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ENSURING AVAILABILITY AND SUSTAINABLE MANAGEMENT
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WASEP model in improving access to water and sanitation in Pakistan: an example in best practices

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Post-2015, as global leaders move towards SDGs, it is important for countries in the Global South to situate water and sanitation interventions not simply as 'ends', but also as 'means' towards achieving broader goals of human development. The paper demonstrates this, firstly, by discussing theoretical debates in secondary data to situate the importance of water and sanitation in human development, and secondly, by using primary data (pre-and-post intervention analysis) from the case study of Water and Sanitation Extension Programme (WASEP) which has successfully applied an integrated model for provision of safe water and sanitation, along with a behavioural change communication strategy for improved health and hygiene practices in the mountainous regions of Pakistan. Drawing from the learning of WASEP approach, the paper concludes that policymakers in the Global South should re-conceptualize WASH interventions to account for issues of community empowerment, WASH sustainability, and the regional/national human development goals.

Introduction

Recent estimates on Millennium Development Goals (MDGs) reveal that despite global efforts to improve universal access to water and sanitation, the MDGs' targets have become a broken promise as more than 650 million people still do not have access to clean drinking water, and around 2.4 billion people lack access to basic sanitation facilities, particularly in the Global South (United Nations, 2015). Post-2015, as global leaders move towards Sustainable Development Goals (SDGs) and a commitment to 'ensure availability and sustainable management of water and sanitation for all', it is perhaps more appropriate than ever to take a step back and reflect on the shortcomings of contemporary water and sanitation policies in the Global South. It is important to recognize that issues of safe drinking water, adequate sanitation, and improved health and hygiene practices are intricately correlated, and can have multidimensional impacts on communal health - frequency of waterborne diseases, especially diarrheal diseases, trachoma and hepatitis - livelihood opportunities, gender empowerment, incidence of poverty, human dignity, and the human development of rural communities, in general.

Using the human development framework, the methodology of this paper is to discuss theoretical debates in development scholarship to demonstrate how water and sanitation interventions can contribute as means towards human development agenda. This is supported by using primary data from the case study of Water and Sanitation Extension Programme (WASEP) which was initiated in Pakistan in 1997 by Aga Khan Planning and Building Service, Pakistan (AKPBS,P). Since 1997, WASEP has provided access to safe drinking water to more than 52,000 households, led the construction of over 21,000 latrines, and initiated an extensive behavioural change communication strategy to promote health and hygiene in the mountainous regions of Gilgit-Baltistan and Chitral (GBC) in Pakistan. Primary data collected by AKPBS,P through baseline surveys, pre-and-post intervention evaluations, focus group discussions and case studies of beneficiary communities, suggests that through WASEP, there has been a significant improvement in communal health, gender equity, community empowerment, and household income generating opportunities etc.

To conclude, using the case study of WASEP as a model policy framework, and drawing parallels with theoretical debates, the paper proposes that policymakers in the Global South should design integrated, bottom-up policy frameworks which address issues of water security, adequate sanitation, and its impact on communal health within the broader human developmental goals of a region/country.

Human development approach to understand water and sanitation interventions

Using a benefit-cost ratio, the World Health Organization (2012) illustrates that water and sanitation can have direct economic impacts on the lives its beneficiaries. The global economic return for every dollar spent on improved sanitation and improved drinking water services is USD 5.5 and USD 2 respectively. The report further suggests that achieving universal access to water and sanitation can yield an economic return of USD 4.3 for every dollar, and can translate into savings of USD 18.5 million and USD 32 billion by avoiding deaths and reducing health care costs respectively (ibid). But issues of water and sanitation cannot simply be boiled down to an economic variable. It is instrumental to analyze the multidimensional factors associated with development interventions in water and sanitation and the ways in which it impacts a household's quality of life. For instance, the dignity attained when women are no longer coerced to defecate in open field; the increase in social cohesion when all households have access to safe drinking water, and they no longer have to compete for limited sources of safe drinking water; and the cross-generational and inter-generational improvements in quality of life of a community when its inhabitants receive water security and improved sanitation facilities.

To analyze for these multidimensional factors, the paper proposes using a human development approach, firstly, because it shifts the focus of assessments from economics to an individual's wellbeing and, secondly, because rather than accounting for monetary value of provision of goods and services, it prioritizes on provision of real opportunities for people to be able to do what they value (Alkire and Deneulin, 2009). Moreover, the human development approach allows us to focus on 'ends' achieved by a development intervention, and ways in which it promotes wellbeing through promoting 'economic growth, social investment, people's empowerment, provision of basic needs and social safety nets' for the urban poor' (Haq, 1995:23). Using the human development approach, we can argue that policy makers in the Global South should not view access to safe drinking water and adequate sanitation facility simply as a basic human right, or as Nussbaum (2000) would refer to it as 'basic entitlements'. Rather the policy makers need to envision how effective water and sanitation policies can also have multifaceted explicit and implicit impacts on a community's wellbeing including, 'higher lifespan, reduced morbidity and mortality from various diseases, augmented agriculture and commerce, higher school attendance, lower health care costs, and less physical burden' (Graham, 2011:3).

This is especially important from a socio-economic perspective, because if a community does not have access to safe water and adequate sanitation facilities, it runs the risk of health and environmental issues. In the Pakistani context, up to 842,000 deaths, including the death of 361,000 children under five, are associated with waterborne diseases, especially diarrheal diseases, related to unsafe water consumption (WHO, 2015). This means that unsafe water consumption not only burdens the national health system but also negatively impacts the human resource in the country. Furthermore, the report from World Health Organization and UNICEF (2014) illustrates that nearly 41 million people in Pakistan practice open defection. Literature confirms that inadequate sanitation practices can contaminate the water table, leading to hazardous health conditions for the community including waterborne diseases, and stunned growth and reduced cognitive abilities among young children (Geruso and Spears, 2014).

In addition, lack of water security impacts the livelihood opportunities in a community. If the water source in a community is owned/controlled by some households, it shifts the socio-economic power dynamics in the community as other households become dependent on those who control water. On the other hand, if all households in a community lack water security, they are forced to either consume unsafe water or to use a proportion of their income to pay water tariffs – which in turn reduces their saving capabilities. Similarly, lack of access to sanitation is a pressing concern as the World Health Organization (2015) reveals that more than 2.5 billion people lack access to basic sanitation facilities around the world, and around 1 billion people do not have access to latrines or any other form of sanitation facilities, and are forced to practice open defecation. Applying the Economics of Sanitation Initiative approach, Hickling and Hutton (2014) use data from 18 African countries to further demonstrate that a person practicing open defecation spends an average

of 2.5 days finding access to a site for defecation; the opportunity cost of the loss of time is the additional households chores performed or income he/she could have earned.

In adopting the human development approach to analyze policies on water and sanitation, we also need to use a gender-age perspective and deconstruct power structures which are correlated with issues of water and sanitation. For instance, women and young children are primarily responsible for collection of water for their households, and have to devout a considerable amount of their time for this activity (United Nations, 2015). UNICEF (2006) illustrates that children are most vulnerable to diseases incurred from unsafe water consumption and inadequate sanitation facilities, as compared to other age groups. In addition, explaining the gender inequities in use for sanitation facilities, McFarlane, Desai, Graham (2014) explain that women- unlike men- often have to wait until night in order to defecate when all other social activities cease; the extended period of waiting can not only exacerbate health problems for women but also make them more vulnerable to sexual assaults. This suggests that accounting for human development in water and sanitation policies is imperative because issues in access to water and sanitation have a disproportionate impact on marginalized groups, particularly women and children.

Adopting a human development approach is also useful to design policies on water and sanitation because it situates community as the centre-piece of the development process and empowers them 'to participate in deciding what should be chosen' for their own development (Sen, 1999:31-32). In other words, community-based, participatory approaches in water and sanitation interventions can kill two birds with one stone. On the one hand, accounting for voices and perceptions of the local community can allow policymakers and implementers to get an insider's perspective of contextual realties and challenges in the field, and devise bottom-up, tailor-made solutions to cater to the community's wellbeing. On the other hand, community participation can empower the local households to participate in the decision-making, and take ownership of the scheme, which can eventually translate into the sustainability of the schemes, as the community will continue to find value in it and ensure its maintenance.

However, Chandhoke's (2009) analysis advocates for a critical need to scrutinize 'community participation' by investigating how, and through what procedures, the local community is encouraged to participate in a development intervention. In other words, it is important to question whether a water and sanitation policy is reflective of the views of the entire community, or does it simply accounts for the views of community elites and/or more vocal members of the community and neglects the diverse views of different groups in a community setting. To encourage nuances of community perceptions, it is important to have a more inclusive approach which encourages the participation of marginalized groups, particularly women and children, in the planning, implementation and financing of water and sanitation interventions. Based on the discussion, we will now anlayze the WASEP approach in Pakistan, and ways in which it has promoted human development in its beneficiary communities.

WASEP approach in Pakistan

An agency of the Aga Khan Development Network (AKDN), AKPBS,P initiated the WASEP approach in Pakistan 1997. Since then, WASEP has provided access to portable drinking water in around 52,000 households and improved sanitation facilities by constructing more than 21,000 latrines along with promoting awareness on health and hygiene practices to low-income communities in Pakistan. WASEP's activities are primarily focused on the mountainous regions of Gilgit-Baltistan and Chitral (GBC) in Pakistan, where the lack of public infrastructure and rough terrains make it hard for the local community to acquire safe drinking water and adequate sanitation facilities.

So how did the WASEP model succeed in the region of GBC? The paper argues that a major reason for WASEP's success is its integrated human development approach which develops water and sanitation infrastructure with a comprehensive behavioural change communication strategy and encourages community to take ownership of their water and sanitation resources. A research published in the *Bulletin of the World Health Organization* demonstrates that WASEP's integrated approach provides a "package" solution to issues of health in a community by contextualizing the multifaceted issues related to water and sanitation while also incorporating "engineering solutions with appropriate education to maximize facility usage and improve hygiene practices" (Nanan *et.al*. 2003:164). WASEP's integrated approach is premised on a six-step model including:

a) Potable water supply infrastructure
b) Community mobilization and participation
c) Water quality management

d) Health and hygiene education
e) Household sanitation infrastructure
f) Grey water drainage

This suggests that rather than stand-alone interventions, WASEP adopts a holistic approach to water and sanitation management to account for correlated issues of grey water management, health and hygeince and community mobilization. A crucial component of this holistic strategy is recognizing grass root realities especially that the region of GBC is prone to natural disasters. Therefore, a topographical survey is conducted prior to the construction of water channels under all WASEP schemes to ensure that the water channel is less vulnerable to natural disasters. In addition, WASEP prioritizes the use of local construction materials which adhere to contextual building requirements.

Since 1997, a major contribution of WASEP has been the reduction in waterborne diseases in GBC. AKPBS,P's Impact Assessment Report (2014) demonstrates that lack of access to safe water and adequate sanitation prior to WASEP's interventions were major concerns in GBC because it led to high incidence of waterborne diseases, and in some villages the households were forced to spend as much as PKR 1,000 (approximately USD 10) per year on treating diarrhoea. To address these issues, WASEP provides 24/7 access to safe drinking water to all households, which has had a direct impact on communal health; a case-control study of children aged up to six years, found that "children who did not live in a WASEP village had 33% higher odds of having diarrhoea than children who lived in a WASEP village" (Nanan et.al. 2003:162).

But the impact of WASEP schemes in not restricted to communal health. The pre and post-intervention surveys conducted by AKPBS,P demonstrate that WASEP has promoted community empowerment and gender equity. The findings indicate that prior to its interventions, in some areas women and children had to walk as long as two to three kilometres every day to fetch safe drinking water which not only deprived them of their productivity, but also led to decreased attendance rates at schools. AKPBS,P's Impact Assessment Report (2014) found that by providing door-to-door access to safe water, WASEP has reduced the daily time spent daily on fetching water from 50 minutes to two minutes per households; this time could now be spent by women on productive activities like agriculture and child care. Consequently, the survey also demonstrated a 67% increase in school attendance due to reduced diarrheal incidences, and a 19% increase in school attendance as children no longer have a make an arduous daily journey to fetch water for their households. In addition, through the provision of adequate sanitation facilities in more than 21,000 households, WASEP has contributed towards reducing the practice of open defecation. This is especially important from a gender perspective as previously women had to wait for unsocial hours to defecate.

But is access to safe water and sanitation facilities enough to achieve human development? Not really. An instrumental aspect of WASEP's success is its behavioural change communication strategy which recognizes that the installation of a water tap or construction of a latrines will become effective only if the community sees value in using them. This is important because while Pakistan's National Sanitation Policy (2006) emphasizes on using multiple strategies to create awareness on adequate sanitation practices, the implementation of the policy has remained a distant goal. Hence, WASEP entails a strong bottom-up, social mobilization approach through which the community households are involved in the implementation of all intervention. In order to ensure ownership, the community members are encouraged to assist in gathering local construction material and in providing skilled and unskilled labour during the construction process.

Another component of WASEP's behavioural change communication is its Community Health Improvement Programme (CHIP) which sensitizes the community towards adopting hygienic practices including proper use of latrines, handling safe drinking water, washing hands after using the latrines etc. In addition, WASEP implements the School Health Improvement Programme (SHIP) to increase awareness among children on appropriate health and hygiene practices. Literature suggests that incorporating the theme of sanitation in school curriculum is one of the most effective ways to change behaviour. An increase in levels of education, explain Hickling and Bevan (2011), corresponds to a decline in the rates of open defecation whilst ensuring that the next generation will be more aware of the negative consequences of open defecation.

Moreover, to ensure community empowerment, WASEP forms community-led Water and Sanitation Committees (WSCs), members of which are chosen democratically from the community, and participation of women in WSCs is made mandatory. WASEP builds capacities of WSCs to mobilize the community and increase awareness on health and hygiene practices. The WSCs are also made responsible to collect an initial contribution towards the construction of the water and sanitation schemes, and then, a monthly tariff from all households which contributes to the Operations and Maintenance (O&M) fund. The O&M fund is

crucial to create a sense of ownership among the community towards the scheme and also ensure regular maintenance of their water and sanitation resources. The formation of WSCs, and encouraging the community to take ownership of the project can also be tied with the long-term sustainability of WASEP's interventions. It demonstrates that post-WASEP's interventions, the community is not dependent on external actors to achieve access to water or sanitation; rather the community can manage its own water and sanitation resources.

Conclusion and lessons learnt

Using the case study of WASEP's integrated approach in mountainous regions of Pakistan, the paper, firstly, help us to challenge the practice in some countries, including Pakistan, which have separate policies for water and sanitation. The paper stressed on how water and sanitation interventions are inter-related and countries in the Global South are, perhaps, better off to conceptualize integrated policies on water and sanitation rather than isolated stand-alone policies for each. Secondly, learning from WASEP demonstrates that water and sanitation interventions are more effective when complemented with a strong behavioural change communication strategy that emphasizes appropriate health and hygiene practices. AKPBS,P's Impact Assessment (2014) revealed that the creation of WSCs under WASEP, along with the CHIP and SHIP sessions in WASEP, have helped to not only sensitize the community and increased awareness on safe water consumption and adequate sanitation practices, but also mobilized the community to ensure maintenance of the WASEP schemes. Thirdly, the WSCs and O&M fund in the WASEP model confirmed that community empowerment is instrumental to create a sense of ownership and ensure sustainability of water and sanitation schemes. This is also confirmed by the UNDP's Water and Human Development Report (2006) which argues that empowering the local households to become self-reliant in managing their water and sanitation is instrumental to catalyze progress towards universal access to water and sanitation.

Lastly, and most importantly, the WASEP model helps us to conclude that effective policy frameworks on water and sanitation should be situated within the broader framework of national human development goals. In other words, policy-makers in countries in the Global South need to conceptualize their regional/national policy frameworks such that interventions to improve water, sanitation and hygiene (WASH) are designed as integrated means towards improving quality of life in a community. In short, by accounting for the correlated issues of community empowerment, water and sanitation management, and the quality, effectiveness, and sustainability of WASH interventions, countries in the Global South can catalyse human development.

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Note/s

WASEP was initiated in 1997 by Aga Khan Planning and Building Service, Pakistan (AKPBS,P). Currently, AKPBS,P is under transition to become a new entity under the Aga Khan Development Network called Aga Khan Agency for Habitat.

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