

**The Social Construction of Sanitation Technologies: An analysis of the
technology selection and implementation process in District
Mansehra, Pakistan.**

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DISSERTATION

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Abstract

Over the last few decades sanitation has been the focus of many development projects and strategies in the international development community for the strong connection of poor sanitation to several developmental outcomes such as health, poverty, economic productivity and safety amongst others. With regard to the Sustainable Development Goals the situation is not satisfying. A strong barrier to establish such technologies exists, as there are not only diverse technological approaches to tackle the problem, but also a complex social situation. Typically, each of the stakeholders involved have their own agendas, ideas, preferences and internal policies, which may or may not be in line with local expectations and ground realities. It is therefore important to understand how technologies are selected and organized between different actors and then implemented within the given context and the challenges faced in the process, from the perspective of the different actors involved.

Due to the perceived value of sanitation projects in development, Non-Governmental Organizations (NGOs) have increasingly taken up the responsibility of service provision where the governments of developing countries have lagged far behind. NGOs have become the preferred organizations for foreign funded development in the sector, playing a more decisive role in the development and implementation. Funded by foreign donors, International NGOs (INGOs) implement water and sanitation projects through local NGOs, in the context of local regulation and policy, creating a multifaceted governance structure.

Using the social construction of technology as the main guiding theory enables the understanding of the roles of different social groups, the politics of their engagement and the different meanings associated with the technology from different perspectives. This provides an insight into how the different actors ultimately shape technologies and their implementation and what outcomes in different communities are generated by these dynamics.

Methodologically, this thesis is based on case study research while putting focus group discussions with key informants at the core of the empirical analysis. These were used as entry point into the village communities and to understand existing practices, preferences and the experiences with the development projects. In-depth interviews were conducted with individual households at the community level, with project managers and WASH experts at the I/NGO level and with donors funding WASH projects. Different sanitation approaches implemented in at least two villages each were covered in the study. A total of 9 villages were selected based on four different technological approaches to sanitation development. A focus group discussion was conducted in each village, whereas the number of interviews depended on the beneficiaries (and non-beneficiaries) of the project. Related staff from eight different I/NGO and donors were also interviewed.

In most cases technologies are selected by donors and INGO, who assert substantial influence over governments to ensure sector policies to favor preferred technologies. Sanitation policies now favor approaches requiring less investment, however do not necessarily translate to better outcomes and in many cases were observed not to be accepted by the local communities. Local NGOs have huge responsibilities however enjoy very little autonomy in key decisions. Important tasks relegated to community organizations allow for existing power and class structures and political influence present in the communities to be replicated in the projects, thus potentially undermining the purpose of development. Stricter government regulation related to the socio-political conditions of the region, such as terrorism, have adversely affected the ability of organizations to work freely, thereby making the already challenging process of implementation even more cumbersome. Based on the challenges faced by the different actors, recommendations to overcome some of the complexities of the problem in the sector have been elaborated and related to the different actor groups they are intended for. These recommendations would help improve technology selection and implementation for better developmental outcomes in the sanitation sector.

Zusammenfassung

Aufgrund der starken Verbindung zwischen schlechten Sanitäranlagen und mehreren Entwicklungsergebnissen wie Gesundheit, Armut, ökonomischer Produktivität, Sicherheit und anderem, waren Sanitäranlagen die letzten Jahrzehnte im Fokus von vielen Entwicklungsprojekten und -strategien in der internationalen Entwicklungshilfegemeinschaft. In Bezug auf die Nachhaltigen Entwicklungsziele ist die aktuelle Situation jedoch nicht befriedigend. Es existiert eine große Hürde zur Etablierung solcher Technologien, da neben diversen technologischen Ansätzen zur Lösung des Problems zusätzlich eine komplexe soziale Situation vorliegt. Typischerweise haben die beteiligten Interessensgruppen ihre eigenen Pläne, Ideen, Präferenzen und interne Regelungen, die möglicherweise nicht zu den lokalen Erwartungen und Wirklichkeiten passen. Deshalb ist es wichtig zu verstehen wie die Auswahl der Technologien erfolgt, wie die Organisation zwischen den verschiedenen Akteuren stattfindet, wie die Einrichtung in der jeweiligen Umgebung umgesetzt wird und welchen Herausforderungen die verschiedenen Akteure im Verlauf begegnen.

Durch die wahrgenommene Wichtigkeit von Sanitärprojekten in der Entwicklungshilfe haben Nicht-Regierungsorganisationen (NGOs) mehr und mehr die Verantwortung zum Betrieb solcher Anlagen übernommen, wo die Regierungen von Entwicklungsländern zurückgeblieben sind. NGOs sind die bevorzugten Organisationen für aus dem Ausland finanzierte Projekte in diesem Sektor geworden und spielen eine entscheidende Rolle in deren Entwicklung und Realisierung. Durch ausländische Spender finanziert realisieren internationale NGOs (INGOs) Wasser- und Sanitärprojekte mit Hilfe lokaler NGOs, wodurch im Kontext lokaler Regelungen und Gesetze eine facettenreiche Verwaltungsstruktur entsteht.

Social Construction of Technology als Leittheorie ermöglicht das Verständnis der Rollen der verschiedenen sozialen Gruppen, ihre Politik und die verschiedenen Bedeutungen, die die Technologie für die Beteiligten hat. Dies liefert einen Einblick in die Art und Weise wie die verschiedenen Akteure letztlich Technologien und ihre Anwendung formen und welche Ergebnisse diese Dynamik in verschiedenen Gemeinden hervorbringt.

Methodisch basiert diese Arbeit auf Fallstudienforschung, bei der Diskussionen in Fokusgruppen mit Schlüsselinformanten im Kern der empirischen Analyse liegen. Diese Diskussionen wurden als Zugangspunkt zu den dörflichen Gemeinschaften und zum Verständnis existierender Praktiken, Vorzügen und den Erfahrungen mit Entwicklungshilfeprojekten genutzt. Tiefere Interviews wurden mit individuellen Haushalten auf Gemeinde-Ebene, Projektmanagern und WASH-Experten auf I/NGO-Ebene und mit Spendern, die WASH-Projekte finanzieren durchgeführt. In der Studie wurden verschiedene Ansätze zur Etablierung von Sanitäranlagen betrachtet, die jeweils in mindestens zwei Dörfern umgesetzt wurden. Insgesamt wurden neun Dörfer aufgrund von vier verschiedenen technologischen Ansätzen zur

Entwicklungshilfe bei Sanitärtechnik betrachtet. In jedem Dorf wurde eine Fokusgruppendifkussion durchgeführt, während die Anzahl der Interviews von den begünstigten bzw. nicht begünstigten Personen des Projektes abhing. Außerdem wurden beteiligte Mitarbeiter von acht verschiedenen I/NGOs sowie Spender interviewt.

In den meisten Fällen werden die Technologien von den Spendern und INGOs ausgewählt, die substanziellen Einfluss auf die Verwaltungen ausüben, um sicherzugehen, dass lokale Regelungen die ausgewählten Technologien bevorzugen. Regelungen zur Sanitärtechnik bevorzugen aktuell diejenigen Ansätze, die zwar weniger Investitionen erfordern, die jedoch nicht unbedingt zu besseren Resultaten führen und bei denen in in vielen Fällen beobachtet wurde, dass sie nicht von den lokalen Gemeinden akzeptiert werden. Die lokalen NGOs tragen eine riesige Verantwortung, genießen jedoch sehr wenig Unabhängigkeit in Schlüsselfragen. Wichtige Aufgaben an Gemeindeorganisationen abzugeben, ermöglicht es existierenden Macht- und Klassenstrukturen sowie politischer Einflussnahme in den Gemeinden sich in den Projekten zu spiegeln, wodurch der eigentliche Zweck der Entwicklungshilfe potentiell untergraben wird. Striktere Regulierung durch die Regierungen in Bezug auf die sozio-politischen Bedingungen in der Region, wie z.B. Terrorismus, haben den Organisationen viele Möglichkeiten frei zu arbeiten genommen, was den bereits schwierigen Umsetzungsprozess noch schwieriger macht. Basierend auf diesen Herausforderungen der verschiedenen Akteure wurden Empfehlungen zum Überwinden einiger der Komplexitäten des Problems in diesem Bereich erarbeitet und den jeweiligen Akteuren unterbreitet. Diese Empfehlungen würden dabei helfen, die Auswahl und den Einsatz der Technologien und damit die Resultate der Entwicklungshilfe im Bereich der Sanitärtechnik zu verbessern.

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Adeel Malik

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After several years of working towards my PhD, today I am finally writing one of the last parts of my dissertation. It has been a tremendous experience, during which I have learned a great deal, came across many great people- both in my scientific as well as private circles and experienced a new culture and region. It has been such a great journey, although not an easy one, I am grateful that I had the opportunity to peruse my wish in such a great country.

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Abbreviations

BCC	Behavior Change Communication
CBO	Community Based Organization
CLTS	Community-Led Total Sanitation
DRR	Disaster Risk Reduction
FATA	Federally Administered Tribal Areas
FGD	Focus Group Discussion
GB	Gilgit Baltistan
GoP	Government of Pakistan
IEC	Information and Education Communication
INGO	International Non-Governmental Organization
KP	Khyber Pakhtunkhwa
MDG	Millennium Development Goals
MoE	Ministry of Environment
NGO	Non-Governmental Organization
NOC	No Objection Certificate
NSP	National Sanitation Policy
NWFP	North West Frontier Province
ODF	Open Defecation Free
PATS	Pakistan Approach to Total Sanitation
PHED	Public Health Engineering Department
PIEDAR	Pakistan Institute for Environment-Development Action Research
PWD	Persons With Disabilities
SLTS	School Led Total Sanitation
TMA	Tehsil Municipal Administration
UNHCR	United Nations High Commission for Refuges
UNICEF	United Nations International Children’s Emergency Fund
UNO	United Nations Organization
VDC	Village Development Committee
VDO	Village Development Organization

WASA Water and Sanitation Agency
WASH Water, Sanitation and Hygiene

Chapter 1

Introduction

Water and sanitation remain an enormous challenge to this day, threatening the health and lives of humans and the environment, despite the focus of the international development community for the last few decades. Close to 650 million people use water from unimproved sources and around 2.4 billion (out of which 946 million people are still practicing open defecation) have no access to any form of improved sanitation (United Nations, 2015).

Several problems related to poor sanitation have been well documented over the last decade. However research into the issues of provision of water and sanitation technologies, from the different perspectives of the stakeholders have seldom been highlighted. The process of development of water and sanitation technologies may appear to be simple at the surface, however the complexity is a result of the large number of organizations, institutions and social groups involved that are interacting across continents and countries, with different internal and external policies and motivations, operating in different enabling and constraining environments. The sanitation challenge could rather be termed as a ‘wicked problem’. Wicked problems are characterized by challenges or problems that do not have simple solutions, cannot be clearly identified and defined, are dynamic and change over time, are socially complex and may include behavior changes (Australian Public Service Commission, 2012). According to Head and Alford, 2015, wicked problems are “those (problems) that are complex, unpredictable, open ended or intractable”.

The Water, Sanitation and Hygiene (commonly known as WASH) sector challenge fits the idea of a wicked problem due to the fact that the sanitation needs, conditions and requirements are highly context dependent and therefore have no simple solutions. Furthermore most sanitation challenges are socially complex, since they involve many social groups and organizations all interacting within the context of their policies depending on their role in the process as well as

the policy and regulation of the country and region where the implementation takes place. Interacting groups may have different opinions, knowledge, information, experiences and even attitudes which make a common decisions and solutions to problems very unlikely (Head, 2008). The tensions between the different stakeholders in the development of WASH technologies in order to address the sanitation challenge add further social complexity, as does the socio-cultural, economic and political context in which they operate. It is also hard to address the complexity of the WASH challenges because of the interdependencies of the different elements that are part of the problem and the causality they may have, another characteristic of wicked problems. In order to understand the processes of selection and implementation of WASH technologies and the subsequent adoption or abandoning by the beneficiaries, a deep understanding of these social complexities that exist in the given context is required. This thesis aims to address some of these interesting complexities to better understand the role of different actors and actants in the process, describing the social construction of the WASH technologies.

Despite several research and knowledge on the direct and indirect consequences of poor sanitation, the current sanitation challenge is not limited to simply provision of water, sanitation and hygiene technologies and systems that address the issue. It now includes the need to provide decision-makers with the right knowledge and evidence that can help effectively plan, implement and rightfully address the wicked problem in its entirety. This thesis in part tries to address some of these issues, at least to the extent of the selection and implementation of technologies. This is by no means the complete set of knowledge required to appropriately modify the worldwide sanitation drive, however it is more of a context based study that can help provide with imperial evidence that could help shape future projects and policies within the given context.

1.1 The Sanitation challenge

The problems associated to poor access to water and sanitation services are well documented. However it is important to understand why sanitation is a worldwide concern and why many international development organizations try to promote and address the challenges through several incentives and goals (refer to next section).

There are several aspects of sanitation that are of importance in the development context. One of the first issues to be addressed is the association of the lack of sanitation to poor health, which is

most commonly the focus of such studies (Sclar et al. 2017), and is known to be linked to other important development issues such as poverty and vulnerability. It is estimated that the 10% of the global disease burden can be associated to poor sanitation or complete lack of it (Pruss-Usten, 2010) and is in general associated to higher infant mortality and morbidity rates (Cameron et al. 2013; Bartram and Cairncross, 2010). However the effects of poor sanitation are not limited to the physiological effects of ill health, disease and poor environmental conditions and influence human wellbeing in general in a variety of ways (Owusu, 2010). Improper sanitation has been linked to reduced school attendance and cognitive abilities, likewise recent studies demonstrate that improved sanitation can improve both improvements in cognitive ability (Khalil et al., 2016) and an increase in school attendance (Morgan et al., 2017; Dreibelbis et al., 2013; Freeman et al., 2011).

It is usually the women and children that bear the brunt of the problems associated with poor sanitation. Women are vulnerable to sexual harassment and diseases due to the fact that they are usually responsible for water collection and may be forced to defecate in the open (Caruso et al., 2015) thereby exposing them to potential exploitation. The effect of poor sanitation on women and children is also more pronounced due to their vulnerability. Women often are physically fatigued because of the strenuous job of collecting and carrying water leaving them with no time and energy for other activities and opportunities (ibid.; Sorenson et al., 2011).

For these reasons and the strong links of sanitation to several important development outcomes different organizations are working on the different initiatives in order to promote water and sanitation technologies. These range from years and decades dedicated to sanitation and worldwide goals to be achieved such as the millennium and sustainable development goals. The following sections describes the different initiatives by different international organizations and bodies and the current situation regarding sanitation in the country where the study takes place ie. Pakistan. This is followed by the important and critical questions and literature of where the responsibilities for the provision of water and sanitation facilities and technologies lie and who is actually taking up this responsibility, touching upon the different agendas and methods of operation of some of the key bodies and organizations involved in the process. This further leads to the discussion and question as to how technologies are selected and the processes of implementation of the selected technologies.

1.2 Sanitation, Millennium Development Goals and Sustainable Development Goals

Due to the widely known consequences of poor water and sanitation, development programs related to water and sanitation have become a pressing need and a top development priority (McConville, 2006). Improvements in sanitation coverage had been targeted by the United Nations Millennium Development Goals (MDGs), because of its association to issues of environmental and public health, economy, human dignity and security. During the period of implementation (2000-2015) the MDGs had put immense pressure on Governments and development agencies to achieve target oriented goals in several development sectors, and became the widely accepted measure of development progress in these sectors. One of these goals was to ‘halve by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation’, which in 2005 meant, providing ‘sustainable sanitation’ services to 1.6 billion people over the next decade (UN, 2007). The challenge of the MDGs was not only to achieve a specified number of toilets, but to do it in a sustainable manner that would lead to lasting positive change for the entire community.

After more than a decade of efforts it was quite clear that the targets set by the MDG’s would be missed by more than 600 million people (UN, 2012). The pressure of meeting the target and the presence of these goals themselves had resulted in a shifted focus of development agencies from ‘sustainable sanitation provision’ to ‘sanitation coverage’. The difference is that the latter does not include any information on the quality of the service provided (Aertgeerts, 2009), and relates to mere provision. The focus at this point, not in theory but mostly in practice, became achieving a specified number of toilets rather than provision of sustainable sanitation services.

Although the overall target of halving the proportion of people without access to improved sources of water was achieved, the sanitation target could not be met. Even though some progress and efforts were made, the question of the sustainability of these developments still remains.

After the expiry of the MDG’s the Sustainable Development Goals (SDG) were set by the United Nations, to achieve what was not achieved by the MDG’s. The target is to meet the goals by the year 2030. They consist of 17 goals and 169 targets that are integrated, indivisible and balance

the environmental, economic and social aspects of sustainable development (UN, 2015). The SDG's related to water and sanitation are "By 2030, achieve universal and equitable access to safe and affordable drinking water for all" and "By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations" respectively (UN, 2015). At present this means providing 663 million people with access to improved sources of drinking water, 1.8 billion people with safe drinking water and basic sanitation services such as toilets and latrines to 2.4 billion people (ibid.).

As with the MDG's there is some debate to the effectiveness of the SDG's. Although the formulation of the SDG's was done through a rigorous process of political negotiations, gaps related to issues of actual meaningful implementation, suitability to actual political process and international agreements and targets that cannot be quantified remain (Hák et al., 2016)

It is also important to understand the definition of 'improved' when referring to water and sanitation systems. According to the Joint Monitoring Programme's latest definitions for the purpose of monitoring, improved sanitation facilities refer to systems "designed to hygienically separate excreta from human contact" whereas an "improved drinking-water source is defined as one that, by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with fecal matter" (WHO, 2017,2015).

1.3 Sanitation in Pakistan

According to the latest statistics by the Joint Monitoring Programme (JMP) a report published by the World Health Organization (WHO) and UNICEF, evaluating the progress towards the MDG's and SCG's in the sector of water and sanitation for the last 25 years, in 2015 only 63% of the population had access to improved sanitation and 91% of the population had access to improved sources of drinking water. The MDG target for sanitation was met whereas the target for water was not, despite the fact that 13 % of the population has no access to any sanitation system at all. This means that 41 Million People in Pakistan still defecated in the open in 2014 making Pakistan the country with the third largest number of people to do so after India and Indonesia.

Although Pakistan is said to be ‘on track’ for the sanitation target and has made ‘good progress’ for the water target, there is not much information available on the quality of the improved water and sanitation facilities or services that are being counted as improved within the statistic. Most of these figures merely relate to coverage or access (Aertgeerts, 2009) and do not indicate the quality of the services or technologies. For example in the Mid Term Development Framework (MTDF) of Pakistan from 2005-2010, 65% of the population was reported to have access to improved sources of water and 55% of the population to a sanitation system. 70 % of the rural population with access to water uses shallow wells as their major source of water, whereas out of the 55% population with access to a sanitation system only 16% were connected to covered underground drains or sewage systems (Nawab et al., 2006), indicating that numbers do not necessarily reflect quality of service, and also that having access does not necessarily mean access to improved facilities.

In a study by Pakistan Council for Research in Water Resources (PCRWR) on the water quality and microbiological contamination of ground water around the country, 65% and 35% of the ground water samples were found to be contaminated with Total Coliform and Fecal Coliform respectively (PCRWR, 2006), both indicators of contamination with pathogenic organisms. So despite the fact that a large proportion of the population seemingly had access to ‘improved’ water and sanitation facilities, the basic purpose of the MDG’s which was to alleviate poverty, reduce environmental degradation and improve health and economic growth, was in no way being achieved or perhaps even considered. Meaningful economic growth and real development may be being overlooked by considering statistics and simplistic interventions as a success (Maxwell, 2003, Clemens et al., 2007).

In comparison to Germany the water and sanitation system in the whole country is quite basic. Most large cities do not even follow the centralized sewage systems that are typically present in the western world. Even when they are present in certain parts of larger cities, the sewage rarely goes through proper sewage treatment. Only 8 percent of all domestic wastewater is treated in Pakistan, the rest of which is drained and discharged from houses in natural drains, fields or when available into sewers or decentralized septic tanks (Murtaza and Zia, 2012). In rural areas the sanitation systems, if present at all, are of the most basic type and do not always meet the criteria for ‘improved sanitation’. Such rural sanitation systems are always decentralized and are

not connected to sewers of any sort. They may however be connected to poorly constructed soakage pits but in most cases drain into fields and natural drains. The most common type of sanitation system is the pour flush latrine, pit latrines are rarely used. Open defecation is the norm when no sanitation systems are available to the household. It is not uncommon for a certain proportion of people in every village, to defecate in the open, in most cases. Depending on several factors this could range from being quite low to quite high.

1.4 Who's responsible?

Usually Governments are responsible for all the development activities of their countries. Water and sanitation services should be no exception, especially after both have been realized as basic human rights by the United Nations. Since both have been declared as basic human rights, it should be the Governments responsibility to ensure adequate services and development in the sector. Some Governments lack the capacity to fulfill this right and in many cases lack of Governmental priority and interest for the sanitation sector is why sanitation remains absent in many national development plans (Cumming, 2009). In certain instances the responsibility is passed on to local governments, as in the current case of Pakistan, which lack both the capacity and the funding to carry out such projects (ibid., WaterAid, 2008).

Since the 1970's several NGO's have stepped in to help Governments that could not keep pace with the growing demands and to, in the past decade and a half, meet the targets set out by the MDG's (Surjadi et al., 1994; WHO, 1997). They have since become the preferred organizations to carry out donor funded development and social welfare projects, especially in cases where governments are thought to be corrupt and inefficient (Ferguson, 2006; Pearce and Eade, 2000; Chabal & Daloz, 1999). In some cases NGO's are thought to be efficient and even more cost effective (Edwards and Hulme 1996; Vivian, 1994; Meyer, 1992; Sollis, 1992), and therefore are preferred over local governments.

NGO's rely on international donors, private donors and Governmental aid agencies for most of their funding, getting up to ninety percent of their funding from these donors (Nelson and Dorsey, 2003; UN, 2003; Hulme and Edwards, 1997). Many of the NGO's from the North or industrialized nations have "strictly defined mandates, and have operated in distinct, recognizable sectors" (Nelson and Dorsey, 2003). With lots of investment in development from

donor agencies, there has been a decreasing role of official representatives that are supposed to be representing communities and their needs. Most of the decisions are made between development banks officials and humanitarian or donor agencies (Davis, 2004; World Bank, 1994). This shift of power has led NGO's to gain more control over development in general and to play a more decisive role in socio political areas (Scherrer, 2009), often overlooking local community's preferences and needs. Mostly the NGO's themselves do not have the autonomy to make decisions and suffer from donor dependency. Therkildsen (1988) reviewing the involvement of donor agencies in water and sanitation sector reported that projects usually followed a control-oriented approach in planning and implementation thus contributing to the problems of donor assisted water and sanitation projects. This control oriented approach means that donor's agenda is of prime importance rather than community's preferences. To avoid such problems it is necessary that Donors consent to as much autonomy as possible, even if plans do not meet the donor's expectations in every respect (Yohalem and Hoadley, 1990; Bendahmane, 1993). Despite the knowledge of this, little has changed in recent years, donor dependence seems to be increasing and donors and NGO's seemingly still play a decisive role in development of the sector.

Most of the rural developments in countries like Pakistan have now been dominated by the NGO sector for the last decade. Allocation for the sector in most developing country budgets is low and therefore most of the projects are financed by donors and international aid, yet in the past couple of years this also has been falling short. On the other hand the dependence on donors and reliance on foreign aid seems to grow. Only 1.5 percent of the total development aid budget is earmarked for the water and sanitation sector both for Norway and the United Kingdom (Cairncross, et al, 2010), which means that Governments will eventually have to step up to the challenge. This is further complicated by the fact that when NGO's and international development organizations take over or are predominantly involved in a particular sector, they leave out several 'intermediate organizations' during their implementation, possibly to be more efficient. In the long run it is the intermediate organizations and institutions that are important to continue supporting the communities and ensure that the development work that has been done will be sustained over a longer period of time and changing conditions (Smits et al., 2007, Moriarty and Schouten, 2002). Supporting local institutions in order to increase their capacity thus enabling them to take up the challenge themselves should be the primary objective of the aid

and development (Flower, 2013). Some of these problems are in line with the very criticized aspects of the Technical Assistance (TA) approach to development in the 1990's which was criticized for bypassing Governmental systems and focusing on technological outcomes rather than strengthened institutions (Ohno and Yumiko, 2004).

NGO's involvement in the water and sanitation sector ranges from direct service provision in emergency and humanitarian relief contexts and community education and awareness to research, innovation and participation in policy dialogue to promote community needs, proven approaches and technologies (Carrard et al., 2009). Most of these sanitation projects typically include both hardware (dealing with physical technologies) and software components (awareness, capacity building, education etc.)

1.5 Technology selection

Perhaps one of the most important roles NGO's or other bodies play in the provision of water and sanitation is the selection of technologies to solve the water and sanitation problem. Although several technologies to tackle the problem are available, the rapidly changing conditions of development countries make the selection of water and sanitation technologies a challenging process. The biggest challenge is to implement these technologies in the varying socioeconomic circumstances typically found in most underdeveloped regions and countries (Loetscher and Keller, 2002).

According to Brikké and Bredero, 2003 many water and sanitation interventions by NGO's, follow a resource-driven approach in which most of the intervention and technology selection takes place without the communities' involvement. There is minimal meaningful contact between the implementing agencies and the communities intended to benefit from the technologies. Consequently many important factors pertaining to societal preferences and norms, such as the socio-cultural aspects are not properly considered and understood. In this case and in the case of most water and sanitation development projects in the developing world, technologies are selected on the basis of global and internal policies and as a replication of successful technologies in other parts of the world with little or no consideration and modification to suit local conditions and needs (Ali et al., 2008). Many authors have argued that failures in the sector to some extent can be linked to poor planning and decision making and the lack of will of

designers to engage with the community to find what the most suitable options would be in the given context (Barnes et al., 2014; Montgomery and Elimelech, 2007; Brikké and Bredero, 2003). On the contrary if these approaches were to be demand driven, most of the community's preferences would be identified and integrated in the project, along with the participation of the community (Brikké and Bredero, 2003), however this does not seem to be the norm. It is quite clear and should be understood that no single technical approach or institutional and economic reform can address the sanitation challenges for all communities alike (Palaniappan et al., 2008).

In most water and sanitation projects a very technical approach is followed, where the implementing agency decided on the technology that was deemed to be appropriate from the implementing agency's or donor's perspective (Brikké and Bredero, 2003). A predominance of engineers in the field of development which leads to a technical focus on the problem only, can be attributed to many failures in water and sanitation systems, which were abandoned by the communities and failed to bring about intended results in several cases (Smits, et al., 2007, Ali et al., 2008). Perhaps this is why most water and sanitation projects implemented in the past have had a low success rate. In fact only 50-66% of the sanitation and water supply projects evaluated by the World Bank were found to be satisfactory and sustainable in the long run (World Bank, 2003).

Infrastructure facilitation in the water and sanitation sector is a complex process that cannot be done by technical innovation alone and requires a large degree of socio cultural, political and institutional transformation and reinforcement (Geels, 2005). The social aspects of technology are now widely known, and it is now generally accepted that the social and technical aspects of technology cannot be separated (Dosi, 1982; Bijker, 1992; Hughes, 1993 & 1987).

The relationship between the different actors and the politics of their engagement often determines the outcome of the process, i.e. the type of technology chosen. Despite all the knowledge collected over the last several decades of water and sanitation development projects the technologies, systems and developments remain to be unsustainable in the long run. The importance of combined efforts of different organizations and institutions to achieve meaningful outcomes in the sanitation sector have been discussed in several recent publications (see for example, McGranahan, 2015; McGranahan and Mitlin, 2016; Chong et al., 2016; Karar and

Jacobs-Mata, 2016). This also suggests that the contemporary issues of water and sanitation require collaboration of different groups at different levels, however the process of interaction between them is neither simple nor straightforward. In the case of Pakistan Nawab and Nyborg, 2009, identify several issues within the interacting institutions in the sector ranging from unrealistic policies, lack of coordination and a conducive environment. This creates an 'implementation gap', which is the difference between the theory of what should be done and the practical side of what actually is (Barnes, 2014). Evidently there exists a plethora of literature of what approaches are successful and what policies are required to create an enabling environment for development within the sector. However it seems that reality with the involvement of many different institutions, not everything can function as it is meant to be. This leads to the important question as to where the problem lies; is it in the different institutions and their interactions, is it in the government and their policies, is it related to the implementation and the roles played in the process by different organizations or is it because of the socio-economic conditions present in the developing world or more specifically in Pakistan?

1.6 Research questions

All of the above mentioned problems do not simply coexist; they have strong ties to each other and in turn affect each other leading to complicated problems that appear to have simple solutions but in real world situations are not effective in solving the problem. They are all forms and parts of the larger wicked problem. What is not so clear from the literature and previous studies is how the technology selection process that occurs at the levels of governments, donor agencies, implementing agencies and sometimes communities and community based organizations and their interactions in the given contexts shapes the outcome of technology. This study intends to address this issue by closely looking in to the workings of these above mentioned organizations, their roles and agendas, politics and influences and constraints and opportunities while selecting technologies related to water and sanitation development projects and interventions.

There also seems to be some missing information on the context specific roles of development agencies in their role of WASH technologies in the literature, however this information needs to be created and updated because of the dynamics of the problem. Approaches are fast changing,

just as society, technology and knowledge, therefore updated knowledge needs to be created in this regard.

Most studies on sanitation in the past have focused mostly on the technical aspects of sanitation or the technologies independent of the context in which they are to be implemented. There are also a number of studies that focus on human behavior, perceptions and attitudes related to water and sanitation. In the particular case of sanitation technologies the sociological aspects sanitation development have usually been limited mostly to technology acceptance or at most culture, which no doubt are important facets when discussing both technology and society. However the processes preceding the acceptance or rejection of technologies in societies are often overlooked and not deemed relevant to the final outcomes of such developmental projects in the real world settings. Therefore the research aspect of the real world problem is to investigate how these processes are set up between the different actors involved. Each organizations and institution are set up with policies, mandates and purpose, it is interesting to understand how they deal with differences in opinion, experience and expectations in relation to sanitation technology developments. Developments which require critical decisions to be made and affect the outcomes of projects that have deep implications with respect to important development indicators, need to be understood by how the different actors organize themselves in the process. It is therefore critical to understand the position of each actor in relation to the technology in terms of influence over the processes that entail the development projects in the sector. It is also necessary to understand how each actor perceives the technology in question and what they believe is the purpose of the development and the intended outcome.

I therefore chose the ‘Social Construction of Technology’ as the theoretical framework to study the stated problem as the theory allows for the in depth study of the social groups surrounding the process of technology selection and implementation. The social construction of technologies allows the technology to be effectively studied in light of the social processes that influence the technological outcomes and allows me to understand the dynamics and positioning of the groups with reference to the technology. Given that different actors play different roles in the process of development, each having their own agendas, ideas and restrictions the theory enables me to analyze their contributions to the outcomes of the technological developments along with the effects of the technological developments in the society. Another important aspect is the

importance placed on the context, which in the case of the study is extremely important. Further details of the theoretical framework are provided in the forthcoming chapter.

The central ideas of this research derive from related sources, the first is my personal experience and research related to sanitation before the commencement as a doctoral candidate. It was during this research period that I came across several practitioners working in the sector. Their feedback on the problems and the issues in the water and sanitation sector were quite helpful in outlining the research problem in question. In doing this research and answering the main research questions I hope to ultimately improve developments in the water and sanitation sector not by action but by research which will elaborate the processes of technology selection, implementation and development, all of which are important aspects related to the outcomes of the project, however are not understood very well by the different individual actors involved. Moreover, even when the comprehension at the different levels is present the interlinkages of the outcomes of technological development to micro and macro level processes have not been demonstrated and may be difficult to understand from the perspective of individual actors. Ultimately the study intends to generate knowledge that can be used specifically in the context of the study area, in other regions with similar contexts and as generalizable cases in the broader sense.

The following are the main research questions of the thesis.

1. How are water and sanitation technologies developed and organized amongst the different actors involved?

This question intends to answer what and how different groups are involved in the process of planning and implementation of water and sanitation services and how they perceive the technologies in question. It aims to understand the relationships between the different groups and how their interaction may influence the process of development and of the future of the socio-technical system.

2. What is the process of selection and implementation of technologies?

In water and sanitation service delivery and developments there are different routes through which technologies are brought to communities and end users. The approaches followed to do so

determine the technological outcomes. All approaches are unique due to the specific contexts in which they are applied. It is therefore important to study the major approaches, both in practice and in theory, to understand the technologies that are the outcome of these approaches which are shaped by various socio-political factors.

3. What are the challenges to the implementation of technologies within the given context?

Many stakeholders are involved in the development of water and sanitation systems, each with different expertise, expectations, capabilities and agendas. Several challenges may become obstacles in achieving what initially was intended to. These challenges whether related to the different actors, the natural environment or the context, offers the opportunity for in depth analysis into challenges faced in the rural development of water and sanitation systems, which can be translated into generalizable knowledge used for policy guidelines.

1.7 Structure of the thesis

Chapter 2 discusses the theoretical framework of the thesis and defines how it forms a frame to analyze the research objectives. Important definitions of terms used in the following chapters are also given.

Chapter 3 outlines the methodological approach adopted throughout the empirical and analytical part of the thesis. A detailed account of the study area is also presented within this chapter and should help the readers comprehend the socio-cultural, political and economic conditions prevalent in the area for the analysis and discussions in the following chapters.

Chapter 4 is a descriptive account of the sanitation technologies and the social dynamics and structures present at the micro level in the study area and villages. The chapter highlights the different social groups and their interpretive flexibilities with respect to the technology. An important part of the chapter is the description of the village dynamics based upon the socio-cultural environment and highlights the important notion of power and politics at the village level. This chapter also details the experiences of the local communities with the whole process of development of WASH technologies at the village level.

Chapter 5 further goes into the details of the possible technologies and the possible and actual modes and processes of delivery and implementation of the technologies. The technology implementation, selection and adoption process are explained in light of the analysis at the macro level, describing the different institutions and the role they play in bringing the technologies to the communities. This includes their interactions under given policies and the tensions between and within these organizations and how this impacts the technology in question.

Chapter 6 presents the challenges faced by the different institutions, organizations and communities in the development of WASH technologies from different perspectives. These are based on the different organizations involved and their modus operandi within the given context. The chapter as well as the thesis is concluded with recommendations to improved developments in WASH technology selection and implementation, structured on the basis of the organization they are intended for.

Chapter 2

Theoretical Framework

The theoretical framework in this study intends to outline the underlying theories of the problems discussed and will function to fill any gaps that are left out in the collected data while identifying boundaries of the scope and extent of the study, guiding methodology and key research questions. In the problem previously discussed several actors and social groups responsible for the selection, implementation and usage of the technologies in question have been identified. Therefore the theory considered here is particularly relevant, since it considers analysis at these particular levels.

2.1 Technological determinism Vs. Social Constructivism

In the last couple of centuries mankind has witnessed (what is known as) a technological revolution, an era or period of time dominated by rapid changes in technology. Newer and presumably better technologies replaced older ones alongside social and societal changes. In fact the whole technological revolution is seen by some as a social change rather than a technical change. This particular issue of whether technology guides and determines society or vice versa or even both simultaneously, has been a debate in many scholarly accounts on the subject.

According to Sally Wyatt technological determinism means firstly that technologies are developed independently from society by the designers or developers and not affected by external socio-political factors and secondly that these technologies determine society and social change (Wyatt, 2008). Technological determinism in its many forms from different scholarship can have different interpretations. These range from the positive autonomy of technology to the theory that technology is the foremost factor that ‘determines’ social change (Bimber, 1990), hence the name technological determinism.

In the past many societies were symbolized and remembered by their technological advancements, so much so that eras were even characterized by the major technological development that took place within them. An example is the ‘bronze age’ in which technologies

which enabled the widespread use of bronze, were created, therefore characterizing these societies by the major technological development. Most historical accounts of technology focused on the effects of technology and technical innovation, such as the implication of printing, rather than the process of development and the creation of printing press by Gutenberg (Smith and Marx, 1994).

Technological determinism is often referred as 'hard' or 'soft'. Proponents of hard technological determinism often consider technology to be autonomous, forcing society to change in accordance with or to facilitate the development of the technology. Whereas soft determinism suggests that we (society) may have some control over the development of technologies or societies change as a result of technological development. Soft determinism does not deny the fact that technology has social affects (MacKenzie and Wajcman, 1999), yet still proposes that societal changes are brought about by technological changes.

The older view of technological determinism, where users or consumers of technology didn't actively participate in the technology development process which was also thought to follow a linear path has now changed (Oudshoorn and Pinch, 2008). The relationship between technology and society is no seen through a more constructivist view, at least amongst the scholarship of Science, Technology and Society fields. Sociologists of technology can not only be concerned and limited to the effects of technology (Mackay and Gillespie, 1992). There is a too interesting of a dynamic and relationship between technology and society to limit it to how technology affects a very passive society.

The social shaping of technology was a theory developed in critique of technological determinism by sociologist, philosophers and scientist studying technologies in relation to social aspects. The social shaping of technology is a hard and broad concept to define. One common feature throughout is the effort to understand the development of the technology as well as explore technologies as products of society and social change rather than adjustments in society to adjust to technical changes (Williams and Edge, 1996; MacKenzie and Wajcman,1985; Bijker and Law, 1992). Since it is believed that technologies do not follow a predetermined path, several choices are made, whether conscious ones or not, are made along the path of its development, these choices and the reasons thereof are opened up for discussion and analysis through the social shaping of technology (Williams and Edge, 1996). Even within the social

constructivist view, technology is not only seen to be simply socially determined but rather shaped or constructed, which means that technologies are based and developed upon selections between different possibilities depending on different social factors and which in turn may have different social consequences as well (Williams and Edge, 1996). Each stage of technology development and selection involves choices which are in most cases more social than technical, which have direct consequences on not only the content of the technology itself but also on how it affects society (ibid.).

The social shaping of technology with a focus on the micro level is based on three different approaches i.e., the 'social constructivist', the 'systems approach' and the 'actor-network' approach (Mackay and Gillespie, 1992).

The systems approach is based on Hughes concept of technology, science, context and the social aspects overlapping in a seamless web. All the different components of technology whether designers, scientists, engineers, users, materials, mines, artifacts, organizations and institutions all come together as a system and do not have hard boundaries which allow them to be studied individually (Hughes, 1986).

The Actor Network Theory (ANT) developed by Latour, Callon and Law is a theory that focuses on sociotechnical systems consisting of actors. In the case of the actor network theory 'actors' may be human or inanimate objects which interact in a 'network' to produce technological systems and is based on the relationships between human and non-human agents (Mackay and Gillespie, 1992). Much of the privilege that humans enjoy as being the sole determinants of technologies, as in the case of most constructivist approaches was removed, creating no bias between humans and non-human objects in their effect on technology or vice versa. There is no definite reason to believe that either humans or objects determine social change, but social interactions may shape the inanimate and likewise the inanimate may shape social interaction (Law, 1992). The theory aims to also focus on nature and the ability of physical objects to at least impact socio technical systems to extent. Human actors would like for systems to function more efficiently, but in some cases that may not be physically possible. As in Latour's example of the construction of winding roads, where a straight road may be desirable by some yet the geography and the landscape also determine whether such as road is possible or not.

Consequently every turn and bend in the road is forcing humans to make the turn or steer the car in order to stay on the road. . In either case both human and nonhuman actors are considered equivalent for analysis (Pinch, 2009). A common criticism of the theory lies in the lack of ANT to provide a strong analysis of the actor, the central theme of the theory and also lacks clarity and definition of the concept of an ‘actor’ (Callon, 2007). The actor network theory and SCOT are quite similar in the fact that they do not look at technologies in terms of successes or failures but rather look at the process that may have led to either outcome.

For social constructivist technologies are social constructs or constructed by interaction and negotiation of different ‘social’ actors that are relevant to the process, which may include users, designers, institutions and organizations and emphasizes on the more social aspects of development and the design of the technologies and the related possible choices (Mackay and Gillespie, 1992; Pinch and Bijker, 1987; Latour, 1992). The Social Construction of Technology (SCOT) is one of the major theories within the social constructivist view. The constructivist analysis of SCOT therefore has the capacity to analyze both the social construction of technology and also the effects of these technologies on society, thus bringing together aspects of both social constructivism and technological determinism (Bijker, 2010), which is a very important aspect and reason for choosing this theory for the research.

One of the reasons why SCOT was chosen as the major theory of the study was for the clear analytical framework as well as a methodological tradition that is adaptable to the study and its needs. Also the crux of the theory lies in the fact that different technological outcomes are the results of different social contexts and the development of technology could follow very different paths depending on these contexts. This in my opinion offers certain flexibility to the analysis, which would be very important in this case for the reason that the socio-technical system in question is not exactly in the true sense the development of a technology that doesn’t exist but rather a development of a technology in a certain context or even the development of a whole context.

2.2 The Social Construction of Technology (SCOT)

It is quite clear that technologies can no longer be considered as artifacts or simply objects that exist. Technologies are constructed by societies and in turn make societies what they are.

Several aspects of SCOT have been refined and added over time, to make it more adaptable to several situations for better analysis of socio-technical systems. Some of the aspects of SCOT that are relevant to the study are presented below.

SCOT is a theory that can be traced back to Pinch and Bijker's (1987) article, "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other" (Klein and Kleinman, 2002) and is made up of different methods combining analysis from history of technology, sociology of scientific knowledge and science-technology-society (STS) coming from several countries such as the Netherlands, UK, USA and Scandinavia (Bijker, 2009). Combined from several countries of the world and applied to study various cases in different cultural contexts with diverse methods, SCOT has gained strength as a theory that can be applied to a variety of cultures and contexts using different methodologies (ibid.).

2.2.1 Interpretive flexibility

The SCOT theory in its basic form is based on four components. The first key element in the SCOT theory is interpretive flexibility, which suggests, according to Klein and Kleinman, 2002, that "technology selection is an open process that can produce different outcomes based on the circumstances of development". According to Bijker this means that an artifact can be seen as not one, but at the same time many different artifacts, depending on the different meanings associated to the same artifact by different social groups (Bijker, 2010).

This has been a common theme of investigation for many Science, Technology and Society scholars that have often studied how technologies are being shaped by society, social groups and other social forces. Interpretive flexibility means that "technology has no objective or fixed properties but allows for different interpretations to its functional and sociocultural properties as well as its technical content" (Baron and Gomez, 2016). Technologies do not have inherent meaning, rather their meaning is associated with a particular groups of people (Pinch, 2009). All

different groups that are associated to a particular technology in one way or another many have a different meaning associated to the technology or may have very different interpretations of the use of the technology. This could potentially lead to very different courses of development of the technology or could even in some cases lead to multiple designs or even completely different designs (Pinch and Bijker, 1984). These interactions between the groups could be influenced by negotiation, interaction and conflict (Klein and Kleinman, 2002; Cronberg, 1992; Hacking, 1999; Winner, 1992). Therefore according to SCOT the technologies we see or the technologies that are in existence are a result of intergroup negotiations, which is subjective and dependent not only on the ‘circumstances of development’ but also on the different social groups and their interactions that create these circumstances. The meanings associated to a certain technology could be very different depending on their position in relation to the development of the particular technology. It would not be uncommon, for example, for users to have a completely different meaning associated to a technology as opposed to the designer of the technology. This can be further complicated when the actors (such as designers and users) may be separated by space and time, in which case the end users may not have any interpretive flexibility at their end, even so, even users only interpret and change technologies based on several social factors (Orlikowski, 1992). Yet in the context of the study although the predominant technologies used may be developed away from the users, the process of development or introduction of the technology to the users continues at the user level giving rise to a higher interpretive flexibility amongst the community and the development of technical frames in the contextual time and space. Furthermore when using SCOT as a frame, methodologically and analytically, no single meaning or interpretation has preference over the other and should all be treated in analysis to be of equal importance (Bijker, 2010). This leads to a better understanding of the processes that place within the development of the technology and not only on the final product or the artifact (ibid.).

In the context of the study the interpretive flexibility of water and sanitation plays a very important role, since many of the social groups come have totally different opinions and ideas of the whole concept of sanitation and also how related technologies should be, function and what purposes they serve in the community. It will therefore be quite interesting to compare the different meanings of technologies, artifacts or otherwise, in light of the meanings associated

with them by the different social groups being studied. This provides a chance to not only compare the different meanings associated with these technologies but to consider these technologies different, based on the meanings they hold for different groups, and compare them with each other on this basis.

2.2.2 Relevant social groups

One of the reasons why the SCOT theory may be quite suited to the study is the focus on the social groups that are associated to the technologies and because of its emphasis on how social groups and their interactions and hierarchies determine technological outcomes (Klein & Kleinman, 2002). The fact that SCOT in its socio-centric nature places social groups at the middle of the technological development process seemed to suit the study in question quite well, due to the involvement of many different social groups related to the study. Relevant social groups form the second component of SCOT in its original form and can be considered as the unit of analysis (Oudshoorn and Pinch, 2008). In SCOT technologies are studied through the eyes of relevant social groups, each group will have a different description of a technology, leading to many different technologies on this basis (Bijker, 2010).

According to Pinch and Bijker, 1984, in the case of SCOT a relevant social groups has been identified as a group that share similar views or meanings of a technology or the same interpretations of the problems of this technology and innovations within, which can be organizations, institutions, organized and unorganized individuals. These groups should be treated as equal during the study and analysis of them, since their view on the technology is unique and no view on the technology can either be considered superior or inferior than the other (Bijker, 2010; Hacking et al., 1982).

In some cases certain social groups such as the users may be quite an obvious social group but in other cases different social groups may not be so apparent and may have to be searched for through careful investigation and may be significant to the technology and how it was developed or other surrounding processes. According to Pinch and Bijker, 1984, several different groups may exist within a single apparent group, for example there may be different groups of users for which the meaning of the technology may substantially differ from that of the other. In such a

case it would be interesting as well as important to include and account for different groups within social groups. Since each of the social groups or sub social groups within a social group comes with its own set of problems associated to a particular technology and perhaps even solutions, it is important to understand them all to identify certain conflicts that may arise or be present within or amongst social groups (Pinch and Bijker, 1984). From the classical example of bicycles, for certain users such as women and elderly people the bicycle seen as something unsafe, whereas for a certain demographic as explained by Pinch and Bijker, 1984, as ‘men of nerve and means’ this was an opportunity to prove their bravery and courageousness to the world and the opposite sex (Pinch and Bijker, 1984; Bikjer, 2010). A very common example observable in daily life is the different use of cellular phones amongst different groups. With a variety of features for some it is a device that may be used as a camera, for gaming or even something used to avoid (also known as ‘E-void’) people whereas for others it still functions as a basic communication device or even as a business tool to communicate with markets from rural areas.

“Technology development is a process in which multiple groups, each embodying a specific interpretation of an artifact, negotiate over its design, with different social groups seeing and constructing quite different objects” (Klein & Kleinman, 2002). The aspect of different social groups interacting with their own meanings and interpretations or purposes of the particular technology was also quite interesting in the context of the study, since many of the groups that appeared to be involved in the process of the technology development seemed to have very different ideas of what the technology should look like or what particular functions it should serve. In real world scenarios of technology development and selection, the outcome of this process or generally the selection of the technology in this case depends on the interests and power relations between these actors and is/may not necessarily based on unbiased knowledge of all the stakeholders (Olsen and Engen, 2007). However looking at relevant social groups and their interpretations of technologies takes the focus off of successful or failed technologies and rather uncovers the process through which either outcome may occur, so the focus shifts more to the process rather than the outcome only (Bijker, 2010). Different settings and contexts in terms of knowledge, environments, values etc. set new technical frames and social groups, through which technology is developed, this in turn depends on the homogeneity of the group

(Bijker, 1995). When resources are distributed equally over all social groups, there is a chance of innovation. In most real world scenarios this is not true, where certain social groups dominate the process and technical frames are influenced by external factors such as power, resources, networks and influence (Klein and Kleinman, 2002; Sørensen, 1997).

2.2.3 Closure

The third component of SCOT is closure, or the point at which different social groups involved develop a consensus and agree that no further modification in design or technology will occur. This is mostly achieved when all problems associated with specific technologies are thought to be resolved by the different groups, known as ‘rhetorical closure’ or when these problems are redefined in order for them to no longer pose a problem to the social groups, known in this case as ‘redefinition of the problem’. From literature it is evident that the final technology selected or rather the point at which a technology is deemed selected depends on the actor with a relatively higher influence (Olsen and Engen, 2007), which in most cases is not the end user of the technology. The closure process is achieved when the main actors involved believe so and once a technology is closed or stabilized it is very difficult to reopen the process (ibid.). On the other hand closure may be achieved by reducing the problem or by simply creating a problem that will be solved by the current technology in its present state. This could potentially be done by certain groups with vested interests in the current form of technology. The process of closure is highly dependent on the social relations and power structures of the relevant social groups and therefore is important to understand with respect to the study.

One of the seemingly interesting concepts of closure is redefining the problem in such a way that none of the groups can contest it. This is important in this case as the relative power amongst the actors will determine who defines the technology in what manner. In case of water and sanitation technology developments, an assumption would be that most of the organizations responsible for the implementation and planning would hold more power to do so, but this depends on the technical frames that exist and will be uncovered during the empirical part of the study.

2.2.4 Technical frames and the social context

The technological frame is another important component of SCOT and perhaps one of the most relevant to the stated problem in this study. This is a fairly new development that wasn't fully developed in the Pinch and Biker's initial accounts of SCOT (Klein and Kleinman, 2002). The context should define the background in which different social groups exist, interact and operate their power differences and the terms of their engagement and how different factors can affect or influence these relationships. In order to conceptualize the effect of social groups on the technology in question it is important to somehow situate these groups in relation to each other and to place them in some kind of a framework that defines how they interact and shape technologies in terms of their power structure and the resources they use to do so (Klein and Kleinman, 2002).

Why specific routes of development of the technology were chosen over others or why they succeeded for that matter depends on the 'technical frame' or the broader concept of how the different social groups interact and what determines these interactions amongst their membership (Bijker, 2010). Technologies are better understood by the politics of interactions between different relevant groups which are involved in the selection, development or application and utility phases. The technical frames do depend on the current practices which in turn affect the future practices and technology (Bijker, 2010).

The technological frame is the development of the broader context in which actors are situated in relation to the technology being studied. This includes their power structures and the politics of their engagement and begins when these groups interact in account of the technology. The concept of technical frames is applicable to all groups as a whole, where each individual social groups forms its own frame as well, in each case these frames consists of social elements as well as artifacts (Bijker, 1995). Social groups may be part of a single frame or of more than one, in which case the frame with a larger influence determines their role in relation to the technology (Bijker, 2010).

Klein and Kleinman, 2002, identify several resources that the relevant social groups may draw on when talking about the wider social context. These resources are directly related to the way these groups interact within the technological frame. These resources are economic, political,

cultural and current or previous technologies. These are all important factors when considering the study in question. Economic resources are directly linked to power and therefore the ability to shape technologies. Political resources affect policies related to the development and use of certain technologies and also play a decisive role in the way social groups influence technological outcomes. Policies have direct impacts on creating an environment conducive to the propagation of certain technologies over others (ibid.). Similarly cultural resources and existing technologies play an important role in the way different groups shape technologies in their interactions within the technical frame. All these factors are extremely important in the current study and seem to play a critical role and therefore will be studied and analyzed in detail in the following chapters.

2.3 Criticism

SCOT has had its fair share of criticism in the literature. Many critics of the theory believe that it takes too much of a socio-centric approach to the study of society and technology, whereas others sometimes refer it to a framework to study or develop technology rather than a complete theory (Olsen and Engen, 2007).

According to Klein and Kleinman, 2002, the most criticized aspect of SCOT is the view that the world around an artifact is composed of social groups, which fails to assess the difference in power of these groups and assumes that all social groups have an influence on the development of the artifact. This view tends to overlook the differences in powers and how these power differences are socially created. *ibid.* This criticism was overcome by the recent addition of 'technical frame' to SCOT. The concept of the technical frame somewhat overcomes the problems of the structuration of the social groups and helps identify the power relation of the relevant social groups in relation to one another with reference to the technology.

One common point of criticism amongst many STS researchers is the lack of clarity on the role played by technology or simply how the technologies affect society. Since SCOT was based on a social constructivism approach in contradiction to the deterministic view of technology, it is assumed to fail or ignore the effects of technology on human society. SCOT in the past has also been referred to 'social determinism' because of its perceived exclusive focus on the social aspect of technology development. This is overcome by other approaches by treating the 'the

social and the technical or the human and the non-human; as equal in analysis such as in the ANT. According to Pinch, 2009, SCOT does not and cannot attempt to deny the impact of technologies on humans. He continues to give the example of the bicycle and how there are several impacts of the technology on the human user of the bicycle, such as the roads including twists and turns, the frame that supports the rider and the physics of movement and balance. Having acknowledged this, Pinch does not deny the impact of the non-human world on the human and describes that SCOT as a theory does not as well, but allows the freedom to focus on certain aspects of this interaction. Furthermore according to Bijker, 2010, in one of his later publications, the constructivist approach of SCOT brings together the approaches and viewpoints of technological constructivism and social constructivism. “A technological frame describes the actions and interactions of actors, explaining how they socially construct a technology. But since a technological frame is built up around an artefact and thus incorporates the characteristics of that technology, it also explains the influence of the technical on the social” (Bijker, 2010). This notion of the sociotechnical ensemble realized the possibility of the co-construction of society and technology (Oudshoorn and Pinch, 2008; Bijker, 1995). Furthermore the addition of technological frames has enabled the study of ‘technological shaping of society’ alongside the ‘social shaping of technology’, which is important to understand how technologies affect different cultures and practices and how they are able to shape interaction around itself (Bijker, 1995).

The unit of analysis in SCOT started out with the artifact, which was a bit too restrictive to the technological system which proved challenging to delineate the technical of a technology to the current point of sociotechnical ensembles, which is not restrictive at all and allows to further the principle of symmetry in the technical and the social as in Hughes ‘seamless web’ (Bijker, 2010). This is important in understanding that not only is the social impacts important, also non-technical factors play a major role in the development of technology and cannot be ignored (ibid.). The sociotechnical ensemble allows the research to be applied to other technologies and areas and is not limited to the case (Bijker, 1995). This is very important in the case of the study, since I would like to not only study the social construction of the technology but also how once these technologies are decided upon, developed and then implemented, it would also be quite interesting to study how the technologies have impacted life, humans and the society in general.

Another criticized aspect of SCOT is the methodology recommended, which will be discussed in more detail in the methodology chapter.

2.4 Definitions

The term ‘technology’ usually invokes images of something tangible, that physically exists, can be observed and touched, which is quite a simple conception of technology. Technology especially amongst STS researchers means much more than something merely physical. Technology is not only physical but the thought and knowledge behind the physical. When we combine only the artifact and the knowledge we miss the context (Olsen and Engen, 2007). For this reason, the definition of ‘technology’ in the context of this study refers to the three layers of technology described by Bijker, (1995), which are physical objects, activities and processes and people, their knowledge and practices. This includes the artifact, the knowledge behind the artifact and the context in which they both come together.

When this concept of technology is translated to the water and sanitation technologies in as seen in this study, the physical objects are the tangible artifacts which are commonly known as the hardware component of sanitation and include physical structures such as piping, toilets, septic tanks, drains etc. Activities and processes are related to what is commonly referred to as the ‘software component’ of water and sanitation which typically includes awareness, information and education, in case of the third level in the definition of technology would refer to in this case as peoples knowledge, attitudes and practices related to sanitation.

Chapter 3

Methodology

The study mostly deals with qualitative methodology. The social construction of technology primarily deals with subjective social factors, such as power relationships, institutions and their organization. So for this purpose a ‘social constructivist approach’ was adopted.

3.1. Study area: District Mansehra

All of the villages selected were in the administrative area of District Mansehra of the province of Khyber Pakhtunkhwa (KP, formerly North West Frontier Province). District Mansehra is one of the seven Districts in the Hazara division of KP. Administratively each province in Pakistan is divided into Divisions which are further divided into Districts. Each District has several sub-districts which may have many Union Councils.

3.1.1 Geography

Mansehra district has a total area of 4,579 sq km and an average altitude of 975.36 meters (3200 feet) above sea level. It lies between the latitude 34°-14′ to 35°-11′ and longitude 072°-49′ to 074°-08′. Mansehra district shares its borders with a number of other districts. It shares its northern border with the districts of Kohistan and Batgram. On the east side it is bordered by Muzaffarabad District. Abbottabad and Haripur Districts lie on its south side (Ali, 2005). Mansehra district is comprised of various mountain ranges, plains, valleys, and a number of lakes and rivers. The mountains in this region are usually high (2000 meters to 4500 meters above sea level).

Mansehra district is divided into five administrative units: Balakot, Mansehra, Oghi, Baffa and Darband.



Figure 3.1 Map of Pakistan showing provinces (Khyber Pakhtunkhwa in light blue)
 (source: pakistanmap.facts.co)

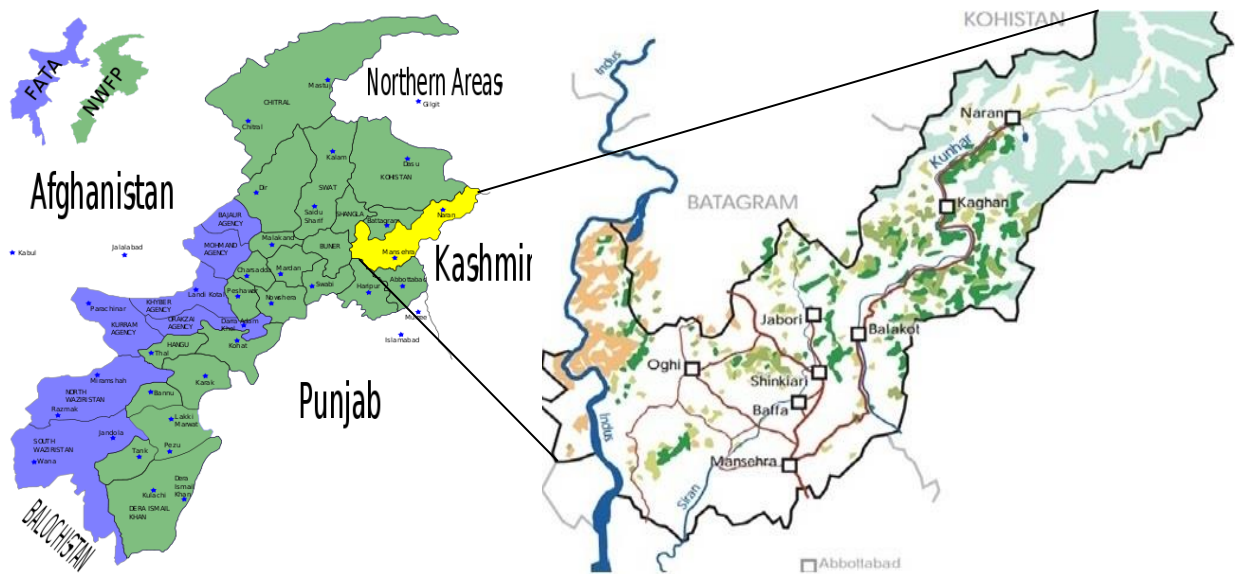


Figure 3.2 Map of Khyber Pakhtunkhwa (formerly NWFP) showing District Mansehra
 (source: commons.wikimedia.org)

3.1.2 Demographics

According to the census carried out by the government of Pakistan in 1998 Mansehra District had a population of 1.1 million persons (49.60 % males and 50.40% females). The population density was 251.8 per Sq. Km and average household compromised of 6-7 people. The majority of people lived in the rural areas 94.68 % as compared to Urban areas (5.32 %). The literacy rate was very low at 36.32 %. The literacy rate is much lower amongst females (22.71 %) as compared to males (50.90%).

The total number of housing units was 172040; out of these 61.89 % of the houses were pukka (cemented with brick/stone) houses. It was found that 49.10 % of the housing units had access to electricity. Piped water and gas for cooking was only available to 26.27 % and 3.42 % of housing units respectively (Kpk, 2017).

3.1.3 Culture

The people of this region are friendly and are known for their hospitality. Majority of the population is Muslim. However, a small number of Hindus and Christians also reside in this region. The different languages spoken in Mansehra district include Urdu, Hindko, Gojri, Pahari, Potohari, Majhi, Pushto, and Kashmiri.

Joint family system is prevalent in this area and elders make all the decisions. There is a deep respect for elders, not only of the household but also at the village levels. People in the region are generally considered as religious and are to some extent conservative. For this reason the village clerics are given much importance in several matters pertaining to the village especially in decision making. Families are generally close knit and neighbors usually share good relationships with each other. People belonging from this region usually consume foodstuff that is cultivated there e.g. wheat, maize and rice (Ahmed et al., 2011).

3.1.4 Livelihood

Pakistan is an agrarian country. So, as expected the main source of livelihood of most of the people living in this region is small scale agriculture. In addition to this many people have livestock and sell their milk or meat to earn a living. Fisheries are commonly found in the region and act as a source of income for the owners. Other sources of income include mining, tourism

and forestry. Industrialization is almost nonexistent in this region due to the lack of required resources (SMEDA, 2009).

Poverty is widespread in the region- more than half of district's population is living below the poverty line. The root causes of poverty include high population growth rate, low literacy rate, lack of diversification of livelihood sources, natural disasters and poor human resource development.

3.1.5 Natural disasters

Mansehra district is located in a seismically active zone and thus experiences earthquakes quite often. The worst one to affect the region was the October 2005 earthquake. It was 7.8 on the Richter scale and caused considerable loss of both infrastructure and life. Almost 15,997 people lost their lives and 9,903 were injured (National Disaster Management Authority Pakistan, 2006), whereas the figure related to deaths, according to the Government of Pakistan, was well over 80,000. Thousands lost their homes and livestock. The rural communities are still reeling from the effect of this earthquake as it had a long term effects on livelihood. This region is also prone to flooding. The 2010 floods adversely affected 22,870 people one way or the other. Almost 3,267 houses were destroyed (Humanitarian Response Pakistan, 2010).

Certain factors make Mansehra region really vulnerable to natural disasters. These factors include poverty, poorly constructed buildings, poor sanitation, lack of disaster management, absence of economic safety nets, high population growth and density (Shaw et al., 2008).

After the 2005 earthquake many national and international NGO's rushed to this area to provide relief to the effected people. Many are still working here for the betterment of the region. Some of the NGOs working here include HAASHAR, Saibaan, World Vision, SUNGI, Swiss Agency for Development and Corporation (SDC), Sarhad Rural Support Program (SRSP) etc. These NGOs are mostly working on post-earthquake rehabilitation empowering communities, provision of safe drinking water and sanitation.

3.1.6 Villages

The following villages were selected for in depth investigation in District Mansehra.

	Village	Union Council	Sub District/ Tehsil	District
1	Basala	Bhogarmang	Mansehra	Mansehra
2	Garang	Bhogarmang	Mansehra	Mansehra
3	Icherrian	Icherrian	Mansehra	Mansehra
4	Ahal	Icherrian	Mansehra	Mansehra
5	Paras	Kewai	Balakot	Mansehra
6	Kewai	Kewai	Balakot	Mansehra
7	Meesuch	Ghanool/Garlat	Balakot	Mansehra
8	Naka Guldar	Ghanool/Garlat	Balakot	Mansehra
9	Talhata	Talhata	Balakot	Mansehra

Table 3.1 Villages included in the study

The selection of the villages was based on several grounds, some of which are mentioned in the table below. For practical reasons villages that would be more accessible were preferred over other village with similar conditions that were not very accessible. However not all the villages finally selected were easily accessible.

Village	Selection of villages
Basala and Garang	Basala and Garang are located in the same UC and were the two villages selected to study the specific approach that was implemented in these villages. These two villages out of several others were selected for several reasons. Access to both villages was possible at most time throughout the year which was a criterion that was important for the study. Both villages were similar in terms of village structure and are relatively the same size villages i.e. between 40 to 50 households in each. In both of the villages women tend to work in the fields, which is not the norm in many other

	<p>regions. This was helpful, as the women became more accessible. Furthermore both villages had active Community Based Organizations (CBO) due to previous engagement with NGOs, which would help to understand the functioning of the CBOs in the development process. Also in both cases the projects had been implemented around a year before the study, so it made for an interesting case to see what changes in sanitation practices occurred at the village level after the completion of the project. Another interesting aspect was the village had been visited by the donors and the project was approved for replication in other areas. Therefore this would shed some light on donor expectations in terms of the outcomes of the project.</p>
<p>Ichherian and Ahal</p>	<p>Ichherian and Ahal are situated in the same union council and are nearby villages. In both of the villages the same project was implemented, which targeted Persons With Disabilities (PWD). This is due to the unusually high incidence of PWDs in the area, the exact reasons of which are not clear. However there is a large long term treatment and rehabilitation center for stroke patients, close to the villages. People from other areas of the district have settled there to be near the treatment facility. On the other hand the high disability rate is also attributed to the earthquake of 2005. In the case of both villages technologies suitable for disabled persons were developed and some aspects of the project were ongoing. There was no functional CBO present in both of the communities before the start of the project. The hierarchies in the case of both of these villages and surrounding areas were mostly based on political affiliation rather than the class differentiation that is unusually observed in the area.</p>
<p>Paras, Kewai and Talhata</p>	<p>Paras and Kawai are located in the same union council, Talhata is located in a different union council is geographically separated from the other two villages. All of the villages were severely damaged in the 2005 earthquake and therefore experienced large-scale damage to infrastructure. In the cases of the villages, different projects were initiated during the reconstruction and rehabilitation phase and also at later stages. These were interesting cases due to the fact that a lot of attention was given to all sectors to areas that were severely damaged in the earthquake and the development process lasted several years in the case of these areas, with follow up projects and continuous engagements over a large time span with the communities. Since initial projects in these communities were initiated after the earthquake, sanitation projects were implemented over a decade. These cases therefore could be an interesting case as to the progression of water and sanitation technologies in the communities and</p>

	<p>the comparison with newer projects. In terms of the society both villages of Paras and Kawai are located en route to a popular summer resort in Pakistan, which could have an influence on the adoption of technologies and the knowledge, attitudes and practices in relation to sanitation. Another interesting aspect was the prevalence of the old hierarchies in the villages, which change the dynamic in the society. In many places the old institutionalized hierarchies do not officially exist, this was also the case for these villages however they were still present unofficially, as I the case of Paras and Kawai. In all the villages the CBO were quite strong since they had been formed over a decade ago, yet were still somewhat function and formed.</p>
<p>Naka Guldar and Meesuch</p>	<p>Both Naka Guldar and Meesuch are located in the same union council. Both villages are quite inaccessible by normal vehicles and are located in the mountains at high altitudes. These villages were the least developed villages with one of the lowest coverage of sanitation as compared to the other villages selected. The villages lacked road access, electricity, water supply and distribution schemes and easy access to hospitals, schools and markets. Since the villages were so remote, construction of latrines is much more difficult and is expensive. In both of the cases total sanitation, as per the National Sanitation Policy were implemented and therefore it would be interesting to see the results in communities that weren't able to build conventional sanitation systems on their own. CBOs were only created before the projects and did not exist prior to the start of the project. Another interesting aspect was the reliance of the chosen approach on behavior change in the community, which in such remote communities would be more difficult. Due to perhaps the remoteness of the villages the communities were also known to be very religious and conservative. This would make interesting cases in terms of religion, culture and norms in relation to sanitation.</p>

Table 3.2 Village selection

3.2 SCOT methodology

According to Bijker's more recent publications on SCOT (Bijker, 2010), the research process would usually follow a three step process. The first is the sociological deconstruction of the artifact to show its interpretive flexibility among the relevant social groups. The second process is to show how the artifact is socially constructed, whereas the third step of the process is to

analyst the social construction in terms of the technical frames. For some of the steps there are also relevant methodological suggestions.

One such method is the method prescribed by Bijker, 1995, to identify relevant social groups. Briker suggests using the snowball method to identify social groups, this in practice would mean to start with a small number of known actors and add onto the list more actors as identified by earlier ones until a complete list had been achieved (Klein and Kleinman, 2002). This however may be problematic in reality as there is no way of being certain, that all the relevant groups have been identified by other groups, perhaps leading to the exclusion of many important and critical social groups to the study (ibid.). Although Bijker, 1995 does suggest some caution and recommends the researcher to be aware while the process of identification and addition of relevant social groups to the study.

3.3 Institutional mapping

Since the water and sanitation issue in Pakistan is so complex involving many different institutions and organizations, the best approach was to start with an institutional mapping exercise. This exercise was performed during field visits and was somewhat in line with the SCOT methodology of identification of relevant social groups by the snowball method. In most cases the snowball method was employed. Many of the institutions could already be identified by the somewhat limited publications and research papers on the subject area from Pakistan, although this list did not seem to be complete. The actual process of institutional mapping started with my initial contact at COMSATS University, where a Professor* of Development Studies working on research and collaborative projects in the study area was able to identify the main institutions involved in the development and implementation of water and sanitation technologies in the study area. Along the line, having made contact with other institutions, I was able to further add and verify the institutions that had been previously identified along with more details on their roles in the whole development of the systems.

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The institutional mapping methodology is not only used to identify relevant institutions but is also used as an exercise to map out the different stakeholders in order to understand the distributions of power amongst them. Institutional mapping can be used to identify the distribution of power amongst and interactions amongst the relevant stakeholders and can be helpful to understand decision making processes (McFadden et. al, 2010). This was also quite important for the study, as power plays an important role in the social construction processes and also to develop technical frames and understand the logic of technology selection processes. The whole process of institutional mapping started out with identification of relevant institutions but was carried on deep into the research with individual respondent interviews as well as the Focus Group Discussions (FGDs) carried out in villages with the communities.

3.4 Selection of respondents

The selection of respondents was based on the type of technology developed in the village and the nature of the project by the NGOs. Throughout the study a more purposeful sampling technique was adopted. Purposeful sampling is the identification and selection of cases which are perceived to have a deep understanding through experience or otherwise of the subject matter in question, in either case they are usually have more information on the subject under investigation (Palinkas et. al, 2015; Patton, 2002; Cresswell and Clark, 2011). The benefit of the purposeful sampling was multifold. Firstly since all the interviews conducted were quite detailed and were conducted by myself, it would be inefficient to spend time on cases that did not seem relevant to the study. Having said this, it was not assumed a priori that only certain cases were relevant whereas others were not. Investigations were made in order to select the respondents that would yield the most information. Secondly in the case of certain technologies, such as the PWD project, not every member of the village would be valuable as an interviewee. In such a case purposeful sampling would allow me to identify the respondents that were directly related to the technology in question and had a certain level of knowledge about it. Furthermore in order to avoid any possible bias in the selection, not only the beneficiaries were selected and other people in each from the community were also interviewed.

In the cases of villages Basala and Garang, where the community were provided with five toilets each, members of the households that received these five toilets were interviewed in either case

and an additional five households were also purposefully selected for interviews. The selection of the five households who received the hardware component of the technology is quite obvious. The other five households were selected in order to understand the situation of the rest of the village that did not receive any support in terms of hardware technologies. It was also important to interview them to get an unbiased view of the selection and implementation processes of the beneficiaries as well as the technologies.

In the cases where only the PWDs had received the hardware component of the technology, each household and PWD that did receive the technology were interviewed. As in the previous case an equal number of households, that did not receive any type of support, were also interviewed. This principle of the 'critical case sampling' was followed in the other villages as well, where the implementation of the technology had been done similarly.

The exception were the villages of Meesuch and Naka Gudar, as in the case of these villages, no one was provided with any hardware component and the whole village was called to an triggering session where they were given training on the technology and its benefits. Every household that had started to build a latrine, had already built one or was planning to build one in the near future, was interviewed. Since the number of households that fell in any one of those categories was quite low, other households, mostly ones that had attended the triggering meeting were interviewed additionally. This was important to understand why some houses considered building the latrine and others didn't. Due to the small number of households that actually had built a latrine, started to build one or claimed to be have been planning to, most of the households/individuals that were interviewed were the ones who had only attended the meetings.

3.5 Primary and secondary data

Most of the data in the thesis comes from primary sources and was collected through extensive research visits during the empirical phase of the research, through a series of methodological tools presented in this chapter. Secondary data on the sanitation systems in Pakistan and the working of international, local as well as government bodies in the context of the water and sanitation sector is mostly only available in the form of gray literature. There are very few scientific publications on the water and sanitation sector in Pakistan, and there are further less on

the social aspects of sanitation in the country. In fact I was unable to find a single such research article done in the study area of my research.

Due to the earthquake and the many natural disasters in District Mansehra, there are several reports on the sanitation conditions and implementations, mostly from INGOs and bigger organizations such as the UN. The data in most of the reports is quantitative and from the water and sanitation sector is mostly concerned with coverage of water and sanitation systems in general.

3.6 Interviews

Interviews were one of the major methodological tools in the study. Interviews were conducted at different levels to gain information for different research questions addressed in the study. Interviews are affective research tools for qualitative data collection as they can lead to information on perceptions and experiences relating to phenomenon (Clark, 2008). In both interviews with the community members as well as with the institutions, semi structured open ended interviews were conducted. In in-depth interviews the structure of the interview is not rigid and predetermined, the questions are open to more of a discussion related to experiences, knowledge and understanding rather than being direct and prompting short answers (Cook, 2008).

As a pretest the applicability of the question guides were tested with a group of students at a local university and accordingly adjusted. Further adjustments were also made during the interviews with respondents in the field.

3.6.1 Institutional level interviews

Interviews were conducted at the institutional level to gain insight into the working of different institutions related to water and sanitation development projects. Most of the interviews conducted at this level were with organizations that were directly responsible for the technologies that were studied in depth in each case. These organizations comprised mostly of INGO's, NGO's and CBO's.

In the case of INGO's, officials responsible for the process of calling for and then accepting proposals for water and sanitation projects were interviewed. These officials are the ones who are responsible for the projects throughout the lifecycle and therefore are familiar with the processes from the start of the projects, through the implementation phase ending with the monitoring and evaluation processes. They also have the responsibility to manage the projects on the behalf of the donor organizations and work closely with several local NGO's on different water and sanitation projects. The purpose of these interviews was to understand the process of funding in general and the role played by the funding organizations. Since they are the representatives of the funding agencies, valuable information was gained on important aspects related to funding such as the funding contingencies and conditions, the choice of technologies and the overall power of donors during several critical decision making processes. Several interviews were conducted with the largest INGO umbrella organization in Pakistan i.e. United Nations Organization (UNICEF, UNHCR), Norwegian Church Aid (the INGO that deals with all funding from Norway) and with ActionAid/Plan International.

Interviews were also conducted with several NGOs. The interviews were mostly conducted with projects managers for the projects that were being studied in the field, but also many other local NGOs that have been implementing water and sanitation or environmental projects for several decades were also interviewed. Interviews at the NGO level were very important for in depth information on the working of NGOs in Pakistan in general and specifically in the water and sanitation area. It was also important to understand the challenges faced by the implementers- which in most of the cases are the local NGOs, during the process of receiving funding and then the subsequent implementation phase in which these organizations are directly involved with the target communities. They therefore form the link between donors and their representatives (INGOs) and the intended beneficiaries of the projects. There are several staff NGO members that are related to the implementation of water and sanitation projects but it was not easy to gain access to all level of officials from the NGOs and most of the interviews were conducted with the project managers-who overlook the whole process both technically and financially and manage the field staff team. From within the field team it was very difficult to access 'social mobilizers' which are responsible for the specific tasks such as awareness and communication with the communities. Local NGOs such as Sungi, Saibaan, Alkhidmat Foundation, Pakistan

Institute for Environment and Development Action Research (PIEDAR) and Society for Sustainable Development (SSD) were included in the interviews.

Interviews were conducted with Community Based Organizations in villages where they formally existed and were part of the development process. This depends on the development model followed by the NGO and whether they created these organizations during the process of implementation of the projects. In the case of villages Garang and Basala (implementation in both cases by Saibaan) CBOs were formed before the implementation of the project and therefore had newly formed CBOs. In most of the cases the CBOs were the primary contact to the village and most of the information on the village was gathered from members of the CBOs. In all cases where members of the CBO were interviewed, the senior most members were interviewed. This was quite beneficial to understand the general conditions of the village related to the demographics, cultural practices and political affiliations of different groups of the villages. Specific information related to the project was also obtained by many of the interviews conducted with the CBOs. The whole process was proved to be a good insight into the practices related to sanitation in each village. These interviews were conducted mostly at the residences or at the communal meeting place the 'Hujra' within the village.

3.6.2 Community level interviews

In depth, in person interviews were conducted at the community level with selected respondents. The semi-structured, open ended interviews were conducted to understand the socio-cultural practices in general as well as specifically related to sanitation. All community level interviews were conducted at the houses of the respondents in order for it to be a comfortable environment for all respondents. The reason why in person interviews were conducted was to build rapport with the interviewees therefore ensuring more accurate information. Another benefit of in person interviews, which I personally felt true in my case, was the nonverbal communication or reactions to certain questions and topics (Clark, 2008). Although the intention was to be able to interview each respondent individually, without the presence of family members or people from the village, this was not always possible. For example in most of the interviews with women, a male member or even sometime a child was present during the interviews. In most cases only the interviewee responded, yet the presence of a male member has to be taken into account. Female

respondents were also generally shy and only elderly women were open to discuss their sanitation practices. In most cases the interviews led to valuable information and insight into the sanitation practices and preferences of the communities as well as their experiences with the projects. The interviews were also important to understand the working of the CBOs and their personal involvement in the process of implementation and the project itself. Not all respondents of the interviews were direct beneficiaries of the technology or the systems and projects, which helped in identifying and further looking into many overlooked aspects of the projects.



Figure 3.3 In-depth interview with a member of the community in Basala

3.7 Focus Group Discussions (FGD)

Often researchers chose between either FGD or interviews yet both are quite complimentary research tools and can be used together to validate information from either of the tools, to get a broad overview of the different opinions to expect in further in depth interviews or other methods and to provide an introduction to the topic under investigation in the context (Morgan,

2008). FGDs were chosen as another tool in order to get accurate in depth information about the selected villages. FGD is a tool where a group responds to questions and comment on other participants answers as well. This not only helps to validate the responses of other members of the groups but may also be helpful to understand potential contentions and points of disagreement or agreement. Furthermore the reaction to different answer during the focus group can also be interpreted and can lead the researcher to issues otherwise not very apparent. FGD are not only a discussion forum but also provide the researcher with critical information regarding the phenomenon being investigated letting the researcher compare opinions of the different groups or individuals that may be present (Morgan, 2008).

The FGDs were important in the context of the study as they usually formed the critical entry point into the selected villages. The intended participants of the focus groups were the key informants (such as political leaders, religious leaders, teachers and village doctors) and members of the Community Based Organizations. In most of the FGD carried out in the villages, many of the key informants were in participation and at times other community members were present as well. I personally moderated the FGDs, but would also allow for the group to take the discussion into different directions if relevant. In most cases the FGD were started with more general topics such as the conditions and the problems in the village and then were steered in the direction of the core issue. This initial discussion served as an ice breaker to allow the participants to open up to the more difficult topic of sanitation. Unexpectedly many of the members seemed to be quite relaxed in the FGD sessions, especially talking about the taboo topic of their practices related to defecation etc. as compared to in depth personal interviews.

The FGD proved to be a valuable tool not only as a source of information but also as a good entry point into each village, where it was possible to let some of the important people (according to the community) in the village know what I intended to do. In certain cultures in Pakistan it is very important to have the blessings of the village elders to be able to approach individual households at all, therefore this was an important step in starting research in each village, a sort of rapport building with the village elders and key people in the village. Of course for this reason, it was extremely important and perhaps even necessary, yet it was also helpful in retrieving general information related to the village and the needs and wants of the communities.



Figure 3.4 Focus Group Discussion with participants in the ‘Hujra’, Meesuch

3.8 Data Analysis

All interviews and focus group discussions were recorded as audio files. Audio recording was chosen as the preferred method of recording interviews and FGD as this would allow me to interact more freely with the respondents and it would allow me to observe all possible instances of nonverbal communication such as hand gestures and expressions, which I found important to observe. All observations during an interview were recorded manually in a notepad by myself. After returning from field visits, in the days that followed I would also try to listen to the interview recordings and add my general observations.

All of the audio guides were first manually transcribed and translated. This was a time consuming process but was necessary to retain all important information and to ensure that

nothing was missed. All of the transcribed data was then further processed with the qualitative data analysis MAXQDA 12. All the text from different interviews was first sorted into groups. The text in each group was then tagged, color coded and assigned importance on the basis of different themes related to the objectives and analysis of the thesis.

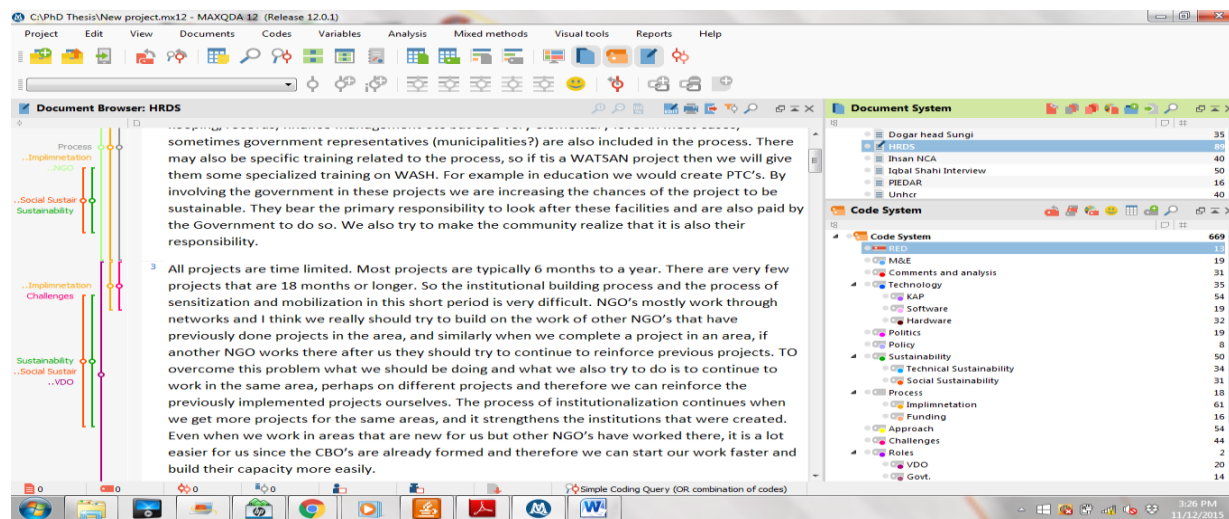


Figure 3.5 Example of coded data in MAXQDA 12

3.9 Methodological challenges

A certain degree of challenges is perhaps part of every study involving field research and qualitative data collection. In this particular case the complex socio-cultural and geographical makeup of the study areas made the whole process of data collection quite challenging. The following are some of the areas where most of the challenges occurred.

3.9.1 Study area and accessibility

Although several villages were selected on the basis of their accessibility, not only by me for the study but also by NGOs which prefer to work in areas where they can frequently visits during the implementation of the projects, sometimes this proved to be quite challenging. For me accessibility was important to ensure that I would be able to visit these areas frequently, during different seasons depending on need to go back and forth from close by cities.

All of the villages are located in the region severely affected by the disastrous earthquake of 2005, which resulted in largescale damage to human life and infrastructure. Even after a decade many of the roads leading to the villages were not restored, making it almost impossible to reach them by normal vehicles. The villages of Naka Guldar and Meesuch, located at a height of 2600m, did not have any roads at all and were only accessible by a mountain dirt road only suitable for certain types of jeeps. These roads were also only usable in dry conditions and could not be used for several days after rain. These villages proved to be the most difficult to access frequently because of bad weather and the fact that a few jeeps were even willing to take passengers to and from the village. Unlike some of the other villages, they were also not accessible by foot. The coordination between a jeep willing to take me to the villages was quite a hindrance and many planned visits had to be cancelled or postponed. This was also quite inconvenient when a FGD had been set up, yet could not be executed as planned. Basala and Garang were also not easily accessible by normal transport, but the village jeep (a designated jeep carrying villagers back and forth each day) was much more reliable as were the roads in these areas. The rest of the villages were relatively easier to access provided the weather conditions were optimal.

Accessibility of respondents was also another challenge, not only for respondents in the villages but also when interviewing local NGO staff. Many NGO staff did not honor their commitments even when agreed upon in advance. At times I would travel long distances for a meeting to find out that the person I was to meet had to go to the field the same day and therefore could not be there for a discussion. In the case of respondents, I would at times find the whole village empty because of a funeral or a marriage in a neighboring village, which was not anticipated nor communicated to me even after our mutual agreement of a visit date. It is not common to plan things much ahead of time especially in the rural contexts in Pakistan.

3.9.2 Culture and norms

Culture and the norms in village life are very important and therefore must be respected at all times. The norms and culture throughout all the study area villages was the same, since they are located within the same district and are geographically close.

First of all in all villages outsiders are not welcomed unless they have a purpose and a contact to within the village. I was able to make contact to specific people in the village through the relevant NGOs which always ensured that I was well received by the village. Although this in itself was a problem, since at times I was associated with the NGO. This problem was overcome by explanations of purpose in the village. In every case the villages were extremely hospitable and welcoming towards since I was using NGO contacts to access the villages. After the FGD it was easier to go around the villages and meet different people and talk to them. Some people in villages also consider NGOs to be ‘western agents’ that may have ulterior motives and therefore do not like to talk to anyone associated to NGOs.

Because of the culture of respect that exists in all Pakistani rural communities, respondents found it hard to talk and open up at times in front of others especially when elders were around. Generally people were extremely shy as well, especially when talking about something almost taboo such as defecation practices. To overcome this problem I designed my question guide so that we could discuss general issues to warm up before coming to specific habits and practices.

In most villages it was still hard to have interviews with women respondents. Women in the rural settings do not usually interact with outsider men and therefore, more men were interviewed than women. When women were interviewed usually a male member of the household was present, which assumingly could cause a bias in the responses. When talking to elderly women it was easier since a male member didn’t always have to be present and they were generally more open.

People in villages are usually very hospitable and it is important to give them the opportunity to be so. This at times caused delays in interviewing, as it was necessary to first drink tea and socialize with the men of the household before conducting interviews. At times when possible I took this time as an opportunity to talk to more than one member of the household at the same time. Although this very culture was beneficial at times, as it was also an ice breaker and allowed me to speak to the people in their own language and build rapport.

3.9.3 Literacy

The literacy rate in most rural areas in Pakistan is very low. The majority of the older respondents have never been to school at all. Sometimes I found it difficult to get answers related to their feelings and behaviors or reasons behind them and some concepts were extremely difficult to communicate to them. To overcome this problem as much as possible, I tried to break up everything into comprehensible concepts so they could be easily understood during my questions.

3.10 Limitations of the study

The results of the study are mostly limited to a very narrow and specific socio-cultural context and therefore may not be generalizable on larger scales such as the international level. However the objective of the study was not to produce data that can be generalized at larger levels and therefore should not be thought of as a key to be used in any particular context. As will be seen in the forthcoming chapters generalization is already a huge problem in the WASH sectors where knowledge, data and information have been used without modification to fit the local contexts and therefore cannot be said to be the most desirable in this particular case. Although the applicability of the results may be used in several areas with similar socio-cultural contexts and the context independent aspects of development in the water and sanitation sectors as well as the role of different actors on technological outcomes is a part that may be of interest at a larger scale and is the meta information that may be generalized in other situations.

Another limitation of the study is the gendered aspect of the study. Although this aspect was covered in the study in the light of the theory, the interaction with females as mentioned earlier-mostly in the presence of other males was a limitation and a challenge to the study.

The study does not also aim to take into account the different regional policies in place from the federal and local Governments. Since all the selected villages for the study were situated in the same area, these variations in other regions where the policies are different or the cultural influences are different could not be compared. However the positive aspect of choosing the region in addition to the ones mentioned in the previous sections, is the large number of related projects that are being undertaken in the area, the assumption that more will follow and the fact

that I was able to visit the villages with an understanding of the local culture and language and therefore was treated as less of an outsider.

Another limitation of the study was the limited participation of related Government officials in the study. Although they were not to form a large part of the respondents in the case of the planned study, I personally did try to contact several people in related Government organizations. However in each case there was no interest from their side. Similarly another group that was very hard to access was the social mobilizers working towards the bottom of the chain of development (since they are in direct contact with the community). This however seemed to be more intentional. In connection with all the NGOs that were contacted and interviewed, I was only allowed to interview related staff at the project management level. Despite repeated efforts to interview the social mobilizers I was only successful in a few cases and in one instance only briefly over the phone. I personally suspect that the NGOs are not keen to let social mobilizers represent their organizations in any way other than direct implementation, as they are less educated and trained and as will be seen in the forthcoming chapters, are sometimes the weakest link of the chain.

Chapter 4

Technology and society dynamics

This chapter takes a closer look at the sanitation technologies, approaches and communities in which the technologies have been introduced by several different organizations through various approaches and methodologies. The chapter starts with an account of the different approaches and technologies that were implemented in the villages studied. It is important to understand the methods by which these technologies are brought into communities or approaches to understand the final technological outcomes and the processes that it entails.

The chapter also details the norms in terms of the prevalent practices related to sanitation and hygiene in the study area and explains why the practices exist in terms of the knowledge of the communities and their attitude toward the important yet somewhat taboo issue of sanitation. This chapter also highlights the presence of different social groups at the village level and the power structure that exists naturally in the villages and as a result of the introduction of water and sanitation technologies. It is also important to understand the user experience during the course of the development, and therefore the community's perspective and experiences of the projects are also described. This chapter sets the context at the micro level in the wider context of water and sanitation developments at a rural level and will be followed by perspectives from the macro level in terms of policy and institutions.

4.1 Sanitation approaches

When planning for a WASH project the sanitation approach is usually decided upon during the proposal phase of the project. The approach refers to the plan related to the hardware and the software components of the project. There are several well-known approaches in the sector that are used globally to design and implement WASH projects. All approaches are based on different theories of what works in the field and have been tested in several areas throughout the world. New approaches have been emerging in the sector based on research and development theory.

Although several different definitions of the sanitation and hygiene approach may exist in the context of this document the sanitation approach refers simply to the combination of hardware and software components for planning sanitation projects strategies. So basically the approach whether a known approach or a novel one, will describe what sort of hardware is to be provided and what software components are to be employed to gain meaningful results of the hardware components.

The following are some of the approaches that were seen to be implemented in the villages and sanitation projects under investigation.

4.1.1 Total Sanitation

Total Sanitation is now used as a collective term to describe many of the different total sanitation approaches such as Community Led Total Sanitation (CLTS) and School Led Total Sanitation (SLTS). These are the two approaches that are most commonly implemented in Pakistan and therefore will be the focus of the total sanitation approaches. However the only total sanitation approach that was seen as implemented in the study area was CLTS. Both Naka Guldar and Meesuch were the two villages where CLTS had been implemented and was an ongoing project of the Sarhad Rural Support Programme (SRSP).

The CLTS approach was developed by Kamal Kar in Bangladesh in 1999 into 2000. The approach was based on Public Rural Appraisal method to end open defecation in communities by triggering a need for sanitation based on understanding, making sanitation a top priority in a way the community go beyond their means to achieve an Open Defecation Free (ODF) environment (Kar and Chambers, 2008). The basic idea of the approach is to motivate communities and make them aware of the relationship between poor sanitation and Open Defecation (OD) and spread of disease and contamination.

Goal	Hygiene Behavior change
Target group	The whole community

Applied settings	Rural
<p>CLTS uses participatory rural appraisal (PRA) techniques to raise awareness of the risk that open defecation presents and to reinforce a natural sense of ‘disgust’ about this practice. The community members analyze their own sanitation profile including the extent of open defecation and the spread of faecal-oral contamination that detrimentally affects everyone. A variety of tools are used including:</p> <ul style="list-style-type: none"> • Focus group discussions • Transect walks • Mapping of open defecation sites • ‘shit’ calculations (that calculate the total weight of faeces produced and circulating in the community). <p>Throughout, the crude local equivalent word for ‘shit’ is always used. The approach aims to generate a sense of ‘disgust’ and ‘shame’ amongst the community. They collectively realise the terrible impact that open defecation is having, leading to a moment of ‘ignition’ when the community initiates collective local action to improve sanitation within their community. Awareness and momentum from the triggering translate into action plans for making the community open defecation free (ODF). Importantly, facilitators will steer towards this ignition, but never lead or enforce a decision to take any action as this has to come from the householders themselves.</p>	

Table 4.1 Overview of the CLTS approach. Reprinted with modification from “Hygiene and sanitation software: an overview of approaches.” (Peal et al., 2010)

According to the ‘Handbook on Community Led Total Sanitation’ written by Kamal Kar and Robert Chambers the CLTS process consists of three different phases i.e. pre-triggering, triggering and post-triggering. The pre-triggering phase is usually based on selection the right community for the process and building rapport with the community. The triggering phase is the important phase of implementation where the PRA techniques are employed and several activates are carried out with the community in order to trigger them to realize the relationship between poor sanitation and its negative impacts on the community. Activities to provoke feelings of ‘shock, shame and disgust’ are performed with the community to trigger the community to make sanitation a priority. These range from transect walk (also known as ‘walk of shame’) through the village to identify places of defecation, ‘shit calculation’ of each household to shame the community, participatory mapping of the village and defecation points with dies on the ground to show the community how feces may spread from one place to another

to invoke shock and demonstration of how flies carry feces to food to invoke disgust. These exercises are done communally for the collective affect. Although according to the handbook the communities are not recommended any particular type of technology and are just motivated to take collective action to end OD, in practice this has not been the case. The process of post-triggering is mostly meant for the monitoring of the community and the continuous motivation required in obtaining the ODF status.

Tremendous successes have been documented with the CLTS process around the world, where communities upon communities have become ODF by taking collective action and changing their priorities and practices related to sanitation. This is perhaps why the focus of Pakistan's Sanitation Policy was on the promotion and adoption of total sanitation approaches. The government has fully adopted the Total Sanitation approach which is evident from the creation of a Pakistan specific approach known as the Pakistan Approach to Total Sanitation (PATS). The PATS approach is supposedly tailored for Pakistani communities and I was told by the WASH coordinator of UNICEF that helped formulate the PATS, that it is the best approach that can be implemented in Pakistan's context. According to the respondent the PATS is built on five pillars that are technical options, hygiene promotion, advocacy, sustaining the demand and knowledge management. Although the meaning of Total Sanitation is to have ODF environment, good hygienic practices, total vector control and solid waste management, in the context of Pakistan the primary objective of PATS is to achieve 100% ODF villages and good hygienic practices. The respondent was of the view that the approach was a good solution for the rural areas of Pakistan since it does not offer one single technological choice to the people and once people start moving from OD to a fixed point defecation, or what is known as up the sanitation ladder, they will never go back to the old ways and as they can afford better systems they will always upgrade.

However this was quite inconsistent from what I observed in the villages where the approach was implemented. According to another respondent who is the head of a local NGO that carries out research and implementation of WASH projects in Pakistan and was also consulted for the PATS, the relapse rate of ODF villages (from ODF back to OD) was very high in the context of Pakistan. According to him there are several different reasons for the failure of the approach to

bring about a lasting change, Firstly the quality of social mobilization is a factor which is key in a project that does not rely on any subsidies. According to the respondent the whole approach is based on the community's realization that sanitation is essential, yet if the quality of social mobilization is not up to the mark, no one will be convinced. Another reason according to the respondent is the inhomogeneous and fractured state of the Pakistanis society, what works in one place does not necessarily work in another because of the vast differences in culture and norms. The WASH coordinator of UNICEF also agreed that the success of the approach is somewhat based on the social mobilizer, since they have the power to turn the project either to 100% ODF which is a success to simply "*tatti pe matti*" (covering feces with soil), which would be considered as a failure.

PATS is said to be different than CLTS implemented in other parts of the world, however superficially the approach seemed to closely resemble the CLTS approach followed globally. However I was told by the head of PIEDAR that the PATS approach was based on local pride rather than the concept of 'shock, shame and disgust'. This is quite a positive development in the approach since the shock, shame and disgust would be very counterproductive in the context owing to a high sense of self-respect amongst the communities. However I also learned from the respondent at UNICEF that one of the effective ways to make people (or seemingly force people) to relinquish OD is by creating social pressures by imposing social sanctions on non-compliant households. According to the respondents the communities are encouraged to shun the households that do not comply, banning them to part take in communal affairs such as weddings and other celebrations. Social sanction are used by communities to punish individuals or households for their behavior (Cameron et al., 2015) this however is contrary to the claims of promoting local pride and although may force certain behaviors, cannot be seen as positive in a development context. These social sanctions may be considered as violations of human rights, even when the intent is to achieve communal benefits (Bartram et al., 2012). There have also been reports of extreme social sanctions such as taking pictures of people defecation and publicly displaying, locking people's houses, imposing fines, blowing whistles at people defecation in the open and many more (see Bartram et al., 2012; Kar and Chambers, 2008; Mahbub, 2008). Personally I feel that any approach that leads to social exclusion of a group of individuals or households should not be promoted and can result in larger problems such as conflicts and

uneven distribution to resources and capitals. Although in some accounts this has proved to be successful in relation to the goals of achieving the ODF free status, it should not be promoted as part of a development approach since social incoherence goes against the goals of development of society.

In the case of both of the villages studied where CLTS was implemented, the traditional CLTS approach was followed to some extent. According to the residents the village, they were contacted by an NGO wanting to help them build latrines. I was told by respondents in the village that despite the fact that they had other pressing needs they agreed to have a triggering session with the NGO, after which a meeting was arranged and the whole village was informed. This coordination was done through the Village Committee (VC) which was already formed in the village after the 2005 earthquake but was mostly inactive. Many of the villagers participated in the triggering meeting. The triggering meeting was discussed with several of the respondents of the village during the interviews. Most of the respondents were quite consistent, they all took the same message away from the triggering, that was they must build a pit latrine in or around their houses. Most of the respondents said they were specifically told to build pit latrines and they were told how to do so. This was quite interesting since in the traditional CLTS approach no technology is to be recommended to the community and according to UNICEF and PATS they were given several options of different technologies.

During interviews with the community it became quite clear that most of the people were not very satisfied with the project and the technology itself. The actual construction of pit latrines amongst the community was very low and not many people had dug pits for latrines. The ones that had were not really satisfied with the latrines. Some respondent even clearly mentioned that the use of a latrine is out of question until and unless they have a water supply scheme. Many of the respondents were of the view that use of a toilet or a latrine is only possible with water. This stems back to the cultural practice of using water for cleaning after defecation, and therefore if there is no water connection in the toilet, there is no chance of its use. The low rate of toilet construction can perhaps also be due to the poor social mobilization. Although some people claimed that that they were told in their triggering session to wash their hands and were given some hygiene education, the motivation for sanitation, the basis of the approach was totally

lacking. According to a report released by the implementing organization i.e. Inter Rural Support Programme (IRSP) sanitation coverage increased from 43% to 93% and open defecation was subsequently reduced by 50% after the triggering of two villages in District Mansehra, one of which was Naka Guldar. Although the other village in the report was not part of my research the collective figures still don't seem to match up, after seeing the conditions in the village that was mentioned in the report and was part of the study i.e. Naka Guldar. It seems like such projects are continues to be funded due to the inadequate monitoring mechanism and what seems to be exaggeration of achievements by the implementers.

Another observation was the knowledge of how disease may be transmitted through improper sanitation. The whole approach and its success depends on people understanding the links between OD and disease and other associated problems. However if the community does not understand this link, there will be hardly any motivation to actually shift from OD to fixed point defecation. During interviews when asked why the respondents thought open defecation was bad, I got several responses showing a lack of understanding of why exactly OD could be a health risk. Some older respondents even said that feces in the open spread bad smells which in turn causes sickness. The link between OD and disease was considered to be the obsolete 19th century theory of 'miasma' in which the belief is that bad air and smell are the causes of sickness and diseases rather than germs.

During the FGD with members of the CBO and the community from both villages I was told that sanitation was not a top priority for both of the villages. In fact when the group was asked to identify their top five development priorities in the villages, sanitation did not make the list. The priorities of both of the villages were water, roads, schools, health facilities and electricity. They also said they weren't that interested in the project as it did not address any of their development priorities, however the NGO did not promise but assured them that this project would bring more attention to the needs of their villages and other organization would follow after the completion of this project, and would address their needs. As discussed earlier this is perhaps a strategy employed by local NGOs to implement projects that are not really supported by the communities. The NGOs sort of promise that if the project goes well and they meet their targets

they will attract the attention of other development organizations and NGOs which will bring different projects to the village.

4.1.2 Partial Provision

Unlike the Total Sanitation approach this not a known approach and was named the partial provision approach on the basis of the descriptions of the NGO. Although technically this may not even be considered as an approach to sanitation, the unique combination of hardware and software components fulfil the criteria of an approach according to the definition given in the start of this section.

In the partial provision model the NGO provided villages with 5 latrines and septic tanks to be constructed for five different households. This approach was implemented in Basala and Garang. The VDO were given the required materials to construct five latrines along with septic tanks and soakage pits. The VDO was also given money for the construction costs of the sanitation systems, however the selected households themselves were responsible for the construction of the toilets after being given the materials and the money for the construction. The selection criteria set to choose the beneficiaries were households that were poor and had one disabled person.

The software component of the project was based on hygiene trainings given to men, women and children alike. A major part of the project was to improve mother and child health in the area, therefore specific trainings related to mother-child health were also given to many women of the area. In 13 villages several females were also provided with trainings as Traditional Birth Attendants (TBAs) to assist women during their pregnancies and during child birth.

According to the implementing organization the rationale behind the approach was to develop a small number of latrines in the village for the most deserving people, which would inspire other households of the village to construct latrines for themselves. According to the NGO many households in the village could actually afford to build a latrine, but due to the culture of open defecation and the low acceptance of toilets many of the households did not want to. So in order

to promote the culture they thought it would be best to construct five toilets in each village (a total of 13 villages were selected) rather than completely covering a few villages.

4.1.3 Provisions for persons with disabilities

In the case of villages of Ahal and Kappar Dho beneficiaries were selected on the basis of them being disabled people there are many sanitation interventions and development interventions in general that focus on Persons With Disabilities (PWDs). Sanitation systems for PWD are quite important for PWD due to their restricted movement. In villages where OD is common, it is extremely difficult for PWDs to defecate in the open and therefore require a sanitation system that is accessible to them. The selection of beneficiaries was left to the CBO in the villages after the total number of latrines was conveyed to them. Since the project was for PWDs, households that had more than one PWD and widow headed households with a PWD were preferred.

In the case of the project a certain number of sanitation systems based on the budget was fixed, and the most disabled people of the village received a sanitation system. In some cases where PWD already had sanitation systems, the NGOs helped to improve access to these systems by constructing for example ramps and rails. The project was further linked to water harvesting, as water scarcity was prevalent in the area.

The software component of the project covered the whole village including persons with and without disabilities and was related to hygiene, demand for sanitation creation and advocacy. Through their advocacy programme the NGO tried to get the government's attention to the region related to several problems related to water and sanitation and PWD in general and also to acquire more funding for different projects in the area.

4.1.4 Post disaster approaches/ fully subsidized approaches

In post disaster scenarios the coverage in terms of the hardware component is usually more than in normal situations. Also the extent of development would usually depend on the damages that were caused by the disaster. In many cases post disaster interventions may involve different organizations working in the same areas and villages and therefore different roles may be taken

by different organizations and in some cases the technologies that are received by parts of the villages may be different from the others based on the implementing organizations.

In most of the post sanitation approaches communities were provided with materials to construct their own latrines. In some cases this was partial provision with some parts provided by the others and in some cases all materials along with building costs were provided to the recipients.

The type of hardware technologies also depends on the phase of development after the disaster. If the interventions take place immediately after the disaster in most cases the facilitation is temporary and in some cases this was in the form of temporary shared communal pit latrines developed around the villages (such as in Paras and Kawai). The basic idea at this stage is to stop indiscriminate OD by the community and to prevent the spread of disease by doing so. After the emergency phase of the disaster, in the rehabilitation phase, when new facilities are being constructed and restored investments are made on more permanent solutions. However according to the respondents of Paras and Kawai, two villages with substantial infrastructure damage after the 2005 earthquake in the area the toilet infrastructure they were provided with after the earthquake was not durable and the toilet fittings had to be changed after a few years of use.

Although the hardware components are necessary in post disaster situations especially when the disaster resulted in large scale infrastructure damages, the software components of WASH projects seems to be quite rigorous. Most of the focus is on hygiene promotion, which is usually based on how to maintain hygienic conditions in the new setting of post disaster situations. Hygiene kits are usually distributed and extensive trainings on hygiene are given to the affected communities.

4.2 Components of sanitation technologies

WASH projects are always based on several different components that intend to achieve different outcomes but are usually geared to achieve the same long term goals of the project, whatever they may be. In short the different components are the different sanitation technologies being promoted or implemented in WASH projects. Most WASH projects according to

practitioners in the sector are based on ‘hardware’ and ‘software’ component of WASH technologies.

The sanitation project components are tied to the national sanitation policy in many cases as there are different recommendations that should be followed under the guidance of the national sanitation policy. There are often set combinations of hardware and software components that are internationally adopted by several organizations and are promoted by several as well. These combinations form approaches, such as the ones discussed in the previous section.

4.2.1 The hardware component

The hardware components are all tangible forms of technology and may typically include toilet latrine installation along with superstructure and in some cases water tanks, drainage systems and decentralized treatment (septic tanks or soakage pits etc.). The hardware components need to be constructed by skill labor such as masons and plumbers, which may come from the community or may be constructed by contractors or hired staff that specializes in such work. If the project follows a component sharing model then people from the community may be responsible to hire such skilled persons for the technical construction work or they may contribute their services themselves. The basic purpose of the hardware component is primarily to keep contaminants out of the environment in order to prevent contamination of the environment and therefore spread of disease.

In the case of the study area the technical options that were seen to be implemented were not quite diverse and only a few different forms of the same technologies were mostly observed. One of the most common types of hardware that was seen was the pour-flush latrine. The pour-flush latrine or toilet is a basic toilet that may not be provided with a continuous supply of water for flushing and has to be manually flushed by pouring an amount of water down the toilet after use. These come in a variety of shapes and sizes and can be fitted with both the pedestal and squatting types of toilets. However in the case of the rural areas in Pakistan, the squatting form is the norm. The toilet has a water seal which means that no flies can enter the pit and also when it properly functions no odors will escape the pit as well, causing the toilet to be relatively odor free if properly ventilated. This type of toilet is generally more acceptable amongst most of the

communities because of the fact that it always water to be used in the toilet and it is relatively cleaner or more hygienic appearing with less odor problems. Once fitted the system is usually robust and does not require frequent maintenance.

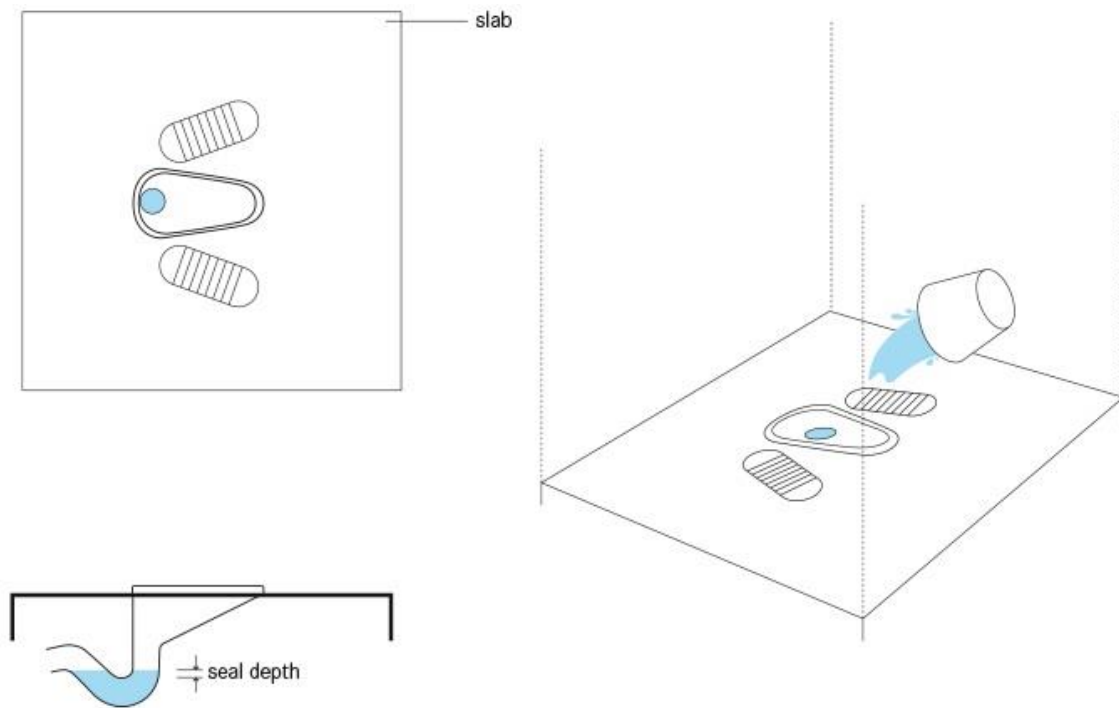


Figure 4.1 Pour flush latrine and water seal, *Source: Tilley et al. 2008*



Figure 4.2 Simple pour flush latrine fitted with a squat toilet (outside and inside) in Village Basala.

One of the other common forms of hardware that has been seen to be implemented in many recent wash projects in the country is the simple pit latrine or some variation of a simple pit latrine. The simple pit latrine is a basic pit directly in the ground which may or may not be covered by a toilet. A pit latrine is only considered to be ‘improved sanitation’ as required by the UN in their previous MDGs as well in the Sustainable Development Goals if the pit is covered with a slab. The rationale behind the requirement of the slab is so that hygienic conditions can be maintained within the latrine and to prevent the collapse of the whole structure.

An improvement to the basic pit latrine was the Ventilated Improved Pit (VIP) latrine which is widely used in other countries around the world. The VIP addresses some of the issue associated with the simple pit latrines, these include problems of odor and flies within the toilet. In the VIP latrine this is done by adding ventilation to the pit itself, which draws out odors and flies from the pit. Although some of the organizations said the VIPs were used a regularly in different projects, no true VIP latrine could be observed in the field and I personally assume that most of

the latrines that are referred to as VIP latrines in the sector at the local NGO levels are synonymous to simple pit latrines and the terms are used interchangeably.

The popularity of the pit latrine is lower than other options in Pakistan in general and so was the case of the filed area. Some of the reasons why the technology is not preferred amongst the community are that the pit latrines are not aesthetically as pleasing as other systems, they are often uncomfortable, are usually quite odorous and sometimes prohibit practices and habits that are the norm which renders them incompatible with normal cultural practices. They also require more maintenance and the pits may have to be pumped out fairly often.

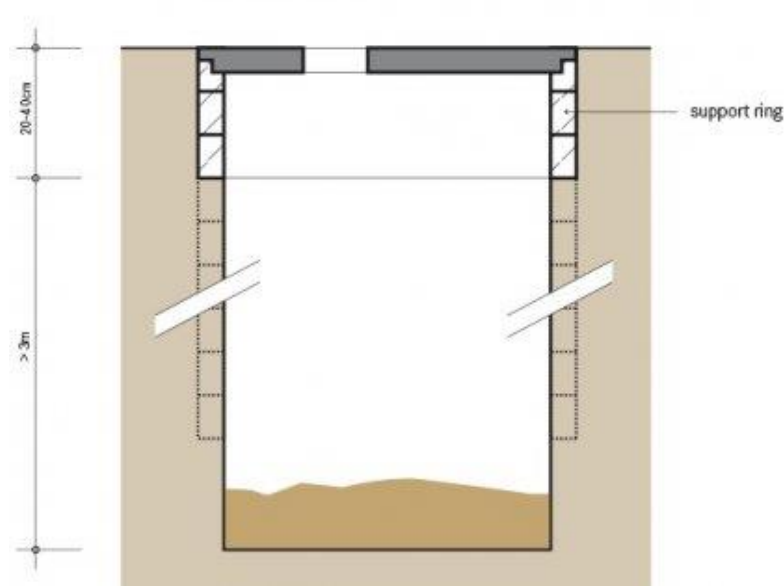


Figure 4.3 Simple pit latrine. *Source: Tilley et al. 2014*

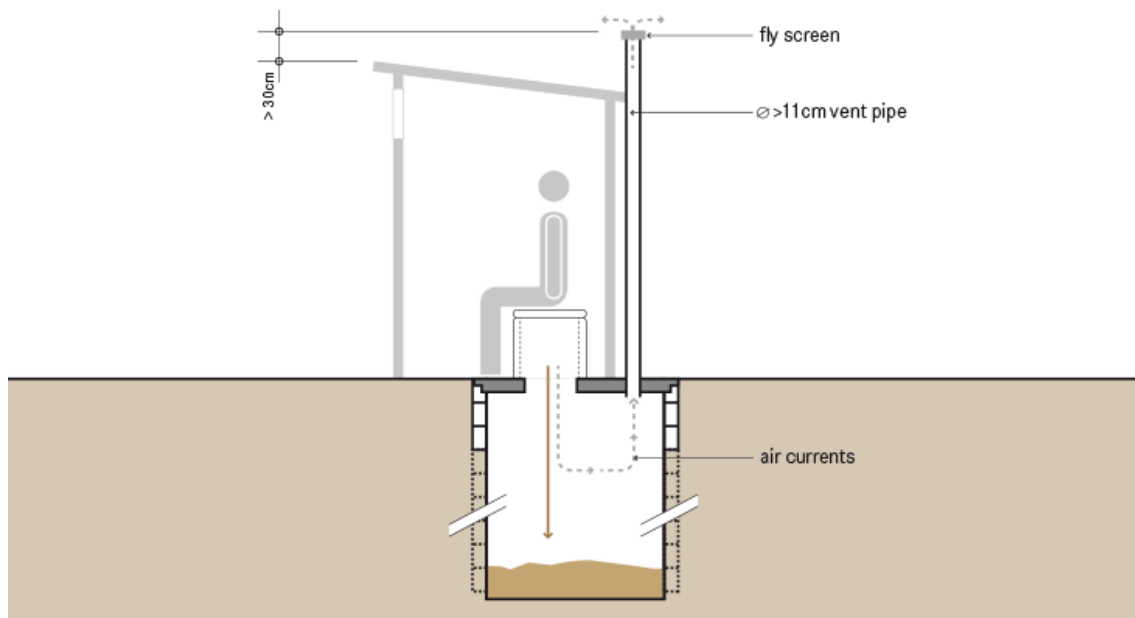


Figure 4.4 Ventilated Improved Pit latrine. *Source: Tilley et al. 2014*



Figure 4.5 Actual pictures of a simple pit latrine from the study area (Naka Guldar). As seen in the close-up of the actual opening, no slab is present on the pit.

Another important hardware that is usually used together with most type of water based latrines such as pour flush latrines is the septic tank. This technology is quite commonly used all over Pakistan, in both rural and urban settings due to the lack of centralized sewerage systems in most cities and villages. There are several different models of the decentralized septic tank that are used but the most typically used design will be discussed here.

The usual septic tank consists of a tank containing two to three chambers with an inlet, directly connected to a toilet system (or single toilet) and in some cases an outlet that either drains into the open or to a soakage pit. In rural areas in many cases what is referred to as a septic tank is usually just a soakage pit with no outlet at all. In such a case it's a simple tank filled with coarse material (such as broken bricks, stones or clay pots) which allows adsorption of the wastewater into the ground. The dimensions of this pit vary according to the local conditions. This is the preferred model in rural settings as there is no skill required in the creating of such a pit and can be constructed by ordinary masons that are available. The material and resource requirements of a soakage pit are usually lower as well and therefore are preferred by the local communities and also by some NGOs. Another benefit for the communities is the use of local materials such as stones for the building of the walls of the soakage pit (as shown in figure 3.7), this however may not be the recommended materials to be used for its construction since the walls should be sealed to prevent seepage of backwater into the surrounding soil.

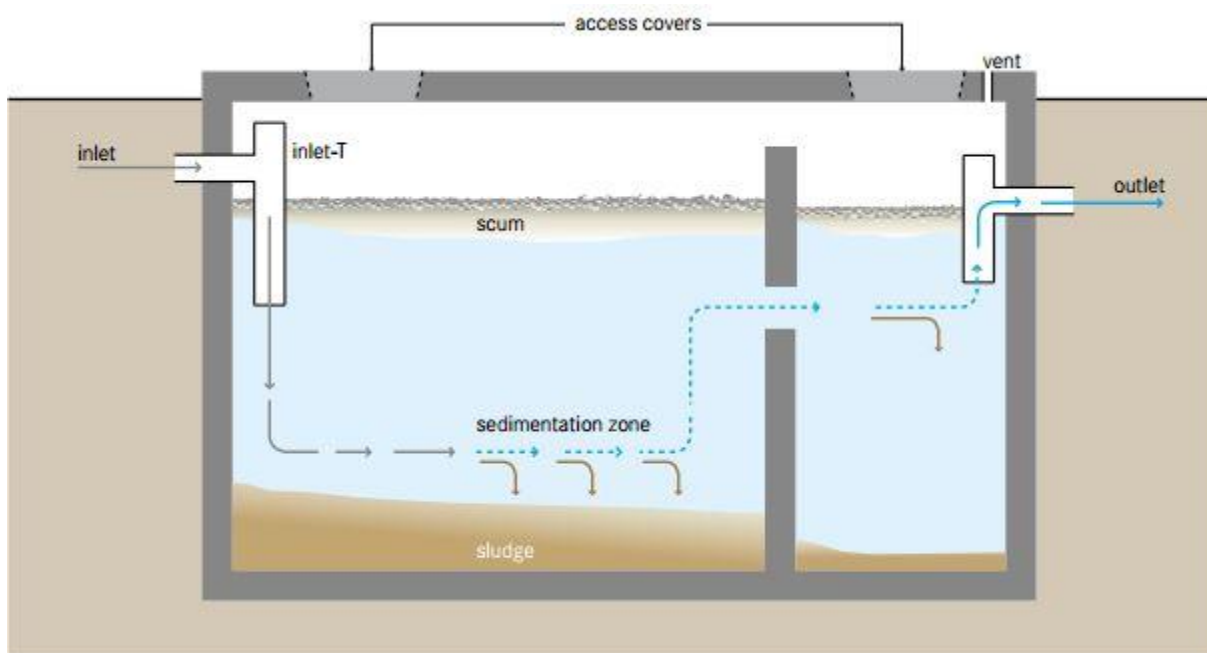


Figure 4.6 A septic tank with two chambers. *Source: Tilley et al. 2014*



Figure 4.7 An under construction (left) and operational (right) soakage pit from village Basala.

4.2.2 The Software component

The software component of water and sanitation technologies are the part of the project which do not include physical structures and are based on communication and awareness with and for the beneficiary communities of the project. The software component is intended to reinforce the physical aspects of the project with knowledge, education, training and information that will help the communities benefit from the hardware components that have been developed. The software component may include, but is not limited to, interventions such as training, awareness raising, hygiene education and promotion, capacity building, advocacy, community mobilization and demand creation (Van de Reep, 2010). In the development sector and NGO jargon this is usually referred to as social mobilization and is usually done through social mobilizers that are part of the NGOs project staff.

Hygiene promotion is a very important component of all water and sanitation interventions. Without hygiene promotion and hygienic practices, the success of any water and sanitation intervention would be undermined. As mentioned earlier the purpose of the hardware components of technologies is to prevent contaminants from entering the environment and therefore break the chain of contact with humans. However the physical technologies can only do that to a certain extent. Pathogenic organisms and contaminants can also be carried by humans when they physically come in contact with feces (their own or of another person such as a baby or a sick person). The only way of breaking this link is by good hygiene and proper hygienic practices such as handwashing. Although handwashing may seem like a trivial practice for many, the link between disease and the practice of handwashing may not be very clear to the people in many villages. The effectiveness of such a simple intervention and its importance in relation to water and sanitation technologies is what makes this practice so important. It is estimated that simple handwashing can potentially and also theoretically reduce diarrheal diseases by up to 47% (Curtis and Cairncross, 2003). Handwashing is considered to be one of the most cost effective methods of reducing diarrheal disease burden and comparatively costs much less than other interventions, such as toilet construction and water supply. Therefore due to its effectiveness both in terms of cost and in reducing disease it is almost always part of WASH projects. Handwashing and other hygiene trainings such as washing of food, food preparation,

drinking water storage and handling etc. are mostly part of the software component of WASH projects. Their importance needs to be communicated to the communities so they understand the importance of proper hygiene management in order to achieve the goals of sanitation.

Another major part of the software component is awareness creation around the problem of sanitation and the reasons why sanitation may be important. Many people in rural setting and villages are not really aware of the links of poor sanitation to the problems associated with it. Therefore it is important to make them aware of poor sanitation and its links to poor health and disease, poverty, reduced productivity etc. This is usually done by different trainings, in many forms such as radio messages, wall chalking, posters, drama and theatre, door to door approaches etc.

Several different types and forms of social mobilization strategies were identified in interviews with the local NGOs. Human Resource Development Society (HRDS) focus more on theatre and plays with messages to get various messages across to a wider audience at once. According to the WASH coordinator at HRDS, drama has proven to be the most effective, since it's entertaining for people and children also enjoy it. The messages within the plays are simple to understand and remember. However in certain cultures and parts of the country women may not be able to participate in such communal activities and may not be able to be part of such plays. So it may be an effective method but only in certain areas. Another common method of hygiene promotion in the villages is by demonstrations, which can be done for women, men and children separately and therefore all groups can be engaged. According to respondents from NGOs this method can also be effective since the community will be 'learning by doing' which makes it easier to retain and remember. The NGOs may also provide the community with hygiene kits, this is especially common after disaster situations, which include all materials required to maintain a standard of hygiene.

According to one of the INGOs interviewed sometimes the communities have to be 'triggered' for them to realize that they require a sanitation system. From the perspective of the local NGOs many times there is funding for sanitation projects yet it may not be a need from the community's perspective and therefore for the local NGOs to have some success with WASH

projects they need to create a demand for sanitation amongst the community. The purpose of demand creation is not only for the community to realize the need for a sanitation system but to also aspire to a better standard of living owing to the benefits of proper sanitation and for the community to be more involved in the decision making process related to the project so it does not remain a donor driven approach and can be changed to a demand driven project. This however seems to be quite difficult, especially when the community has different development priorities and preferences. Also when the project durations are so short, it would be quite difficult for the NGOs to mobilize the communities to the extent that they become very actively involved with sanitation, especially if it's not a prior need.

In villages of Paras and Kawai toilets were constructed after the earthquake and the residents of the village were given trainings to promote hygiene. According to respondents of the village, they were told to wash their hands after they used the toilets, yet no such facilities were provided with the toilets. So even if people wanted to wash their hands they would have to go somewhere else to do it. This was also seen in other villages and was identified as a common theme in most of the projects studied. Although the NGO highly emphasize the need for hygienic practices such as handwashing, no facilities to actually carry it out are provided. Also many of the respondents claimed that it was difficult for them to afford soap for their larger households and were willing to wash their hands with water only, but were told this wouldn't be good enough by the NGO. It seems like the NGO have set implementation strategies for different outcomes, yet they don't try to understand the actual barriers to achieving those outcomes. For the NGOs, in this regard, it seems as though the only objective is to be able to claim that they have trained the community and made them aware of the necessity of handwashing for example. Of course it is impossible for the NGO to force a practice such as handwashing on the community, but simply making them aware how important it is may still not be enough and perhaps they need to think of ways to help the community overcome their inability to carry out such practices for whatever reasons they may be.

According to several of the INGOs interviewed it was common consensus that social mobilization and Behavior Change Communication (BCC) are the backbone of many of the sanitation approaches that are being implemented today. Perhaps that is why a very

comprehensive national strategy called ‘Pakistan national behavior change communication strategy and action plan for safe drinking water, sanitation and hygiene’ exists and was created by UNICEF and USAID for the Ministry of Environment in line with the sanitation policy of Pakistan. Despite the very comprehensive document on every aspect of BCC, a respondent responsible for WASH projects in an INGO complained about the whole concept of BCC in the context of WASH projects. According to the respondent sometimes BCC must be done in hundreds of schools over ten months, in such a case there will be no reinforcement of the BCC and it will be pointless. The suggestion from the respondent was that the donors should allow continuous BCC in a single area for a longer period of time to actually achieve meaningful behavior change. Although this would be a better approach I still believe that behavior change can only be expected when all external factors, such as cost of materials required to maintain basic hygiene, are removed.

4.3 An Overview of the communities and sanitation approaches

This section describes the communities and villages in brief and presents a table summarizing the key features and technological outcomes of the sanitation approaches

4.3.1 The community: an overview of the villages

All villages selected were from the same district of Pakistan i.e. Mansehra District, which means that culture over all of the villages, is to a large extent quite similar, which would not have been the case if villages in different districts were chosen. Cultural differences as well as differences in physical appearance, language and natural environment are quite variable throughout the country and may change within a matter of less than a hundred kilometers. All of the villages included in the study were small villages typical of the region. The number of households ranges from about 50 to 80 per village. Most of the people in these remote villages are usually quite poor and rely on small scale farming, cattle, forests and tourism in some cases for their livelihood.

This in most cases means the practices around sanitation within the area and the villages studied were rather similar, as were many of the other conditions prevalent throughout the villages. However it is worthy to mention that some practices and geographical features of the villages

had an impact on the communities in several ways, which could and have impacted the adoption of sanitation technologies and also the community's attitude and practices towards sanitation. Both villages Paras and Kawai are located on the way to a large mountainous resort which is a tourist attraction for many people in the summer months. Tourists usually flock to these cooler retreats in the high altitude mountains to beat the soaring temperatures of the plains in the south. Therefore many people of the village operate, work in or own small close to the roadside businesses and frequently interact with the tourists. Several of the people of these villages also take up summer jobs in the touristy areas and therefore are in close contact to the tourist, which according to a resident of the village has also modernized the village to some extent. This is perhaps why the toilet usage in these areas was relatively higher than the rest of the villages. However after the earthquake of 2005 and the severe damage and loss of property and infrastructure, many people cannot afford to rebuild their own latrines. This was followed by a several sanitation interventions in the emergency and post emergency phases, the results of which will be discussed in the forthcoming sections of the chapter.

The villages of Naka Guladar and Meesuch were the most remote villages in the study area, lacking all basic services and infrastructure such as roads, communication, electricity and of course proper water and sanitation facilities. Due to the high altitude location of the villages, not much land is available for farming. Furthermore the bitter cold in the winters does not allow much local economic activity in the village. People from this region often find work in nearby cities and earn a livelihood as laborers, small scale farmers or working again in nearby touristy areas in the summer months. However in the case of these villages the usage of sanitation systems was one of the lowest in all the villages studied. Respondents claimed to be aware of the benefits of sanitation, however this could possibly be because of the sanitation intervention that was carried out shortly before interviews in the village were conducted. Another possible reason for this observation is due to poor access, which substantially increases the material and labor costs.

In the case of Garang and Basala, which are located at a relatively lower geographical area with respect to the villages previously discussed, the main livelihood of the majority of the village is small scale farming in and around the villages, forestry and for some people construction/ labor jobs in the city. Both cities are close by and are located closer to the large city of Mansehra in the

district. This means larger access to markets and other facilities such as hospitals. Although not far from main highways, the villages can only be accessed by special vehicles, which again mean higher costs for materials. In the case of both of the villages the people seemed to be more educated and aware of the modern world and way of life. This could be because of the close proximity to the District's largest city and the fact that electricity is available along with cellular communication coverage. Despite being more aware generally, the usage of sanitation systems was surprisingly low. In fact in both of the villages, open defecation was the norm with the exception of the few households. During interviews with the local community there was mention of how defecating in the fields increased the fertility of the agricultural land, however this point of view was not expressed by many people. The fact that it was not reported by many does not necessarily indicate that it not the common perception, as people in the villages would seldom admit that human feces is a beneficial fertilizer for the crops. This has to do with the cultural taboo of sanitation and the religious aversion to bodily waste such as feces and urine. Perhaps this culture and the perception that open defecation in the fields is good for the crops in an agricultural village prevents people from adopting modern forms of sanitation.

In the case of villages Icherrian, Ahal and Talhatta, both Icherrian and Ahal are located just off of the 'silk route' highway, whereas Talhatta is located near to a large city in the district. Most of the people in villages Icherrian and Ahal earn a living by small scale agriculture as well as small businesses. In Talhatta many of the villages have small businesses or work as skilled or unskilled labor in the nearby city. In the cases of all the villages the pre-project sanitation coverage was rather high as compared to the other villages in the study. The reason seems to be the fact that the villages are well connected to larger cities and they are fairly easily accessible.

4.3.2 An overview of the approaches

The following table gives a brief overview of the approaches and technological outcomes of the approaches in the villages studied.

Approach	Villages	Technological outcome	Features of the approach
Total Sanitation (CLTS)	Meesuch, Naka Guldar	Hardware: Pit latrines Software: Aggressive sensitization traditionally by shocking, shaming and	<ul style="list-style-type: none"> • No subsidy • Based on PRA methods • Aims to eliminate open

		disgusting the community into collective action	defecation
Partial provision	Basala, Garang	Hardware: Pour flush latrines Software: Awareness, hygiene promotion and training	<ul style="list-style-type: none"> • Few households per village provided as model to the most needy • Fully subsidized • Aims to eliminate open defecation by creating a demand on the basis of successful models
Persons with Disability (PWD)	Icherrian, Ahal	Hardware: Different latrine types depending on PWD, accessibility ramps, modified toilets and fixtures etc. Software: Advocacy for Persons with disabilities	<ul style="list-style-type: none"> • Full or partial provision only for PWD • Aimed at improving accessibility of sanitation for disabled people • Create models for the community to follow
Post disaster/ Fully subsidized	Talhatta, Paras, Kawai	Hardware: Pour flush latrine in most cases Software: Awareness, hygiene promotion, health education	<ul style="list-style-type: none"> • Introduction of sanitation technologies into communities that did not have any sanitation systems before the disaster • Post disaster rehabilitation and reconstruction

Table 4.2 An overview of the sanitation approaches in the study area

4.4 Village structure, power and politics

This section outlines the structure present in the villages in the study area and describes how the inherent structure and internal political setup of the villages relates to developments in the hygiene and sanitation technologies.

4.4.1 Village Structure

Since all the villages selected for in depth study were located in the same district, the culture across more or less all villages is similar and is predominantly present throughout the whole area. This is true because in all villages selected the majority of the people belong to the same ethnic group and speak the same language. Not much variation in culture was seen over the different villages and the village setup was also more or less consistent. However there may be slight variations in village leadership and power in the village, this will be highlighted where necessary.

The literacy rate in most villages of the area is rather low and only the younger generations have attended schools at a primary and sometimes secondary level. There is quite a difference between the literacy rate of men and women only in recent years have girls also started to attend schools. Usually each school is served by a single government primary school (grade 1-5) located close to the village. Although the primary schools are meant for pupils of different ages and levels, there are usually only one to two teachers assigned to each primary school and therefore the standard of education is quite low.

There is usually a 'Numberdar' (also known as Lambardar in some areas) who is the head of the village and is usually the head of the wealthiest family. In the context of rural life in Pakistan the wealthiest people of the village are the ones that own the most land and therefore the Nubardar is usually from the family that owns the most land in the village. In the case of the smaller villages there may not be an official Numbardar but there is usually an equivalent (sometimes referred to as the 'the great' or 'the elder' of the village by the locals). As in the case of the Numbardar, they are usually from the wealthiest family of the village and own the most land in the village. There are also elected political representatives in the village that are part of the local government's lowest tier of Union Council, these representatives are known as councilors and are in many cases also from the influential families of the village. Although the councilors are elected representatives of the village, they do not necessarily have power over the village unless they belong to one of the influential families of the village in which case the influence is more related to membership of the family rather than the political position held. There are also minimum educational requirements for the appointment of a counselor, which also makes the likelihood of

someone from an influential village family being elected more likely, since the influential village families are more likely to be educated than the other villagers.

Another important influence in the village is from the religious leader of the village or the religious imam. The religious people of the village are not only respected but are also obeyed (Nawab et al., 2006). According to a local NGO, in the region of study and in the province of Khyber Pakhtunkhwa (KP) in general, the religious leaders of villages have more influence over the village than the political leadership of the village. This is because of the strong religious affiliation of most rural communities. This gives the religious leaders power over others as they are respected and needed to perform different rituals and ceremonies in the village (such as marriages, funerals etc.). Therefore there is a great respect for all clergy and men associated with religion in the rural setup. The village imams enjoy power over the rural communities in many ways and have a great say in village matters since they are considered as religious authority. Their power can also be attributed to the fact that people fear isolation and exclusion from the community if the religious leaders are displeased with them and would go to any lengths to avoid such a situation and be shunned by the rest of the community. During implementing of WASH projects I was told by local NGOs that they always first contact the local leaders or village elders and religious leaders of the village. In some cases the NGOs also admitted to give in to their demands in order to be able to implement the projects and be able to approach the communities. The WASH coordinator of a local NGO mentioned that many of the Imams of the mosques ask them to construct a latrine next to the mosque, and they usually have to agree to have their blessing. This although doesn't seem like much, in some cases when there are only provisions for a few toilets to be constructed in the whole village, there may be other places where it would be more suited. Yet on the other hand for the project to have a chance to be successfully implemented it is beneficial for the implementing to have the support of the religious leaders of the village. I was told by several NGOs that one of the most important aspects of implementing WASH projects in villages is first getting the influential people of the village onboard and making sure that they are aware of the projects and approve of them. During previous research projects in certain areas, when I would approach a village to conduct interviews, I was always told to meet with the village head or Numbardar before I was allowed to speak to anyone in the village. In fact it would have been impossible to even talk to any of the community members without first meeting the Numberdar. In my meetings with the Numberdar I would explain my

purpose of the interviews and once satisfied the Numberdar would allow me to conduct the required interviews.

4.4.2 Power and Politics

Power and politics play an important role in life in Pakistan especially in rural areas. Traditionally power has been held by the wealthy families of the village and that still remains true to this day. However other forms of power such as religion and politics have emerged as well, which create different classes within rural communities.

According to local NGOs many of the village men would like to have toilets for the local schools and the village Mosque. The village mosque is a place where most of the men gather for prayer up to five times a day and may also discuss village problems amongst themselves after prayer. Before praying they must also make ablution and wash themselves to rid their bodies of any impurities and that is the rationale of having a toilet by the mosque. This in some cases may not be a bad idea, since this is the only toilet that may be used communally by many people of the village. In any other case sharing of a toilet with other families, especially if it is used by the women, would be out of the question in any village in the study area. This was also pointed out by local NGOs. According to them the situation is quite different in other parts of Pakistan, such as in the South, where the sense of community is stronger in villages and shared facilities are not a problem. However in the region of the study area, there is a strong culture of privacy especially when relating to the women of the family, and therefore there is no possibility of using shared facilities by the community members. The toilet in the mosque is an exception and is only used by male members of the community. This was seen in both villages of Garang and Basala, where the community was given five toilets each which were to be distributed amongst the villagers according to criteria. In both cases one of the five toilets was constructed in the local village Mosque. Upon receiving this information during the FGD, I was a bit surprised to learn that the toilets that were meant to be given to the most poor and disabled people of the village had been constructed close to the mosque of the village. However I realized that perhaps this was the only latrine that could be used by a large number of people in the community that did not belong to a single family. However I had mistakenly assumed that the latrine would be open to the public (males at least) and could be used by any male at any time. Upon visiting the latrine next to the mosque, I noticed that it was locked and was explained by the CBO members that the village

Imaam or prayer leader controlled access to the toilet, which normally remained locked and was sometime opened shortly before prayer time. However it seemed as it was being used more as a personal toilet by the village Imaam. Although this did not seem fair to the community, as mentioned earlier and also by several local NGO staff, sometimes it is required to make sure the project can run smoothly in the village. A respondent from a local NGO openly admitted to giving in to the demands of the local religious leaders, which are usually related to the construction of toilet facilities in the mosque.

The influential people of the village also try to manipulate the implementing organizations and get favors in return for public support. In many cases the influential families of the village have substantial power over the village and also exercise it. This means that being able to access the community means that the influential people must be on board with the project and must also support it. According to an INGO, every village had natural hierarchies and influential or political people that have power over the rest of the village, sometimes the influential people try to influence the projects and they also try to use them for their personal gains. According to the respondent from the INGO, sometimes the implementing partners have to give into their demands, as the projects would not be possible without their support, however they try to minimize this to as much as possible.

In general it seems like there is not much of a difference between the influential people of the community and the lead roles of the projects at the community level i.e. the village development organization (VDO) or the CBO. In most of the villages studied it seemed as if the most influential members of the community were also part of the main body of the CBO and held the highest positions. In many of the villages the CBO members were usually from the most well off families in the village. For example in village Basala, the most educated person of the village who was a government school teacher in the village, was also the secretary of the CBO. According to the local NGOs the secretary must be an educated person in order to be able to keep all records etc. However the family of the secretary was also one of the wealthier families in the village, perhaps due to the fact that the head of the family had a government job. In the rural setup of Pakistan, the wealthy families traditionally have power over the other poor village families. Traditionally the wealthiest families used to be the families that owned the most agricultural land in the village and were known as the Malik, Khan or Chaudhary of the village

depending on the region. These people also had official powers and were usually appointed by the state as a 'Numbardar', in a feudal like system. This system has continued and till this day the wealthiest families of the village are also usually the ruling families. Similar patterns were seen in each village of the study area. In the case of village Paras the son of the 'Nubardar' was the head of the CBO. This means that CBO was also in the hands of the most influential family.

According to the head of the CBO in Paras, the earthquake and the developments afterwards changed the whole scenario of the village. An interesting aspect from the wealthiest family of the village, came forward through the interview with the respondent. According to the respondent the major losses in the earthquake were incurred by the rich people of the village, as the poor people did not have much to lose. However after the earthquake and after the projects that followed, the village became more homogenous, as the rich families lost a lot and the poor families gained a lot. The respondent however being from the wealthiest and most influential family did not see this as a positive change and did not seem to be happy with the redistribution of power in the village.

The manifestation of the power structures can be clearly seen in the implementation of sanitation projects in the village. Since the preexisting power structures were retained in most cases in the creation of the village committees that assist in the development process, in the cases of several villages it was not difficult to observe how power was used for personal benefits in case of the project. The worst case scenario was village Garang, where it seemed like the selection of the beneficiaries was quite biased. Although only five toilets were to be distributed, many of the toilets were given to people in the village that seemed to be relatively well off. Since all of the families that received toilets were interviewed, it was not hard to tell that many of them did not meet the criteria of being the most poor or of having someone in the household that was disabled. One of the toilets was given to a very large house in the village, which in the rural setup would be considered as a sign of relative wealth. During interviews with the family, I learned that many people of the family work in larger cities and have a rather steady income. The house itself stood out from the small mud and stone houses around it and clearly belonged to a more wealthy family. I also learned during the interview with the family that the head of the CBO was the nephew of the head of the household and that is the reason, as I assume, as to why the family were given a latrine. Due to strong familial ties in rural communities, nepotism is quite common.

Similar other cases emerged, where families that already had latrines were given a second latrine as opposed to many other poor people in the village that could not afford a single one. Also the secretary of the VDO also received a latrine, which according to many respondents in the village that did not, was quite unfair as their family was quite well off. Similar incidences were reported in other villages as well, where the CBOs and VDOs would unfairly favor their families and people of choice.

While talking to CBOs from the different villages and many respondents, it seemed as if the local NGOs did not really overlook the whole process of the actual implementation. In many cases the members of the CBOs even reported making changes to designs and other factors without informing the NGO. Also the choice of the beneficiaries is left up to the CBO and the community, without much input or review from the local NGO. Many local NGO admitting to not have a role in the selection of the beneficiaries and only stepping into the process if the community could not decide on its own. Although it seems like a good idea to leave the decision making up to the community, there should be perhaps a review process just to ensure that the selection was not biased. As in most of the cases decisions left up to the community will be no different from any other decisions made in the community, meaning that the power and influence of the influential remains the same, which undermines the whole concept of development.

4.5 Sanitation in the communities

This section focuses on the users and the community in general as an important social group and addresses their knowledge and practices related to sanitation and the meaning they associate with the sanitation technologies. This section also includes the experiences of the users as a social group in the process of the development of sanitation technologies.

4.5.1 Knowledge, attitude and practices

Open defecation is common practice in most of the villages studied. This has been practiced by generation after generation in most underdeveloped rural areas in Pakistan. Due to the lack of sanitation facilities, people are used to defecate in the open and have been doing so for generations. Although it may be cumbersome, since it has been the only way known to these

rural communities, many of the people still till this day feel comfortable continuing this practice and not see it as a problem.

However things have changed in the last couple of decades and certain changes in conditions have made this practice difficult. The rapid increase in population is one factor that has made defecation in the open quite difficult according to most of the respondents in the villages that have been practicing open defecation. The number of houses within the villages has been rapidly increasing and the number of fields and agricultural lands have constantly decreased. I was told by many of the older respondents that it was never a problem, as there were few houses in the village and they were separated by large fields. Now however houses are practically joined to one another and there is not much agricultural land left in between the houses. In such conditions it is very difficult for the people to find suitable places to relieve themselves and they often now have to go further away from the villages to find a private spot to do so. This has also been a source of conflict between families in villages, where sometimes using other people's land to defecate has led to conflicts between families. However despite the increasing difficulty many people in villages still prefer open defecation and do not prioritize sanitation.

The increased population and unavailability of land has affected the ability to easily find a place to defecate which has created problems for the community related to sanitation. It is especially difficult for people with reduced mobility such as the elderly, sick and people with disabilities.

In most cases in the villages according to many of the local NGOs communities are generally less interested in sanitation technology developments and are mostly interested in water supply technologies and schemes. In the past, the government's focus of development in rural areas was always on water supply as well, as water was always a higher priority and projects related to water supply were always welcomed in the villages. For sanitation developments, there may be some resistances in certain communities, since it's not a top priority for the locals that have been defecating in the open in the past and sometimes don't have any exposure to toilets. Sanitation programmes also require 'sensitization' as termed by local NGOs- to make people aware of the need of sanitation systems. This is also why the government in the past was more inclined to water provision projects, they did not require much effort in convincing the communities, since

all communities realize it as a basic necessity. Also the government perhaps also considered water supply to be more important than sanitation.

Sensitization from the NGOs for water and sanitation projects is done in the case where the communities don't see their current sanitation practices as a problem and do not prioritize sanitation as one of their pressing needs. However when NGOs get funding for sanitation projects for certain areas, even if sanitation is not a need from the community it is a perceived need from the donors and the INGOs and therefore they would like to implement sanitation projects in the area. So although the local communities are not very interested in sanitation projects that's the only service the NGOs can offer with the current funding and therefore they need to make the community aware of their 'need for sanitation'. This however may not be so successful and according to respondents in the local communities they sometimes agree for the projects and go along with the development in hopes of getting what their needs are in the future. I was told in many of the FGD in different villages that the NGOs usually tell the communities that there are good chances that other projects will be funded in the area if the community support the current project and help to make it a success. Therefore the communities are sometimes led to believe that other projects based on their needs, will follow if they cooperate with the current sanitation project being implemented. However these are usually not fulfilled since the NGOs cannot predict future funding and cannot guarantee any sort of future development in unless they already have received funding, which in most of the cases is not true. This strategy in my opinion is used to get communities on board with any sort of project and is termed as 'sensitization' by the NGOs.

The fact that most of the water and sanitation projects are implemented in villages where there is no demand and need from the communities perspective became quite clear in several personal interviews and FGD with the communities. In the villages of Naka Guldar and Meesuch where total sanitation approaches were implemented, in a joint FGD of both villages, the community did not seem very pleased with the project and the implementation. The community was of the opinion that they had other important needs that weren't being addressed. The community identified their top five development needs which were water, access roads, electricity, schools and hospitals. Their top five list of development priorities did not even include sanitation as a priority. This came as a surprise, since the community was interviewed after the sanitation

project was implemented which focused on making the community aware of the need of sanitation and the dangers of open defecation and its success is heavily dependent on behavior change of the community in terms of open defecation and priority for sanitation systems. However the community did not seem to be convinced by the triggering sessions done by the NGO in their implementation. However many NGOs are quite aware that projects are more likely to fail if they are only implemented because there is funding available for a sanitation project in a certain area as reported by a respondent from an INGO.

There are several reasons why many of the respondents in different villages do not prioritize sanitation in their lives. One of the main reasons is that people use water for cleansing themselves after urinating and defecating in a toilet and therefore would only like to use a toilet if there was constant supply of water or at least water present in the toilets. This is why many respondents said it was absolutely necessary to first have a water supply scheme before sanitation systems in the village. When people defecate in the open they do not need to have a source of water and may use materials present in nature to cleanse themselves, which are not available in the toilet. According to respondents, 99 percent of the people that defecate in the open do not purify themselves with water and rather use soil or stones to do so. However since these materials are not available in toilets, it would be impossible for people cleanse themselves, if there is no running water. According to the respondent, they have to collect water from miles away in small quantities for their basic necessities like drinking and cooking, therefore they cannot use this valuable amount in the toilet. Muslims must also use water for 'ablution'. Ablution is the cleaning of oneself through a sequence of actions in a particular order to be in a state of ritualistic purity in order to be able to offer prayer (Mokhtar, 2003). This can be done by other means, but is normally done with water before each prayer. Since most people in the village are religious and offer prayer five times a day, they require a fairly large amount of water for ablution and therefore many people would like to have water available before anything else. Water has a special significance for Muslims and their ritualistic purity, therefore most people consider it to be more religious to use water to purify oneself, be it ablution or anal cleansing.

Also in many of the communities open defecation or going without a sanitation system have historically been the norm. Many of the communities have been cut off from most of the more developed parts of the country due to poor access and have not been exposed to sanitation

systems at all in many cases. Open defecation and having no sanitation system at all has been a practice of their forefathers and is a normal part of their lives now. Although the topic of sanitation is still taboo, is not very openly discussed and is considered a private matter, open defecation is the norm and is not seen as something wrong. Respondents had pointed out to me that their forefathers had been defecating in the open and were healthier and stronger than the current generations in their opinion.

During previous studies in different villages people even associated the practice of open defecation with the religious concept of ‘sunnah’*, which is considered to be an important part of religion and is encouraged to be practiced. However this is only a belief amongst the most conservative people in the villages is not based on facts, however it is used to justify the act of open defecation. Perhaps this is why several studies show that open defecation may be continues even after sanitation technologies are available (Garn et al. 2016; Barnard et al. 2013).

The practice of open defecation is not always related to religion and is not always considered as a better practice but may be a simple preference for some people. Many respondents in one on one interviews admitted that they preferred open defecation over using a toilet for several reasons. Such findings have been reported in other countries such as rural India, where a preference for open defecation was revealed (Coffey et al., 2014) where the culture is comparable to that of rural Pakistan. The reasons for this preference are quite personal at times, but according to respondents in the field, several common reasons were identified. An observation was that most of the older men in the villages still preferred to defecate in the open and many of them said they have been doing it so long now, that it hard to get used to the idea of a toilet, since they feel more comfortable outside. As the saying ‘old habits die hard’ goes, the sheer reason in this case is habit which is hard to break and behaviors which are hard to change. Although many of the organizations claim that they focus on behavior change and employ behavior change communication strategies, the actual process of changing behavior can be quite complicated. In interview with the secretary of the CBO in village Ahal, the CBO member was

* “Sunnah is the verbally transmitted record of the teachings, deeds and sayings, silent permissions (or disapprovals) of the Islamic prophet Muhammad (PBUH), as well as various reports about Muhammad's companions.” (Wikipedia)

of the opinion that there is nothing wrong with open defecation and the only problem with open defecation now is the issue of space due to increased population and an increase in the number of houses in the village.

In approaches where the communities are encouraged to build and use pit latrines as an alternative to open defecation, open defecation usually remains to be common practice. In this case it is the nature of the technology that turns people off of its use. All respondents using pit latrines reported severely foul smelling pits. The use of water is not recommended in pit latrines, however in many cases it is used which causes a short lifespan of the pit and also creates unbearable odors. In my previous research on pit latrines, I was told by respondents that the foul odor of the pit latrines was the reason they weren't used. Also younger boys who were more open about their choice of defecation also offered a different explanation. According to a respondent in an INGO, they are mostly aware of the unacceptability of the pit latrine in the province mostly because of the odor problems and the fact that the pit latrines are not supposed to be used with water.

Some younger respondents pointed out that they feel ashamed to use toilets in the house, since according to them everyone in the house would know what they are doing, which made them feel ashamed and embarrassed. However when they go outdoors in the fields, no one knows why they are going out and when exactly they are going into the fields to relieve themselves. This also shows the nature of the subject of sanitation and defecation and how personal and private most people in rural Pakistan consider it to be. It is a taboo subject that no one wants to openly discuss, in fact people in rural areas consider it to be so taboo that they do not even want to use the a toilet in front of other family members.

Many of the sanitation approaches were designed to benefit the disabled in the communities. The study area being a post disaster area, Even when the project didn't directly target people with disabilities, in many cases beneficiaries with disabilities were preferred and selected on the basis of their disabilities. Projects that were designed specifically for Persons With Disabilities (PWDs) such as in villages Ahal and Kappar Dho were better designed keeping PWDs and their special needs in mind. The beneficiaries of such projects seemed to be more satisfied with the development than the disabled beneficiaries of projects that were not designed specifically for PWDs but were chosen as beneficiaries since there were more than one PWD in the family

which received the latrine, as in the case of villages Basala and Garang. In the case of these two villages a very limited number of toilets were provided to a few families in each village with PWDs.

There were several cases in which people that were not able to freely move around due to different disabilities, still claimed to defecate in the open by choice despite having a toilet (or previously having a pit latrine at home). A respondent that was crippled and could only get around with crutches, explained that he still went into the fields to defecate despite his reduced mobility. In his opinion the pit latrines were unusable due to the odor problems and had to be filled out for this reason. This trend was not only limited to pit latrines, as in other examples there were families that had pour flush latrines built as a result of a sanitation project, yet they admitted to still practice open defecation by all members of the family including the oldest women of the household who could not move around so easily. In this particular case the family was selected to receive a toilet due to the large number of people in the household that had reduced mobility. However after one year of its construction the toilet is still being used as a storage space.

Pakistan being a patriarchal society in general, women in the village typically do not have much of a say and are not consulted for decision making. In the case of water and sanitation technologies women are usually the care takers of such systems and their input in the planning and development would be quite beneficial and useful. However all NGOs try to include women in the projects and also have female staff that are responsible to make sure that the concerns and inputs of women make their way into the project planning and implementation.

The exception in most cases was the female respondents, many of which seemed to be happy with a toilet in or within the house, making it easier for them to relieve themselves at any time of the day or night. The females in conservative societies find it the hardest to defecate in the open. In previous studies of extremely conservative areas many females were not allowed to leave the households during the day time and would only be able to leave the house to relieve themselves after dusk or before dawn. Although many of the women were pleased to have toilets in the house, in many instances in these areas, the pit latrines were filled up after some time and most people, men and women reverted back to open defecation.

Sometimes communities are not so open to strangers coming into villages, whether for projects or any other reasons. Villagers may be wary of their activities and believe they may have ulterior motives (Nawab et al., 2006). According to local NGOs many village men think that the NGO staff (even female) may be a bad influence on the women of the community and therefore do not even prefer female staff talking to the females of the villages. According to local NGOs sometimes communities are not so open with NGO workers coming into the villages and talking to the women in private. In some cases NGO women workers were not even allowed to talk to male community members until they had covered their heads, as is done by village women when talking in the presence of males. This shows how hard it is for female NGO workers to access women quite frequently. In general the province of Khyber Pakhtunkhwa is known to be very conservative and to not appreciate outsider influence in their communities (Nawab et al., 2006). Despite the communities' male's aversion to NGOs interacting with females of the community, many of the respondents in all villages said a toilet or a latrine is best for the females and is convenient for them since they do go out much. In fact a personal observation was that in many cases it seemed as if for many of the respondents, the latrine was something to be used by women rather than men. This was quite similar to a previous study related to the use of pit latrines in a conservative area of Pakistan, where the men outright claimed that the latrine in the house was only for the men, as if it would have been unmanly for a male to use it or a cause of shame for men to use a latrine within the household. In all villages currently studied most of the men that had access to a latrine and also the ones that didn't, did not have such a strong stance on men using the latrines. However they did mostly share the common perception, that open defecation wasn't a problem for the males of the villages and was mostly a need for women and children. Since many of the respondents pointed out that the latrine was useful for women mostly, this perhaps is a way for them to enforce their patriarchal power by discouraging women to leave the houses.

At the community level many of the respondents claimed that they could not afford to build latrines and if they could have afforded to do so they would like to have a proper sanitation system. This however is in contradiction to what many of the NGO and INGOs claim. According to these organizations, most of the households or at least the majority of the households can afford a basic latrine, which if built could be updated at a later stage. According to the NGOs many of the sanitation projects are designed on the premise that many of the people in the village

are able to afford sanitation technologies. From the community's perspectives building a latrine on their own is out of the question. According to almost all respondents they couldn't afford to build one on their own, and said they had a hard time feeding the family and taking care of other expenses such as medical bills etc. On the other hand an observation was that almost everyone possessed a cellular phone. Even in communities such as Naka Guldar and Meesuch, where there was no electricity, all of the people had cellular phones and even invested in solar panels for their houses in order to charge their phones and have some light in the houses. Since the solar panels weren't powerful enough to light the whole house their main function is to charge phones and be able to have one single light in the house at night. This does not mean that the community can afford a sanitation system in anyway yet it does show that sanitation in many cases is not the priority.

In some cases respondents even mentioned that they thought it was 'unclean' to have a toilet within the house, they were of the opinion that it made the house impure. Such respondents were usually older men and associated defecation as something to be done outside and away from the house and referred to the practice as 'outside business' which should not be brought into the home. The perception of impurity in the house can be related to the religious view of human feces and waste products. In Islam feces and urine are considered to be 'najis' or intrinsically impure, which means anything that comes in contact with either will also become impure and cannot be worn for prayer or worship. The severely strong aversion to human waste products in religious ritual is a reason for many of the behaviors observed and is why it is even considered taboo to discuss such matters unnecessarily.

From the perspective of the implementing NGOs, respondents mentioned that it is easier to implement different technologies (such as ecological sanitation (ECOSAN)*) when the community do not have any toilets at all. Although this claim could not be verified as no such ECOSAN projects exist in the study, it seems as it is unlikely since in many of the cases people had a hard time to change habits in the case of different technologies. So it is hard to assume that the community in the study area would be willing to accept such a progressive technological system as ECOSAN, because of the above mentioned reasons. However the fact that this may have been achieved in other parts of the country where the culture may be different cannot be ruled out.

4.5.2 Interpretive Flexibility

The interpretive flexibility of technology is the different meanings associated to technologies based on the different relevant social groups in the development process.

As discussed previously sanitation is not usually a priority for people living in villages where there are no sanitation systems. This was consistent over all the villages in the study area and has shown to be a general trend in other parts of the country in rural areas as well (Nawab et. al. 2006, Nawab and Nyborg, 2006). However in most of the villages studied, even though sanitation was not a priority, many of the respondents were not opposed to developments in this regard. One reason for this observation was the fact that many of the respondents over several villages considered the sanitation development projects as a ‘stepping stone’ project which would eventually lead to other projects in the area, which would eventually address and cater to their needs rather than being on the basis of what the donors would like to see being implemented.

Another reason is the fact that rural communities are usually poor and would accept any material help in any form, even in some cases if there is no intention of use. In villages Talhatta, Paras and Kawai respondents reported the people in some cases sold off the materials they were given to construct a latrine in order to buy things according to their need in the post disaster scenario. This was also seen in the case of Village Garang, where a family did accept materials and support to construct one of the five toilets provided to village, yet after a year did not complete its construction, do not use it and have no intention to do so in the future.

According to the focus group discussion in Paras, many of the respondents reported that communities had become quite dependent on aid and were not willing to do things on their own after the earthquake. After the earthquake and the engagement of aid agencies in the region for over a decade, most people have started to rely on these organizations for local development. I had experienced this during previous research projects in the area some years after the

* Ecosan or Ecological Sanitation is an approach that recognizes sanitation wastes as resources that can be used to close material and energy loops making these materials available for reuse (Langergraber and Muellegger, 2005)

earthquake. As part of a research team our task was to collect samples and conduct interviews, even after explaining this to the locals, they would still ask us to send other organizations to give them material things that were previously distributed, such as cattle, water tanks, construction materials etc. In general the communities continue to have this attitude till this day and for many of them any intervention, whether needed by the community or not may to some extent be an opportunity to gain material needs.

Pakistan is a patriarchal society in general, more in rural settings as compared to urban areas. In rather conservative areas women are confined to houses and are not seen much in the open. Their role in many rural areas is related to the upbringing of children and looking after domestic chores (Nawab et al., 2006), however in some communities they may help out in the fields in times of need. Generally women are left out of decision making and are not involved in religious and political matters at the village level. Women in general are considered part of a family's 'izzat' (literal translation-respect) or honor and must obey strict social regulation in order to preserve the family honor. 'Purdah' is an important aspect of social regulation of women's life. Although the literal translation may be curtain or veil the physical manifestation may range from segregation of sexes in all spheres of life and physical covering of the body outside of the house. In interviews and FGD most of the older male beneficiaries and respondents viewed toilets as something that preserves women's 'purdah' and therefore also their families honor. The rationale is that when women have toilets in the house they do not need to go outside in public and be seen by men of the community, not necessarily in the act of defecation, but generally as well. Although not all the villages of the study area had such strong restrictions of purdah and in many cases women could be seen outside of their homes taking care of their children and animals or fetching water, the view of the toilet from the men's perspective was fairly consistent that it served to protect the purdah of the women of the village when a toilet was present.

Another meaning associated to the sanitation technology from the users perspective comes from the fact that having no sanitation system could potentially lead to conflicts within the communities and therefore the presence of a toilet would enable households to avoid these conflicts. The sanitation technologies are therefore seen by many users as a development that would prevent conflicts from happening within these communities. As described in earlier sections, conflict may arise due to use of other people's agricultural land in the village for open

defecation. According to respondents people usually would go into their own fields, if that is an option or they go away from the village in some cases. However many poor people (in a relative sense- since most people in the villages are poor in any case) in the village may not own their own agricultural land and therefore in some instances may go into other peoples fields if they cannot go outside of the village into the woods or fields. So therefore having a toilet for such people would mean less chances of contention with others in the village. However in an FGD with the elders of two villages, they had also admitted to encouraging people to defecate in their own fields, as this would fertilize their lands. This shows that people from the community consider open defecation to be beneficial for their own crops. However this is only acceptable in one's own land and not in the agricultural lands of other people in the village.

Many respondents across several villages also expressed that they felt ashamed when outsiders came into their villages where there are no toilets. Although they themselves weren't ashamed of the practice, they did feel ashamed when visited by guests and for that reason many people expressed a desire for a toilet and a sanitation system. This however, according to many respondents, could be done by simply constructing a communal latrine in the village 'Hujra', a communal and guest sitting area where outsiders are usually taken.

For women as a sub-group of the social group of users, felt the latrine was a convenience and a way provided them with dignity and privacy. Most women respondents interviewed were happy with having a latrine that could be used and preferred one inside or close to the house. For women open defecation means going outside of the house to defecate at times when they will not be seen by others, for this reason they usually choose to go at dawn or after sunset, since most of the women cannot go far away from their homes. So having a toilet means having access to a sanitation system when need be, and being able to go and relieve oneself in privacy and safety.

The community's utility and meanings associated to toilets and sanitation systems were quite different than other social groups such as the implementers and the project funders. Primarily the motivation for the provision of sanitation technologies to communities is to fulfill most documented benefits of sanitation which may include improved health, dignity, productivity, improved environment etc. However these are not the meanings typically associated from the community's perspective. As mentioned earlier the link of sanitation and poor health did not come up many times in discussion with the respondents from the community. Health despite

being a problem in the rural areas was not associated with improper sanitation systems, even post intervention where in most projects a component of hygiene promotion and awareness existed. For the group of users the use of the latrine was still limited to their culture and norms and the benefits of the systems were also only seen in that perspective.

4.5.3 Users as a relevant social group

In the case of this study the relevant social groups with reference to the sanitation technologies were identified and have been separated from the institutions involved in the water and sanitation development process which will be explained in detail in the forthcoming chapters. Relevant social groups can be identified on the basis of their perception of the technology and are treated equally in the analysis of the technology (Bijker, 1984, Bijker, 2010), which should mean that each group has a similar meaning associated to the technologies in question.

The social groups that will be discussed in detail in the context of the study are the users or beneficiaries of the projects and the organizations that arrange the developments for the beneficiaries. In both cases the groups are composed of smaller sub groups that will be discussed further in each section. However in this chapter we will focus on the users as one of the most important social groups. The other social groups and institutions will be discussed in the forthcoming chapter in detail. It is interesting to understand the nature of the groups and their perceptions of the technologies. This will allow for better understanding of their relationships and the power structures between them in the context of the technology development taking place.

The users of the technology are an important group in the context of the study. Although not everyone at the user end can be grouped in a single category based on their meanings associated with the technology, the group of users can be said to be composed of several different sub groups which may be based on several factors, as described in earlier sections.

Although users in the case of this study are the beneficiaries of the projects, many respondents are actually not beneficiaries and did not receive any sanitation technologies in the hardware form. Since many of the projects studied did actually have software components targeting whole villages in awareness raising and hygiene promotion campaigns, all respondents are being considered as users or potential users of the technologies. This is important as in the case of

some of the approaches followed by the development organizations, the whole purpose of the development was for the project to have an effect on the others in the community so they would build their own latrines after seeing the beneficiaries receiving and using theirs. So their input and opinions of the sanitation systems equally matter even if they are currently not first hand users of the systems.

The group of users within each community is to some extent homogenous when talking about their culture and the norms. The difference however lies in their experience related to the technologies, their implementation or the development of the technologies in their settings. For this region men and women have to be separated on the basis of their experiences, since both experience the process of development of the technology differently and are governed by different social norms making the experience in general and in the use of the technology different.

Women generally aren't involved in the decision making process of the villages and most of the development activities of the villages have not been much different in this regard. Although there all NGOs and development practices usually try to involve women in the development process, their actual participation is usually limited. In many of the approaches women were trained separate from men on hygiene and other important sanitation related reinforcements. However the components of female participation are usually limited to trainings and they are not usually, and in many cases of the projects studied, involved in many of the important parts of the projects such as planning and decision making. These tasks, if done with community participation at all, are usually taken care of by the male members of the community. Many of the planning meetings took place in the communal 'hujra', where as per the norms of the region is off bounds for the women of the village or not commonly used by them. Although women are the primary caretakers of the maintenance of any such systems that would be created and are responsible for the maintenance and even small repairs (Nawab and Nyborg, 2009), their opinion on placement of the facilities or preferences remain absent in all projects. In certain cases it was the women of the village that were actually the beneficiaries of such projects, however even in the case where women were the prime beneficiaries of the project, they were not consulted on the design and the type of systems that were to be provided.

Interviewing women in the village was possible but mostly in the presence of a male member of the family. Many of the females did not complain about the lack of participation in most of the cases, however in some cases the female respondents that were not direct beneficiaries of the projects in terms of hardware facilities, had complained about the distribution and the selection of the beneficiaries. This seemed to be a common theme amongst the women respondents of several villages, in some instances women beneficiaries of the projects even admitted that the distribution of the facilities was not fair, however they weren't involved in the process in any case. In all cases the women of the villages also had no say in the selection of the beneficiaries. This task is usually done by the Village Development Committee (VDC) or the Community Based Organization (CBO), whichever exists in the village. These organizations are largely representations of the male part of the population and are not selected by, or to represent the female population. In some of the projects the local NGOs talked about the creation of female CBOs alongside the male CBOs, however they were seen to be largely inactive and did not have much of a role in the projects.

In some cases it may be very difficult to access the females in the community. According to an NGO worker it is not uncommon in certain areas for women to be completely inaccessible to the project team, in such scenarios they try to get the message across to women through men. There is no way however to assess how effective this method actually is. Furthermore this may not be a very reliable method of implementation for the software component of sanitation and may not have the intended results. Knowing the current structure in most of the villages in the area, the men may not be willing to convey any information to the females of their households or may not think it is necessary at all.

The most prominent sub-group of the users are the men of the community. They are prominent due to the fact that they have a larger role in the development of the sanitation technologies, however they are not considered more important than the other sub groups in any way. As opposed to the women of the villages selected the men played a role in the implementation process of the technologies. Whether the male members of the community were actually able to shape or change elements of the projects will be discussed in detail, however at minimum the male members of the community were more involved in the process than the female members of the community.

As mentioned before, the male members of the community usually make all the decisions. In the household all decisions are made by the head of the household, who is usually male (Nawab, 2006). In the village however, when communal decisions are to be made, it is the influential male members of the community that make most of the decisions for the communities. The influential people in the community usually are either the wealthy of the village or have political powers and connections. Village elders are also valued and the religious leaders of the village are also respected when communal decisions are made. Most of the community's decisions are made in the communal 'hujra' which is often referred to as an institution in its own right. Hujras in the village life play an important role, they are not just physical structures where people meet or entertain guests, they have a deeper cultural value in many regions of Pakistan. In many cases however, the 'hujras' may not be completely communal and may be owned by the rich family of the village. When meetings at the village level are held their hujras, they assume the role of the leader in such meetings and their opinions would be superior. This is perhaps why many of the village problems and issues are discussed in the hujra, it gives the owners of the hujra or the wealthy families a certain power over the rest of the village. The local NGO now are to some extent aware of this problem and try to avoid the village hujra for meetings with the community. However according to the local NGOs sometimes the influential people in the village try to make the NGO staff use their hujras in order to take credit for the development and make the community believe that they are responsible for the initiative. In such a case the local NGOs try to use a public place such as a school for such meetings. In the case of local NGO Saibaan, they had actually created a community center for the villagers as part of a vocational training project previously implemented in the villages of Basala and Garang. However according to Saibaan staff this is not always possible for shorter sanitation projects and mostly private hujras are used for planning and community consultation meetings. This however is used by the influential people of the village to exercise their power over the people in the village. Perhaps this is the reason why projects will not succeed without the backing of the religious leader or the mosque and the village influential or the hujra (Nawab and Esser, 2008).

Most male respondents that were interviewed did not really seem to have a problem with the sanitation systems that were being built as long as the NGO was financing the construction of the systems. In almost all cases, when male respondents were asked why they thought it was important to have a sanitation system if they did consider it important, the answer was usually

the same- they were of the opinion that it was difficult for the women of their households to go outside to defecate and therefore the toilet or sanitation system would be beneficial for the women of the household. This seemed to be the reason why many of the male respondents wanted a sanitation system. In many cases male respondents would say defecating in the open wasn't a problem for them since they were out of the house most of the time, in the fields or doing other work in the village and were able to as far away from the village as required, however this was not possible for the females of the village because of their culture. Many male respondents focused on this as the sole benefit of having a sanitation system, rather than making the important link to disease and health, which according to local NGOs is the basis of all their mobilization projects. However the link between disease and improper sanitation were missing in many cases as mentioned in earlier sections. In the case of the FGD with the village men in Meesuch and Naka Guldar, the head of the CBO admitted to telling people that they should defecate in their own agricultural lands as this makes the soil fertile and is good for the crops. In the case of this village even the members of the CBO did not seem to be convinced of the benefits of sanitation.

4.5.4 Community experiences

The community members may experience development differently depending on several socio-cultural factors. For example in the case of water and sanitation technologies and projects, the experiences are different for male and female members of the community or they may differ on the basis of the fact as to whether the community received any benefit from the development or not. However it is important to understand the experiences of the community during and or after the implementation of the project, since the projects are intended to benefit the society. Understanding the community's experiences can also help identify the challenges in the implementation and enable us to recommend changes that would better the process.

The experiences of different users also depend on the type of project being implemented, since each project had different outcomes and modes of delivery to the community. The specific approaches through which the technologies were brought to the communities will be discussed in the forthcoming chapter.

As mentioned the women of the villages are not usually involved in the projects, at least at the planning and discussion level. They may be part of the hygiene promotion and awareness raising drive though. Most of the women respondents that were interviewed were rather satisfied with the projects.

One common observation after several interviews was that for many of the community members, the compliance from their perspective was for reasons other than the project. In the case of villages Naka Guldar and Meesuch, most of the respondents reported pressure from the CBO in hoped that if the NGOs were satisfied with the progress they would help the community with other development issues. During the FGD many of the community members said they had tried their best to do what they were told, however the NGO has not fulfilled their promise of bringing help to the community. Some of the respondents from the village and the FDG said the NGO did not actually promise them, but led them to believe that if they all dug pits for latrines, other organizations would see their willingness to work and cooperate and would want to help them with their other needs of water, roads, electricity etc. However according to the people of the village the community is losing hope now and have not received anything from anyone as yet. It seems like the community was misled by the NGO and they really believed that they would receive a lot of help if they showed progress, yet nothing changed even after progress from the community's side.

The community's experience of complying with the guideline given by the NGO in the construction of pit latrines did not prove to be very practical and the community complained that they did not have the required support either. They were instructed to dig pits and build simple superstructures with old cloth bags and wood. However the village is situated on the top of a mountain, where it is extremely difficult to dig pits with a depth of five feet. Also materials are not readily available in the area due to limited access to the village. Locally available materials were used in certain cases to build the superstructures but they did not last because of the strong winds that blow across the mountains at night. So it seems that the solutions given to the community were not really suitable according to the local conditions and were not properly planned. Furthermore the social reinforcement that accompanies such approaches where no subsidy is given to the community did not seem to be effective at all. Many respondents were not really convinced that they needed latrines at all. This is an indication that one, the NGOs claims

that the community can be motivated for sanitation to an extent that there are no barriers to the creation of sanitation systems on their own without monetary support or subsidy (and in the case of these villages, technical support as well) is not valid, and secondly the technology in its entirety and all aspects, does affect the adoption, acceptance and behaviors by the community.

In the case of the approaches that were specifically designed to facilitate persons with disabilities, most of the beneficiaries of the projects did respond positively to the developments. In most of the cases the latrine were provided to people with severe disabilities of different natures, however in any case they all responded to have had difficulties in either using existing toilets and/or defecating in the open. The reason for the difference in opinion of persons with disabilities in relation to other people that do not have disabilities seems to be due to the fact that not having a sanitation system is a problem for disabled people, from their perspective. However for people without disabilities not having access to a sanitation system is not really a problem for them or at least they don't consider it to be a problem. In the case of the projects specially designed for PWD, they were given access to toilets that were already constructed or new toilets were built that were easily accessible. In certain cases some PWD respondents said what they needed the most at this stage was to have a wheel chair, as they couldn't afford to buy one. Although they were happy with the toilet, it still wasn't easy for them to get around without a wheel chair and in some cases needed assistance to be able to use the toilets as well. In these projects the implementing NGOs in collaboration with the CBO selected the beneficiaries and therefore no irregularity was reported by the community in this case. Since the project was only meant for people with disabilities, it was not accompanied by a village wide hygiene promotion and awareness raising campaign. This was became evident when the members of the CBO voiced their opinions on the project and the need for sanitation in general saying, the project was good and was necessary for PWD but for the rest of the community open defecation is not a big problem and a matter of concern. This opinion as mentioned earlier is not uncommon in the region.

In the villages where post disaster projects brought sanitation systems to the communities, the experiences were somewhat different. Many of the respondent in the village were not quite satisfied with the quality of materials given to build toilets in the post disaster context. Although they were used by a large part of the community, they did not last long enough and the toilet

pans had to be discarded after a few years. In the meantime other projects were initiated by different organization in the area and the community was given new toilets, which were better in quality and are being used to date. However even in the post disaster contexts, there were reports of people selling off the materials provided to them to construct the latrine and several of the respondents reported that the materials given weren't sufficient to build a latrine and only people that could afford the additional materials required to install the latrines had actually done it. According to the respondents the materials were sold off to buy other items that were a priority for certain poor families. For the poor families that cannot even afford, sanitation is not a priority at all. Despite the claims of NGOs that most people can afford sanitation systems for themselves and that they just need to be motivated, many people claim that they cannot even afford the basic necessities of life. This was particularly true for many families in the aftermath of the earthquake of 2005, where many families suffered from great losses to lives, property and livelihood. In the FGD with the village committee of Paras, I was told that the whole culture changes after the earthquake and it was like a revolution, but not always in a positive way. In many regards the respondents seemed to negatively associate the development that took place in the aftermath of the earthquake. They felt that the development process and choices ruined the culture of the village. People were given aid to build their own houses, so each family had to build their own house which according to the respondents changed the family centric culture of the joint family to the separation of families. Members of the CBO also did not agree with the development policy where everyone was treated equally and received equal amounts of compensation, regardless of their previous status in the village and the amounts of loss. Since most of the CBO members are from the wealthy families, they were not happy about that fact that in the post disaster scenario, the gap between the rich and the poor of the village was actually narrowed down. With reference to the water and sanitation systems one of the main concerns of the community was that the NGOs emphasized hygiene in all products, yet they did not create enabling environments to practice good hygiene. Toilets were provided by the NGOs without any hand washing facilities, which made it quite unlikely to be able to maintain hygienic conditions since many of the usual water supply systems were disrupted due to the disaster. Many respondents from the community complained that using water to maintain hygiene was very difficult in the winters, as the temperatures drop below the freezing point, the water is too cold to use it for handwashing or for other hygienic purposes. Unavailability of water either by

quantity or due to the fact that it cannot be used for reasons such as the cold, may lead to a higher incidence of disease. Lack of water and hygiene have also been linked to blindness by Trachoma (Carincross, 1999), which is prevalent in many dry or cold areas of Pakistan. For communities to actually be able to be hygienic, along with hygiene promotion and education, enabling conditions need to be created.

In the case of other projects such as in villages Garang and Basala, where the communities were given five latrines each, the experiences of the community were somewhat different. The beneficiaries of the latrines were meant to be people with disabilities that belonged to poor families. In some cases the latrines were actually given to people with disabilities, however in most of the cases the latrines were not designed with disabled people in mind as was in the case in the project in villages Ahaal and Kappar Dho. The selection criteria was set to benefit poor disabled people, yet the technologies were not modified in any which way to support their use by the targeted beneficiaries. This was one of the grievances that came forward from the community. In certain cases some of the beneficiaries were not at all happy with the construction, the technology itself and the support offered by the NGO and the CBO as well. The families were not given any alternatives in terms of the designs of the toilets, which would render them usable by disabled people and instead every beneficiary was given all the materials required to construct a simple pour flush latrine with a squat pan that would be normally used in the village. Furthermore in certain cases where the CBO did assist in the construction of the latrines, the placement of the toilets was not very accessible and convenient for PWDs. For a household with two crippled children the latrine was constructed on the roof of the house, which meant that the mother had to carry her children up a flight of stairs each time they needed to use the toilet. The mother said it is not much of a problem at this stage as the children are quite young, yet she agrees that it may be difficult to carry the children after a few years. In another case the toilet for PWD was constructed almost 50 meters away from the home, where two members of the family could hardly walk. This particular family was not at all happy with the project, and said the latrine would be useless for them as they weren't asked for their preferences before they received the materials for construction. This also shows that there was not much monitoring during the implementation and construction phase from the implementing NGO. I would like to assume that if there had been, the problems that were reported could have been avoided.

Many of the respondents that didn't receive a sanitation system in the village complained about the distribution of the limited toilets. This was also observed during interviews with the beneficiaries and during the FGD with the community and the CBO. It seems that there was some element of nepotism and favoritism in the case of the distribution of the latrines. In justification the head of the CBO of Basala told me one beneficiary was selected from each neighborhood (group of 5-10 houses) of the village. However the households that received the systems did not seem to be the most deserving households in the neighborhood.

Chapter 5

Implementation

This chapter relates to the implementation of water and sanitation technologies in the field areas that were observed during the field research. The implementation process is important to understand the whole water and sanitation scenario in the country generally and specifically related to the cases in the area of study. Therefore I believe this chapter will contextualize the water and sanitation sector and will help readers to understand the processes starting from the institutions involved in the process, the processes of funding and project implementation and the sanitation policy and its creation.

This chapter will shed light on observations that were brought forward in the previous chapter in the light of the technology options and outcomes of projects, the institutions responsible for their development, the actual processes of implementation and the policy and regulations related to sanitation in Pakistan.

5.1 Institutional Framework

The WASH sector in Pakistan is quite complicated owing to a plethora of different institutions involved in sector. Pakistan still being a developed country and being a South country in the global North-South context still receives much foreign aid from different donors and countries for development. With the donations and aid come a variety of organizations to organize, implement and monitor the distribution and dissemination. The following is an account of the main institutions working in the WASH sector of Pakistan in relation to their general functioning and role in the implementation of WASH projects at different levels.

5.1.1 Government Bodies

Changes in governments and laws over the last decade and a half have caused responsibilities related to water and sanitation to often shift in accordance with amendments in the constitution,

although in some cases these changes have not yet been implemented. For this reason, responsibilities on record may fall on bodies that have not in practice yet taken up these responsibilities. The Pakistan country sanitation paper presented in the South Asian Conference on Sanitation (SACOSAN)-V describes a comprehensive overview of the Government structure related to WASH. The former Ministry of Environment (MOE), currently known as the Ministry of Climate Change since the 2010 (effective July, 2011) enactment of the 18th constitutional amendment devolving powers from the federation to the provinces, was responsible for the creation of the Environmental Policy of (2005), the Sanitation policy of (2006) and the Drinking water policy of (2009) and was responsible for all development in the WASH sector in the country. After the devolution of the power to the provinces however, the federal Ministry for Climate Change was only responsible for the coordination of WASH efforts at the provincial level.

The responsibility of WASH activities was further delegated to the local government's Tehsil Municipal Administrations (TMA) according to the Local Government Ordinance from 2001 and the Local Government Act of 2013, after which the TMAs were responsible for all project implementation in the WASH sector at the Tehsil (district level). Previously the WASH sector was also a government mandate but was operated under provincial governments rather than local governments through city Development Authorities and Water and Sanitation Agencies (WASA) in cities and PHED in the rural areas, whereas now after the ordinances the responsibility lies with the tehsils or in certain cases districts (both tiers of local government) (Martin et. al, 2006; Cyan, 2004). Many of the institutions now responsible for the implementation of WASH at the local government levels have not fully taken up this responsibility. Furthermore concerns related to the ability, capacity, transparency and accountability of these bodies have been expressed in relation to WASH services and responsibilities in their jurisdictions (Fisher and Sansom, 2006).

According to (Ahmad et al, 2005) the most common reasons for devolution of social services are the failure of the central government in its responsibilities related to social services such as water and sanitation and improvements in their effectiveness. In the context of Pakistan the purpose of the devolution was to improve social services by bringing decision making closer to the communities involved however according to reports the process of devolution was quite haphazard and was not well structured. All provinces followed a different process of devolution

of the PHED despite having a similar structure before the devolution and the same stipulations for devolution across all provinces resulting in different situations with reference to retention of control at the provincial level (Cyan, 2004). In NWFP (now KP) the PHED was first unsuccessfully devolved to the District level instead of the TMA level and then was transferred to the Division level, which is controlled directly by the provincial Government (ibid.).

The Planning Commission of Pakistan, another body working under the umbrella of the Ministry of Planning, Development and reform, work in close coordination with other ministries and provincial governments on larger projects. In fact the Planning Commission is responsible for the approval and monitoring of all projects with a total budget of more than 1 million dollars.

In 2004 the National Coordination Committee on Water and Sanitation (NCCWS) was created by the federal Government for the coordination of all WASH related activities and projects in the country. The committee was chaired by the federal secretary of environment from the MoE and included not only members of the government and ministry but also private sector as well as the development sectors (Martin et. al, 2006). The main purpose of the committee was to review policies and create standards and recommendations in the area of water and sanitation and to bring together different sectors from the public as well as private sector to have better coordination for projects related to water and sanitation and also to devise strategies and policies within the sector to meet the MDGs (ibid.).

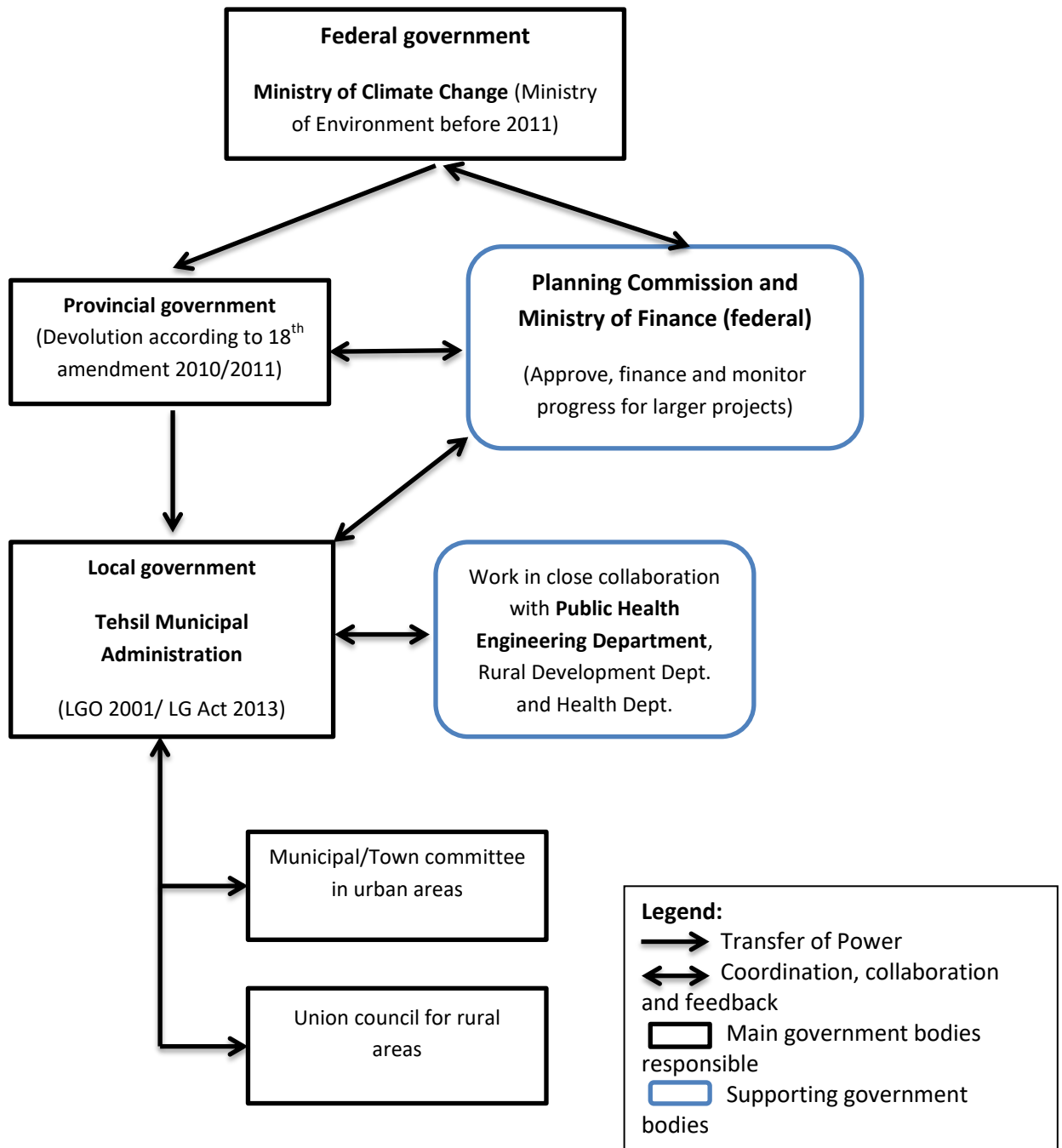


Figure 5.1 Government Structure in the WASH sector

During an interview with a WASH coordinator from one UN organization in Pakistan, problems related to the 18th amendment and the resulting government structure was highlighted. According to the interviewee “one of the biggest issues in Pakistan is the unreliable structure of the Government, especially after the 18th amendment”. After the 18th amendment some changes were made to facilitate projects but there were also several subsequent projects. The interviewee explained how in KPK before an NGO can start a project they must obtain a Non-Objection Certificate (NOC)* from the Government and the Army that they are clear to carry out the project in the area. An application form must be filled out along with an extensive description of the project and then must be submitted to the relevant government office for approval, which take may sever weeks. This could be a big problem since many of the projects are usually short term projects and even if the projects are longer typically an NOC is only approved for up to 90 days. The application and decision process can sometimes take from 4 to 6 weeks and is usually issued at a back date. Therefore when we apply for an NOC for a three months project, we usually only get to actually work on the project in the field for two months or less, which in most cases is really not enough. Since the duration the NOC is granted for is quite short a lot of work has to go into the project before the NOC can be applied and in the case that the NOC is rejected this results in a lot of wasted time and problems with the donors, as it is hard to explain why there are delays and how the systems functions. In the opinion of the respondent, this also causes some frustration amongst the donors and may even discourage them from funding future projects in these areas. According to the respondent, National Rural Support Programme (NRSP) was granted 2 million PKR for a project was unable to get an NOC, which is causing a lot of wastage of valuable development money that could be used for development.

The National Disaster Management Authority (NDMA) lists all the projects that have been issued within NOC on their website and the duration of the NOC issued. Looking at the 30 most recent NOC’s issues for WASH projects (some also having other components as well), the average duration the NOC were issued for was found to be just over three months, which for a WASH project is quite short.

* Application form for the NOC for I/NGO in Annex I

It was also learned through an interview with a WASH coordinator of an INGO that after the 2010 floods, WASH was set as the 7th priority for funding and projects for the international donors, which means it was not a top priority. Donations earmarked for a particular sector are based on the sectors priority ranking by the government. This changed after the 2011 floods, for several reasons such as widespread cholera epidemics, severe diarrheal and the spread of Polio in the country, the government placed WASH as the 4th priority for donors. This however did not change the status of WASH projects and donations earmarked for the sector, as it was no longer a priority area for the donors, since they had lost interest due to its previously low priority status.

During my interview with the WASH project head from Saibaan, a local NGO in District Mansehra that is responsible for the implementation of the WASH project in my study area, I learned that the government may play an important role in the implementation of projects from the NGO sector as well. I was told that during Saibaan's implementation in a WASH project with schools and hospitals in Chitral (city in the Northern Areas of Pakistan), the government played a vital role and a good liaison with the local government was built which led to the success of the project whereas in District Mansehra the government has not been supportive in any way. For this reason the government in district Mansehra in its role in the sector was referred to as a "hindrance" to the development work done by NGO in the sector because of their attitude and lack of interest like most other government bodies in Pakistan. Recently it has been more of a hindrance than support, as we are constantly being monitored by different government and security agencies in Pakistan, especially after the introduction of the NGO bill in Pakistan. The NGO's are constantly monitored and the other security agencies which include the Intelligence Bureau (IB), Inter-Services Intelligence (ISI) and the police are constantly directing us as to which projects we should take and which areas we can chose for implementation and which not.

From the community's perspective the general perception of the government was that they were not really concerned about rural development and the rural areas in general. Many respondents from the villages felt that the government wasn't doing enough and that they had to rely on NGO for basic developments and services such as roads and WASH facilities. Meesuch and Naka Guladar are fed by a government water scheme that had not been working for a long time now. Many of the responds from the village there is a government employed lineman, who is responsible for the operation and the maintenance of the water supply scheme but no one has

seen him around for a year now. The village council was interested in getting water and also approached the TMA to discuss the water issues. The TMA sent an NGO rather than taking interest in the matter themselves. Similarly in Basala I was told that the road to the village was damaged after the earthquake and despite several requests and attempt to get the local government to repair the road, nothing had been done for almost ten years. Finally an NGO was able to build a new road for the village. Most of the respondents in the communities had the same opinion of the government agencies, saying that they are mostly ineffective and inefficient in their work.

According to the head of an NGO working on WASH and other social services in District Mansehra, projects should be handed over to the local Governments after sometime for the long term maintenance and upkeep. However according to the respondent the local TMA's are not at all interested in such projects and generally like other government bodies do much work at all, that is the reason why none of the public water filters that have been installed anywhere in the district or any of the public latrines work any longer. This point of view has also been the consensus from most of the NGOs. The NGO sector uses these claims to legitimize their dominant role in the development sector in general. Many of the respondents from the NGO groups also said they don't have faith in the government in terms of development and providing social services and in many cases also cause hindrance to the work of NGOs.

5.1.2 Donors

A large part of all development works in Pakistan is funded by international donors through various channels of foreign aid and donations. As mentioned earlier, governments in third world countries are not seen by international donors and other developed countries as being able to effectively bring social services to its citizens and are often thought to be corrupt and simply inefficient.

The following provides an overview of the largest donors in Pakistan.

Donors	Thematic Areas	Total Budget/ Period	Geographical Area
Asian Development Bank (ADB)	1. Investment and reforms in energy and infrastructure	\$2,180 2013-2014	Nation-wide

	<ul style="list-style-type: none"> 2. Reforms to strengthen governance and promote structural transformation 3. Development of urban services 4. Effective implementation of projects and programs and capacity building 		
Australian Agency for International Development (AusAID)	<ul style="list-style-type: none"> 1. Education and health 2. Humanitarian and disaster preparedness and response 3. Economic development 4. Governance 5. General development support 	\$92.1 2013-2014	Nation-wide specifically under privileged and remote areas
Department of Foreign Affairs, Trade and Development (DFATD), Canada	<ul style="list-style-type: none"> 1. Protecting children and youth 2. Sustainable economic growth 3. Governance 	CDN\$ 62.97 April 2012 to March 2013	Nation-wide
UK Department for International Development (DfID)	<ul style="list-style-type: none"> 1. Building peace and stability 2. Making democracy work 3. Promoting macroeconomic stability, growth and jobs 4. Effective delivery of public services 	\$432.82 2013-2014	Nation-wide
The Netherlands (Dutch)	<ul style="list-style-type: none"> 1. Human security, rule of law and human rights 2. Promotion of trade and investment under the slogan: from aid to trade 	\$62.26 2012	Malakand Division in KP
European Union (EU)	<ul style="list-style-type: none"> 1. Livelihood 2. Formal & vocational education 	\$544.50 2007-2013	Nation-wide especially areas affected by natural and manmade disasters
Germany	<ul style="list-style-type: none"> 1. Governance 2. Energy 3. Education/vocational training 4. Health 	906.94 2009-2014	Nation-wide with a focus on KP & FATA
Japan International	<ul style="list-style-type: none"> 1. Ensuring human security and 	18,927	Nation-wide

Cooperation Agency (JICA)	human development 2. Development of sound market economy 3. Achievement of balanced regional socio-economic development	2011	specifically neglected Areas
Norway	1. Fight poverty and bring about social justice 2. Governance 3. Education 4. Rural development, women and gender equality and human rights 5. Culture, peace and reconciliation, disaster prevention and preparedness	\$16.38 2013	Nation-wide specifically neglected Areas
Swiss Development Cooperation (SDC)	1. Promotion of micro enterprises through finance and vocational education 2. Support to sustainable practices regarding the use of natural resources. 3. Promotion of human rights and education, specifically the education of women and girls	\$16.24 Annual	Nation-wide with a focus on KP, FATA and Northern areas
US Agency for International Development (USAID)	1. Increasing the capacity and efficiency of power and energy sector 2. Fostering private sector-led economic growth and agriculture 3. Supporting stabilization efforts in regions susceptible to activity by violent extremists, particularly on the border with Afghanistan 4. Increasing access to and the quality of education 5. Health care	\$3,827.30 2009-2013	Nation-wide especially underrepresented geographic areas, like Balochistan, the Northern Areas, Gilgit-Baltistan and AJK
The World Bank	1. Economic governance 2. Human development and social protection 3. Infrastructure to support growth	\$4140 2012-14	Nation-wide (including Khyber PakhtunKhwa,

4. Security and reducing the risk of conflict	FATA and Balochistan)
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Table 5.1 List of the largest donors in Pakistan along with their thematic focus areas, budget and geographical areas of projects. Reprinted (with modifications) from the UN report “Pakistan Donor Profile and Mapping”, 2004.

Traditionally most of the aid comes from the Organization for Economic Co-operation and Development’s (OECD) Development Assistance Committee (DAC) member states. There are 30 DAC states that are approved by the OECD as donor countries based on fixed criteria to be able to donate to other countries. Several non DAC countries, such as China, India, Brazil, United Arab Emirates (UAE), Saudi Arabia and Russia amongst others have in recent years emerged as large aid donors to third world countries as well. Most of the aid in Pakistan comes primarily from DAC countries, yet several large scale development projects in Pakistan such as the China Pak Economic Corridor (CPEC) and other energy based power plant projects have been taken up by China and may potentially become one of the biggest donors for economic development in Pakistan.

It is quite well known that most aid from the DAC countries is bound by conditionality in terms of policy and governance reform, which may even include specific mandatory changes to government and policy (Bräutigam, 2011, Dreher et al. 2011, Kilama, 2016). This may not be the case in non DAC countries, instead in most cases the aid from non DAC countries comes with trade agreements rather than binding reforms (Kilama, 2016). The restrictions and conditions may be for several reasons, in the case of structural, governmental and policy reforms, it may be perceived by the donor country as necessary for the aid to be effective (Dreher et al. 2011).

According to an OECD report only 0.8 percent of total aid was allocated to the sector of water and sanitation in 2005 which amounted to about 5 Billion USD in 2005-2006, this increased to about 10 Billion in 2012 (OECD, 2008; OECD, 2012) after the floods of 2010 and 2011.

Apart from tied aid there other forms of conditionality are associated with donor funded projects and development in general. In the WASH sector this seems to be somewhat prevalent. Many WASH projects are directly funded by donors and are not part of large development aid to the

country's government. Most of the aid that the government receives and is earmarked for the sector is disseminated through UN agencies which have taken up an important role in this regard, and to a lesser extent through government channels. In an interview with the WASH coordinator of a local NGO I was told that the UN agencies play a big role in many of the important development sectors of Pakistan such as Polio and WASH. Most of the investments and the coordination done in these sectors are done by UN agencies and therefore they are responsible for a lot of the planning, coordination and decision making of these projects and have a great influence on the government and its sector policies. This was also perhaps why the PATS was also adopted as a central approach for the whole WASH sector- since the UN was and is pushing for each country to meet the MDGs. The MDGs were one of the most important agendas of the UN up to 2015 and therefore concrete steps were taken to influence governmental policies in ways that would favor their realization and achievement. This appears to be the case in the WASH sector in Pakistan, as the initial Sanitation Policy heavily emphasized the Total Sanitation model and later the PATS was created as a brain child of the UN in Pakistan with the collaboration of the government. A senior WASH specialist at UNICEF claimed that PATS was 'their approach' and was created in collaboration with the government to achieve fast results in the lacking sector of sanitation in Pakistan.

In the case of WASH projects where projects are funded directly by donors, they tend to be much more involved in the whole process. An example is the Norwegian Church Aid, which operates in Pakistan as an INGO but most of the development work they do is through or in collaboration with local NGO's. They receive funding from the Norwegian church and other Norwegian charitable bodies and then take up projects in Pakistan to be implemented through local organizations. So although such organizations are operating as INGOs they are actually playing the role of donors in Pakistan and for the local NGOs. In other words their responsibility as the middle organization is to not only ensure proper utilization of the funds and implementation of the projects but also to make sure the donor expectations are met during the process. This could potentially be a source of contention between the donor and the implementers of the project, and came up during discussions with many of the local as well as some of the international NGOs. According to a WASH officer at Human Resource Development Society (HRDS) "Sometimes the donors have their own objectives that they have to fulfill and sometimes it becomes difficult for us to meet this donor driven objectives dues to socio cultural issues. Sometimes when we try

to push these things, it backfires and may cause the project to fail. Sometimes the donor's requirements don't really make sense and are based on their policies, but are not actual issues in reality. In this case we try to negotiate with the donors to do things a bit differently”

During an interview with a WASH coordinator at NCA I also learned that there are many pressures on the ‘middle man’ INGOs from the donors. I refer to such organizations as they play the role of a ‘middle man’ between the donors and the local partners (usually NGOs) in the development sector. According to the interviewee the donors dictate what kind of projects are to be done by the organization and which thematic areas they should focus on which result in donor driven projects. Furthermore some donors have very strict restrictions such as gender inclusion, yet others are not bothered about particular issues and only want tangible outputs. This can sometimes be problematic for the organization as the donors demands may be conflicting with the vision and mission of the organization which may be a central part of their ideology, in such cases the interviewee further discusses that the donors want them to ignore things that are important to the organization only and cater only to the donor's expectations. The organization may want to include components of Disaster Risk Reduction (DRR) or climate change, but the donors may not care about these aspects at all and usually only look for tangible results. It is difficult to have to ensure that the donor's visions and priorities are considered along with the organization's own ideologies, this complicates matter for all especially for the implementing partners. The interviewee explains how if the donors would try to be more in line with the vision of the organizations it would be a lot less complicated for everyone involved and the results of the projects could be a lot better, however in some cases they are flexible to some extent but mostly that's not the case.

According to another interview with a WASH project manager I learned that international donors expect a lot from the I/NGOs and sometimes their expectations are not based on what exists and are the norms in the countries where the implementation is to take place but on where the donors are situated (which in most cases is developed west countries or the global North). Again the interview points out that the donors often have their own priorities as well as ideas of what projects should consist of and what technologies are currently the best. This superiority of ideas doesn't allow the organizations to make good use of the indigenous knowledge that exists

amongst the communities and beneficiaries and the local knowledge of the organization working there. The donor organization may also have their own policies, which may be fine in certain contexts but may also make implementation for the organizations a bit cumbersome or even according to the interviewee impossible. The example of gender inclusion was once again quoted; this is an issue that is seemingly very important for certain donors and also certain organizations. As an example the respondent discusses the implementation of a donor funded project with the requirement of gender inclusion in the Federally Administered Tribal Area (FATA), where female NGO staff can't work. In such a case gender inclusion would be totally impossible for the organization, which could potentially lead to mistrust between the organization and the donors. It's really difficult when we have to work with three sets of policies, this may be especially challenging for the IPs. In many cases the donors also want the IP to promote their name and openly announce to the beneficiaries who the donors are. In some communities this may not be a problem, but in the more conservative communities promoting and displaying the name of a donor organization such as USAid would not be feasible because of the mistrust of the society and the skepticism associated with the US and their aid. According to the interview this is because of the role the US has played in the geo-political situation in the past and also because of the current drone attacks taking place quite frequently in the tribal areas of Pakistan. Generally the in the more conservative areas of Pakistan (such as KP and FATA) people feel that most development projects from donors have ulterior motives and therefore do not really trust these organizations.

During an interview with a WASH coordinator from a UN organization, I was told that most donors have changed their strategy now and they focus more on advocacy and the social aspects of WASH rather than technical projects where actual WASH facilities were created for the beneficiaries. Perhaps this is the case with the UN projects, as most of the other respondents did not mention projects which only promote the soft component. As previously UN created PATS with the government which promotes awareness surrounding sanitation without any actual subsidies and therefore it seems like this approach is limited to the UN and is not really a requirement of the donors. I was also told by the interviewee that the donors do have preferences for many variables in the projects from the technical options (when there is a project which involves hard components) to the selection of the area where the project is to be implemented. Some donors prefer easily accessible areas where they can visit the project site and monitor the

progress whereas others would like their projects to be in more inaccessible areas and in that case would opt for third part evaluations. In most cases, since the donors want a physical presence at the site of implementation (whether for monitoring purposes or to promote themselves as donors) they chose areas which are competitively easier to access, thus leaving out some of the more underdeveloped areas in the country.

Donors at time are also divided on the basis of the technologies they support and the budget they allocate to different technologies, which may be quite variable. On the other hand when they advertise calls for projects a lot of the donors will reduce the amount of money the has been demanded for certain projects by the IPs from the proposals and will force them to do the same amount of work in less money. This as well indicates that there is some mistrust between the donors and the IPs.

Many of the local NGO respondents mentioned issues with the time duration restrictions from the donors. The donors usually do not want to fund long term projects and the usual duration for projects in the water and sanitation sector can be as short as three months. This according to many of the NGO's is a really short time to actually achieve something meaningful and lasting, even if it's only for awareness or advocacy and does not involve any physical construction of any sort at all. Some of the WASH coordinators from local NGOs also mentioned that even when projects are approved they take a very long time to release the funds causing delays in implementation and therefore valuable time that should be spent in the field at the initial stages collecting data or doing surveys cannot be done at the later stage and everything has to be rushed. According to the local implementing partners/NGO there are several reasons why the donors prefer shorter projects. First of all they are easier to manage and transparency can be ensured. Another factor is that longer projects will run higher overhead costs (such as staff salaries) or the costs that will not directly benefit the communities they are intended for. Furthermore the shorter the project the easier it is for the donors to implement. In my interview with the head WASH officer at UNICEF I was told that the maximum duration of a project that UNICEF can fund is for eleven months, which is not based on the optimal time for any projects or achieving good results but on ensuring transparency of funds. Another expiation by some was

that donors are sometimes only concerned with short term outcomes and therefore do not want to be engaged for longer periods of time.

However the one thing that seemed to be in common after interviewing several local and international NGOs and also some donor organizations was the fact that the donor organizations do not really trust the IPs and therefore have several restrictions placed on them for accountability. These restrictions however sometime may even be a hindrance to the proper implementation of the project and the realization of the goals of the projects.

5.1.3 Non-Governmental Organizations (NGOs)

NGOs are not new to the developing world and have become a familiar term in relation to development and devoting countries. Since the 1970s NGOs have stepped in the world of development to carry out various development projects that would traditionally be the responsibility of governments and since have become the preferred organizations to carry out development work and service provision especially where government are considered to be incapable to do so or are perceived to be corrupt and inefficient (Chabal and Daloz, 1999; Eade, 2000; Ferguson, 2006). NGOs have now taken the responsibility of social service provision and development in collaboration with and sometimes in place of local governments, their large presence in international development, the amount of funding available and their range of activities are all bear testament to their importance (Besley and Ghatak, 2017). However lately there has been much debate on their effectiveness in bringing about meaningful change in the development discourse. Questions of efficacy and the ability of NGOs to meet long term goals when development is now primarily dominated by short term outcomes are being raised (Banks et al. 2015).

There are several different types of NGOs in operation across the globe working on a wide variety issues. According to the OECD's Creditor Reporting System database of 2015, NGOs can be of several types. The first type is donor country based NGO which are based in the donor country or another developed country. The second type of NGOs are International NGOs which operate at the international level and may be affiliated to several donors and donor countries and

the third type of NGO are the developing country based NGO which operate and are based in a developing country. In the context of this study, NGOs are divided into two categories i.e. International and local NGOs.

There are many NGOs both International and local that are working in the WASH sector in Pakistan. Some of the main INGOs that focus on WASH in Pakistan are UN (mostly UNICEF and UNHCR), NCA, OXFAM (GB and DE), Save the Children, International Rescue Committee (IRC), Plan International and Water Aid among many others. Because of the high demand of INGOs for WASH projects at one time in Pakistan many of the local NGOs now have a WASH section or at least claim to have competencies in WASH. Some of the main local organizations that are working in WASH in the North of the country and are particularly active in the region of the study area are Saibaan, National/Inter Rural Support Programme (N/I RSP), Sungi Foundation, Alkhidmat Foundation, Aga Khan Rural Support Programme (AKRSP) among numerous others.

The following section is based on interviews conducted with INGO, local NGO and the communities on the role of the different NGOs in the process of implementation of WASH technologies and projects.

This may not be standard practice amongst the NGOs but may prefer to start with the creation of local institutions, such as Community Based Organizations (CBOs) and Village Development Organizations (VDOs) before any development can take place. Building local institutions and the capacities of local communities is usually an important agenda of many NGOs (Morgan, 2016). I was told that some of the local NGOs have ‘community leadership management packages’ which are used for the institutionalization of village bodies that will assist in the development process. Basic training of bookkeeping, records, finance management are given as part of the package. This training may also include specific training related to the projects, so in the case of WASH projects they will be given basic WASH training. These institutions will be responsible for the systems and the development after the NGO has left and therefore they are very important to the success of the projects. The NGOs also try to create linkages with the CBOs and the

TMAAs so they can work in collaboration. However several issues with the whole process of the creation of the CBOs will be discussed further in later sections of the thesis.

In relation to WASH some of the NGOs feel that it is not yet a priority with many of the communities. Rural communities have different priorities and in general water is much more important for them. Many representatives from NGOs working in the WASH sector reported that this is always a problem in communities where they don't have many other basic services. It becomes exceedingly difficult for NGOs to approach communities with projects that sensitize communities to build latrines or even build latrines for them when they don't have access to many other essential services such as potable water, health care, education, communication etc. which may be a priority for these communities. In such a case the NGO can go ahead and implement the project but it becomes exceedingly difficult for them to expect a good outcome in such a case, especially in cases where the NGOs are targeting for behavior change in the communities. How can they bring about behavior change when something is not important for the community and they don't prioritize it? The NGOs claim that they try their best to sensitize communities and to try to create a need for improved sanitation amongst communities and to make them feel that this is and should be their top priority, but they may not success in doing so. However projects are far more likely to fail if they are implemented just because the NGO has competencies in WASH and funding for a WASH project is available. This problem may be compounded by the fact that a lot of the people in charge of WASH at the NGO level are WASH engineers, I was told that many of the WASH engineers working in such projects don't even visit the area where the implementation is to take place and plan their projects from their offices thinking they have knowledge of the area and the community. This can be very problematic, according to the respondent, as not all areas and communities are the same and to provide sanitation systems that communities perceive not to need and further systems that were planned without the collaboration of the community can be the recipe for total disaster.

Many of the local NGOs seem to blame the donors for their planning, strategies and expectations related to the implementation of projects. According to respondents from the local NGOs, donors are mostly only interested in the output of the project. Outputs are the immediate results of the project, for example number of toilets or hand pumps constructed or number of people trained

etc. depending on the nature of the project. The outputs are intended to have mid-term outcomes and long term impacts. Most donors are usually only concerned with the outcomes and that the expected deliverables according to the project proposal and plan were delivered. If the NGOs are not bound to deliver outcomes and impacts then they do not have the will and resources to do that on their own. This according to the wash coordinator of a local NGO is one of the biggest problems at the moment, as NGOs don't even strive to achieve long term goals when they are not bound to do so by the donors and when they are completely fulfilling their commitments by simply implementing the projects. When such projects are evaluated after several years there may be no impact visible at all because this was not planned for and therefore cannot easily be achieved.

According to an interview with an INGO which provide funding to local NGOs for projects I was told that several conflicts may arise during the course of the project, which are usually caused by the corruption from the NGO side. The NGOs often try to hire contractors for kickbacks, which are not necessarily the best contractors for the type of work. This generally would lead to the poor quality services or technologies, which becomes apparent during monitoring. When the monitoring process takes place during the actual implementation phase of the project rather than the conventional end-term monitoring the INGO may advise the IP to change the contractors. This may lead to several conflicts or problems between the INGO, the IP and the contractors. The whole process is then time consuming and valuable time that should be spent on the implementation of the project may be lost and can even in some circumstances lead to project failure. Furthermore the INGOs believe that the local NGOs are now very 'commercialized' and although they act as non-profit organizations, they are running NGOs like a business and take a lot of money in the name of operational costs. Therefore most of the INGOs don't trust the local NGOs and try to keep them on a very short leash in order to ensure transparency. To tackle this problem, INGOs now prefer to fund projects taken up by a consortium of local organizations which is a new strategy adopted by INGO to improve efficiency and accountability amongst the local IPs.

During interviews with the many NGOs that were interviewed I learned that there are many NGOs working in Pakistan at the moment and there is a large competition for projects. The

problem with this extent of competition is that there are always NGOs willing to take larger projects with a lower budget which ultimately is affecting the quality of work done in general by NGOs. It's therefore difficult to secure projects for the NGOs and to remain competitive they always have to lower their costs to a minimum.

Many of the International Organizations seemed to prefer smaller IP or local NGOs for implementation of the projects. According to the INGOs the smaller the organization the more responsible they are and the better the organization will be managed. When these local NGOs become too large and have several field offices in different locations, sometimes the management and internal policies are not strong enough to support such a large structure which gives way to corruption and misappropriation of funds. According to the INGOs, most of the corruption at the local NGO level takes place in smaller field offices that are not well managed and monitored. On the other hand the local NGOs feel that they need to grow as organizations in size, in geographical outreach and in thematic areas of implementation to be able to get more projects from different donors and INGOs. So it becomes harder for them to grow and keep a good reputation amongst the INGOs, since most of the projects given to the local NGOs are on the basis of their reputation amongst the WASH community and WASH cluster.

NGOs in Pakistan are usually not able to apply for funding for pilot projects and neither can the INGOs use the funding they get from donors on pilot projects. This means that all the projects that are implemented in the field have to be tested through actual projects and that's why according to respondents from INGOs there are the same projects being repeated and replicated without trying new styles or implementation or without any innovation.

INGOs working as donor organizations may push their own policies at the local government level or on beneficiaries, which may not be desired by the communities or local governments at all (Cook et. al. 2017).

5.1.4 Community Based Organizations (CBO)

CBOs are sometimes also referred to as Village Development Organizations/Committee (VDO/C) especially by the local NGOs. In many cases CBOs may be non-profit organizations

formed from within the community to facilitate community based development to achieve certain goals (Hussain et al, 2008) quite similar to NGOs. In the context of this study the concept of the CBO is the same, the only difference being the CBOs in this case did not form from an organic process initiated from within the community itself based on a need to do so, but were rather created by NGOs that were implementing projects in the area. The practice of creating VDOs for the implementation of development projects by NGOs in Pakistan was initiated by AKRSP in response to the global trend of participation and was soon followed by other organizations in an attempt to involve local communities in NGO led development and interventions (Israr et al, 2009). The logic behind the creation of the CBO or VDO is to create local institutions that will serve as an extension of the NGO in the village and will remain active after the end of the projects. The NGOs see these village committees as the key to the sustainability of their projects, since the VDO are presumed to remain intact and look after the project once the NGOs have left. These village organizations may strengthen enough over time to apply for projects on their own behalf based on the community needs and should in future be able to implement such projects as well. In the context of the current projects for which the CBOs are created, the role of the CBO is to represent the community in matters of decision making and ensure participation of the community where possible by bringing the concerns, needs and opinions of the community to the NGOs. They are also given small responsibilities in this context and are expected to be the key link between the NGO and the community. In many cases the CBOs will be responsible for the upkeep of the system or the continuation of the project after its end from the NGO's side.

According to the local NGOs before any development activities of the project can actually take place the formation of the CBO/VDO must take place. This may take a long time and does reduce the time available for the organization for the actually implementation of the project, but most of the respondents agreed that it was well worth the time and a must for every project. The process of selection and creation of the VDO may differ from NGO to NGO but in the end the purpose is usually the same. Many NGOs prefer to take projects in areas where other NGOs were previously working, as mostly in such a case there will be an existing CBO already. Even if they are not active at that particular time, they can be revived and the whole process of their formation does need not be repeated.

During Focus Group Discussions (FGD) with the VDO's of the villages, I was informed that the selection of most of the members of the VDO was made by the community themselves. This however, upon deeper investigation seemed to be true only in the case of some of the VDO members, more or less the members lower in the hierarchy of the VDO. In most cases the general structure of the VDO is similar and consists of a head (usually a figure head), a secretary and a treasurer which make up the main body of the VDO, along with 7-10 general members. The head and the secretary make most of the decisions in the VDO, which may also mean decisions on the behalf of the village for different projects. The general members are in most cases the elected part of the VDO whereas the others may be chosen. It was quite interesting to learn that the NGOs as well as the VDOs had similar views on the selection process of the top positions of the VDO. According to the NGOs the requirement for the chairman is that the person must be educated, since some basic reporting and other such tasks may be part of the job and that the person must be well respected in the community. Both the NGOs and the CBOs all mentioned that the higher positions must go to be people that have a say in village matters and that are respected amongst the rest of the community. Some of the NGO even reported that the members of the CBO were directly appointed by the NGO themselves and in such a case "people that are influential in the community and are well respected" are selected for the top positions. They were mostly of the opinion that the people in these position had to be worthy of their titles and needed to be respected in order for them to take decisions on behalf of the community and also guide the community. This would also be true in the case of a democratic process in the selection and appointment of the top positions of the VDO and would ensure that the majority of people from the community were willing to be led and represented by the selected members which would be fairer. Furthermore the current method of selection and appointment encourages power structures prevalent in villages and small communities to be emulated and to some extent enforced, by giving more powers over the community. In most villages power and respect are based on wealth and political power or affiliations, therefore the more wealthy families of the village are also usually the more powerful ones. In the case of the VDO formation it seems as these people make it to the top positions of the VDO. According to a local NGO to implement a project in the area the NGO must have a good relationship with the political leadership of the village for everything to go smoothly. The respondent from the local NGO went on to say "whenever we have to create a CBO we ensure that the influential people of the village are also

included, these are things that you have to do in a village, and without this it's difficult to create a harmonious environment".

One of the major responsibilities of the VDO is the selection of beneficiaries for the projects in the village. In most of the cases the NGOs do not have sufficient funds for one hundred percent coverage of facilities and therefore only selected houses will receive the benefits especially when the hardware component is concerned. So although they are supposed to be representing the communities, when the powerful of the village are given power to decide as to who the beneficiaries will, potential conflicts arise. During a FDG upon touching the subject of favoritism and the power structure of the community and VDO, a head of the VDO said "we always make the right choices and no one can contest our decisions". I personally felt that the head of the VDOs in many cases were not really aware of the details of the project and were presumably acting just as a figure head. However they all did seem to be the most influential people in the village in most cases. The secretaries on the other hand seemed to be more actively involved in the projects. This was confirmed during interviews with the NGOs.

According to Saibaan a local NGO in District Mansehra, alongside the traditional VDO that is comprised of male members only separate female VDOs were created in each village, as it is not possible to have female representation in the main VDO of the village. The female VDOs however seemed to be totally inactive and were not consulted while making most of the decisions that were made by the male VDO. Furthermore the female VDOs were also not assigned any roles and responsibilities in connection to the project with the exception of informing other females in the village of NGO visits etc. The male VDOs also admitted that the female VDO was not involved in many things pertaining to village development. According to Saibaan out of the 32 VDOs created (16 male and 16 female VDOs) in total in different villages, 16 have registered themselves with the social welfare department as a Citizen Community Board (CCB). Once registered as CCB the local VDO then becomes eligible to apply for funding and to initiate projects on the basis of community needs. After the Local Government Ordinance (LGO), it became mandatory for local governments to reserve up to a quarter of the total development budget for development projects through the CCBs on a component sharing basis (Anjum, 2005; Chohan, 2007). All of the registered CBOs in this case were male VDOs and none of the female VDOs created have registered themselves. However

according to the VDO that registered they were told to do so by the NGO themselves and was not based on their own initiative. This probably explains why, according to the NGO, none of the formed CBOs have to date received funding or applied for any kind of funding for any community development projects.

In the case of one of the CBOs that was formed by another NGO in the aftermath of the earthquake to speed up the development processes in affected rural communities, I was told by the former secretary of the CBO that he had applied for funding repeatedly from the government to build an irrigation canal which at the time was a pressing need for whole community. It took almost three years for him to finally receive the funding and then the canal was built. According to this former CBO member, it wasn't as simple as it seemed. The whole funding process was quite cumbersome and he had to use personal contacts to actually receive the funding. The implementation was far more challenging for the respondent as after the end of the project the community alleged him of corruption and embezzlement of development funds. This according to the respondent was very disheartening, since so much time and energy were spent on the whole project from obtaining funds to building the channel. After the bad experience the respondent said he never tried initiate such projects again.

5.2 The implementation process

The following section details the process of WASH technology implementation by the organizations with a focus on the processes of funding and model of implementation. This section also takes a closer look at the monitoring and evaluation process, which are key to understand the targets and goals of the development processes from the donor and NGO perspectives. Another important aspect of the process is the role of the CBO in the development process which has direct links to several aspects of the technologies in the community.

5.2.1 Funding

Many of the WASH projects in Pakistan are currently funded by international donors through a variety of organizations as well as through the government. The process of funding may vary from donor to donor and may also be different for different sectors and projects. Most funding

for WASH projects from international donors is disseminated via INGOs and is rarely ever directly given to the local NGOs for implementation.

The process may vary from one INGO to another but in most cases if funding is available to an INGO they may call for projects, which are for specific WASH projects and may be for certain areas. Local NGOs may respond to these calls with a concept note for a project, which will be forwarded to the international donors. According to NCA, the local NGOs are also given time to carry out a brief need assessment in the intended area of implementation before the concept note is to be submitted. Although the INGOs claim to give time to the local NGO for a need assessment before the concept note and detailed proposal is submitted, I was told by a local NGO WASH coordinator that it isn't always possible to do a need assessment at that stage and may be done later after the project approval. This is quite interesting as it seems to be a requirement from the INGO and is it intended to assist in the designing of the projects based on the community's needs, yet sometimes the whole project is planned and even approved from the donors and INGOS without any need assessment at all. If the donor is satisfied with the concept of the project the INGO in collaboration with the local NGO will create a detailed project proposal which will again be submitted to the donor for final approval.

Everything will be included in the detailed proposal, from the model of implementation to the technology to be implemented to the budget. The INGO will carefully examine every aspect of the proposal and make necessary changes where required before submitting it to the donors for approval. After the approval of the project which may also entail changes to the original plan or where sometimes donors may want to include their own wishes in the project, the money will be given to the INGO, which will then subsequently transfer the money to the IP in several installments.

In case of UN funded projects the process is similar with the exception that the proposals are submitted by local NGOs as a result of project calls and the final decision is made by the UN body themselves. Although the donors bodies are not involved directly in approving projects, according to respondents from these organizations the UN may be directed as to what type of projects are to be funded with the aid money they receive. This in some cases may be very detailed and may include preferences of areas of implementation, model of implementation and

even technological preferences. The UN agency however may also have their own criteria for the selection of the NGO and may also have several guidelines for the implementation of the projects, which are referred to as Terms of Reference (ToR). The TORs for a project are usually a part of the project call and therefore are known to anyone applying for the project. Funding is released to the IP in parts which are usually based on the achievement of certain milestones such as number of staff trainings etc. In the case of the UN agencies I was told that the selection of an IP is based on several criteria such as their previous experience with UN to ensure familiarity with the UN system of funding and implementation. Specifically in the case of PATS the IP's capacity and knowledge of PATS is also assessed, as all projects through the UN will be implemented on the Total Sanitation model.

Most of the international aid coming into Pakistan is through UN organizations, which draw aid from a variety of donors (such as the European Union (EU) and European Commission Humanitarian Aid (ECHO)). This aid coming into the country from several donors is also controlled by a UN agency called United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA). OCHA usually creates Clusters in each area that are responsible for the coordination of funding for that particular sector. There exists a WASH cluster in Pakistan that was created after the 2005 earthquake, which coordinated efforts mostly during the emergency phase of the disaster but later became inactive. According to an interview with the WASH coordinator at a UN agency, Pakistan has a very short disaster memory and most of the structures that are created during the emergency phase of a disaster do not last and soon become inactive. This is why, according to the respondent, the disaster preparedness of the country is lacking. After each and every disaster, these structures have to be established again all over again which takes a long time and effort. However it seems like the WASH cluster does exist at present and may not be very active but do play a role in the coordination between different organizations and of funding in the sector. The WASH cluster became active after the 2010 floods in the country and remained somewhat active thereafter, perhaps because of the 2011 floods and other disasters that followed.

Respondents from the UN agencies interviewed claimed that funding for WASH has decreased over the past decade. There was a lot of funding available for WASH projects after the 2005 earthquake. This however changed after the 2010 floods when the government changed the

official WASH priority to 7th place for funding from international donors. However after decreased funding and more floods to follow water, sanitation and health situation worsened, causing the government to make WASH the 4th priority for international funding. According to the respondents, this did not have the intended results and Pakistan is now facing a ‘donor fatigue’ where WASH is no longer a priority.

It seems as though there is quite a bit of control from the INGOs while choosing and then finally transferring funds to the local IPs. However the control mostly seems to be related to the process of creating a proposal and applying for the funding as well as the financial reputation of the local IP rather than the projects implementation and the competency of the IP in the given project. The need assessment seems to be a common requirement across the board of INGOs yet the fulfillment of this requirement is either can be compromised or then IP base their projects on their perceived needs of the community which in many cases could be totally misrepresented. The latter of the two possibilities seems more likely, the implication of which could be the difference between a successful and failed project.

5.2.2 Implementation

The whole implementation phase is quite important and interesting as during this phase of the project the INGO, IP and community interact for a short time, which results in certain technological outcomes. The actual technological outcomes are based on the interaction between these institutions, before and during the implementation of the project phase and therefore are important as well as interesting to have a look at some of the main steps of implementation.

The process of implementation starts after the implementing partners are provided with the funding or even before that if the IP conducts a need assessment to develop the proposal. This need assessment is usually quite basic and according to interviews with local partners, it may be trivial in some cases as they believe they have a good understanding of most areas where they are working and therefore they don’t actually need to carry out a need assessment before the project to understand what the needs and preferences of the communities are.

After the funding process and when the first installment is released to the IP, the actual process of implementation starts depending on the requirements of the project and its type. In most cases the projects related to WASH are quite short and have an average duration of 3-6 months. In many cases most of the NGOs operating in the study are reported extremely short project durations- more close to three months long. However, according to the UNICEF, most of the projects they fund are between 9-11 months long. The short duration of projects is mostly so that the projects can be closely monitored over the life cycle of the project, which is feared not to be possible affectively with projects of longer duration.

5.2.3 Model of implementation

The model of implementation chosen has direct consequences over the technological outcome of the project and the methods by which the IP will bring the technologies to the communities and their interaction with them. These models may be replications of other models that are used to implement WASH projects in other parts of the world such as the Total Sanitation approaches or may be tailor made by the local NGO keeping in mind the community the project is intended for. Even when models that are used in other parts of the world are followed there may be modifications made to them to suit the local context.

There also may be certain models that can be part of any type of sanitation approach such as the component sharing model. So even if the Total Sanitation approach is being used for the implementation, component sharing can be applied to that particular case. This was seen quite a bit in the field where different models were sometimes mixed to for approaches that would fit the local context.

According to a respondent in charge of the implementation of WASH projects some of the donors and the INGOs are open to different models of implementation, whereas others still prefer the contractual model of implementing water and sanitation projects and bind the local NGOs to follow these models, which according to the respondent are bound to fail and are not the best way to implement projects. These models rely on large contractors for all of the construction work that is required, for example the construction of latrines and water supply

system. However in the contractual model there are greater chances of corruption and sometimes it becomes very hard for the NGOs to implement projects without problems meeting the requirements of donor/INGO while working with contractors.

All projects that are funded by UN agencies in Pakistan follow the Pakistan Approach to Total Sanitation (PATS) and therefore are based on the total sanitation approach. A respondent from a UN organization mentioned that they will only fund projects that will follow the PATS and therefore it is a condition for the funding of projects. This means that the implementing partner is bound from the very beginning to choose a particular model of implementation. This however seems to be counterproductive to the whole process of funding where the NGOs carry out a need assessment on which the model should be based taking into account the needs of the communities. This however may not always be the case and when donors fund projects through other international organizations such as the NCA and OXFAM (De). In projects funded through these donors, the NGO may propose a certain model of implementation and plan which as discussed in earlier sections may or may not be based on the findings of the need assessment (if it has been carried out at all). The donors however may have objections to certain models or approaches and is dependent upon their final approval. Their approval may be contingent on certain changes to the model of implementation and certain other conditions as well.

Sometimes when applying for projects such as in the emergency phase in the wake of a disaster the NGOs don't have time to create proposals and to submit them to the donors for approval. A respondent from an NGO mentioned that in such a case they have 'readymade' proposals that can be used to apply for funding at once. They only have to 'fill in the blanks' by feeding in some information related to the nature of the disaster and basic information on the extent of losses due to the disaster. In such a case due to the shortage of time according to the IP the donors usually accept the proposals as are and agree to fund such projects.

In some cases the donors may want the IPs to involve the local governments in the projects and make this a necessary component for the implementation. The rationale for this is quite obvious as they would like the local government to be involved in the project and for their capacity to be built for future projects. This according to the local NGOs sometimes creates problems for the

NGO during implementation, especially if it's a central part of the model and is necessary to achieve, since most of the times the local governments are not really interested in these projects and end up being a hindrance to the smooth implementation of the project, when the time for implementation is already short.

It seems fairly obvious that the selection of the appropriate sanitation model for the implementation of the WASH is pertinent to the success of the project. Yet during the interviews it, this part of planning or implementation did not seem to be that important. In the case of UN agencies there was no room for any changes in the approach they follow and they are obliged to do so without considering the community in question and the local conditions of the area. On the other hand organizations may take their own convenience over the needs of the community in designing projects and the implementation strategies and models to be followed. Also the donors without having much knowledge of the area may also change or recommend changes to the model based on their own preferences.

More details of the specific approaches to implement the selected sanitation models will be given in the forthcoming sections.

5.2.4 Role of CBO's

The Institution of CBO or VDO have already been discussed in previous section of this chapter. However the role they play in the actual development of WASH projects has not been discussed in detail and requires some attention owing to their important role in the project cycle.

Once the VDOs are created before the project implementation by the NGOs they become the representatives of the village and most of the dealing between the community and the NGO is done through the VDO. They not only facilitate the meetings and interactions, especially when done at a communal level but also play more decisive roles in representing the community they represent. In the various projects that were studied the VDO major responsibility was to decide who the main beneficiaries of the projects would be. In all the villages and cases studied, this

was the case with the exception of the two villages where Total Sanitation approaches were implemented (as there is no direct beneficiary of the project).

In some cases when VDOs already exist in villages, they are contacted by the NGOs before applying for funding for WASH projects. The NGOs briefly (usually over the phone according to an NGO) describe the project to the VDO members and let them communicate the project to the rest of the village. The VDO members after having done this then inform the NGO whether they are interested in the project or not. However according to a respondent from an NGO, it is very unlikely that any community would refuse a project even when it not based on their need. They may ask the NGO to include a component that is their top priority (water supply schemes are a usual request), however the NGO would usually not be able to entertain such requests. According to the NGOs, they however tell the community they may be able to bring projects of the community's choice and needs to the villages in future. Whether this is actually done could not be ascertained. However in some cases it was quite obvious that the NGOs use the tactic of giving the community hope for future development to successfully implement projects that they are available (in terms of funding). This was quite evident in the Total Sanitation approaches where there was no physical provision of resources as part of the project and therefore the community was given a sort of hope for future developments if the current project was a success. The VDOs and community may only be willing for the implementation of the project, especially when it's not a top need amongst the villages, in hope that they will get the attention of the development community and will be able to attract other projects or NGOs to get what they need.

During interviews and FGD with members of the CBOs in different villages it also became clear that in most of the projects the CBOs were provided with the materials required to construct a certain number of latrines along with septic tanks in projects where latrines were constructed. The responsibility of the VDO in this case was to not only distribute the materials and cash required to build the sanitation systems but to also monitor the project in each case and make sure that all the construction was happening and was according to the directives of the NGO.

The most important role of the CBOs is the selection of beneficiaries in each project. According to the NGOs they never have enough funds to provide the whole community with ‘hardware’ components, they do try to cover the whole village with the software component in forms of trainings etc. This leaves the hard decision of who will be the beneficiaries (in terms of hardware development/subsidies) up to the CBOs to decide. In principle the NGO usually give the CBO a criteria of the people that should receive the most benefit of the project depending on the project requirements. For example a project may be designed for people with disabilities or for female headed households. In some cases the only criteria by the NGO are to choose the most deserving household in the village on the basis of income or level of poverty. The process of selecting beneficiaries for the project becomes quite challenging when several households may meet the criteria and the selection has to be narrowed down. This seems to be the only case in which power was actually relegated to the VDO. In many of the projects studies, the actual materials were handed over to the VDO and they were allowed to select the beneficiaries of the project on their own. According to the NGO if they are unable to do so, then the NGO may step in and perform a wealth ranking and choose the poorest people of the village, which is a very transparent way to handle the problem and no one can object to such a process.

Although this may be an effective way of implementation and selection of the beneficiaries of the project, this may not work in practice. As mentioned in earlier sections of this chapter the creation of the CBO and the manner in which it is created and people are chosen for the committee may result in certain influential people in the village retaining all the power thus reinforcing existing power distribution patterns rather than changing them. Furthermore when the whole selection process of beneficiaries is left up to the CBO without any intervention from the NGO this could possibly lead to partiality in the selection of the beneficiaries. Due to the reinforcement of the power structures the community would be helpless and would not have any say or power in the matter.

During an interview in village Talhatta, where materials were provided to the CBO for the construction of toilets for a number of households, I was told by the beneficiary of the project that the selection criteria of the beneficiaries was not made public and is not known to the community. I was told by the respondents that the CBO members decided on the beneficiaries

and the materials were distributed amongst them, there was no consensus amongst the village. Despite the respondents being beneficiaries of the project themselves they didn't shy away from telling me that several deserving people were ignored and even the respondents themselves think there were people that deserved the toilets more than they did themselves. According to the respondents the people that were well connected to the CBO heads were given latrines, whereas the people that did not have good connections to them did not receive any benefits. The respondent connects this back to the formation of the CBO, which was created by the NGO with the project. All members of the CBO belong to the same family and therefore controlled everything. The respondent went on to say that the NGO did not bother to verify or check the process and blindly believed in the inputs from the committee which resulted in unfair distribution of the resources. The respondent went on to say "this is a convenient arrangement between the NGO and the village committee (VC). They don't really care who gets what as long as they can go on with their work. If they would have talked to different people in the village they would be aware of the people that actually deserve the help, but this wouldn't be very convenient for them. It's much easier for them to set up a committee and just rely on what they say. If they would have asked me I would have told them, but they didn't bother contacting anyone else in the village".

From a development perspective building local institutions that would truly represent the community's interests and be able to assist in the development process should be a good idea. However in the case of the actual implementation, the purpose is defeated to some extent when families in power are given even more power to make decisions for the whole village. In my opinion the NGOs themselves should play a more proactive role not only in the selection of the beneficiaries but also in the creation of the CBOs themselves and in the project management once they are functional. The CBOs are very young institutions and are mostly formed before the start of a project, therefore such roles should not be relegated to them without any check and balance. Nepotism is very common amongst the Pakistani society and may be even more pronounced in the rural setup where families rely on each other for their survival and therefore it should be no shock and to some extent can even be expected. To counter this the NGOs should be taking preemptive measures to ensure it does not happen, rather than blindly trusting the CBOs. However another possible interpretation and explanation to this occurrence is the lack of

interest of NGOs to actually produce results. It seems like the implementers are more interested in fulfilling the basic requirement of a project which may be as simple as construction of five latrines.

5.2.5 Monitoring and evaluation (M&E)

Monitoring and evaluation is another important aspect of the implementation of WASH projects. The purpose of the M&E is multifold, it is used to make sure the community have received the benefits of the project, to assess the impact of the WASH project and to evaluate the performance of the implementing organization. In theory the M&E is a chance for all the stakeholders to understand and learn from their mistakes if any and avoid them in future implementations.

The M&E is done at different levels with respect to who is carrying it out. During the project cycle the M&E may be done by the NGOs themselves to evaluate the progress of the project and to make sure the project is on track, financially and time wise. This may be more of a continuous process over the lifecycle of the project and is typically done by the NGO staff themselves.

Mostly monitoring for the donors is done via third party evaluators or through the INGOs responsible for the projects. According to several INGOs the monitoring depends on the type and the duration of the project. There is a special budget reserved by the INGO for the M&E. In case of longer projects (18 months or longer) a baseline study will be conducted before the project as part of the M&E process, this will be compared to the end term M&E done after the project. In certain cases I was told by INGOs that a permanent M&E officer is hired by the INGO and is based in the office of the IP, so they can closely monitor the finances and budget according to the activities that have taken place. There also may be different monitoring staff for the financial part of the project as well as the technical part of the project. During the process the monitoring team of the INGO must report the results to the NGO in a specific format and these reports may contain suggestion for improvement. The monitoring reports must be submitted to the donors at the end of the project as well. In very long projects (lasting several years) there is also a midterm evaluation in addition to the baseline and end term. This did not seem to be the case with all INGOs and with all donors as well. Some donors expect more of the process and put more

emphasis on the M&E. The example of DFID was quoted, as they are usually not really interested in the M&E part of the project, they are usually only interested on the budgetary aspects of the projects and how budgetary restrictions are met.

According to INGOs if the donors are interested in M&E they will have their own ‘third part evaluations’ separated from the evaluations of the INGO and the IP/local NGO. This may be done at any time of the project depending on their interest in the project and what they are interested in monitoring. Usually the end term monitoring takes place around four to five months after then end of the project. According to a respondent at the UNHCR very few donors are actually interested in M&E in the real sense. Most of the donors are only associated till the end monitoring of the projects, after which the project is closed and everyone moves onto new projects and nothing meaningful is learnt from the whole experience. The exception in these cases is European Commission Humanitarian Aid Department (ECHO), they are the only donors according to the respondent that monitor or continue to monitor the projects up to a few years after the completion. According to the respondent most other evaluations are more superficial, and are usually based on financial aspects or in other cases are based on numbers rather than quality. The standard evaluation is done by filling out an evaluation form and a checklist.

According to the local NGO Saibaan, some donors such as OXFAM do not necessarily expect them to meet all the project goals, in fact they don’t mind if the project does not bring the intended results, however they do encourage the NGO to reflect on the reasons why the project may not have had the intended results and would like to take it as a learning process. On the other hand other local NGOs were of the opinion that the donors are not really concerned with the long term impacts of the project and therefore rely on direct outputs of the projects such as number of latrines built or number of individuals trained. The impacts of the project are not visible right after completion of the project and only become apparent in the long run, yet according to the respondent they are the real indicators of the success or failure of a project and therefore should be the focus of the evaluation.

5.2.6 Closure

Closure is an important theoretical concept from the SCOT theory and relates to the point of consensus within the social groups where no further developments in the technology are needed.

This concept is closely related to the implementation of the sanitation technologies, as there certainly are points where certain social groups believe the objective of development has been achieved. This concept is also related to the meanings of each group attached to the technology in question, this concept was discussed in the previous chapter. In reality however, the process of closure like many others in the context is influenced by several factors and as described by Olsen and Engen, 2007 may be influenced by the actor with more power.

In the case of sanitation development the power to influence the projects and the implementation of sanitation technologies lies mostly at the donor and INGO level. In many cases projects are designed to meet certain outcomes such as number of toilets or households trained. This in theory would mean the coverage of communities with sanitation services or training to enable communities to attain sanitation services and maintain hygienic conditions and practices. However in reality this may not be ensured. So in many cases the problem of lack of sanitation or low rates of adoption of sanitation technologies are redefined by the actors in a way that would be solved by the implementation of the projects and the development of the technology in the community. In the cases of the villages of Basala and Garan, I was told by the NGO responsible that many people in the villages can afford latrines but it's just not a culture to do so. Therefore the solution proposed was to construct 5 latrines for the people that required them the most and the rest of the community would be inspired and would simply follow. Therefore the NGO's (in collaboration with the INGO and donors) point of closure was to construct five latrines in each village to motivate the community to adopt improved sanitation. However this in no way coincides with the community's closure where even when there is a willingness to adopt sanitation technologies, there are economic and other challenges to overcome before that would be possible.

Similarly in the case of Naka Guldar and Meesuch where the 'Total Sanitation' approaches were implemented, the problem is redefined by the implementing organizations to suit the technology implemented. In this case the lack of sanitation is because of the lack of awareness, which to some extent would be true, however awareness is not the only barrier to the adoption of sanitation technologies. Therefore the implementing organizations achieve closure by imparting awareness to the communities regarding their improper sanitation practices. However, for the actual communities, even knowing about sanitation and the drawbacks of not having any

sanitation systems does not mean that the communities do not have any other issues related to the sanitation technologies. That is why even after the implementation of the project the sanitation technology usage was very low.

From the perspective of the implementing organizations rhetorical closure may be achieved as all the problems associated with the technology in ‘their opinion’ have been solved, however the realities of the problems of the communities in relation to the technologies may be quite different. These realities and concerns however, are not always addressed and always considered, especially when many key decisions are made at the levels of the donors and INGOs.

5.3 National Sanitation Policy*

Pakistan’s first National Sanitation Policy (NSP) was created by the Ministry of Environment (MOE) and approved by the federal Government in 2006. According to the NSP, it was created to be able to meet the MDG targets related to sanitation by 2015 and subsequently by 2025.

The Policy refers to ‘proper sanitation’ as “Proper sanitation means the promotion of health by safe disposal of excrement, encompassing critical components of sanitation services like privacy, dignity, cleanliness as well as a healthy environment through safe disposal techniques”. The purpose of the Policy is to provide broad guidelines on sanitation to Federal, provincial and local governments to increase sanitation ‘coverage’ within the country.

The main focus of the policy is the eradication of ‘open defecation’ in the country and is stated as the main vision and also as one of the primary objectives of the Policy. In fact the eradication of open defecation seems to be the most stressed recommendation of the policy along with the goal of sanitation coverage to improve quality of life. The target set out by the policy was to meet the Millennium Development Goals by 2015 and to achieve 100 percent improved sanitation for the whole population by the year 2025.

The policy also has special recommendations in terms of type of technologies as well as implementation designs. One approach that is directly promoted by the policy is the Community

*The only source used for this section was the actual National Sanitation Policy, 2006. (See Annex II)

Led Total Sanitation (CLTS) approach, is generally believed to be successful in moving people from open defecation to fixed point defecation there by elimination open defecation. This is in line with the policy's focus and therefore the promotion of CLTS is listed as one of the main objectives of the policy. In terms of technology options, for low density urban and rural areas, ventilated pit privies or pour flush latrines connected to septic tank and a wastewater disposal or collection system.

In this case it is to some extent unclear as to what the definition of ventilated pit privies are. In general there are Ventilated Improved Pit (VIP) latrines which are different than normal pit latrines and are a superior model, yet may require some advanced materials and skills to be constructed. If according to the policy the standard is at least VIP's then the normal pit latrine, which is usually recommended and is the typical outcome of the CLTS approach, may not be sufficient. This would be a contradiction within the policy itself since that is one of the recommended forms of implementation. On the other hand the recommendation of pour flush latrines connected to septic tanks and a wastewater collection or disposal system may not always be feasible for rural communities, where no wastewater collection systems are present and sometimes a water disposal system are not possible due to geographical locations.

On the issue of financing for water and sanitation projects from the government, the federal government as well as the provincial governments will try to localize funds for water and sanitation projects. When communities of over 1000 people are targeted, a component sharing model is recommended where some of the funding originates from the Government whereas the community also contribute to the development either through financial or other means (for e.g. as manual/ skilled labor, material resources from the land etc.). According to the policy in case of communities or villages with a population of less than 1000 people, the projects will be related to social mobilization and awareness rising to promote the construction and use of latrines or the Total Sanitation model (such as CLTS) will be adopted

Generally the villages with less than 1000 population are considered to be small villages and are usually located in remote areas that are hard to reach. If access to the villages is the reason for the low population of the villages then the material costs of construction (and for that matter all other materials) is usually higher, making it even more difficult for people to afford them. In

such a case only awareness and motivation may not be an affective step to the eradication of open defecation, as people may simply not have the means to construct even the simplest latrines, which are not the latrines that are recommended in the policy itself. These projects are to be taken up by the Tehsil Municipal Administrations (TMA) and Union Councils (UC).

Through the policy the Government also offers a programme of incentives for the communities that become open defecation free. This again is to promote open defecation free and clean villages and communities. Each village/UC that is declared OD will receive a cash prize, the full amount of which can be obtained when they sustain their status for a certain amount of time. Villages that attain 100 percent sanitation coverage will also be rewarded. Some of the villages where the total sanitation approach had been studied were still in the early stages of implementation and therefore had not achieved the ODF status. It is therefore hard to assess whether these policies are enforced or not.

In relation to the capacity building, government officials at the UC level are to be inducted and trained in order to collect data and help implement the water and sanitation projects by the Government. Whereas for the communities that will benefit from projects or for general awareness of sanitation and hygienic practices media campaigns through television and radio, as well as incorporation of messages in school curriculum is recommended.

According to the Policy Instruments of the NSP of 2006, each provincial government is responsible to create a regulatory framework and strategies for the implementation of the Policy. No such framework could be found in the case of Khyber Pakhtunkhwa (KP, formerly NWFP as stated in the Policy), the province where the study area is located. Since the devolution of powers in 2001 from the provincial governments to the local Governments, the local governments are now responsible to take up projects related to water and sanitation and development in general as well. In the case of sanitation projects, the responsibility lies at the Tehsil level, which is the second tier of the local government, through the tehsil Municipal Administration (TMA). The local government at the tehsil level should be allocated with funds according to the sanitation plan prepared by the provincial governments. Yet since no formal 'Sanitation Action Plan' at the provincial level exists, the local Government's role was reported to be minimal in the development and execution of water and sanitation projects in the research areas.

Another policy instrument is the formalization and regulation of the Total Sanitation and Component Sharing models. These were formalized at a later stage in a model called ‘Pakistan Approach to Total Sanitation’ (PATS) in 2011 again by the MOE, GOP in collaboration with other International Organizations such as the UN. Also included in the policy instruments are recommendations for the legislation for toilet construction, which also does not as yet exist.

Since the NSP is only a policy and therefore in many cases does not have concrete regulation and laws based on the policy, many areas of the policy seemed to have been ignored in practice especially by the local Governments. Regional or provincial sanitation strategies have been created and are available for all other provinces (including territories such as Azad Jammu and Kashmir (AJK) and Northern Areas (now the province of Gilgit Baltistan)), yet no documented strategy could be located for the province in which District Mansehra lies i.e. KP. Perhaps the most enforced part of the policy is the adoption of the total sanitation model in Pakistan, for which the PATS document was released and widely circulated amongst both concerned Government and non-Governmental organizations working in the sector.

5.3.1 Pakistan Approach to Total Sanitation (PATS)*

Since the primary focus of the NSP was to attain open defecation free status and to promote and adopt the total sanitation model in Pakistan, a special expert team was formed in 2008, to create guidelines for the regulation of total sanitation approaches in adoption and implement in Pakistan. The task was to create a context specific guideline for the implementation of total sanitation models in rural villages of Pakistan with a population of less than 1000 inhabitants. This collective approach is known as Pakistan Approach to Total Sanitation (PATS). According to the document a context specific approach was needed due to the different set of conditions in the water and sanitation sector in Pakistan which include the socio-economic, political, cultural characteristics paired with frequent natural disasters and the mechanisms of aid and development. Also the context specific sanitation approach was created to address issues of local government competence and lack of will to improve sanitation for low economic areas and in rural areas especially and also to focus the local government’s attention to sanitation rather than

*For PATS See Annex III

water supply only.

In the context of PATS, total sanitation includes several different approaches or models that may be employed individually or in combination to meet the goals of Total Sanitation. In general total sanitation is the complete eradication of open defecation from communities in their entirety and also encompasses solid waste, animal waste and wastewater. In PATS to attain Total Sanitation the example of the Baluchistan sanitation strategy is quoted, which emphasizes that approaches must target open defecation, hygiene promotion, solid waste management and waste water disposal.

According to PATS the CLTS approach was introduced in Pakistan to achieve ‘total Sanitation’ and uses the concept of the ‘sanitation ladder’. The CLTS approach was intended to include targeting not only open defecation but also proper drainage, sewerage, solid waste management and hygienic practices to be in line with the concept of total sanitation. Total Sanitation approach in Pakistan includes several different approaches or total sanitation models including Community Led Total Sanitation (CLTS), School Led Total Sanitation (SLTS), Component Sharing, Sanitation Marketing and Disaster Response, with the objective to achieve Total Sanitation- an open defecation free environment with behavior change and an increased demand for sanitation. The focus of the PATS document seems to be mostly on CLTS promotion and adoption.

As in the NSP the provincial governments are to set specific context related guidelines for the local governments and TMA’s, which should help in the planning, promotion and implementation of total sanitation at the local level. The PATS intends to reinforce the ‘integrated total sanitation concept’, which is the integration of demand creation for sanitation and its sustenance, the promotion of hygiene and inclusion of drainage and wastewater treatment inclusion in all programs.

Although PATS recommends CLTS, SLTS, sanitation marketing, component sharing and disaster response approaches, there are very few guidelines on the actual approaches and their implementation. Furthermore for a document which was created to promote specific approaches and contextualize them according to the local conditions of Pakistan, there hardly seem to be any differences from the general approaches they briefly discuss to the approaches that are being implemented in the rest of the world. Which brings up the question, is there the need for a

specific approach to total sanitation in the context of Pakistan? My answer to the question would be yes, if that's what the Government emphasizes on in the sanitation sector then there is a need to properly regularize the approach and for the reasons mentioned in PATS. Not all approaches that have had success elsewhere can be successful in other countries and if they are to be adopted they need to be modified to fit the local context. Both PATS and NSP talk about successes of the total sanitation approaches in other Asian and African countries as an argument to replicate the approach in Pakistan. Yet the PATS does not in any way recommend how exactly these changes can be made or what can be done to contextualize these approaches to the case of Pakistan. For example the following is the description of sanitation marketing in PATS, where no details on the actual implementation strategies are given.

“Sanitation Marketing is an approach which seeks to capitalize on the strength of various service providers in the provision of sanitation services using commercial marketing procedures and techniques and behavior change communication to create and sustain sanitation demand generated through CLTS and other community approaches. These service providers include small and medium scale private sector, retailers, entrepreneurs and masons etc.

The main aim is to provide technologically and financially sound sanitary materials, sanitary services and guidance as per the need of the project intervention areas as the demand for better sanitation hardware materials goes up, and with the shift in hygiene behavior. This approach is not meant to confine only on the provision of hardware but is meant to extend further to explain the value, use, and maintenance of latrines to the customers. In this regard, facilitators help in establishing linkages with local markets. In most cases where CLTS has been triggered on any scale, demand for sanitary hardware has exceeded supply. Lack of low-cost hardware can impede progress with CLTS and other community approaches and the subsequent movement up the sanitation ladder. Very soon after triggering or after achieving ODF status, those better off in communities tend to move to better quality latrines and improve the existing ones. Some may decide to move directly to higher-end latrines and skip low-cost models regardless of cost.”

The most comprehensive part of the PTAS are the guiding principles, which are not specific principles related to each approach but are general principals delineated in relation to the objectives of PATS itself. However these cover broader themes relating to the implementation of

total sanitation approaches in the country. The guiding principles are based on the concepts of achieving ODF statuses for communities and sustaining the status through demand creation, engaging with communities and placing them at the center of the development process, developing the capacity of the local governments to enable them to carry out such projects, focusing on usage rather than coverage and incentives and rewards among many others. One of the interesting principles is the encouragement to be open with the kinds of sanitation technologies and the promotion of indigenous sanitation technologies through guided support in association with local activists or resource persons or masons etc. Therefore according to PATS no specific technology is promoted or is considered to be inherently part of the total sanitation approach. Whether this actually occurs in practice will be discussed further in the CLTS approach as seen in the field. The guiding principles also recommend the creation of locally made Information, Education and Communication (IEC) materials. The rewarding and maintain of ODF statuses should be based on continuous monitoring and yearly updates of the status to ensure its sustainability.

During my interviews with the different institutions that were key stakeholders in the WASH (Water, Sanitation and Hygiene) sector in Pakistan had some very interesting insights on the policy itself and on PATS as well. According to an interview with a WASH coordinator from the United Nations, I learned that PATS was created by the Government and the United Nations to enhance the sanitation portfolio of the country by bringing it to an ODF status. This would show the country was not only committed to meet the MDGs related to sanitation but was also ready to step up to the challenge and finally give attention to the sanitation sector. This was essential in order to continue to receive funding from donors through foreign aid. The Government and the UN both owned the PATS and planned to implement it for all sanitation projects in Pakistan. All relevant stakeholders in the implementation side of the WASH sector (including I/NGOs, government bodies, local governments) were instructed to follow the PATS in their project implementations. The biggest problem of the whole PATS and NSP is that no one owns it, especially the major actors in the WASH sector. Unicef and the Government are the only ones with large projects following total sanitation projects that can be said are done in accordance with PATS, other than that no major I/NGO are or have implemented water and sanitation projects in accordance with PATS or NSP, they all implement their own kinds of projects on the basis of what suits them the most. However they cannot be blamed all together, since the

problem according to the WASH coordinator was that the whole policy and PATS lacked standardization as well as clear instructions or trainings for NGOs on how they could implement total sanitation projects. Interestingly the purpose of the PATS was to contextualize total sanitation approaches to be able to be implemented by all in Pakistan, yet it clearly lacks any guideline for implementation.

UNICEF being the only major INGO/donor implementing large scale total sanitation projects in Pakistan it was important to get their insight into PATS. Since UNICEF is directly involved in the implementation of PATS, I was able to get more information on the implementation of the approach which will be discussed in further detail in the approaches section of the chapter. An interesting aspect of the creation of the PATS approach was the fact that Pakistan was off track to meet the MDG of sanitation (which was at the time 62% access to sanitation) as a result of the 2010 floods, where there were widespread damages to existing infrastructure. In the aftermath of the floods, Pakistan received large amounts of aid to rebuild and reconstruct, after which the Government and other 'like-minded' organizations (basically the UNO) got together and formulated PATS to cover the gap created in the sanitation infrastructure created due to the floods in order to get back on track to receive the MDGs. PATS was a replication in the local context, of the global approach known as Community Approach to Total Sanitation (CATS). PATS was the perfect solution since it focuses on low subsidy approaches and the can be relatively economically implemented. A personal interpretation from the interviews seems the Government was quite keen on the PATS for the reason that it required minimum expenditure in terms of results as compared to other subsidy based approaches. In interviews with local NGOs I learned that the many of the smaller local NGOs believe that the UN agencies play a key role and have control over many of the development sectors of Pakistan. A lot of the investment and the coordination done in the WASH sector especially are by UN agencies and therefore they are responsible for a lot of the decision making and have the power to influence the Government as well. This to some extent explains why the PATS approach was introduced with the support and the coordination of two key actors, the Government and UNO agencies. This is also not surprising since the MDG are a UN agenda and are created by them, therefore they would like to prioritize its fulfillment even if seemingly so it compromises other critical issues.

According to Pakistan Institute for Environment-Development Action Research (PIEDAR) the basic changes that were made to the CLTS approach while adopting it to the Pakistani context were the shift of the approach from the typical 'shock, shame and disgust' concept to the building and instilling of local pride within the community as a motivator for the adoption of sanitation systems. Although there was no mention of such an adoption in the official PATS document, since PIEDAR was part of the actual team that created the approach it was perhaps discussed. This again leads to the question of standardization. Even though a whole country wide approach for the sanitation sector was created, why there are no guidelines for the several hindered governmental and non-governmental organizations which will be implementing it or which should be implementing it. This probably explains why it has not been adopted and owned by these bodies.

Chapter 6

Challenges and Recommendations

After outlining the different processes related to the development of WASH technologies in the rural settings of the field area from different analytical perspective, it is also important to understand the specific challenges encountered by the different social groups in the process. As seen in the previous chapters the issue of WASH is quite complicated, not only in forms of technologies but also due to the fact that the sector is composed of several institutions and organizations which all influence the technologies being developed in their own unique way. However this chain of interconnected institutions, organizations and communities normally do not function as a well-oiled machine. There are problems and challenges to be dealt with at every level and differ greatly from each perspective.

From the perspective of the NGOs these challenges are part of the implementation from the government and from the local communities. Some challenges identified during the imperial and analysis phase even relate to themes such as the socio-economic-political conditions of the country and are even linked to events that do not apparently have an impact, such as ‘the war on terror’ and terrorism. Furthermore many of the impacts of such incidents in the past also have implications that may not be so direct however are challenges that have changed the course of development in certain regions of the country and have had deeper policy implications than previously understood.

The challenges are not limited to the implementing organizations, as will be discussed in more detail in the forthcoming sections of the chapters each and every institution and organization faces different challenges at their own level, all of which have an impact on the WASH projects being implemented. Furthermore the challenges faced by each social group are created by one or more of the other groups in the study, despite the fact that most of the groups and institutions are working towards the common goals of attainment of better sanitation. However in many cases

the challenges from the groups, institutions and organizations involved in the process stem from their internal policies, their technological interpretation or interpretive flexibility as well as national policy and regulation in relation to the sector.

6.1 Non-Governmental Organizations and their operations

As discussed in earlier chapters, the NGOs play a dominant role in the development of WASH technologies in the context of Pakistan. Their role in the whole process places them between the Donors on one hand and the communities on the other, along with their dealing with local and federal government and other local institutions. For this reason the whole process from their perspective is quite challenging. This section details the challenges faced by the NGOs in their implementation of WASH projects and technologies. It is important to understand these challenges in order to understand the problems discussed in the previous chapters and also to draw on conclusions as to how these challenges and problems can be overcome.

6.1.1 Project timelines

The project timelines of WASH projects were brought up in almost all interviews with NGOs as a recurring theme related to the challenges in WASH project implementation. As described in earlier sections, most WASH projects consist of several components, some of which are implemented simultaneously whereas in other approaches, parts of the project, such as the software component for awareness and sensitization must be done before the hardware component of the project can be undertaken.

The durations of the projects are decided by the donor organizations, which have specific policies regarding the duration of the projects they fund. Certain donors only fund three month projects, whereas some donors allow for slightly longer projects to be implemented. In the case of projects funded through the UN, the contractual duration of the project cannot be longer than 11 months. According to the WASH coordinator at UNICEF, the project durations are short to ensure transparency and efficient use of time. However all WASH projects that are funded through UN agencies follow PATS and therefore are based on Total Sanitation approaches, where no subsidies are actually given. What this means in practice is the community must be

given rapid trainings and be part of awareness campaigns to change their behavior within a matter of a couple of months. Most of the Total Sanitation projects that have been funded in the study area and elsewhere were short term, in some cases as little as three months. This time frame is too less to achieve behavior change in the communities, according to the WASH coordinator at UNHCR. According to the respondent to be able to successfully bring about behavior change the community must be engaged for a long period and activities related to Behavior Change Communication (BCC) need to continue even after the project has ended for behavior change to be expected and sustained. However in an example quoted by a former NGO worker now working in the UN, NGO workers sometimes have to deliver BCC in up to 100 schools within the duration of a ten month project. This according to the respondent will of course not have the intended results. In such a case even after the completion of the project, the respondents suggest the continuation of funding for BCC in order to keep educating the communities or the schools depending on the target community.

According to a respondent from a local NGO working on total sanitation and emergency sanitation approaches “the change process is time consuming and people that are used to defecating in the open are not willing to change their habits right away. This can also be an opportunity for them to change their behavior and for us to access these people and assist them with this change. There always is a reaction and resistance but it does take them time to get used to these facilities and the change, but this is only possible when we have enough time to assist them through the process.”

From the perspective of the donors, the time period of more than three months, where no hardware development is to take place may seem excessive. However this period may be enough to initiate behavior change it is not enough to sustain the changes if any over longer times. According to several of the NGOs the short project durations are a means to keep the NGOs under pressure and ‘in line’. In the case of longer projects the staff has to be retained for a longer period of time, increasing the overhead costs of the projects. In this case the shorter the project, the less the overhead costs, which according to many local NGOs is the reason why most donors prefer short projects. However from the perspective of the International NGO the short duration of the project mostly is to ensure transparency and to be able to affectively monitor projects.

According to respondents from the INGOs, it is much easier to monitor projects that last less than a year. In case of longer projects, additional costs will be incurred for midterm evaluations and the chances of misappropriation of funds also increase. In some cases the respondents from INGO admitted that the donors like to create pressure on the local NGO to ensure speedy work and implementation and for that reason give very ambitious targets for short periods of time, so that the local NGOs do not take it easy and work as efficiently as possible. However, there is no way to assure that this will have the intended results and that it will not result in projects that have been hastily implemented without being able to reflect on the actions of the implementation and without much thought. Furthermore the less the time for implementation for the NGO, the less the community will be involved in the project. This means that in many instances the communities needs and wants will not make it to the project at all. Furthermore in the case the the NGO face any problems during the implementation of the project, there is no time to mitigate or stop and change the course of action.

Many local NGOs try to build local institutions, as seen in several of the projects implemented in the villages studied. This can also be a long process and sometime the selection and setup of a village council may be quite a complicated process. Saibaan has adopted this practice as a policy and always creates a VDO/CBO before any project, however according to the local NGO staff at Saibaan short projects don't allow enough time to really create a strong village organization that will be functional not only for the duration of the project but also after the project ends, to further the development work on their own.

In order to cope with such short time durations some of the NGOs reported that they try take different projects for the same area, so after the end of one of the components for example on sanitation, even though the next component or project may not be related to sanitation, they can continue with the behavior change communication (BCC) related to sanitation. Some donors also support integrated projects which means that the NGO will be engaged with the community not only for a longer period of time but also that the NGOs will have projects related to several development issues such which range from agriculture, nutrition, health to education and so on. This in some cases allows the NGO staff to be in contact for a longer time, since each small component of the project is undertaken in succession giving the organization a chance to

reinforce the previously implemented projects. This however did not seem to be very common and in most of the cases, single projects related to sanitation were seen in the villages studied. The exception were the projects implemented in Basala and Garang by Saibaan, since the sanitation project in the case of these villages was part of a larger maternal health project. In comparison the Total Sanitation projects seemed to be implemented over the shortest period of time and although in theory should require longer implementation times since they are dependent on behavior change and self-help in terms of hardware facilities, in the cases of the CLTS projects were based on only a couple of interactions with the community.

NGOs have reported that sometimes the whole process of funding and releasing funds also is time consuming and may waste valuable time that should rather be spent on implementation. In this case the INGO that receive funding from the donors but don't pass it on to the implementing partners on time, are responsible for the delay. The INGO's according to the local NGOs have many steps before the implementation is to take place, this includes the project plans and documentation and several appraisals at time, however after all this has finished the local NGOs implementing the projects only have a fraction of the total project time left for the implementation, which is seen as a problem throughout the development community. According to the local NGOs for these reasons, in projects that last six months, not more than 45 days are spent in the implementation phase.

6.1.2 Social Mobilization

Social mobilization is a term used by NGO to describe a variety of activities undertaken during the project cycle and mostly include any information, awareness, advocacy and education that is part of the software component of the sanitation project. So in this case social mobilization is also the involvement of the community in the project through these means. Information, Education and Communication (IEC) as well as behavior change communication (BCC), two major approaches or strategies of social mobilization, have become key elements of many water sanitation projects and are considered as necessary in the development of water and sanitation technologies and their implementation. The NGO staff responsible for the trainings, education and sensitization of the community are known as 'social mobilizers' and play a key role in the implementation of the project. The social mobilizers are forefront of the project at the

implementation side, since they are the NGO staff that is in prolonged contact with the community throughout the implementation of the project.

From the perspective of the NGO, the role of the social mobilizer is so critical since they are the ones who will be dealing with the community. The social mobilizers have many important functions. They will assist in the process of development of the technology from the start to the end and will be the central contact person between the NGO and the community. They are responsible to make initial contact with the communities and find entry points into the village. They must also be well aware of the community structures of the local communities and must understand the community. It is important for the social mobilizer to gain the trust of the community and build rapport. This will help during implementation when the social mobilizer must carry out activities related to training and awareness rising amongst the community. As mentioned earlier their role is especially important when communities are trying to be mobilized to rise above their economic and behavioral restrictions and norms to adopt sanitation systems without any subsidy and much technical help, as in the case of the Total Sanitation approaches. In fact in reality it would not be wrong to say that especially in such cases the whole project depends on the performance of the social mobilizer.

Despite to very important position of the social mobilizer, in many of the organizations, the social mobilizers are placed at the lowest level of the NGO staff hierarchy. In many cases the social mobilizers are hired on a project basis and therefore change jobs quite frequently. Since the jobs offered to them are usually quite temporary, according to several INGO, the problem of unqualified people entering the position is not uncommon. Many INGO brought up the fact that the position is usually a low paid position with high demands and it's hard to find appropriate people due to the nature of the job. It is counterintuitive to have a social mobilizer that is highly qualified but does not understand the community and the local culture. In an effort for the important social mobilization process to be affective, NGOs prefer to hire local social mobilizers that are from the region in which the project in being implemented. This is understandable and quite important since in most cases the communities in question are not quite comfortable with outsiders frequently visiting the villages, so having a local person that understands the language, the village setup and the norms and culture can function better in the role. This is also useful

when many of the other NGO staff may not be from the area and therefore would be concerned as outsiders. However on the downside the local people available for the job may not be the most qualified.

According to the WASH coordinator at UNICEF, the social mobilizer and the process of community mobilization is the backbone of the process. According to the respondent in the projects funded by UNICEF they monitor the hiring of the social mobilizers for the project and set an agenda for the social mobilizer. This is to maintain a minimum standard and to ensure that the person in the field, that is responsible for the most important task, will be able to perform. According to the respondent in many cases if the process went unregulated social mobilizers would be hired at very low salaries, which mean lower qualified staff for the task, which can jeopardize the whole project. According to the local partners however, it is not just about hiring people at a higher salary. For many of the implementing partners it is very difficult to find someone local that can handle the requirements of the projects. As from my observations in the field, most of the social mobilizers that I observed had very little knowledge of sanitation and hygiene. Perhaps that is why the communities were not well aware of the link of improper sanitation and disease. In the case of some of the projects, it seemed, judging from the knowledge of the community that set trainings were given to the community without much information about the logic and rationale.

6.1.3 Hurdles in implementations

The implementation process of water and sanitation technologies or for that matter development in general by NGOs in Pakistan is a complex process involving many institutions and organizations. The whole process from applying for funding and then the actual implementation can be quite challenging for the development agencies considering the regulation and policies in place and the government structure and restrictions.

Many of the regulations related to the operation of INGOs stem from the fact that the Government does not always trust INGOs working in the country. In recent years this mistrust has grown to such an extent that an official policy notification titled as “Policy for regulation of International Non-governmental Organizations (INGOs) in Pakistan” (see annex IV) was issued to regulate the

operation of INGOs in Pakistan. A statements released by the Ministry of Interior “While we will welcome INGOs to operate freely and independently in Pakistan, let me also make it very clear that now there would absolutely be no margin or space for any INGO to misuse its permission. We would not allow anyone to work against our national security interests under the facade of INGO” (Khan, 2017), shows the skepticism from the Government on their operation. Further as reported in one of the founding newspapers of the country “The new policy to regulate operations of the INGOs, launched in October 2015, warned them against any engagement in money laundering, terrorist financing, weapons smuggling, anti-state activities or maintenance of links with banned organisations, which would entail cancellation of their registration.” (ibid.).

This skepticism and mistrust can also be traced back to the alleged involvement of a Pakistani doctor, Dr. Shakeel Afridi, who was used by the American CIA to help locate the international terrorist and head of the infamous Al-Qaeda, Osama Bin Laden. Dr. Shakeel Afridi was alleged by the Pakistani intelligence to have links to the international development agency ‘Save the Children’ (Haider, 2015). This resulted in the Interior Ministry of Pakistan evicting all foreign staff associated with the organization within four weeks, due to the alleged connections of Save the Children to the fake vaccination campaign by Dr shakeel Afridi (Associated Press, 2012).

The association of Dr. Shakeel Afridi with Save the Children has not only made the government skeptical of the motives of different aid organizations and their activities outside their mandate of development activities but had also confirmed the suspicion of the common folk of Pakistan, especially the demographic that would typically be the beneficiaries of development projects. This in itself has proven to be a challenge for development in the country by many INGOs that bring foreign funding and projects. Historically as well, the general population has shown distrust in any program that is linked to foreign aid, a common example being the polio eradication campaign. Polio vaccinations are thought to be unislamically produced and may be part of a conspiracy of the western agenda, due to which may people refuse to give their children the vaccination (Khan and Qazi, 2013). These conspiracy theories in most cases, were propaganda by religious extremists, which were readily spread through masjids to many rural communities. Since most of the people living in rural areas are illiterate, they do not question anything preached in the mosque and think it would be sacrilegious not to obey and comply.

Many of the NGOs also reported facing hurdles in implementation stemming from the distrust of the community with the sources of the funding and the actual 'agenda' of the development process. In some of the more conservative areas, the NGOs said they had difficulty accessing women of the area, even when the NGO staff were women. This also is linked to the idea of power and control over women, which they fear will be tainted by outside interventions and stems from their patriarchal mentality. Conservative areas and villages, according to the local NGOs do not wish to change the culture in any possible way and giving women access to the 'foreign agendas' of NGOs due to the fact that they receive funding from foreign countries, would put their communities and culture at risk of being influenced.

In connection to the security concerns of the government for NGOs working in sensitive areas of the country, as mentioned earlier, the Government has made it mandatory for NGOs working in KPK to obtain a No Objection Certificate (NOC) before any project can be implemented. However the challenge with the process according to local and international NGOs that have been working in KPK, is that the process is a "black box" and no one even in the NGO sector really knows what is required and what the criteria are. In many cases the NGOs fill out the required documentation and submit the application, after which they may be successful in achieving permission to work in a certain area or they may not, in both cases however, there is no feedback as to why they were or weren't cleared and therefore respondents from the NGO sector said it was difficult to understand what is needed and wanted and what should be or not be done in future projects. The whole process also wastes valuable implementation time in many cases and therefore it proves extremely challenging to implement projects in KPK. According to an INGO many local NGOs despite having funding were not granted NOCs and therefore could not implement their projects at all. The NOC process has also been viewed as access control by the government (Cosgrave et al., 2010).

Another issue reported by the INGOs directly involved in the implementation of WASH projects, was that recent laws passed by the State Bank of Pakistan have prohibited bank accounts being opened under NGO names. This according to respondents from the UNO means that no NGO can open a bank account for the NGO to receive direct funding. This proves to be a challenge, as

this is a standard requirement of donors, who do not according to the respondent transfer funds to individuals and require official bank accounts. This again has been reported to be a move from the Government to monitor and keep checks on international organizations working in Pakistan. According to news reports published in the leading newspapers of Pakistan, the orders were passed down by the Supreme Court in an effort to make banks comply with the National Action Plan (2015) by the Government, which aims to reduce terrorism and terrorist activities in the country. The fact that monitoring NGOs is part of the National Action Plan demonstrated the distrust of the Pakistani Government and the speculation that terrorism is being supported or funded through international charity and INGOs or perhaps that these channels are being misused by terrorist organizations for their operations and therefore the flow of money needs to be monitored. According to the National Counter Terror Authority's website a taskforce has been created to "Frame a Comprehensive Model Law for Orderly Operations of NGO's / NPO's/Charities". The purpose according of the task force as reported on their webpage was to "frame comprehensive model law for orderly operations of NGO's/NPO's/Charities in Pakistan" (NCTA, Pakistan). The rationale behind the monitoring and restrictions on the banking of international organizations can also be explained by the following text from the National Internal Security Policy of Pakistan (2014-2018) which states:

"By involving banks, Federal Board of Revenue and taxation departments for monitoring flow of money to suspected organisation; it is expedient to implement the laws to tighten control over foreign funding to non-governmental organisations and madrassas to distinguish between the legal and illegal flow of money."

From the Policy, it is quite clear that the Government wants to monitor organizations that are using the channel to fund anti-state operations in any form and are not opposed to the rightful operations of NGOs and INGOs. However according to the respondents the policy changes in affect do create hindrances in the implementation of the genuine development projects.

Other forms of monitoring by state agencies were reported by other local NGOs as well. In interviews with local NGOs as well, this problem was brought up. The WASH coordinator at Saibaan and HRDS also said dealing with these checks by different government agencies is

mostly difficult and time consuming. According to the respondent there are so many organizations that are involved in the monitoring process from the Intelligence Bureau to the Police, they are usually being monitored by several different organizations and are answerable to them all, which has created additional administrative burdens on the NGO and requires more resources and time and may be a hurdle in the implementation of the project that are working on. These organizations also recommend where they NGOs should and should not work and where they should initiate development projects, however according to the respondents the choice is usually not up to the NGO.

6.1.4 Security, safety and access

One of the most challenging aspects for the NGOs working in Pakistan is the aspect of safety and security, which is relevant for the NGO staff and the communities they are working in. Pakistan was considered as one of the most dangerous places for aid workers in 2009, due to attacks on aid workers by militant organizations (Cosgrave et al., 2010). In 2008 an attack on the British aid agency Plan International left three of their staff dead, similarly the US aid agency World vision was attacked resulting in the loss of life of six of their workers(BBC, 2010), both attacks took place in District Mansehra. In these cases the reasons for the attacks on the aid agencies by militants were due to the ongoing drone attacks carried out by the US in the tribal areas in Pakistan (ibid.). For this reason the NGO staff must be very cautious about their movements and their safety. This is a big challenge for the implementing NGOs directly as they fear for their lives and also indirectly due to the increased costs of ensuring security such as secure office premises, means of transport, office buildings, security guards etc. resulting in higher overhead costs for the operations of NGO, leading to budgetary challenges (Cosgrave et al., 2010) . These concerns were also expressed by NGOs working in the study area. In some cases NGO workers are not allowed to go to certain areas and may be barred from actually visiting these sites because of eminent security concerns for the humanitarian agency personnel.

Some areas may also be less accessible than others for several reasons. In many instances it has been reported that the Governemnt tries to control access to certain areas by implying restrictions, and in many cases the humanitarian response to disasters and in development are shaped by the Government's control (ibid.). The reason for the government's restrictions and

inaccessibility are not very clear and not much literature exists about the issue. However according to the NGOs the Governments actively try to control and decide which areas are accessible and which are not. This according to respondents at the NGO level access to certain areas may be controlled by the NOC process in place or by demarcating areas as ‘no-go’ zones. Although the apparent reason from the perspective of the Government is ‘security threat’ no specifics in either case are given, thus controlling the access of NGOs to certain areas. According to a report by Cosgrave et al., 2010 the government controls access to areas in which they don’t want the NGO community and is justified by apparent security concerns.

The other form of access is the physical aspect of the location of development, which in many cases may not be very accessible due to poor infrastructure. In many cases donor funded projects are awarded for the most underdeveloped areas of the country and the areas that are also most neglected by the local governments due to their locations. In such areas access may be difficult which may cause additional challenges for the implementing bodies.

In several of the villages that were studied, in many cases there were no proper access roads and only special vehicles could be used to access many of the areas. However in the case of bad weather some of the areas could only be accessed by foot. This has a negative impact on the quality of development work. In the cases of least accessible villages studied, which were Naka Guldar and Meesuch, the fewest visits from the NGO staff had been reported. Also in areas with poor access the material costs drastically increases, which means the costs of facilities is much higher in such areas.

6.1.5 Socio-Political challenges

Politics in general play an important role in the Pakistani daily life. In communities where poverty is high and corruption may be the norm, people tend to rely on connections for personal benefits. Nepotism and favoritism are also very common in the Pakistani society in general.

NGOs in most cases must deal with their fair share of politics in the workplace as well as in the implementation of development projects. In many cases these may cause hindrances to the work

they undertake and pose additional challenges. According to the local NGO respondents politics exist at every level and must be dealt with as part of any development project.

One of the most interesting aspects in this case is politics at the local Government levels. I use the word ‘interesting’ as so far the role of the local government in the whole development process has been quite minimal, in fact their role of support and facilitation was hardly observed in any of the projects studied, yet when the topic of politics and political benefits came up with implementing organizations, the local governments were mentioned in this context in many interviews. Almost all respondents at the NGO level agreed that the local governments try to influence the implementation of the project for their own benefits. This can range from selection of the respondents and implementation areas to forcing the NGOs to hire their acquaintances in exchange for approvals etc. According to a project manager in a local NGO, since the introduction of the NGO bill, the local Governments have more authority and power over the NGOs. In many cases the decisions regarding their operations are not decoded by local Governments, however they may be involved in the monitoring and may have connections to influential people who do have a say in the matter. NGOs have also reported to have been denied access when they are not on good terms with the local Governments or in some cases where they did not favor people or communities on their recommendations (Cosgrave et al., 2010). According to project manager at a local NGO working in District Mansehra

“In district Mansehra I would say one of the biggest challenges is the local Government, as they are not very supportive and are not really interested (in the development project). There a lot of politics going on, whenever we go to a higher up in the district management group like the Commissioner for help, assistance or for permission for the project they are looking for their own benefits. They always want us to hire their relatives and if we don’t comply with their demands they don’t help us and give us the necessary assistance we require for our projects.”

In many cases local politicians also try to influence the projects either directly when in power or through connections in local governments as well. In many cases, according to respondents from the NGOs, they try to influence the selection of villages and beneficiaries in favor of their support from certain constituencies and voters. Influence is not only exerted at the governmental

level but also at the community level, where the influential in the community try to and in many cases are successful in influencing the selection of beneficiaries. This was reported as a great problem for many of the NGOs, to the extent that NGO staff have been threatened by local communities in order to get benefits of the project.

6.2 Community Based Organization

As seen in the previous chapters the Community Based Organizations (CBO) or the Village Development Organization (VDO) play an important role in the development of WASH technologies and in most of the projects implemented in the WASH sector. The most important tasks of the CBO are implementation of the project, selection of the beneficiaries and maintenance of the implemented projects. All three aspects come with different challenges, which will be briefly discussed from the NGO's, community's and the CBO's perspective.

6.2.1 Implementation of projects

In an effort to increase the local participation in the project and to include the community in the decision making process, CBOs are formed to represent the community- their interests and needs. However in most cases the CBO are not always involved in the project at the time when important decisions are being made about the project design and resultant technology. In many of the projects studied the CBOs were created after the project was fully planned and ready for implementation. In the cases of projects where the NGO was able to implement other projects in the area after the creation of the CBO, the CBOs were more involved in the process. However this also in many cases was limited to gathering of data and facts to initiate the new projects. Even so, it can be assumed that perhaps after working with the community for several projects the NGO would be fairly aware of the community needs and preferences. Although this does not and should not replace meaningful participation in any case since as seen in many of the cases, perceived preferences from the community may greatly differ from actual preferences which can only be assessed through true participation of the community.

Although the CBO are created to assist the NGO and the implementers of the project through the process of implementation and decision making, in many cases it has been seen that the NGOs

heavily rely on the CBOs for much of the hardware development in projects with such components. In such cases they may have to take on roles they are not trained and prepared for. For example in the case of the villages where CLTS or Total Sanitation approaches were implemented, the only part of the project done by the NGO staff was the software component. This part was done by a social mobilizer and was done through community triggering meetings, which is a standard procedure in Total Sanitation approaches. The community was vaguely instructed on the technical aspects of constructing a pit latrine and the project was handed over to the CBO to supervise all the construction of the pits in the village, without any follow up from the NGOs side. The CBO in this case was responsible to make sure that everyone in the community built a latrine and was also responsible to overlook all the work that was being done in this regard. This however according to the community was not adequate support, since no one in the CBO was technically trained to construct a pit latrine or assist people technically with the construction in case they ran into any problems.

In many other instances, such as on the case of villages Basala and Garang, where each village received five toilets, the actual construction of the latrines was left up to the CBO with minimal guidance from the NGO staff. In both of the villages contractors were hired to construct the latrine, but there was no further guidance from the NGO, which explains many of the problems that were observed through the community in these villages. These include placement and construction issues, for which the CBO is not sufficiently trained. Perhaps if the NGO had been more actively involved in the implementation of the project during the construction of the latrines and had ensured its presence during the actual construction phase many of the problems could have been avoided.

In an example given by the WASH coordinator working at a UN based INGO, in some cases UN staff are not allowed in certain areas for their safety and in such a case they may also solely rely on the CBOs that are either already registered in the area or are created for the project. According to the respondent, this is also a problem as they can't properly monitor the project on their own and totally rely on the CBO and the contractors for the implementation.

An observation made in the field after several focus group discussions with different CBOs was that the CBOs in almost all cases were not trained and there was no capacity building of the committee with regard to the implementation of the project. They were in some instances trained to keep books and records related to the projects, however they were in no way trained for the technical activities and did not have the capacity to supervise these aspects of the project.

The lack of training of the CBOs and their lack of capacity and training by the NGOs can also be associated to the short time periods of projects, during which training and other activities directed at the CBOs are not always possible.

6.2.2 Selection of beneficiaries

Also an important task that is relegated to the (in many cases) newly formed village organizations is the task of selection of respondents, which has been discussed earlier.

Again in the case of Basala and Garang, the selection of respondents was also handed over to the village committee. This means leaving the choice of the beneficiaries up to the integrity and honesty of the CBOs. This was seen to be as a problem in one of the villages, where the choice of beneficiaries was clearly biased even to an outsider, yet there was no intervention in the matter by the NGO. From the Perspective of the NGO, their defense is to not get involved in the village politics and let the decisions be made at the village level, however they also admit to creating CBOs and giving power in that form to the influential and powerful people of the village. According to the Sungi, an NGO implementing developing accessible sanitation technologies for persons with disabilities (PWD), the process of selection of technologies is and should be left up to the community without any outside influence, since the village is well aware of who really deserves the limited hardware technologies they can offer. Only in circumstances where the community or the village committee cannot decide, do they step in to assist the process.

In many cases the NGOs admit to not disturb the social and power structure of the village. Many of the NGOs said they could not go against the mainstream leadership and structure of the village, since doing so would mean more hindrances to the implementation of the projects.

Therefore for them it is easier to go with the status quo and create a village committee that no one can object to and whose decisions will not be contested. Creating a CBO that did not follow the dominant power structure of the village would be a big challenge, according to the NGOs and would not be successful. The creation of the CBO is also a big challenge for the NGO, since for the ease and the success of the project they believe it is hard to go against the social order of the area.

From the perspective of the formed CBOs in the villages, their task of selection of beneficiaries was also quite complicated. In many of the villages the CBOs said they faced a lot of pressure from the community when deciding on suitable beneficiaries for the projects. The secretary of the VDO in Ahalal, where the distribution of the technologies seemed to be quite fair, said:

“I am the secretary of the VDO and it (the selection) was very difficult since there are 28 disabled people in the village but we could only construct about 11 of the latrines. So of course it was very difficult to choose who to give to. There was a lot of pressure from all other people in the village as well. We created criteria and could only give it to the people that met the criteria and were most deserving”

6.2.3 Maintenance

The CBOs are also responsible to look after the projects after the official implementation phase of the projects. This however is usually only required for public shared facilities that are shared by the community such as water schemes or public latrines. This in many cases is supposed to be in collaboration with the local government, however according to NGOs they rarely contribute and are not very active in maintaining facilities. On the other hand the CBOs in many cases do not have the financial resources and the technical knowledge to maintain these facilities themselves. In certain cases where materials, parts, or skilled persons are required to fix technical problems the CBO are supposed to collect money from each household in the village for the repair and maintenance. However in practice many people refuse to cooperate and this becomes quite challenging for the CBO resulting in malfunction of many shared technologies according to the NGOs.

6.3 Donor involvement

The donor's contribution to projects is not limited to money and in many cases donors may be quite involved in several of the aspects of the project. Since the money in the cases of donors comes from different sources, these organizations are sometime answerable to other donors (governments, individuals, organizations) for their activities and the outcomes of their donations. However several challenges came up during interviews, especially with NGOs, since they are the ones that directly in connection with the donors.

6.3.1 Donor control and micro-management

One of the most reported problems and challenges that came forward in interviews with NGOs (both international and local) was the fact that the donors controlled several aspects of the process and created a lot of pressures on the implementing organizations. These pressures were related to several different aspects of the projects such as the donors policies and expectations as well as their influence on the project design.

Many of the NGOs reported that they face many challenges when dealing with the donor organizations. According to a respondent from an INGO;

“The challenges we face from the donors are that the donors want us to do a particular project, and they give us the time line and they also tell us in which thematic area they want us to work in and where the project should be done, so this is kind of a donor driven approach”

This leaves little room for the NGOs to decide on several different factors of the project that should normally be flexible. As mentioned in past chapters, the reason for rigid conditions for project funding may be due to the policies of donor organizations, such as in the case of UN organizations which will mostly only fund Total Sanitation approaches. This means that every aspect of the project is already set and there is hardly and leeway for the NGO to make any changes to the project according to the local contexts. The UN justify this by the fact that there is a special Total Sanitation approach (i.e. PTAS) which is adopted specifically for Pakistan, however each region in Pakistan is also different and therefore in some instances an approach

that may be suitable in one area of Pakistan may not be in another. This particular issue was highlighted by the head of an action research based local NGO working on sanitation, speaking on PATS and the problems forcing NGOs to take up Total Sanitation projects he said

“Models must be applied and generalizations have to be made, but Pakistan is a country simultaneously in the 16th and the 21st century. PATS in Pakistan have been less successful due to high relapse rate... Perhaps it has something to do with what Pakistan is as a society. Pakistan’s society is a bit fractured, at very different stages of social evolution. We have a very different situation in FATA to the situation in Baluchistan. So it’s a completely heterogeneous society which requires a completely different set of skills and knowledge of what works for attitudinal and behavioral change. Any social change in Pakistan requires deep analysis of the society, which cannot be achieved in these projects or addressed by the social mobilizers. This may be possible in Bangladesh where the society is more homogenous”

Another issue is the compatibility of NGO/INGO and donor organizations policies. In many interviews with the NGOs working on sanitation projects it was pointed out that several of the NGOs are not really concerned with the policies on the NGO and are only concerned about the outcome (especially tangible outcomes) of projects they are funding. According to respondents in some case they are not only not concerned with our policies but in some cases they also try to make the NGOs ignore such additional themes and focus on the core aspect of the project which in most cases is achieving the tangible result of the project. According to a respondent from an INGO:

“They (donors) want us to adopt their approach along with our own. It would be much easier for us if they try to be in line with our approach. We would like to integrate different things in our approach such as DRR (disaster risk reduction) or climate change in WASH projects, but they may not be interested in it and they may just want us to implement the approach to get some outcomes. So they are usually not really concerned about integration, some are more flexible but mostly not”.

So in many of the cases even when in theory the addition of themes to the project may make sense, it may not be encouraged by the NGO. This however may be the policy of certain INGO and may be a part of their central ideology, in which case the NGO would like to integrate other cross-cutting themes into the projects, however may not be able to do so due to the pressures from the NGO to achieve results only related to the initial plan of the project decided by the donor organization. This may be further enforced by the time limitations and restrictions by the donors which hardly allow implementing organizations any additional time, in fact in most cases it is even difficult for the organizations to achieve any results in the given time period.

Similarly the donors may have policies that do not fit the agendas of the local and international NGOs implementing the projects or in many cases are not suitable in the local context. In an example quoted by a respondent from an NGO, donors in many cases require gender equality and equal gender inclusion in all projects, however this may not be possible at all in the tribal areas of Pakistan, where access to women even by women is strictly not possible. However according to the respondent, sometime the donors are not willing to part ways with certain aspects of their policies which make the whole process quite challenging. In other examples quoted the donors may want the implementing organizations to openly promote (through banners and wall chalking) the name of the donor organization, this however in many areas is a sensitive issue, especially when the donor agencies such as USAID have such demands. Many people in the rural areas are skeptical of the US and would not like AID from them either, especially in areas close to where the US had been carrying out drone attacks in the name of the 'War on Terror', according to the respondent.

Another challenge with the donors highlighted by many respondents both from INGOs and NGOs, was the fact that the NGOs in many cases want the INGOs to be more involved in the implementation or call for the INGOs to closely monitor all implementation done by the local implementing partners. From the perspective of the INGOs, there is a purpose for handing over projects to the local NGOs. The role of the INGOs in many cases as reported by INGO staff is to monitor the implementation of the project and provide technical assistance where required. IN many cases the INGO does not have the resources to implement the projects and therefore it may not be possible for the INGOs to be involved in the project beyond their usual role. However in some cases, because of the pressure of the donors as well as in some cases the incapacity of the

local partners the INGOs have to take part in the implementation of the project. On the other hand from the perspective of the local NGOs, they sometimes feel they are being micro managed by the INGOs and are overly involved in the project implementation. So according to most of the respondents at the NGO level, dealing with the other in line with donor directives can be quite challenging for the organizations and may have repercussions in terms of quality of work.

In many cases the donor involvement such as by dictation the type of project to be implemented will have technological implications, which means that in many cases the donors are the ones who make the calls regarding the choice of technology. In an interview with an INGO, the respondent said

“If they are in the UK or the USA they have a different idea of what technologies are suitable. They would like to see the technologies they think are the best. In our case we think we have a wealth of local knowledge and we would like to see that local knowledge come into use when deciding for such things, so it becomes a problem or at least a challenge for all of us to be on the same page.”

The aspect of technology selection in the case of the study is quite complex and involves several different institutions and cannot be simplified by the action of one organization. However the main point being discussed here is that having a non-flexible and rigid view of what the technologies in countries where the donors may not be fully aware of the ground realities may create additional challenges for the organizations that will be implementing the technologies. However most of the NGOs interviewed had a similar opinion on the donor’s choice of technologies. In some cases however I was told that some donors offer much more freedom and are open to different technologies and approaches, which seemed to be quite appreciated by the NGO, however seemed to be the exception.

The WASH coordinator of a UN body discussing the challenges related to different institutions had the following to say

“If one stakeholder in WASH was to be held responsible, I’d say it’s the donors. The biggest problem of the donors is that they have a very similar strategy for the whole world which is not right, they expect all countries to move at a similar pace and to achieve things relative to other countries, but that’s not how the world works. The biggest issue of the donors is that they don’t understand that. NGOs’ are implementing the projects and people are receiving them, but the issue lies at the donor level.”

This was quite interesting as UN itself does act as a donor body itself and funds many WASH projects in Pakistan. The respondent while talking about donors also referred to themselves and their organization as ‘we’ when talking about donors. Even though many NGOs talked about these challenges of working with the donors, there seems to be hardly any self-reflection and change in the donor behavior and pattern of operation.

Obtaining funding may also be another challenge in some cases, many NGOs say the funding available for projects had reduced in the last couple of years. Several reasons for this were stated by respondents in the NGO community. First of all the current instability in the country may be a reason for less funding for Pakistan. The current situation may not be the reason in itself, but as discussed the current socio-political situation of the country had added several challenges to the already challenging task of development. It is easier for donors to donate to other countries that have similar needs yet lack the complexity that characterizes development in Pakistan. In many cases foreign employees of such organization are at time unwilling to come to countries where they fear unrest and unsafe conditions. Furthermore the Government’s restrictions on operations and hurdles in implementation further deter donors from donating to different projects in such circumstances. Another factor according to a respondent is related to the current humanitarian crisis in several countries of the world such as Syria, Yemen, Sierra Leone etc. which means that funding may be distributed and donor priorities in terms of regions may lie elsewhere.

6.4 Recommendations

After the main challenges at all levels have been identified in the implementation and adoption of technologies through various routes by the different institutions involved in the last section of

the thesis, the following section will present the recommendations that conclude the thesis. The recommendations may be useful at every level, however would be likely, given the current situation, more useful for any of the institutions involved in the implementation of WASH projects and technologies in a development context. This includes the Government, specifically those involved in planning and overseeing projects of such nature and relevant departments as well as policy makers. The recommendations are also meant for the chain of humanitarian assistance starting from donors through INGO/NGOs to community based organizations.

6.4.1 Recommendations for the Government

- The first and foremost recommendation would be for the Federal Government to take more initiative to improve their role and performance in the sector of WASH and to take the responsibility that the state should in that regard. Since the declaration of water and sanitation as basic human rights by the UN, it's the government's responsibility to ensure the provision of water and sanitation facilities to all of its citizens. This although seems to be quite obvious however the role of the government in the sector particularly is minimal.
- This brings me to the second point which is the policy created by the government for the operation of humanitarian assistance in the water and sanitation sector. If the government does not have the capacity (or the will) to ensure sanitation for all, at least assistance can be provided to international development organizations that are willing to assist in the development. This should be done through policies which make the operations in already challenging environments easier for the agencies working on such projects. Although the government must keep its national interest in mind, there can be other ways by which the activities of such organizations can be monitored without disrupting their operations.
- In terms of approaches followed, according to literature on sanitation developments, subsidy based technology developments should be discouraged at all costs. This means that no facilities should be constructed for anyone in the community, however enabling environments should be created for people to adopt sanitation. The answer in many cases worldwide has been an overzealous promotion of 'Total Sanitation' approaches, which

may be for good reason in some countries and regions of the world. However I do not think the Total Sanitation approaches in their current form are suitable for Pakistan or a country like Pakistan. There has been minimal meaningful success in the projects monitored (also in other areas of Pakistan in past studies). Therefore I would recommend changes to the existing approach to make the technology choice that typically come with the approach wider to suit different preferences from the community.

- In connection to the previous point, I further recommend that the government should create a sanitation policy based on third party evaluations of projects that have been implemented in all regions of the country. This evidence could favorably shape the policy in accordance to the needs of the community's rather than be based on recommendations from the international communities of what the local sanitation policies should recommend.
- Furthermore there is a need to enhance the 'total sanitation' policy by the Government by funding small pilot projects in various parts of the country. The recommendation for the pilot projects is to modify the total sanitation approach with other approaches such as microfinance and private-public partnership which would actually allow people to finance the construction of a technology of their choice. Successful projects could then be relocated at scale. This not only would solve the problem of the technology associated with Total Sanitation approaches but would also enable the community to overcome their economic restrictions to construct a technology of their choice.
- To ensure the participation and inclusion of the local Government, the central Government should create regulations in this regard and follow through on the implementation. This will ensure the participation of the local governments, which have been mostly absent, yet are crucial for the sustainability of projects implemented.
- Due to the difficulties in creating awareness amongst rural communities owing to the low literacy rate, a recommendation to the Government would be to create public service campaign in the form of public-private partnership and use channels such as radio and television to spread messages related to sanitation, hygiene and health.

6.4.2 Recommendations for Donors

- Technology has been seen to be the most important components of water and sanitation projects. However in most of the projects studied and most of the projects implemented in the country the choice of technologies is decided high up in the chain, mostly at the level of the donors, with little flexibility. The results of many of water and sanitation projects could be different if this decision making process was opened and at least brought down to the INGO and NGO level, with conditions to be done in collaboration with the participation of the local communities.
- Technological preferences are usually based on technologies that have proven to be superior due to successes in previous projects sometimes even in other parts of the world. However technologies that are less preferable (or not preferable at all) may be better received and adopted by the communities, in such a case the weightage of these technologies should be higher than technologies that won't be preferred by the community. This would mean that the community would at least adopt the technologies rather than rejecting them, wasting resources and time.
- Again donors would benefit from funding small scale pilot projects based on novel approaches, such as the inclusion of sanitation into microfinance schemes. Microfinance would enable communities to be able to afford their own sanitation systems, as in most of the cases poverty is a large barrier to the adoption when people desire sanitation facilities. Small pilot projects would also encourage novelty in the process and could generate valuable information and data on approaches or certain aspects of approaches that work and do not work.
- Both donors and INGOs usually monitor projects after and sometimes during their implementation. However in most of the cases the monitoring is financial and the performance is based directly on the deliverables and the performance of tasks with respect to the project plan. However such monitoring does not allow much learning from the projects and does not give any of the organizations a chance to improve future implementations and reflect. The monitoring would be beneficial if it were based on the impacts of the projects, which are the intended benefits of the development. This would allow critical review of what works and what does not in the field as well as what are the

possible ramifications of a certain approach. This would also bind NGO to aim to focus on long term impacts rather than short term outcomes.

6.4.3 Recommendations for NGOs

- A recommendation specifically for the implementing organizations would be to modify the current system of CBO formation and operation. The CBO should represent the community in a true sense and should not represent the already present oppression and inequality present due to the structure of the society, which undermines the purpose end purposes of the development. The process should be democratic if a CBO is to be established. Furthermore the selection of the beneficiaries should not be left to the CBO in its current form and should be an assisted process. With a little work from the local NGOs, it would not be difficult to identify the needy in the community.
- Another recommendation is to ensure that the project implementation phase is supervised and is not left up to the CBOs which in most cases do not have the capacity to undertake such responsibilities. Many of the problems seen with the technologies in the field were due to the fact that the project was implemented without constant assistance from the NGO. This in many cases resulted in several minor problems with large consequences and the difference between having an impact or not.
- Although seemingly trivial, yet very important in terms of meaningful results, a recommendation is the increase of project durations of all projects, regardless of the approach and if they are based on provision of facilities or only education, awareness and advocacy. The project duration, as seen in previous sections, serious implications on the quality of the implementation. This is further complicated by governmental regulations and procedures which use up valuable time that should be spent with the communities.
- An important recommendation related to the time limitation of many of the current development and WASH projects is the concept of integrated projects. There are several documented benefits of integrated projects for several reasons, however in the case of Pakistan I think integrated projects would be especially helpful for two reasons. Firstly since integrated projects involve simultaneous or successive projects on different but

related themes, there would be a chance to integrate sanitation into another project that was an identified and expressed need by the community. This would increase the likeliness of the community's participation and support. Secondly the NGO being involved in several smaller projects being implemented in succession would offer them more time for activities such as behavior change communication related to all themes increasing the likeliness of successful behavior change or at least the retention of information.

- An important issue for the implementers is their inability to create sufficient awareness amongst the community to create a sufficient demand and market for sanitation in the communities. This has been linked to poor social mobilization and the staff at the NGO level that are responsible for these parts of the project. A recommendation in relation to this issue is to ensure only qualified staff are hired and to ensure high quality social mobilization. In the case that people qualified for the task, the government could create training centers attached to Union council level Basic Health Units (BHU).

These recommendations are some of the ways in which WASH projects could potentially have a larger impact in the communities where they are implemented. They are however in no manner, an exhaustive list of recommendation but are key points related to the findings of the study that could help improve conditions based on empirical data from the field. The recommendations and findings of the study may be limited by the narrow socio-cultural conditions that exist in the Pakistani rural society, however in certain cases may be generalizable to similar conditions or countries where similar conditions exist. The limitations of the study have been outlined in detail in Chapter 3.

6.5 Further research

Limited research has been conducted on WASH technologies and projects especially in the case of Pakistan. This thesis addresses certain aspects of WASH projects and technologies which were important to address within the scope of the research, however there is of course need to further this research in several ways and in many respects. Valuable analysis could result from comparative studies in other regions of the country where the conditions both in terms of society and government regulation are different. As some of the factors that affect the technologies such

as policy and regulation were specific to the province where all the cases had been studied. Some of these policies in are not applicable in other regions in Pakistan and therefore a comparison would help understand the impacts of the specific regulations in the study area. Similarly comparisons in other countries with similar conditions would also be beneficial to narrow down the core issues seen throughout the thesis. This would also help produce more generalizable information that may be applicable and relatable to several countries and a wider range of socio-economic and political conditions.

Apart from the aspect of generalizability, there are several areas in which further research may be required. The thesis only covers a narrow aspect of technology selection and implementation in the sector, however does touch upon several different stakeholders in the process. There are however, several other aspects of WASH projects and technologies that do need investigation. An interesting addition would be furthering the research in terms of sustainability of the WASH interventions taking place in the context of rural development. Sustainability studies of WASH technologies would cover several other critical aspects such as the environmental aspect of sanitation. Perhaps a comparison of the current risks of open defecation can be compared to the risks of sanitation systems that are improved yet are not ecologically safe and threaten the environment.

Personally I found the link of ‘War on terror’ and generally terrorism and development to be quite an interesting connection to development in general and specifically WASH technologies. With terrorism on a rise in many regions of the world, it would perhaps be interesting to further investigate how terror activities or counter terror activities may shape or undermine development.

There is much more information required from the sanitation development sector and there are also several aspects which all could be studied in more detail individually or perhaps also over larger geographical areas. In any I personally hope that all research in the area has the intended outcome of improving processes that result in increased adoption of sanitation technologies and the betterment of life for the less fortunate.

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ANNEX I*

APPLICATION FOR NO OBJECTION CERTIFICATE FOR NGOs/INGOs FOR PROJECT IMPLEMENTATION IN FATA

Form Version	1.2	For Use After	Aug 25, 2011
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The humanitarian community has been assisting FATA IDPs in hosting districts of KPK. However, after restoration of peace in the conflict areas and returns of the IDPs to their places of origin, the focus of interventions will be shifted to the affected areas with scope to provide humanitarian assistance to the returnees but also extending to early recovery, restoration and reconstruction activities.

NGO/INGOs that are interested to work in FATA should follow the following steps:

1. For Project NOCs, request shall be forwarded to Director General FDMA. FDMA will further process the request with concerned authorities. For Travel NOCs of National / International Staff shall be forwarded to Law & Order Department with copy to FDMA.
2. **REQUIREMENTS:** NGOs/INGOs will submit;
 - I) Completed & Signed NOC Application
 - II) Covering Letter from the NGO to DG-FDMA
 - III) Profile of NGO
 - IV) Registration Proof of NGO/INGO (from of EAD/Social Welfare Department FATA/ Security and exchange commission)
 - V) Clearance Authority by the Ministry of Interior (For INGOs)
 - VI) Detail of foreign nationals working in the NGO on attached format
 - VII) Detail of Pakistani Nationals working in the NGO on attached format
 - VIII) Detail of other projects being implemented by the applicant in FATA on attached format.
 - IX) Complete Work plan
 - X) Copy of detailed budget
 - XI) Logical Frame Work Matrix having
 - a) Objectively verifiable indicators (OVIs of the project)
 - b) Key point indicators of the project
 - c) Specific defined objectives of the project
 - d) Generic results/goal of the project
 - XII) CNIC Copy of signing person
3. Local NGO that are interested in FATA will register themselves with Social Welfare Department FATA, However if they got registration from Social Welfare Department KPK is also valid for the time being but accreditation will be still needed from Social Welfare Department FATA.
4. NGO/INGOs will submit their progress report each month to FDMA and approved format will be provided accordingly.
5. Contact following focal point for NOC at FDMA:

Mr. Farman Khilji	Assistant Director	Telephone:	091-9218513, 091-9216336
Miss. Nosheen Ambar	(NOC Section)	Fax:	091-9218573

*Source: FATA Disaster Management Authority Pakistan (www.fdma.gov.pk)

Project Proposal Format for NOC

Section I – Contact Information

Organization Contact Details		Phone Number	Fax Number
Name of Organization			
Project office			
Provincial Office			
Head office (in Pakistan)			
Contact details at primary level	Contact at Project Location	Contact at Provincial Level	Contact at Islamabad Level
Name of Person			
Landline Number			
Mobile Number			
Email Address			
Fax Number			
Contact details at secondary Level			
Name of Person			
Landline Number			
Mobile Number			
Email Address			
Fax Number			

Section II – Project Summary

7. Title of Project:					
8. Sector of intervention:					
9. Proposed Project Location: <i>(Please fill the table)</i>	<i>FATA</i>	<i>Agency</i>	<i>Tehsil</i>	<i>Sub-Tehsil</i>	<i>Villages</i>

Activity	Weeks											
	1	2	3	4	1	2	3	4	1	2	3	4

Cluster Vetting:

We certify that:

- The relevant line department has been informed of and/or approves the program/project
- The ‘owner’ has coordinated with the cluster
- The technical components of the program/project are acceptable
- The program/project meets a known need
- The program/project is not duplicative

Name of Cluster Lead Organization

Name of person signing:

Designation:

Signature with stamp:

The _____ (Name of organization)

has read the TOR proposed for humanitarian work and declares to abide by it.

Signature: _____

Name: _____

CNIC#: _____

Organization: _____

Position in organization: _____

Date: _____

Note: Signature at the bottom of each page is required from official of organization. In case of change in verifying person, the organization will notify to FDMA.

Format for Detail of foreign nationals working in the NGO/INGOs

S. No	Name	Nationality	Copy of Passport	Address in the Home Country	Telephone number in Home Country	Address in Pakistan
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Format for Detail of Locals working in the NGO/INGOs

S. No	Name	Father Name	CNIC Number	Complete Address (Permanent)	Complete Address (Temporary)	Telephone Number
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Format for detail of other projects being implemented in FATA

S. No	Project name	Cluster	Agency	Donor / Country
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ANNEX II

NATIONAL SANITATION POLICY

1. PREAMBLE

The National Sanitation Policy, framed by the government of Pakistan, is intended to guide and support the provincial and district governments of Sindh, Punjab, North-West Frontier Province (NWFP), Balochistan, Azad Jammu and Kashmir and the Northern Areas and the administrative units of the Islamabad Capital Territory and the Federally Administered Territorial Area (FATA), in framing their own sanitation related strategies, plans and programmes. This policy is the result of stakeholder consultations held at the provincial level and in Azad Jammu and Kashmir and the Northern Areas.

2. DEFINITION OF SANITATION

The definition of sanitation in the context of this policy is the creation of an open defecation free environment along with the safe disposal of liquid, solid and agricultural waste and the promotion of health and hygiene practices in the country.

3. SANITATION CONTEXT

The sanitation related ground realities related to demographic change, coverage, social issues, the resource dimension, NGO and private sector involvement, capacity and capability of planning agencies and local government departments, is given below and has formed the basis for the development of the provisions of the National Sanitation Policy.

- Pakistan's population in 2005 was 153.45 million with a population growth rate of 1.9 per cent per year. At this rate the population will double in 37 years. According to the 1998 Census the urban growth is 3.5 per cent and 16 per cent of Pakistani's live in cities of over one million. This trend is likely to continue.
- Sanitation coverage is poor. Currently 37.6 per cent (four per cent of urban and 55 per cent of rural) of the country's population have no access to any type of latrine facility and as such they are using fields for open defecation. Only 55 per cent of households in the country have access to improved sanitation. However, between 1990 and 2005 the number of households without a latrine have declined from 52.2 per cent to 37.6 per cent (from 10.5 per cent to 4 per cent in the urban areas and from 70.5 per cent to 55 per cent in the rural areas).
- Only 46 per cent of households in the urban areas and 1 per cent in the rural areas are connected to an underground sewerage system.
- The absence of improved sanitation is a major contributor to Pakistan's poor health statistics. Infant mortality rate is 87 per thousand and under five mortality rate is 110 per thousand. In addition, 228,000 out of 700,000 under five daily deaths are caused by diarrhoea.
- Large and intermediate cities have underground sewage systems. The old systems have collapsed due to a lack of maintenance and poor design and almost all systems

are planned to dispose into the storm water drains and water bodies. This has heavily contaminated the natural water bodies, made their water and fish life unsafe for food and is a major environmental health hazard. In addition, over 50 per cent of Pakistan's urban population lives in *katchi abadis* and/or informal settlements and their sanitation plans have not been integrated into the larger city sanitation plans. Treatment plants for the cities do not exist and where they do, they are inappropriately located and hence receive little or no sewage.

- The vast majority of small towns do not have an underground sewage system. Most neighbourhoods have open drains which are a health hazard and a danger to the housing stock.
- Solid waste management (SWM) systems exist only in the large cities and a few intermediate ones. Here no more than 50 per cent of the garbage generated by the major cities is lifted and that too is taken to informal dumping sites since formal sites have not been adequately developed. It is estimated that only 5 per cent households in Pakistan have access to a municipal garbage collection system. Most hospital waste is not safely disposed off and disposal systems exist only in Lahore and Karachi.
- Surveys show that the majority of Pakistanis do not have a clear understanding of the relationship between unsafe excreta disposal and diarrhoea. They also do not know the costs and techniques of installing sanitary latrines. As a result, sanitation related diseases impoverish them.
- There is an almost total absence of public toilets in cities, towns and transport terminals and transit areas in Pakistan. Functioning toilets do not exist in nearly two-thirds of schools in the country. In addition, water is not always available in the toilets, students and teachers do not know how to use latrines, and staff for maintaining them is not always available since maintenance of toilets is considered to be the job of the "lower" castes. Women and girls are the worst sufferers as a result of lack of sanitation facilities.
- Government spending for the water and sanitation sector has been poor (0.08 per cent of the GDP for the year 2002-03, and 0.09 and 0.10 per cent for the years 2003-04 and 2004-05 respectively). These allocations are insufficient to meet the targets for the sector and most of them are utilised for the water sector rather than sanitation.
- The government has borrowed from International Financial Institutions (IFIs) for sanitation related projects. This has increased Pakistan's foreign debt and according to evaluations most of these IFI funded projects have not been successful.
- In urban areas there is considerable evidence that in the absence of government and/or NGO support and investments, communities organise to build their sanitation systems on self-help and dispose them into the natural storm water drains. If this process is supported by technical advice and managerial guidance then the huge investments communities make into this effort would be better utilised and would help to overcome resource constraints.
- There are a number of Pakistani NGO and government agency programmes and projects that have successfully supported communities in financing and managing the construction of their neighbourhood sanitation infrastructure through self-help. Government-NGO/CBO partnerships have emerged as a result where local government has complimented this work by providing trunk sewers and disposals.

- In most urban areas and in all rural areas sanitation is not priced and as such operation and maintenance (O&M) costs for sanitation have to be subsidised from other sources.
- Maps and plans of existing settlements and the infrastructure that they contain do not exist for the urban and/or rural areas of Pakistan. Institutional capacity and capability for such documentation is almost non-existent. In the absence of such documentation, realistic and cost effective planning cannot take place.
- There is also a lack of technical capacity and capability in government agencies to plan and implement sanitation programmes and an absence of management information systems.
- Engineering standards followed in Pakistan create systems that are expensive to build, operate and maintain. Standards developed by NGO and innovative government programmes have overcome these constraints and are being increasingly applied as solutions.
- Sewage and plumbing systems in Pakistan suffer from badly manufactured pipes, accessories and fixtures which are also not water efficient. This results in deterioration of the system and subsequent polluting of the environment.
- So far there has been an absence of a sanitation policy in Pakistan and an absence of a clear definition of sanitation itself. In addition, roles of the different government agencies responsible for planning and implementation are not clearly defined. There are also a large number of actors involved in sanitation provision and a large number of parallel sanitation related investments and programmes between which there is no coordination and many of which do not come under the preview of local government institutions.
- There is a powerful formal and informal sector involved in the development of human settlements in Pakistan. Sanitation provision is not a priority with these developers. In addition, there are informal schools in the private sector and private clinics in low income settlements. Where this vibrant informal sector has been supported by managerial guidance and/or technical advice, it has contributed to the development of sanitation facilities and hygiene education.

4. OBJECTIVES

The primary objective of the sanitation policy is to improve the quality of life of the people of Pakistan and the physical environment. To achieve this, the policy has the following sub objectives:

- To ensure an open defecation free environment; the safe disposal of liquid, solid and agricultural waste; and the promotion of health and hygiene practices to compliment the primary objectives.
- To develop guidelines for the evolution of an effective institutional and financial framework to implement the primary objectives.
- To link sanitation programmes with environment, housing, education, health, water and city and regional planning policies and programmes.

5. POLICY PRINCIPLES

The principles of the sanitation policy are given below.

- Health is a fundamental human right and health targets cannot be achieved without sanitation. Therefore, this policy considers sanitation to be a fundamental human right.
- Development has to be sustainable. To achieve this, it is necessary to
 - build on what exists, mobilise local resources, avoid foreign loans and develop programmes that are implementable within available resources and enhanced capacities of institutions and communities;
 - understand, accept and support the role that communities, NGOs and the formal and informal sector are playing in sanitation provision;
 - accept the component sharing and total sanitation models (described in Section 7) for all government programmes and projects so as to ensure financial sustainability and community and private sector involvement in development and subsequent O&M;
 - develop and use appropriate technologies that are low cost, easy and cost effective to maintain;
 - involve departments responsible for O&M in the planning of sanitation schemes;
 - initiate research and pilot projects for developing sustainable models for the safe disposal of agricultural waste.
- The needs of women, children and the handicapped are to be given priority in all policy, planning and implementation processes.
- The provision of adequate, appropriately and hygienically designed toilets in public spaces and public use buildings will be guaranteed.
- There will be an equitable distribution of resources between the richer and poorer sections of human settlements. However, preference will be given to those areas where the environmental and social impact of investments shall be the maximum.
- PC-1s for projects and programmes will only be prepared after the conceptual technical details and Bill of Quantities have been developed and a stakeholder consultation has been held. The feedback from the stakeholder consultation will be reflected in the modified designs and estimates. Technical designs will be area specific and will be sensitive to the culture and traditions of the communities they are designed for.
- O&M costs will be generated at the local level through a combination of affordable user charges (on a sliding scale) and/or by assigning O&M responsibilities to community organisations.

- Sanitation programmes and projects will be coordinated with city planning, housing, environment, health, education and income and social economy policy guidelines, programmes and projects.

6. MINIMUM ACCEPTABLE SANITATION OPTIONS

The definition of adequate minimum sanitation in the context of this policy is given below.

- In urban areas or rural settlements of high densities: Flush latrines and/or pour flush latrines in homes (or privately shared) connected to an underground sewage system terminating in a sewage treatment facility.
- In unserviced urban areas and in low density rural settlements: Ventilated pit privies/pour flush latrines connected to a septic tank linked to a waste water disposal and/or collection system.
- Minimum sewage treatment facilities will be of biological treatment and retention time will be calculated so that the effluent produced will be in keeping with the National Environmental Quality Standards (NEQS). The effluent from the treatment plants in the rural areas will be used for agricultural purposes.
- Disposal of storm water can be combined with sewage disposal provided the effluent can bypass the treatment plants during rains.
- The disposal of raw sewage into natural body bodies will not be permitted.
- Solid waste disposal in large and intermediate cities will be disposed to properly designed landfill sites. In case of smaller settlements, area specific solutions will be developed in keeping with the NEQS.

7. POLICY MEASURES

7.1 Cross Sectoral Issues

Sanitation issues are closely related to larger environment, housing, city and regional planning, health and education, gender, drainage and industrial effluent disposal policies, regulations, programmes and projects. A process of coordination at the federal, provincial, district and town/tehsil municipal administration (TMA) level will be established between these different sectors.

7.2 Government's Vertical Programmes

Funding from government's vertical programmes and from bilateral agencies will be a part of a larger investment plan prepared and monitored by the provincial government and managed by the district government and/or the TMAs. In addition, definite allocations will be made in the Khushali Bank, Pakistan Poverty Alleviation Fund (PPAF) and other community support programmes for sanitation specific projects.

7.3 Adoption of the Component Sharing and the Total Sanitation Models

The Component Sharing Model (whereby communities and/or developers, housing societies etc. finance and build their latrines, lane sewers and collector sewers and local government builds trunk sewers and disposals) will be adopted for all government schemes in the urban areas and villages of

over 1,000 population. Sewage and waste water treatment facilities will be provided by the developers for large schemes where connections to local government developed disposal is not available. Incentives to communities and households will be provided to make the Component Sharing Model attractive such as local government paving lanes where communities have built their sanitation systems.

For settlements of less than 1,000 population the Total Sanitation Model (successfully practiced in Bangladesh) will be adopted. In this case government would mobilise communities, raise their awareness and provide incentives (technical support, subsidies) to them to build their sanitary latrines and waste water disposal systems along with the promotion of hygiene and preventive health practices.

7.4 Effluent Quality Monitoring

TMA's will be responsible to coordinate with the provincial Environmental Protection Agencies to assist them in the monitoring of the effluents of the municipalities in accordance with the NEQS.

7.5 Capacity Building

- Projects and programmes considered as good practices will be converted into training centres for government officials; TMA's staff; community activists, representatives and technicians; and elected representatives. Training will be provided to groups in which all stakeholders are present together.
- At the union council (UC) level, a team of community technicians will be trained in surveying, mapping, estimating and supervision of construction work so as to provide technical support to the UC. Salaries for this technical team will be provided through an endowment meant exclusively for this purpose. The technical team will also be responsible for training community members in the skills the technical team possesses.
- The capacity of all levels of government will be developed to ensure public consultations and self-monitoring and documentation of their work.
- Professional academic and research institutions will be involved in the capacity building process and as a result build their own capacities through interaction with grass root realities.

7.6 Awareness and Education

- Provincial and local government programmes will be developed to advise and collaborate with the media, especially TV and radio channels, to promote sanitation related messages in their entertainment programmes and to develop special programmes related to sanitation and its relationship between civic responsibility, health and education.
- A sanitation (including solid and agricultural waste) related training/awareness raising programme will be initiated at all educational institutions (schools and colleges) as part of the curriculum, at teachers training institutions and local government department and agencies including Basic Health Units, Physical Planning and Housing Departments, Tehsil Headquarters, Mother and Child Health Centres and the Social Welfare Departments. The main focus of the programme will be primary health related; on why toilets are required and how they should be used and maintained; and on how solid waste can be managed through the principle of reduce,

recycle and reuse. An important part of the programme will be on the adverse effects on sanitation systems due to the use and improper disposal of polythene bags.

- Informal and private sector schools and clinics will be documented by the TMAs and the UCs so that sanitation related health and hygiene programmes can be initiated and promoted through them.
- Sanitation related issues will be incorporated in the government's National Policy for Development and Empowerment of Women, March 2002.

7.7 Public Toilets

Public toilets will be adequately provided (keeping in view the different requirements of men, women and children) as a priority for all public use open spaces (such as markets, parks, playgrounds) and public use buildings. The toilet requirements and specifications will be built into the bye laws of all urban areas and TMAs. Where feasible, the construction, maintenance and operation of these toilets can be sublet to the private sector on a build operate and transfer basis or on government-private sector partnerships.

7.8 Public-Private Partnerships

- Formal sector real estate development is creating townships and housing estates all over Pakistan. Bye laws will be developed by the provincial government and implemented by the TMAs for developing sanitation systems and sewage and waste water treatment facilities for different sizes of developer promoted schemes. Informal sector developers will be provided incentives and disposal points by the TMAs if they build an underground sewage system in their development schemes.
- Developers and housing societies will be charged the proportional costs of local government developed sewage disposal systems.
- The private sector-community-NGO linkages in solid waste management in Pakistan are well established. City governments and TMAs will identify these good practices, assign roles and responsibilities through consultations and invest in promoting them.

7.9 Urban Sanitation

- City governments and TMAs will develop their capability and capacity to document existing settlements and for identifying the existing sanitation and drainage related infrastructure and its condition. On the basis of this documentation, a programme for the rehabilitation of damaged infrastructure (as opposed to its rejection and/or duplication) will be developed and implemented.
- An overall sanitation plan will be developed for all urban settlements by city governments and the TMAs (or Water and Sanitation Authorities (WASAs) which have not been devolved) in coordination with all other agencies involved in sanitation. The plan will focus mainly on the details of the trunk sewers and disposals and all other sanitation related agencies (cantonments boards, railways, etc) will develop their plans in accordance with the overall plan.
- Wherever sewage has been planned to dispose in storm water drains, such drains will be converted into box trunks or trunk sewers will be laid in them or on either side of them and will terminate in treatment facilities. The treated effluent will then be discharged into natural

water bodies, used for agricultural purposes or converted in lakes and ponds as part of recreational areas. The government will develop the necessary NEQS for effluent to be used for these purposes.

- Gravity flow systems will be used for sewage schemes (unless not feasible) so as to avoid pumping and O&M costs. Where these systems cannot be self-cleansing, a one chamber septic tank will be built between the toilet and the lane sewer so as to avoid solids from entering the system and clogging it.
- Close coordination between agencies responsible for the Katchi Abadi Improvement and Regularisation Programme and the proposed Informal Settlements Improvement Programme (see Item 8) and TMAs and agencies responsible for planning, implementation and O&M of sanitation will be established so as to make their work more integrated and effective.
- Roads in *katchi abadis* will not be raised to a level higher than the level of the plinths of the houses so as to make sewage disposal and drainage possible and to prevent the *abadis* from flooding during the rains.
- All TMAs and/or city district governments will develop landfill sites for the disposal of solid waste. These landfill sites and the collection and disposal systems can be either managed by the local government itself, be a public-private partnership or contracted out to the private sector. In any case, the involvement of the formal and informal solid waste recycling industry will be sought.

7.10 Rural Sanitation

- The Component Sharing Model (latrines and lane sewers built by the community with technical advice from NGOs/TMAs and trunk sewers and disposals built by local government) will be adopted for villages of 1,000 and above population. For villages of less than 1,000 population the Total Sanitation Model will be adopted. Both models have been described in Section 7.3.
- A programme for motivation, technical advice and subsidy (through supply of materials) will be initiated in selected TMAs and UCs for the construction of ventilated pit latrines and safe disposal of waste water. Such TMAs and UCs will be transformed, within a year, into training centres for local government staff, elected representatives and community activists, technicians and leaders from other tehsils and UCs.
- The motivation programme for latrines will also educate people on the health problems associated with handling of animal dung and the health hazards of keeping animals within homes. Alternatives to the present conditions will be developed in association with the governments livestock departments.
- The use of waste water for agricultural purposes from individual households in low density villages will be encouraged and designs for its collection and use will be provided to households. Similarly, waste water from sewage systems of large/dense villages will be sold by the UCs for agricultural purposes. Where land for development of a treatment facility has been provided by an individual, he will be entitled to sell the treated effluent to farmers but he will also be responsible for the O&M of the treatment facility. The necessary quality standards for effluent to be used for agricultural purposes will be developed by the government.

- Relevant government agencies will initiate research and pilot projects for developing sustainable models for the safe disposal of agricultural waste. These models will be promoted at the UC level.

7.11 Hospital Waste

Provincial government will ensure that city governments and TMAs follow the Hospital Waste Management Rules 2005 of the Ministry of Environment for the safe disposal of hospital waste.

7.12 Sanitation for Disaster Areas

The federal government will develop the principles for providing sanitation to communities and settlements effected by disasters such as earthquakes and flooding. Based on these principles, the provincial and city district governments will prepare policy and implementation plans. These will be developed and approved within 12 months of the enactment of the National Sanitation Policy.

7.13 Review of Sanitation Plans and Policy

The sanitation policy and city and district level sanitation plans will be reviewed after every census.

7.14 Water Efficient Systems

The relevant federal and provincial government agencies and/or research organisations will ensure the development of water efficient sanitation systems and technologies by developing guidelines and designs for the private and public sector sanitation related manufacturing industries.

7.15 Consultations

City government and TMAs will hold public consultations once the conceptual design of the development plan, schemes and projects has been completed. Modifications in the designs will be carried out to accommodate the concerns of the stakeholders. The PC-1 will be prepared only after such a process has been carried out. A steering committee of representatives of interest groups will be created to oversee the programme/project/scheme. Accounts of the projects shall be made available to the public every quarter along with a quarterly progress report. These will also be made available to the media.

8. POLICY INSTRUMENTS

The following policy instruments and procedures will be developed for making the implementation of the sanitation policy possible.

- Existing sanitation related policies and their regulations and procedures will be reviewed and, if necessary, modified so as to fulfil the requirements of the National Sanitation Policy.
- On the basis of the National Sanitation Policy, the provincial government will prepare and put in place a regulatory framework (rules, regulations and procedures) and a strategy for the implementation of the National Sanitation Policy and for the coordination between the various sectors involved in sanitation related issues. This framework will be implemented at the provincial, district and TMA level.

- The Component Sharing and the Total Sanitation models for the provision of sanitation will be legislated and the procedures and regulations for their implementation will be developed.
- A programme for the upgrading of informal settlements (created out of the informal subdivision of agricultural land) will be instituted on lines similar to that of the katchi abadi improvement and upgrading programmes.
- A legislation regarding the building of toilets along with their specifications shall be developed by the provincial government and implemented by the city district governments and TMAs.
- Local government will raise funds for the O&M of sanitation systems and/or hand over O&M responsibilities to communities and the private sector so as to make O&M sustainable.
- The Higher Education Commission will be requested to make it compulsory to link professional education in medicine, engineering, architecture, planning and social work to grass root realities.
- The government will honour its international agreements and obligations which include the Millennium Development Goals, the recommendations of the World Summit on Sustainable Development and the UN Istanbul Declaration.

9. INCENTIVES

The government will provide incentives in the form of three rewards to tehsils/towns for the implementation of the National Sanitation Policy.

- **Rewards for all “Open Defecation Free” Tehsils/Towns:**

Fiscal incentives will be made available to all tehsil/town governments that achieve an ‘open defecation free’ status. An open defecation free tehsil/town will have completely eradicated the practice of open defecation and having ceased all effluent/seepage releases into open drains or nullas.

These incentives grants will be dispersed in two instalments. The first instalment when a tehsil/town can prove that it has achieved ‘open defecation free’ status and a second instalment after a period of time once the tehsil/town has proven that it can sustain this status. A monitoring system through provincial/district level functionaries will be developed to validate ‘open defecation free’ status prior to the release of funds.

- **Rewards for all “100 per cent Sanitation” Tehsils/Towns:**

In addition to the eradication of ‘open defecation’, further fiscal incentives will be made available to tehsils/towns that have addressed broader environmental health issues to achieve 100 per cent sanitation status. A tehsil/town that has achieved 100 per cent sanitation status will, in addition to being ‘open defecation free’, have achieved the following: (a) 100 per cent sanitation coverage of individual households, schools and public areas, (b) free of indiscriminate solid waste disposal and (c) eradicated all stagnant water sites.

To be eligible for the “100 per cent sanitation” incentive grant a TMA must be able to demonstrate that it has developed systems to ensure that the safe disposal of excreta, solid waste and drainage will be managed efficiently on an ongoing basis. External agencies/NGOs will be contracted by the provincial government to validate all “100 per cent sanitation” applications prior to the release of funds.

- **Awards for the Cleanest Tehsil/Town:**

To promote excellence in the delivery of sanitary outcomes, a ‘cleanest tehsil/town’ competition will be introduced. This scheme will provide a prize to the tehsil/town in each province that has achieved the highest standard in delivering environmental ‘quality of life’ outcomes.

The tehsils/towns shall be judged by independent committees (comprising of peer TMA functionaries, provincial functionaries and external support agencies) on the basis of criteria that encompass: (a) excreta disposal, (b) waste water disposal, (c) solid waste disposal, (d) personal hygiene, (e) community participation and (f) quality of life. Suitable indicators will be developed for each of these criteria and assigned different weights dependent on their significance. The achievement of “100 per cent sanitation” status will be taken as the minimum eligibility criteria for entrance into this cleanest tehsil/town competition.

10. TARGETS

Pakistan will meet the Millennium Development Goals (MDGs) targets whereby the proportion of people without sustainable access to improved sanitation will be reduced by half by 2015 and 100 per cent population will be served by 2025 with improved sanitation. This means that the number of households in Pakistan having access to improved sanitation will be increased from 55 per cent to 77.5 per cent and that the number of households in urban areas connected to an underground sewage system will be increased from 46 per cent to 73 per cent.

11. ROLES AND RESPONSIBILITIES OF STAKEHOLDERS

11.1 Government Institutions

11.1.1 Roles and Responsibilities as per Local Government Ordinance 2001

- For the implementation and monitoring of the National Sanitation Policy, all federal, provincial, district, tehsil/town and UC level legislative bodies and government departments and agencies will fulfil their roles strictly in keeping with the provisions of the Local Government Ordinance 2001.
- The provincial government in coordination with the federal and district governments will remove all anomalies, lack of regulations and procedures, conflict of interests between government institutions, to make it possible for different tiers of government and agencies to fulfil their assigned roles.
- The government will take steps to increase the capacity and capability of all sanitation related agencies and departments in accordance with the measures spelt out in Section 5, 6 and 7 of this document.

11.1.2 Additional Roles

- Provincial, district, tehsil/town and UC elected representatives and administration will identify NGOs and CBOs and private sector (formal and informal) good practices and convert them into training centres for their staff with the help of NGOs, CBOs and/or private sector/entrepreneurs and replicate these practices in other locations within their jurisdiction through the formation of stakeholder partnerships.
- A system of planning and feedback, consultation and coordination will be established at the provincial, district and TMA level between all agencies (such as Environment Protection Agencies, Health and Education Department and Urban and Regional Planning Departments and institutions) dealing with sanitation issues.
- The process for the establishment of a management information system will be initiated at the federal, provincial, district and TMA level, in order to enable the planning and development of sanitation; consolidation of information and data from all monitoring and research agencies; and make it freely available to the public through a policy of data sharing (through IT technology) within and amongst all sanitation related organisations.
- Each city government and TMA will prepare a comprehensive mapping and tehsil/town database which will be linked to the proposed management information system. On the basis of this the TMA will prepare spatial and medium term plans which will guide and steer the future development in the sector and on the basis of which appropriate sanitation investment plans can be prepared at the federal, provincial, tehsil/town and UC level.
- The necessary legislation/rules/regulations will be developed to make it possible for the TMAs to develop spatial and development plans which will be prepared in consultation with all stakeholders.
- The TMA will provide technical support to NGOs and CBOs working on sanitation related issues on the self-help Component Sharing Model, the Total Sanitation Model or other community initiatives such as health and hygiene education.
- All departments and agencies dealing with sanitation related issues will introduce a self-monitoring system leading to quarterly workshops and a larger annual workshop at the provincial and federal level in accordance with the provisions of this policy.

11.2 NGOs and CBOs

- NGOs and CBOs will be encouraged to assist communities in mobilising for sanitation related programmes and projects and will assist the district government/TMAs/UCs in the planning, funding and development of community based sanitation infrastructure and for the safe disposal of liquid and solid wastes.
- Successful NGO and CBO programmes will be provided incentives so as to help convert them into training centres for different sanitation related stakeholders.
- NGOs and CBOs will be encouraged to help in the formation of Citizen Community Boards and to guide them in formulating sanitation projects.

11.3 Community Responsibilities

Through the process of mobilisation of communities envisaged in this policy and through public consultation and media programmes, communities will be encouraged to maintain a safe and pleasant physical environment in their settlement, participate in the provision of sanitation infrastructure and its management and manage the disposal of solid waste at the neighbourhood level. The mobilisation process will focus on the creation of awareness among women and the creation of women's neighbourhood organisations.

11.4 Individual Households

Through the process of mobilisation and media programmes, individual households will be encouraged to build latrines, keep the inside and surroundings of their property clean and not to dispose waste in the streets, storm water drains and public spaces. They will also be encouraged to cooperate with the UC administration and with their neighbours to form community organisations that can promote sanitation related programmes and projects.

11.5 Role of the Media

The government will encourage the electronic media to build-in sanitation related messages in its entertainment programmes and to develop educational programmes on sanitation and health related issues. It will also encourage the print media in publishing news and articles which can make people aware of sanitation related issues and motivate them to improve sanitation and hygiene practices in their houses, neighbourhoods and settlements.

12. MECHANISMS FOR IMPLEMENTATION AND MONITORING

12.1 Implementation Strategy

- The policy will be implemented by the federal and provincial governments, local governments, government agencies, autonomous bodies (such as cantonment boards) in accordance with the guidelines, principles and measures spelt out in this document.
- Communities, NGOs and the private sector will be supported and their involvement encouraged in accordance with the provisions of the sanitation policy.
- Following the approval of the policy, the Ministry of Environment shall develop an action plan for its implementation. All relevant ministries, departments and agencies, will also devise plans and programmes to implement the policy provisions.

12.2 National Sanitation Policy Implementation Committee

To ensure effective coordination of policy implementation and oversee the progress in this regard a national sanitation policy implementation committee shall be established at the federal level. The composition of the committee will be as follows: The committee shall meet bi-annually and shall report the status of implementation to the relevant federal ministries.

12.3 Monitoring

- Every department will initiate a process of self-monitoring which it will share with its parent agency. In monitoring itself the parent agency will take into consideration the self-monitoring reports it receives from its departments and/or tiers of government.
- The self-monitoring process will consist of regular weekly meetings, keeping of minutes and ensuring follow-up. Every department and tier of government will produce a quarterly progress report and detailed accounts of work undertaken in that quarter along with problems that have been encountered, shortfalls and the reasons for them and suggestions for remedial measures.
- Every district will hold a yearly workshop as part of the monitoring process. All TMAs of the district, their partner government, NGO and community organisations, will participate in this workshop. Similarly, every TMA will hold a similar workshop of all UCs, partner NGO and community organisations.
- A provincial workshop consisting of all districts will also be held and a workshop at the federal level consisting of all the four provinces, Azad Kashmir, FATA and the Islamabad Capital Territory will be an annual event.
- These workshops and progress reports will determine the effectiveness of the sanitation policy and programmes, reasons for successes and failures and modifications that are required in the regulatory and procedural aspects of the policy and in investments, technical inputs and human

ANNEX III

**PAKISTAN APPROACH TO TOTAL
SANITATION (PATS)**

**MINISTRY OF ENVIRONMENT
GOVERNMENT OF PAKISTAN**

March 2011

1. Background

In 2006, Pakistan hosted the second South Asia Conference on Sanitation (SACOSAN II) which brought the sanitation agenda on the national level debate. Key stakeholders continuous efforts resulted in the formulation of National Sanitation Policy which was approved in 2006 by the Federal Government. The policy highlights social mobilization and behavior change as a key component in addressing sanitation issues at the household level especially in the rural areas. The Policy envisions creation of an open defecation free environment with safe disposal of liquid and solid waste and the promotion of health and hygiene practices in the country using various total sanitation approaches. One of the objectives of the National Sanitation Policy is to promote Community Led Total Sanitation model and other approaches for the creation of an open defecation free environment.

The National Sanitation Policy of Pakistan also provides broad guidelines and support to the Federal Government, Provincial Governments, Federally Administrated Territories, Local Governments and other Development Authorities to enhance the sanitation coverage in the country through formulation of their sanitation policies, strategies, action plans, programmes and projects. It is provided in the policy that the “Total Sanitation Model” for the provision of sanitation will be formalized and the procedures and regulations for its implementation will be developed.

A CLTS core group was notified by the Government of Pakistan in August 2008 with representation from UNICEF, RSPN, WSP-SA, WaterAid, Plan Pakistan and PIEDAR. RSPN was given the responsibility to chair the core group. The main objective of the core group was to operate as a "Think Tank" to advance common understanding of the issues related to scaling up Community Led Total Sanitation in Pakistan. The CLTS core group was requested by the Ministry of Environment to propose a Pakistan specific strategy to achieve “Total Sanitation” in Pakistan.

2. Justification of a Pakistan Approach

The rationale to have a specific Pakistan based sanitation approach is linked to the sector context and prioritizing sanitation. ‘Sector context’ refers to a country’s socio-economic, political, cultural and historical characteristics, including its development trajectory, occurrence of frequent disasters and the current development aid architecture. This also involves looking at political processes within the sanitation sector, the potential links to national political institutions and stakeholders and the assumptions that underpin sanitation sector investment.

There is on-going concern of the government that the sector is not devoting enough attention and resources to sanitation services, particularly when compared to spending on water supply and other infrastructure services. While there are no general figures showing on- and off-budget expenditures in the sanitation sector at national levels, evidence illustrates that investments and expenditures are very low compared to those for water supply and other infrastructure services. Although in the wake of disasters, considerable resources are made available for the provision of emergency services through humanitarian assistance. Additionally, existing sanitation investments and service provision are not always pro-poor. Efforts to increase access to sanitation infrastructure provision can benefit better-off urban residents at the expense of the urban poor, slum dwellers or the rural population. Many documents suggest that governments' limited sanitation expenditures are determined largely by political, rather than technical or economic dimensions in the context of competing demands for resources. The sector demands synergy among all stakeholders from planning to execution of outcomes. Hence prioritising sanitation has to be anchored on promotion of multiple options that fit well within the socio-cultural, political and investment climate of Pakistan.

3. Pakistan Approach for Total Sanitation

The Pakistan Approach for Total Sanitation (PATS) is towards achieving and sustaining an open defecation free environment both in rural and urban context with clear emphasis towards behavior change and social mobilization enhancing the demand side of sanitation. The approach endorses the use of a number of branded total sanitation models, having a key role of communities, which include:

- Community Led Total Sanitation
- School Led Total Sanitation
- Component Sharing
- Sanitation Marketing
- Disaster Response

The above models may be adopted by the provincial and local governments in accordance to what suits best in their local context and in accordance with the reinforcement values of PATS. The planning, promotion, implementation, regulation and monitoring will be expected from municipalities and provincial governments.

The provinces will plan financing the sector which may include own funds, donors and federal government funds. The federal government will continue supporting through Information,

Education and Communications and coordinating for capacity building among the provinces. The approach will be revisited in three years time, it is expected that pilots and implementation through provincial programmes will provide feedback and learning.

4. Reinforcement Values of Pakistan's Approach to Total Sanitation

Following are the reinforcement values of Pakistan's Approach to Total Sanitation which provide greater programming flexibility in adopting context specific solutions as well as an opportunity to engage in meaningful discourse to advance the community led process in Pakistan and attain the desired MDG goals.

- I. Integrated Total Sanitation: The Pakistan specific approach seeks to follow the following components for attaining total sanitation:
 - *Sanitation Demand Creation Interventions:* through Information, Education and Communications (IEC) Campaigns, Community sensitization through Community Led Total Sanitation (CLTS), School Led Total Sanitation (SLTS), Marketing of hand washing etc;
 - *Sustaining the Demand through Supply Side Interventions:* through "Marketing Sanitation", supply chain mechanisms, training of masons, construction of environment friendly latrines for demonstration of technical solutions, trainings of sanitation entrepreneur and sanitation enterprises, facilitation to develop linkages with the microfinance institutions and incentivizing outcomes;
 - *Hygiene Promotion Interventions:* through IEC material on active health and hygiene key messages, behaviour change communications, usage of mass media campaign and IEC campaigns promoting low-cost appropriate and informed sanitation solutions etc;
 - *Drainage and Wastewater Treatment Interventions:* through community participation and component sharing models with the aim to minimize exposure to human excreta and wastewater management;
- II. Launching of a country wide communications campaign to develop a national culture or social norms for total sanitation;

- III. Creation of international and in-country partnerships with key development agencies and organizations such as UNICEF, WSP-SA, WSSCC, RSPN, WaterAid, Plan Pakistan, UN-Habitat, PIEDAR and others to harmonize and coordinate support to federal and provincial governments for conceptualizing and rolling out the large scale rural sanitation programs;
- IV. Development of an enabling environment at the local, provincial and the national level through strong evidence based advocacy to ensure that programmatic approaches and the sanitation development initiatives are well understood, supported, financed and contributed to long term sustainability;
- V. Recognizing that access to adequate sanitation facilities is the fundamental human right of every individual in disasters, a disaster response approach to be followed for provision of sanitation services, coupled with appropriate community social mobilization techniques, at a viable, affordable, cost effective and culturally and environmentally appropriate manner.

5. Guiding Principles of Pakistan’s Approach to Total Sanitation

The approach emphasizes on the following important guiding principles within PATS framework:

- A. Emphasis on “Total” while using Total Sanitation Approach to change behaviours (stopping open defecation) on a community-wide bases i.e. achieving 100 % open- defecation free (ODF) status and working through with the communities after achieving the ODF status to stimulate and sustain the sanitation demand to achieve the remaining total sanitation outcomes i.e. sustainability of ODF environment, usage of sanitation facilities, provision of affordable and informed indigenous solutions, promotion of health hygiene, introduction to community sanitation ladder initiatives, provision of drainage facilities with the aim to minimize exposure to human excreta, wastewater management & the solid waste management;
- B. Placing “Communities” at the centre of any planning process for collective action, behaviour change, application of triggers, follow ups, certification, and the institutionalization of behaviour change processes;
- C. Development of a cadre of local human resource for sensitizing communities on the adoption of improved sanitation and safe hygiene practices. A cadre of male and female activists/ Community Resource Persons (CRPs) to be identified at the community level

and developed for making their assigned area open defecation free. These activists can initially work on a service fee and be further transformed into small entrepreneurs and help expand the capacity of the market to supply services and products;

- D. Developing intense engagement with communities including households, schools, health centres, religious gatherings and other traditional leadership structures to attain the remaining outcomes of the total sanitation after declaration of the ODF status. Social mobilization not to be taken as one off activity. The role of CBOs/COs/VOs at the village level and Local Support Organizations (LSOs) at UC level to be institutionalized;
- E. Use of locally designed IEC material to sensitize the communities on sanitation through hygiene promotion interventions. The messages imparted to be reinforced from time to time;
- F. Integration of “Hygiene ladder” along with the “sanitation ladder” in any of the Total Sanitation program designs, to maximize the impact, through carefully sequencing the hygiene promotion components, especially hand washing based on the local context and through behaviour change communications;
- G. Emphasis on “Usage” of sanitation facilities and not specifically on the construction work to ensure safe disposal of excreta and hygiene practices;
- H. Explore options for safe disposal of human excreta through affordable and appropriate technology and enable communities to take decisions on the materials and designs which work best for them. A local “support mechanism” be established to provide communities with the informed and indigenous choices of sanitation technologies and other infrastructure. Guidance for the infrastructure needs to be extended through designated community activists/community resource persons and local masons/artisans to work on technology options with the communities;
- I. Quality facilitation and local capacity building to ensure sustainability and scale up through building a critical mass of master trainers, community facilitators, resource persons, activists, natural leaders, local masons and artisans. A rigorous training program for trainers and the Local Government institutions to be introduced on the methodologies and the philosophical aspects of the approach. Capacity development of small entrepreneurs and micro financiers to develop a range of technologies and options for environmental

sanitation.

- J. Marketing the sanitation component through involvement with the local market and local entrepreneurs to further stimulate and sustain demand at the household level and move up the sanitation ladder through improved sanitation products and supplies;
- K. Strengthening the local private sector to offer a wide range of sanitation products and services that are consumer-responsive (based on a formative research) and affordable to households with various socio economic incomes including the poor;
- L. Provision of subsidies at the outset to be discouraged in any form to the households. Support extended in the form of in-kind to the poorest of the poor households. Households with different bands of poverty status be identified through an agreed criteria;
- M. Introduce community rewards and incentives when an outcome based collective action to achieve “total sanitation” is undertaken and verified and/or sustainable “usage” of sanitation facilities is maintained through an agreed criteria;
- N. Participatory sanitation baseline to be introduced to develop baseline data and help monitor the post triggering impacts at the village level;
- O. Ensure the local government participation from the outset for enhancing the effectiveness of the PATS, monitoring & evaluation and exploring potential for scale-up through undertaking their capacity building in a wide range of areas;
- P. Results Based Monitoring and ODF Certification Processes to be introduced to sustain behaviors and rewarding outcomes through the involvement of Local Government Institutes. The certification mechanism, to monitor the ODF status at any point in time, be devised which shall take into account the annual renewal of the commitment for maintaining ODF status.

ANNEX IV

GOVERNMENT OF PAKISTAN MINISTRY OF INTERIOR

Notification

No.6/34/2015 -PE-III

Islamabad, 1st October, 2015

Policy for regulation of International Non-governmental Organizations (INGOs) in Pakistan

1. PREAMBLE

- 1.1** This policy will regulate, in future, the registration, working, funding, monitoring and other related aspects pertaining to all types of International Non-Governmental Organizations (INGOs) functioning in Pakistan.
- 1.2** The Government of Pakistan acknowledges the diverse contributions of International Non-governmental Organizations (INGOs) in the socio-economic development of Pakistan, through means such as awareness-raising, social-mobilization, infrastructure-development, service delivery, training, research and advocacy.
- 1.3** This policy recognizes and affirms the need for collaboration with the INGOs by the Government as well as by the private sector. Accountability of all stakeholders and transparency in functioning are the key issues in good governance. INGOs are expected to conform to international best practices in these areas. The Government will recognize the excellence in governance among INGOs by promoting best practices.

2. SCOPE OF THE POLICY

- 2.1** This Policy will have sole jurisdiction over all types of International Non-governmental Organizations (INGOs) (including not-for-profits that may not be registered in their home countries as INGOs but are still, part of the not-profit sector and undertake activities similar to typical INGOs) receiving foreign contributions or utilizing foreign economic assistance to engage in various development programs in Pakistan.
- 2.2** To be covered under this Policy, an INGO should be:

- A private entity i.e. separate from the Government.
- Not receiving return profits generated to their owners or directors or staff.
- Self-governing i.e. not controlled by the Government.
- A registered organization with defined aims and objectives.

3. OBJECTIVES OF THE POLICY

- 3.1** To facilitate and streamline the registration and functioning of INGOs contributing to socio-economic development of Pakistan while ensuring that they abide by the relevant laws and norms of Pakistan.
- 3.2** To encourage the INGOs to build a synergistic relationship with the Government and private sector, at the local, provincial and national levels, through ensuring efficient execution of their programs and activities in the best public interest.
- 3.3** To identify systems by which the Government may work together with INGOs on the basis of the principles of mutual trust, respect and with shared responsibility.
- 3.4** To enable the INGOs to receive legitimate foreign contributions or foreign economic assistance through legal channels and appropriately utilize these financial resources on the agreed areas of public welfare, simultaneously ensuring due monitoring, accountability and transparency of their governance, management and funding streams.

4. REGISTRATION AND FUNDING

- 4.1** INGOs receiving foreign contributions (funds, materials and services) emanating from outside Pakistan or utilizing foreign economic assistance will require prior registration exclusively with the Ministry of Interior (MOI).
- 4.2** INGOs shall not raise funds and/or receive donations, locally, unless specifically authorized.
- 4.3** The INGOs shall declare to the Government of Pakistan all foreign funds, along with the terms and conditions of those funds, as well as details of all bank accounts maintained by them. The INGOs will maintain their financial accounts as per internationally accepted accounting standards.

- 4.4** There shall be an INGO Committee, chaired by Secretary Interior, in Ministry of Interior, to facilitate, streamline and monitor the working of INGOs. The INGO Committee will be the sole authority for approving registration of INGOs.
- 4.5** All INGOs presently operating in Pakistan will be required to apply for fresh registration on the newly introduced electronic version of the registration form, within 60 days from the date of proclamation of this policy.
- 4.6** Scrutiny of applications will be done by the INGO Committee within a period of 60 days.
- 4.7** Approved INGOs will be registered for specific field(s) of work and specified location(s) or areas of operation, after consultation with the relevant Federal and Provincial authorities, and in line with their needs and national priorities of Pakistan.
- 4.8** The INGO may apply for renewal of registration four (04) months prior to expiry of registration.
- 4.9** Pending final decision on application for registration, there will be no interim permission to work.
However, previously registered INGOs will be allowed to continue their operations for six months or until final decision on their applications for fresh registration.

5. FUNCTIONING AND MONITORING

- 5.1** Subject to approval, the INGO will sign a Memorandum of Understanding (MOU) with the Government for a period upto 3 years from the date of signatures. A draft MOU is attached to this policy and can also be downloaded.
- 5.2** The INGOs will only be allowed to establish headquarters and field offices, open bank accounts, and hire local employees after registration with the Government. No unregistered INGO shall be allowed to function or issued visas for its personnel.
- 5.3** All INGOs shall submit an Annual Plan of Action detailing all envisaged projects and the respective budgetary allocations to Economic Affairs Division (EAD) and Ministry of Interior (MOI) at the time of registration, and subsequently on an annual basis. EAD will share these details with all concerned. The Planning and Development Departments of the Provincial Governments can also review the activities of the INGOs in terms of their TORs, and provide counsel where deemed appropriate.

- 5.4** INGOs shall only provide assistance (monetary and/or material) to a local or international NGO after approval of the Government.
- 5.5** Security clearance shall be obtained by Pakistan Missions abroad before issuing initial visa to the foreign nationals intending to work for INGOs. Hiring of foreign nationals by the INGOs in their management and/or staff shall be subject to prior clearance of Ministry of Interior.
- 5.6** Maximum duration of visas for non-Pakistani nationals working for the INGOs, will be one year.
- 5.7** The foreign employees of the INGOs shall seek prior permission of the Ministry of Interior (MOI) for visiting areas outside their designated areas of activities. Violation may lead to cancellation of visas.
- 5.8** Business / visit visas shall not be issued to INGOs staff. No request for change of status of visa shall be entertained in Pakistan or by Pakistan Missions abroad.
- 5.9** There will be regular and effective monitoring of INGOs' activities and work throughout Pakistan. MOI will periodically update relevant authorities about the status and areas of operation / of INGOs enabling them to ensure effective vigilance on INGOs.
- 5.10** The INGOs shall not engage in money laundering, terrorist financing, weapon smuggling, anti-state activities or maintain links with the proscribed organizations.
- 5.11** Breach of security or involvement in any activity inconsistent with Pakistan's national interests, or contrary to Government policy, will lead to cancellation of registration. Likewise, INGOs shall not take part or assist in any kind of political activities, conduct research or surveys unrelated to their TORs. Violation may lead to cancellation of registration.
- 5.12** Any information on violation of terms of reference by an INGO received by any Ministry / Department / Agency will be expeditiously shared with all concerned.

6. TRANSPARENCY AND DISCLOSURE

- 6.1** The INGOs shall be obliged to provide any information that the government may require from time to time.

- 6.2** There shall be proper regulation and monitoring of INGOs' sources of funding, their accounts and tax returns. INGOs not fulfilling disclosure requirements will be proceeded against, under prescribed rules and regulations.
- 6.3** INGOs will be required to have their financial audit conducted by the auditors approved by the INGO Committee.
- 6.4** The INGOs shall fulfill reporting requirements mandated by the Government on the prescribed formats. The INGO Committee will devise these reporting formats as per requirements from time to time.
- 6.5** The INGOs shall be required to make all payments above Rs.20,000/- (Twenty Thousand) in Pakistan through banking channels.

7. REVIEW OF REGISTRATION

- 7.1** Right of appeal will be applicable only to the cases of cancellation of registration.
- 7.2** In case of grievance of any INGO against the orders of INGO Committee, the concerned INGO may file a representation (within 90 days from the date of orders of INGO Committee) before a Special Ministerial Committee to be constituted and notified by the Government. The said Committee would decide all representations within 90 days. The decision of this Committee would be final.
- 7.3** Any decision on termination of INGO registration shall be implemented within a period of 60 days, allowing such an INGO to fulfill all contractual obligations. Winding up of operations will be in accordance with the laid down procedure to be notified by the INGO Committee. Cancellation of registration cannot be challenged in any court of law.
- 7.4** If the Government may deem it in public interest (such as in situations of national disasters and other calamities), it may, subject to such conditions that it may specify, exempt an INGO from all or any of the provisions of this policy for a period not exceeding 6 months.

Sd/-
(KHALIL AHMED)
Deputy Secretary (FIA)