

VARIATION OF SOCIAL ACCEPTANCE: KASHIMBILA MULTIPURPOSE DAM STAKEHOLDERS IN FOCUS

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Abstract: -

Long ago, rivers have always been sustaining livelihoods through the utilization of different natural resources available in their basins. All over the world, many rivers have been dammed in the spirit of performing various purposes: agricultural irrigation, domestic water supply and power generation or flood control. The World Commission on Dams brought into focus the debate on dam related impacts on local economies, societal cultures, livelihoods security and environmental conservation. The outcome of the World Commission on Dams consultation strongly recommended the involvement of stakeholder groups to address appropriately all issues associated with dams. Therefore, the aim of this study is to examine the variation of social acceptance among different project stakeholders. Mixed research method was adopted for the study and the instruments used for data collection were questionnaire, interview and observation. The respondents were drawn from people living within close fringes of the dam. The estimated population of the area is 247, 657 and the sample size of the research is 269. The participants for interview were identified using a stratified sampling method while those whom questionnaire were administered on were identified using simple random sampling. The responses received suggest that dam project capture attention of dam stakeholder groups, if its components are of interest to the community members. These results indicated that there is an existence of variation among Kashimbila Multipurpose Dam (KMD) stakeholder groups in choosing factors that influenced their acceptance. On this basis it is recommended that project developers should always bear in mind the pressing needs of the affected communities during decision and planning processes of the proposed projects.

Keywords: - Dam, Hydropower, Stakeholder, Social acceptance, Kashimbila



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INTRODUCTION

Dams are structures designed by humans to capture water and modify the magnitude and timing of its movement downstream. The damming of rivers and streams has been essential to human population growth and technological innovation. Among other things, dams have lessened flood hazard and let people to settle and cultivate productive alluvial soils on river floodplains; they have tied together the power of moving water for industry and commerce; and they have created reservoirs to boost the supply of water during periods of drought. In the 5000 or so years that humans have been building dams, millions have been constructed globally, especially in the last 100 years (WCD 2000, Poff & Hart, 2002) buttressing the place of dams in human civilizations. Planet Earth needs more and more water and more and lots of energy, due to increase in population and consumption, especially in developing countries. CO₂-emitting fossil fuel resources from hydrocarbons such as natural gas, oil and coal are being consumed at a growing pace and reserves are inevitably running out, to the detriment of future generations. Post-COP 21, the increased use of renewable energies is a necessity, reinforced by the Paris Agreement (Henri & Michel, 2016). The most economical of all renewable energies is hydroelectricity: it is competitive without costly subsidies, and without posing problems of storage or intermittent supply for electricity network operators. It also offers unique advantages for electricity network operation (frequency and voltage regulation) (Henri & Michel, 2016).

The projected changes in climate will lead to great increase in demand for fresh water, drinking water and water for irrigation. Without water, there can be no life on our planet. There are limited and poorly distributed fresh water resources in developing countries (Henri & Michel, 2016). There are regions where supply of water is the absolute prerequisite for any improvement in living standards which are presently too low and even for the survival of existing communities, as well as the satisfaction of the ever-increasing demand that results from the rapid growth in their population. Such regions cannot do without the contribution that dam-reservoirs make to the management of water resources. Water storage infrastructures are seen to be indispensable tools both for sustainable development and for adjusting to climate change. Presently, research on social acceptance has become a developing field in social scientific debates due to the sensible social stress over renewable energy modernizations. Making clear the definition of social acceptance, Wüstenhagen *et al.* (2007) recognize three dimensions of social acceptance, namely socio-political acceptance, market acceptance and community acceptance. Hydropower generation primarily affects the neighboring communities via altering the landscape and worsening the riparian and aquatic ecosystem of the area in question. These aesthetic and ecological effects beget local resistance leading to the dissatisfaction of project execution. Studies have it that well-identified social fairness, trust and environmental justice might raise the level of acceptance (Gross, 2007, Wunubo & Ibrahim, 2018). When it comes to the acceptance of renewable energy sources, the mutual benefit that have been investigated hitherto are by and large between environmental gains (e.g. cleaner energy production) and economic loss (Kaenzig *et al.*, 2013).

Vanclay (2012) suggest that efforts to understand community resistance to dams may need to look beyond processes and explore other factors which may influence the social acceptance of dam project by stakeholder groups.

Differing levels of social and/or economic impacts of the dams in each community may have an influence on the way a community will respond to dam project (Voyer, Gladstone & Goodall, 2014). This work explored how irrigation farming, flood control, electricity, portable water supply, job provision, tourism and road construction influence the stakeholders acceptance of the dam project in their communities.

A success in dam projects becomes largely dependent on the societal acceptance (Olander & Landin, 2008) and satisfaction, as they have to not only achieved time, scope and budget objectives but also meet the needs of society (Jia *et al.*, 2011) through many expectations. Consequently, scholars realize the importance of improving societal acceptance for dam projects (Chang *et al.*, 2013a). However, there is still a lack of integrative knowledge on practices shaping societal acceptance as it is a complex notion that is hard to define and measure (Raven, 2009; Benn *et al.*, 2009). Nonetheless, it can be recognized that societal acceptance is dependent on the management of external stakeholders, more specifically on how the diversity of interests among society is treated (Olander & Landin, 2008).

The social acceptability of dams is therefore, a question of prime importance, and this paper outline some answers to factors that influence the stakeholders' acceptance of Kashimbila Multipurpose Dam in Taraba State, Nigeria.

Literature Review

The Concept of Social Acceptability

Thomassin, White, Stead, and David (2010), defines the concept of social acceptability as "a measure of support towards a set of regulations, management tools or towards an organization by an individual or a group of individuals based on geographic, social, economic and/or cultural criteria". According to While Voyer, Gladstone and Goodall, (2015), the reasons for acceptability of, or opposition against, a project can vary among stakeholder groups, and also within them since these groups are not necessarily homogenous. Schuitema and Jakobsson Bergstad (2012), posits that social acceptability of an environmental policy can be defined as either positive or negative attitudes towards it, or certain behavior resisting the policy. They further state that negative attitudes can in turn lead to different behaviors resisting the policy, which can be anything from signing petitions to non-compliance with the policy. Schuitema and Jakobsson further posit that social acceptability can change over time, e.g. an initial resistance can transform into support during the course of time, with likely positive effects being experienced by the stakeholders. Other researchers also claimed that a little change in the living standard of community members is capable of gaining their acceptance. Also people accept project

base on their feelings that government has identified with them by locating a project in their community (Wunubo & Ibrahim, 2018). There is no doubt about the complexity around the social acceptance of renewable energy innovations in most developing countries.

Stakeholders in Dam projects

It should be noted that dam projects seldom involve only one sponsor and one managing body at the core, but rather coalitions and alliances of various delivering groups (van Marrewijk, 2007). Aside from all internal stakeholders aiming towards delivering the project, each actor or group has its own objectives (Ruuska et al., 2011), and solving conflicting resource scheduling is often the main task for management within the project (Sun & Zhang, 2011).

These stakeholder categories are the source of exogenous turbulence, as Milller and Lessard (2001) call such unforeseen events affecting the project from the outside. The impact that dam projects have on the external environment creates demands of the stakeholders such as land acquisition, remaking zoning plans, convince local politicians (Giezen, 2012). However, key institutional actors, such as NGOs, various levels of government, industrial interests, scientific and technical expertise and the media do not always adequately represent publics" (Flyvbjerg et al., 2002). Flyvbjerg (2003) stresses the role of the public in dam projects by pointing out that citizens cannot influence decision making as it can in other areas of public life. They are denied information or receive it too late, are not involved (Wunubo & Ibrahim, 2018) and, hence, are driven to more radical opposition (Flyvbjerg et al., 2002). Though, sponsors and governing bodies are realizing the importance of stakeholder groups' involvement in order to reduce uncertainty and managing value creation (Chang et al., 2013a). Therefore, it is clear that managing external stakeholder groups is more important for the success of a dam project than internal stakeholders, although their influence should not be underestimated.

Given this insight on dam projects, it should be cleared that external stakeholders, like society, gaining economic and social value are necessary. Therefore, dam projects must involve stakeholders in some form in order to gain societal acceptance and successful project execution.

Dams benefits and drawbacks

The main utilization of the world's dams is for food production, by irrigating lands that would otherwise be deserts. The greater part of global demographic growth is happening in arid regions that need water to produce food, or in regions where rainfall is very irregular (monsoon lands), therefore requiring storage methods such as dams' reservoirs (Henri and Michel, 2016). Hydroelectric energy, with a global output of 2,100 TWh, currently represents 20% of total electricity production and about 7% of all the energy consumed in the world (Henri and Michel, 2016). Hydroelectric dams facilitate adjustable electricity production, by storing huge quantities of water in their reservoirs. Dams, hold back river water by means of turbines, they generate electricity from a renewable source with very few CO₂ emissions. Unlike wind or solar energy, hydro energy can be stored (in reservoirs) in order to generate electricity when needed, simply by opening the gates. This natural storage of energy is the most competitive form of power storage, making use of Pumped Storage Power Stations (PSPSs), which are crucial for electricity networks and play a key role in integrating other modern renewable energies (solar and wind) that are by nature intermittent (Henri and Michel, 2016).

In addition to producing clean carbon-free energy, dams can also, simultaneously, serve other functions: irrigating cultivated land, supplying communities with drinking water, reducing flood flows, replenishing low-water levels, aiding waterway navigation, using reservoirs for tourism and sports, fish-farming, protecting estuaries against tidal backup, and so on (Babbit 2002). From an energy and climate viewpoint, dams are clearly very positive, and perhaps even represent the most advantageous of all renewable energies, provided that geography and hydrology allow for it.

But dams also have down sides: impacts on biodiversity, conflicts of use, risk of breach, and sometimes the displacement of local populations, a rousing opposition. And indeed, every dam, hydroelectric or otherwise, blocks watercourses and constitutes an obstacle to the circulation of certain species (fish swimming upstream, notably migratory species such as salmon and eels) and sediments (sand, mud, etc.) which subsequently build up and can concentrate pollutants in the reservoir (Babbit 2002, Henri and Michel, 2016). The absence of new sediments downstream of the dam can cause erosion problems that modify the aquatic environment, undercut riverbanks, or wash away beaches. Dams are therefore a double-sided coin, with a positive side (energy, drinking water, irrigation, flood regulation, river navigation, fight against drought, etc.) and a negative side of degradation and accumulation of sediments (Babbit 2002).

Materials and Methods

The research adopted a mixed research methods to ensure good results acquired. Data was sourced using interview and survey questionnaire as instruments. The estimated population of the area is 247, 657. From the population therefore the sample size of the research is 269 at 90% confidence level and 5% (0.05) margin of error, (SurveyMonkey, 2018). Interviews were conducted and the participants were drawn from the communities living within a radius of 0-6km from the KMD. Data collected and the result obtained from this study was analyzed using simple descriptive statistics like percentages, table and graphic presentation

Results and Discussions

Variation of Social Acceptance among KMD Stakeholders

The study focus on the following factors (irrigation farming, flood control, electricity, portable water supply, job provision, road construction and tourism) in exploring the stakeholder groups response to the KMD project. This is to enable the researchers ascertain the existing variation among the KMD stakeholders. The dam stakeholder groups

considered in the study are famers, business men/women, civil servants and students. Table 1.1 summarizes the key findings of this research in relation to the major influences on stakeholders’ acceptance of the KMD.

Table 1.1: Variation of Social Acceptance among KMD Stakeholders

	Farmers	%	Business women/men	%	Civil servants	%	Students	%
Irrigation	151	100	00	00	20	55	05	42
Flood control	55	36	05	07	03	08	05	42
Job	20	13	25	36	36	100	00	00
Portable Water	151	100	70	100	36	100	12	100
Electricity	151	100	70	100	36	100	12	100
Tourism	00	00	35	50	05	14	02	17
Road	151	100	70	100	36	100	01	10

(Source: field survey, 2018)

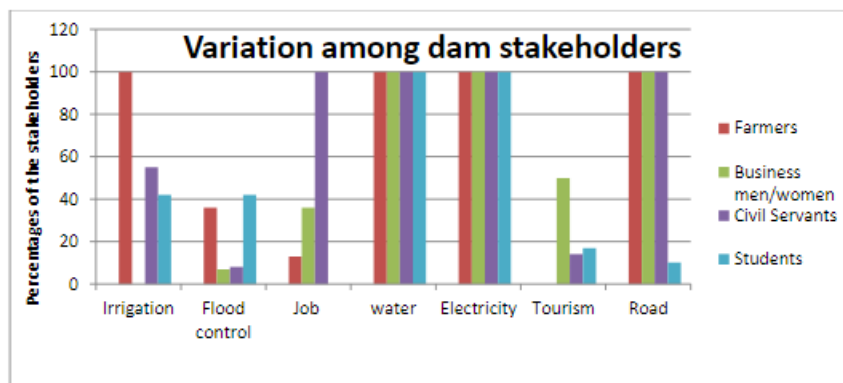


Figure 1.1: Graphical presentation of variation among KMD stakeholders.

(Source: field survey, 2018)

Irrigation farming: From fig 1.1, this component of the KMD project attracted farmers (100%), civil servants (55%) and students (40%) (Table 1.1). The farmers see irrigation farming section of the dam as an added advantage to them; they would not only practice their profession in rainy season but in all seasons. This will encourage the farming practices in the area and change their economic status. Besides, they will not only feed the LGA but extend to the state at large. Irrigation will also be a solution to draught when it occurs in the area. This is the testimony of one of the respondent interviewed:

This is an important aspect of the dam to us farmers; we can grow crops all the time in a year and hunger and poverty will be pushed out from our area (HH6) Source: field survey, 2018.

Some civil servants in the area also engaged in farming activities. This caliber of civil servants does not rely in single source of income rather different sources of income in order to face their lives challenges. Salary only cannot help matters. As for the students that are in support of the proposed irrigation farming, the study found that farming is the major source were the school fee and other fees are coming from, therefore, if this practice will be done in both season will curtail the challenges of all the fees.

Flood control: in support of this component, 36% farmers, 42% students, 8% civil servants and 7% business men/women go for it. Flood control which is the first thing that called for the Kashimbila dam construction in the area influences only few respondents. The study reveals that the respondents have never witnessed flood disaster before the dam construction; therefore, flood control looks inconsequential to the majority. During interview, most of the household head claimed there was never any flood disaster all through their lives in the district (HH4, HH6, HH19 and HH20). KMD was conceived not because of existing flood issue in the study area, but to protect and safe the citizens of Nigeria from destruction as a result of flooding from possible collapse of Lake Nyos in Cameroon. The decision came after a warning by the UN to the Nigerian government. Those that were affected by flood disaster (displaced from residential and farm lands) during the dam construction were the once that consider the component to be of necessity to them. Experience is said to be a great teacher. Your experience in life about any life situation will determine your actions towards handling it. When asked how important are the dam components? One of the interviewee has this to say:

Though I have never experience any flood in my life, but my experience of flood during the construction of the dam was an ugly one to me. Putting flood control as one of the dam components is of great importance to me (HH17) Source: field survey, 2018.

Job provision: under this the result indicated that 100% civil servants, 36% business men/women and 13% farmers were attracted by few jobs the dam management provided. Most respondents believe that it is better to be self-employed than take a job from the dam management. This is attributed to the experience they had from those who were employed by the

dam management during construction and latter disengaged as construction work is no more available, most of the employees were junior staff. Therefore, the respondents see that kind of job is waste of time. The better thing is to go for farming and other businesses.

Portable Water: This gained 100% support of all the dam stakeholders. This show how paramount important is water in the district that everyone is in need of. Water is life, human being cannot do without water and this water must be hygienic. The importance of water to human goes beyond domestic use to commercial advantages.

The importance of water to me and my entire people are numerous. Water is one of those things that make my village attractive, see fishermen all over the village; they are not from here but from Ibi and Benue state (CLA) Source: field survey, 2018.

It was observed that the pipes for water supply are provided to the site ready to be laid. People were attracted by issue of portable water not on the fact that the water has been supplied to the communities, but respondents believed in what they saw on ground and believe that water problem in the area will soon be a thing of the past.

Electricity: This also attracted 100% dam stakeholders. Light is thing of admiration by the human being, when there is stable light in the village it will to some extent curtail rural-urban migration as some businesses that demands electricity will be attracted into the village comfortably. This will help to boost businesses and open up job opportunities for the villagers. Stable electricity supply will also help keep people up to date of the global happenings through television and other electronic media facilities. It was also observed that electricity supply has not being realized in the study area. However, the turbines are being supplied and installed, the power line is ongoing. This is the major reasons while respondents were attracted to the electricity component of the dam.

Tourism: This component of the dam project gained less attention from the respondents. Only 50% business men/women, 17% students and 14% civil servants go for it. This entails that any future benefit of a project that is not in line with peoples need/wants will not gain their support for that project, and at the end the project will be laying waste. Therefore, project developers should be mindful of the facts that project should not be allocated base on political will, sectionalism or tribalism but on people's needs or demands. This is where public participation (procedural justice) is important; it is the medium through which people's needs will be ascertain.

Road: this gained 100% support of farmers, business men/women and civil servants. While 10% students support it. It was found that the prices of farm produce short up in the area especially Bibi, Bawuru and Birama villages. This is attributed to the road graded across the villages by the construction company. This is what one of the respondent interviewed posits:

One of the things that impress us with the dam construction is the grading of the road that link our village. This is because before the dam we were just dashing out our farm produce due to lack of access road into the village. People were not coming to buy our produce and those that came into the village to buy, got it at a cheap price. But with the road now many buyers are trooping in and the price is far better than before (HH1) Source: field survey, 2018.

This was also confirmed by the dam management during an interview session. A respondent was asked about the community members' reactions towards the project and he said:

The communities are very happy because now they can access their villages at all seasons unlike before, this also improved the price of their farm produce, they can now cash money at Kashimbila town through the ATM gallery constructed by the construction company (DMI) Source: field survey, 2018.

In life what is of one advantage always gains support. The hope of everyone is to see that their life experience has positive improvement. This is attributed to improved access to facilities and services (such as water, roads, clinics, police station, schools and electricity). It was found that out of the components of KMD project, water; electricity, road and irrigation gained support from majority of the respondents. They believe that when these are put in place as promised will bring improvement in their lives and the communities at large. The reliance on water; electricity, irrigation and road to improve livelihood is a serious concern given that none of the respondents seems to back it in their choice. At a moment water was more paramount among the dam components because most of the interviewed households did not have access to clean water especially Bibi, Bawuru, Birama and Ngbe villages.

From the findings it is clear that variation exists among the KMD project stakeholders in terms of their choice of the dam components (irrigation farming, flood control, electricity, portable water supply, job provision, tourism and road construction). This is in agreement with Voyer et al. (2015), who posit that the reasons for acceptability of a project can vary among stakeholder groups since they are not necessarily homogenous.

Conclusion

Social opposition to dam projects has the potentials to slow the progress of new developments, and derail national goals of energy supply security and greenhouse gas reduction. The impact that dam projects have on the host community members will determine acceptance by the stakeholder groups. Studies has been extensively carried out on stakeholders

and dam acceptance, but the components of dam to be used as factors influencing the variations in stakeholder groups acceptance of dam project was distributed thinly amongst a number of relevant papers, especially factor considered in this paper. The scope of the study was based on people living within close border of the dam. The limitation of the research includes exclusion of people living beyond 6km from the dam.

The study found four selected dam stakeholder groups are not homogenous in nature and their choices of dam components that influences their support for the dam construction in the district varies. Water and electricity are the components that gained 100% support from all the respondents. Based on the results, the components of dam that does not made little need of the community seems to be the prerequisite of any stakeholder group acceptance of further expansion or construction of new one.

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