Examining Citizen Participation in Government Livelihoods Programs in Northern Ghana; Case of the Irrigation Component of the Northern Rural Growth Program.

By: Zachary Pealore (PhD)
University for Development Studies – Ghana (UDS)
Faculty of Sustainable Development Studies (FoSDS)
Department of Community Development Studies
E-Mail: razackpealore@yahoo.com / pzachary@uds.edu.gh

Abstract

Irrigation development is a key strategy for climate change adaptation and agricultural modernization not only in Ghana but globally. A historical trend in Ghana since 1960's according to Pealore (2012) saw an industrial revolution with a very strong agricultural modernisation attempt. Over decades now, the Government of Ghana has embarked on several irrigation development programmes including the Northern Rural Growth Programme (NRGP). Despite efforts in promoting irrigation infrastructure, few results have been achieved due to failure of planners in considering socio-political factors such as beneficiaries' involvement in project design, unrealistic targets, budgetary constraints and poor technical personnel. The study, therefore examined how communities, benficiairies and stakeholders participated in the NRGP irrigation programme. Community participation is not an end to itself but it is a process of empowerment and fundermental to human dignity and sovereignty. It going about this study, primary data from 221 respondents was randomly randomly sampled across three irrigating sites; Yapei irrigation site, Yipale irrigation site and Goog irrigation site. The primary data was comolemetned with secondary data derived from the review of NRGP irrigation reports, journals and other scientific books related to the subject matter.

Data was analysed descriptively and quantitatively and deploying before and after impact approach with very strong case stories or quotations from respondents. The Sustainable Livelihood Approach model was used as the conceptual framework to gude the research and its outcome. Additional qualitative analytical tools included the Sign test, Spearman's Rank-Order Correlation and Chi-Square tests were deployed to support the statements made by respodents. Though findings revealed there has not been a significant impact on irrigation outcomes, it had greater potential to influence irrigators' outcomes with effective planning and community participation. The success of irrigation projecs will depend on how project beneficiaries are involved at all levels of project. Contrary to this argument, a total of 85% of respondenets felt the project was not participatory as they were not involved in deciding project activities. A total of 60% of respondents viewed the project as not being an

innovation. This means that, the technologies and services provided under the project are not new to farmers. The study also found out that, 57% of respospodents felt that he project interventions were inappropriate hence could not meet their needs. As high as 80% of farmers contended their concerns were not considered while 88% felt they did not have access to project information. Similarly, the study established that 90% of the respondent did not perceived the project as transparent with only 5% indicating it was transparent. The study recommends that active involvement of irrigators and a clear sustainability and communication plan should be in place in the implementation of projects. It is also recommended that there is the need for regular project updates on the status of project among citizens and project management team.

1.0: Introduction

Agriculture is an important contributor to livelihood improvement and poverty reduction in most developing countries of Africa and Asia, including Ghana. According to the Ghana Living Standard Survey [GLSS 6, 2014], agriculture contributed about 39 per-cent to Ghana's Gross Domestic Product (GDP), directly employing 70 per-cent of the labour force and accounting for 57 per-cent of foreign exchange earnings in the early 1990s (Ghana Statistical Service [GSS], 2014). Tendeku (2017) and Diao, Hazell and Thurlow (2010) have observed that a vast majority of people in Sub-Saharan Africa, and an estimated 49 per-cent of Ghana's population live in rural areas and are dependent on agriculture for their livelihoods. In most developing countries, poverty is more widespread and severe in rural agriculture-dependent areas (Khan, 2000), requiring the application of innovative and efficient irrigation technologies to increase agricultural growth for rural poverty reduction. Despite the declining share of agriculture in Ghana's GDP since the 1990s, it is still the major sector of employment, representing 43 per-cent of total employment (World Bank Group, 2015). This suggests that agriculture will continue to play a pivotal role in employment creation as well as drive the country's economic transformation agenda. It would appear that this awareness primarily shaped the policy rhetoric of governments since independence to put emphasis on agricultural transformation to ensure agricultural growth for food security, industrialisation and poverty reduction, especially in the poorer three Northern Savannah regions of the country (Konings, 1981, 1984; National Development Planning Commission [NDPC], 2010; World Bank Group, 2017). The zealous policy initiatives to transform the agricultural sector for economic growth and to even bridge disparities between the more endowed South and poorer North of Ghana have largely failed to achieve the intended results. Inequalities in regional development and poverty disparities still persist. The largely urbanised Greater Accra Region has the lowest incidence of poverty with 5.6 per-cent, whereas the incidence of poverty is highest in the Upper West Region (70.7%), followed by the Northern Region (50.4%) and Upper East Region with 44.4 percent (GSS, 2015). Regions in the coastal and forest areas have extreme poverty rates lower than the national average of 8.4 per cent, while the three Northern regions again have their rates much higher than the national average. The Upper West Region recorded the highest extreme poverty incidence of 45.1 per-cent in 2012/13, followed by the Northern Region

(22.8%) and Upper East Region with 21.3 percent (GSS, 2014). Collectively the Northern Savannah Ecological Zone (NSEZ) contains more than one-third of all poor households in the country, with the lowest development indicators in terms of access to education, healthcare, and safe water and sanitation facilities (World Bank Group, 2017). In addition, poor irrigation facilities and related infrastructures such as roads and storage facilities mean that the enormous agricultural potentials that this agro-ecological zone possesses remain untapped, resulting in high poverty and deprivation in the midst of abundance (World Bank Group, 2017).

Like elsewhere in sub-Saharan Africa, smallholder farmers dominate the Ghanaian agricultural sector for food and industrial crop production (Livingston, Schonberger & Delaney, 2011; Chamberlin, 2007). The vast majority of them (80%) are in the rural areas, whose main livelihood strategy is rain-fed agriculture with limited alternative income sources. Despite the huge potential of smallholder farming as a major catalyst for future economic growth and poverty reduction in Ghana, smallholding can be an obstacle for agricultural development, particularly in the Northern Savannah Ecological Zone, where land productivity is poorer and off-farm income opportunities are highly limited (Tendeku, 2017; GSS 2014; Chamberlin, 2007). Thus, efforts to increase the productivity of smallholder farmers for poverty reduction and sustainable food security will require a mix of technological and socio-political factors.

Since most rural smallholder households depend directly or indirectly on agriculture and given the large contribution of this sector to the overall economy, it is obvious that agriculture should be a key component to promoting economic growth and sustainable development. In line with this, the provision of irrigation schemes has become a catalyst for agricultural transformation and improvement in rural livelihoods in Northern Ghana (NRGP, 2015). Also, Apam (2012) in assessing the impact of irrigations in the Upper East Region of Ghana argued that though irrigation as an agricultural innovation could have a negative impact when not well managed it has great improve the wellbeing of farmers. The positive impact of irrigation which could propel the development of the agriculture sector includes improvement in incomes, access to credit, increased production and productivity, employment and many others. Similarly, in assessing the Ecosystem, Gender and Irrigation Nexus in the Bawku West District of Ghana, Tendeku (2017) observed that irrigated agriculture serve as a significant part of rural livelihood especially in areas where there are limited opportunities for employment in other sectors of the local economy. In his study, he found out that, respondents engaged in irrigated agriculture for different reasons such as income, food, employment and social networks (Tendeku, 2017).

In trying to modernise agriculture, attempts have been made over the years to develop and implement broad-based policies such as the Ghana Poverty Reduction Strategy (GPRS I), the Growth and Poverty Reduction Strategy (GPRS II), The Medium Term Agricultural Development Programme (MTADP), the Accelerated Agricultural Growth and Development Strategy (AAGDS), and the Food and Agricultural Sector Development Policy (FASDEP I and II). Organization for Economic Cooperation and Development (OECD) (2008) argue that just like other policies in Ghana, FASDEP II provides a good investigation into constraints hindering the development of the agricultural sector and also analyses to a certain extent the successes or failures of past interventions. However, the analysis of the

problem as observed by OECD (2008) is often not followed by a proposal of how to improve interventions of the government of Ghana. For example, while it is acknowledged that FASDEP I has failed to achieve the desired impact on poverty because of insufficient targeting of the poor, not much can be found in FASDEP II on how better to involve the poor (OECD, 2008). In Northern Ghana, various development interventions have been initiated to enhance agricultural and rural livelihoods to communities.

The Upper Region Agricultural Development Project [URADEP] (1977-1984) was initiated as the first broad-based agricultural development project to be financed by the World Bank in Ghana. It was designed to increase production (in food crops, cotton and livestock) and family incomes in an area covering 27,300 km2 which supported 125,000 farm families and 40% of Ghana's livestock population. The project was expected to be implemented over a period of five years and had a component for the establishment of 90 Farm Service Centres (FSC) for the provision of farm inputs at the doorstep of farmers, improved on-farm grain storage etc. The project also sought to construct 120 small dams and rehabilitate 100 to provide for dry season gardening, development of fruit trees and fish ponds and water for cattle; improved soil and water conservation; construct 700 wells, stores, houses and offices (World Bank, 1987).

The project goal and objectives, though laudable, were minimally achieved due to a complex web of problems with implementation, management, the prevailing socio-political and economic conditions in the country, as well as some technical hitches arising from the project design. The original project design seems to have been insensitive to the customary practices of local farmers, especially in an area where livestock rearing is undertaken mainly for capital accumulation and the performance of customary rites rather than as a source of income (World Bank, 1987). This suggests that the social systems of the communities were not considered in the project design and one might even wonder if the end-users were even involved in the first place in identifying their prioritized needs. What needs to be noted here is that community politics is very paramount when it comes to power and control of how resources are used. Yet these are systems that are often ignored by development donors and practitioners in developing countries where socio-political factors have a lot of influence on projects and communal livelihoods. From the works of Veldwisch (2006), the intricate interrelations between irrigation infrastructure development on one hand and socio-political processes on the other have insufficiently been acknowledged in design and rehabilitation of projects in Africa including Ghana which account for many failures of smallholder irrigation schemes. Veldwisch (2006) argue that until socio-political factors are addressed and considered critical, irrigation reforms will continue to suffer from unintended effects, which are almost always obstacles to an equitable development (Veldwisch, 2006).

Further review of the URADEP end of project report revealed that the management capacity of the executing agency was found wanting especially during the initial years of the project. This was evident by the industrial unrest and other management problems of URADEP. There was lack of technically capable and experienced mento implement the project which resulted in heavy dependence on the service of expatriate. The schedule for implementation of administrative policy measures was not realistic considering the project was the first of its kind in Ghana and the government did not have the necessary experienced staff to

implement such a broad-based project. The end of project evaluation report also indicated that the project was too ambitious and targets overset. Logistical challenges coupled with poor participation by beneficiaries and stakeholder's in project design and implementation increased the woes of the project. Overall, only 25% of the small dam construction and rehabilitation programme was implemented, with difficulty (World Bank, 1987). Similarly, the Upper West Agricultural Development Programme [UWADEP] which was implemented from 1998 till 2004 had the objectives of boosting food production and incomes, strengthening community organizations and improving the economic status of women. It also sought to develop dry season gardening and improve access to markets through the improvement of feeder roads. The end of project evaluation report concludes that the project had a modest impact but failed to deliver on the provision of infrastructure (irrigation dams) (International Fund for Agricultural Development [IFAD], 2006).

At the end of project implementation, about 70% of irrigation sites were incomplete and the few that were completed were not properly done due to the lack of local experts. "The report notes that meeting timelines and quality of work by local contractors were a major problem. The decision to use the Ghana Irrigation Development Authority (GIDA) as the sole consultant for the irrigation infrastructural development component of the project was blamed for the low quality of project execution and the delays in implementation (IFAD, 2006). The evaluation further revealed that few Water User Associations (WUAs) were in operation long enough to judge their sustainability in effectively managing the small irrigation schemes that were provided under the project and transferred to the WUAs for community management." In some cases, beneficiaries and WUAs have not understood well the different roles and responsibilities of WUA's and Consulting / Construction Agencies in the implementation and management of irrigation systems leading to maintenance problems. "Beneficiaries and key stakeholders participation were very weak while project support unit had no specialized staff to supervise infrastructure work. This did not only lead to low quality of work but the non-execution of major components of the project (IFAD, 2006). With experience and lessons learnt from URADEP and UWADEP, much was expected from the Upper East Region Land Conservation and Smallholder Rehabilitation Project [LACOSREP] I & II (1992/1998 and 2000/2006) respectively. A review of the Upper East Region Land Conservation and Smallholder Rehabilitation Project [LACOSREP] I & II., however, revealed that in both phases, the project also had the objective of increasing agricultural productivity. This was to be done through farmer training and introduction of new technologies, building the capacity of government institutions such as GIDA, MoFA to provide technical and social services at district and -sub-district levels, and the construction of rural infrastructure, particularly small irrigation dams and dugouts in the Upper East Region (IFAD, 2006)." The second phase of LACOSREP improved and diversified the sources of farmers' income, assets acquisition and food security to some extent.

Despite some of the successes achieved by LACOSREP II, it also had some challenges which affected planned implementation. The end of project evaluation reported delays in meeting implementation timelines and poor quality of irrigation schemes executed by local contractors as major problems encountered by the project. This led to the over-reliance on Chinese experts which also posed a problem with supervision. The design of irrigation

systems demands that populations are aware of the importance of irrigation for more than two years. The assessment report showed that this was a waste of time, because communities had already submitted requests for dam before was launched LACOSREP II (IFAD, 2006). Key project actors such as farmers had not fully participated in the project design and implementation. "The report noted that as a result of the poor participation and involvement of beneficiaries and stakeholders like chiefs, district assemblies and MoFA in key project activities, many dams were uncompleted at the time of project closure. Hand-dug wells that required less maintenance and probably be sustained locally were a challenge. It became clear that the levels of responsibility for the maintenance of irrigation facilities were unclear to beneficiaries and WUAs as some maintenance issues were beyond the WUAs and even local government authority budgets. WUAs had limited capacities to maintain and sustain hand-dug wells as their capacity to maintain the irrigation facilities were linked to their ability to mobilize internal and external financial resources only (IFAD, 2006)." With a special focus for the development of the Northern Region of Ghana, the Millennium Challenge Account (MCA) (2007-2012) was initiated. The Millennium Challenge Account [MCA] (2007-2012) programme also had the goal of reducing poverty through enhanced economic growth. It had a more general goal to improve the productivity of agricultural and product distribution services in order to encourage expansion of commercial farming by smallholder farmers. Under this project, ten (10) irrigation schemes were to be rehabilitated through the provision of retention ponds, weirs, canals expected to irrigate up to 5060 hectares (MCA, 2013). However, the end of MCA evaluation report revealed that out of the ten (10) planned irrigation schemes to be rehabilitated, only two (2) (Botanga and Golinga irrigation schemes with the capacity of 495 and 40 hectares respectively) were rehabilitated with a total capacity of 535 hectares (MCA, 2013).

The report also indicated that the irrigation rehabilitation target was not achieved due to; (1). Budgetary constraints and delays associated with the recruitment of contractors to work on selected schemes, (2). Initial information and analysis upon which the decision to implement the irrigation activity based, proved insufficient, affecting scope and implementation, (3). There was limited time available for project design and implementation. For instance instead of works contracts being awarded in November 2010, for a 14 months duration it was awarded in 2011, thus necessitating a reduction in the construction time to 12 months, (4). Project activities were not integrated to effect the desired change on beneficiaries. Some critical interventions like the irrigation schemes and post-harvest infrastructure that would have improved a lot of the farmers came late and were not well integrated (MCA, 2013)." The report also observed that generally grassroots participation was undermined which affected beneficiary's commitment and general outcome of the project (MCA, 2013). It is therefore not surprising that after the first phase of the compact a feasibility study revealed that the irrigation projects could not be implemented due to poor planning. The report also revealed that the sustainability of the irrigation schemes was in doubt given that similar schemes had not performed as expected in the past in the North (MCA, 2013). Currently, the Northern Rural Growth Programme [NRGP] which is a collaboration of Government of Ghana, IFAD and African Development Bank [AfDB] takes a private sector, demand-driven approach for the development of both rain-fed and irrigated food and industrial crop commodity chains. These commodities (soybeans, maize and sorghum and rice) were

selected because they have the capacity to meet local and international demands. The overall objective of the project, especially those in impoverished regions, rural women and other vulnerable groups in Northern Ghana, is to ensure better livelihoods and food security for the rural poor. This will be achieved through the provision of small-scale irrigation (NRGP, 2014). Its main objective was to "achieve sustainable increased incomes for agricultural and rural livelihoods, focusing on smallholder farmers in rural northern Ghana" since the three Northern Regions are considered the poorest in the country (IFAD, 2013).

All the mentioned initiated projects and programmes have their focus on transforming from rural subsistence farming environment to mechanized commercially attractive, viable and dynamic sector so as to increase agricultural production and thus improve farm incomes in a more sustainable manner (IFAD, 2014). The literature on these projects suggests clearly that they have been hailed as failures. Despite these failures, evaluation projects either fail or make little efforts in assessing the socio-political factors underpinning these failures. In assessing project failures and successes in northern Ghana, IFAD (2014) highlighted that, it is not enough to simply install or construct physical irrigation schemes/dams. This accordingly has been easily accomplished in the short run by building infrastructure with donor funds. The report revealed the lack of sustainability mechanisms to ensure projects address the real needs of targeted beneficiaries in the short, medium and long run. The provision of irrigation services in the 1960s till date has been confronted with challenges which have always affected irrigation efforts. Weak involvement of beneficiaries and stakeholders in project design, unrealistic set targets, budgetary constraints, and lack or inadequate technical personnel are some of the challenges faced by irrigation development projects (IFAD, 2014).

The literature also suggests that in most evaluated irrigation projects, the focus has always been on the physical installation and livelihood outcomes such as yields, extension delivery, and a number of hectares under schemes and so on. Little or no efforts are made towards understanding details of socio-political factors such as participation by key actors in projects design, and implementation process since these factors contribute to the sustainability of project implementation and livelihood outcomes. A review of the projects under this study indicates clearly that project design and poor targets, as well as inadequate technical capacity, have been the cause of the failures of projects. Though this might be true to some extent, it will also be right to argue that these factors could have been revised and technical assistance got from external sources which had always been government and donor priorities. It might not, therefore, be the case that, these were critical factors that caused project failures but that, the poor participation of beneficiaries and stakeholders despite the obvious importance of irrigation facilities on the community's livelihoods. It can be argued therefore that community power structures as well as social relations when ignored or when not given the relevant priority could result into low participation as people especially the most influential at the community level could influence others not to patronise such projects.

An empirical study conducted by Veldwisch (2006) on the socio-political situation of Thabina- Irrigation Scheme in South Africa from its physical layout found that, out of over 12 pressure pumps that were built in the scheme, only one was working which belonged to the chairman. As a result, excessive use of water by the chairman is also a direct loss to the farmers downstream. Therefore other farmers are critical of the pressurised pipe and the

excessive use of water by the chairman. However critique on the construction of the pressurised pipe is not openly expressed, as they know that criticising the structure implies criticising the people allied with the structure. It is the alliance of the chairman with this construction that gives it its stable character. Contesting the layout of the structure implies contesting the position of the chairman, who has a wide alliance of tractors, land, and both managerial and political influence. Most probably similar constructions at other places in the system would have been 'corrected' unless a similar alliance would have backed it. It was also realized though whereas farmers had less than 1 ha of irrigable land, the chairman has 5 ha while the vice-chairman had 2 ha of land due to their influence. A study conducted by Mdee et al. (2014) on the Dakawa irrigation scheme in Tanzania found that USAID under its Feed the Future programme had initiated a lot of canal rehabilitation, replacement of existing pumps alongside the provision of inputs but indicated that, the management of the scheme has been politicised, with positions of influence reflecting political party allegiances. In this account, the real smallholder farmers of Dakawa are marginalised by less visible but more powerful political interests (Mdee et al., 2014). Veldwisch (2006) in his study on the Thabina irrigation scheme in South Africa also revealed that there are very critical issues in most irrigation development schemes that have still not been brought up as specific points of attention in both practice and in academia: Veldwisch (2006) identified two key issues that need to be addressed; (1) the clear differences between donor interest and strategies and interest of communities and farmers and (2) the interaction between type of intervention provided by donors on the one hand and socio-political relations considerations on the other. A similar study conducted by Mdee et al. (2014) in the Dakawa irrigation scheme in Tanzania found that, though the scheme is currently working well, it was revealed by farmers that there were situations where pressure was on the farm managers to divert water to plots belonging to powerful individuals. "Irrigation practice is embedded in longstanding social relationships. People do not articulate these as rules but as their way of being 'together'. At the same time, water access is constrained by land ownership (through inheritance or through purchase) and technological limitations. New technology has been adopted into these relationships but local government intervention has been actively resisted. Most interviewees emphasized fairness and sharing in relation to water use that draws on their social connections. In Dakawa, the formality of water access by no means solves internal conflicts over the use of water. Membership of UWAWAKUDA is political and contested and a lack of transparency and accountability is in evidence despite the formal democratic and reporting structures." The full potential for irrigated agriculture to contribute to rural livelihoods cannot be realised without a more substantial political commitment to this goal.

The NRGP (2011-2016) which took a private sector, demand-driven approach for development of both rain-fed and irrigated food production. The provision of irrigation services in the 1960's till date has been confronted with weak involvement of beneficiaries and stakeholders, poor information flow, sustainability issues, unrealistic targets and lack or inadequate technical personnel (IFAD., 2014). The study, therefore, explored the level of citizen (beneficiaries' and stakeholders') participation in the design and implementation fo the the irrigation component of the Northern Rural Growth Program (NRGP) in Northern Ghana. The study conceptualised participation to mean project information flow between

project team and citizens, innovativeness of technologies and how citizens are involved in decision making as well as the management of project interventions.

2.0: Literature Review

2.1: Overview of the Northern Rural Growth Programme

A loan and grant to finance the adoption of the Northern Rural Growth Program (NRGP) was authorized in December 2007 by the International Fund for Agricultural Development (IFAD), which became effective on 24 October 2008. The project was co-funded by the Government of Ghana (GoG), whose financing is supported by the African Development Bank (AfDB). The Programme which was an eight (8) year programme ended on 24th October, 2017. The programme covers the three northern regions (Upper East, Upper West and Northern Region), Brong Ahafo, Central, Greater Accra and Volta Regions but with much focus in the three Northern Regions of Ghana. There is the greatest level of deprivation in the selected areas under the programme. "Several reasons account for the high levels of poverty in Northern Ghana and some of these are : (i) low agricultural productivity due to dependence on erratic rains and low soil fertility; (ii) seasonal hunger and malnutrition; (iii) demographic pressure on natural resources, extensive production system and a sub-optimal use of water resources; and (iv) limited availability of marketing outlets, and difficult access to main markets in the south and abroad." Despite efforts to improve access to irrigated farming, regional agricultural production continues to rely heavily on rainfed crops and is highly vulnerable to risks of climate change. Agricultural growth will therefore be driven by the increased production of both rain-food and irrigated crops and by the development and promotion of agricultural produce in the northern three regions (NRGP, 2014). The overall aim of the project, especially those in disadvantaged areas, rural women and other vulnerable groups within the program area is to ensure adequate farm and rural livelihoods and food security to the rural poor. The main goal is to develop sustainable and competitive goods and food chains for generating agricultural surpluses and for orienting them towards paying markets in southern Ghana and elsewhere. The commodity value chain approach must be used to achieve this .The program is based on the provision of relevant irrigation and marketing infrastructure, access to finance and setting up sustainable farmer-based organizations and the Value Chain Committee. The program's overall policy is therefore focused on a private sector (along with IFAD's private-sector growth and cooperation strategy) and on a demand-driven method, and it identified and established both rainfed food chain and irrigated product chain on the basis of its ability to meet or substitute for local or foreign import requirements (NRGP, 2014).

To achieve this overall goal, the programme has four main components which are described as:

1. The commodity chain development component has the objective of selecting and supporting commodity chains based on models that link small producers to private operators (processors, traders, aggregators, exporters, etc) and fill gaps created by policy failures by (a). Strengthening Farmer Based Organizations (FBOs) through capacity building and skills training; (b). "Improving irrigation, market and transport infrastructure; (c). Enhancing agricultural support services (extension, research, and financial services) through the

building of mutually beneficial linkages among key stakeholders in identified value chains. This component rests on four pillars of activities notably (a) Strengthening of Farmer-Based Organizations (FBOs) (b) Establishment of District Value Chain Committees (DVCCs) (c) Development of Value Chain Organizations and (d) Establishment of Productivity Investment Fund (PIF)."

- 2. The second component is the rural infrastructure development which has the objective to develop the potential for irrigation and integrated water management to shift from the over-dependent on rain-fed cultivation which is highly vulnerable to climate change risks. "The programme's approach to rural infrastructure development takes into consideration the need to establish clear links between infrastructure interventions and commodity chains development from both geographical and technical point of view. This component is made up of the following activities: (a) Small Scale Irrigation Development through river pumping schemes and water conservation schemes support; and (b) The second component is marketing infrastructure development focusing on roads infrastructure development (feeder roads, farm access tracks); and marketing infrastructure (warehouses and backhouses) support activities."
- 3. The third component which is access to rural financial services has the objective to strengthen linkages with financial institutions in order to improve access of financial services to smallholder farmers, women, micro-entrepreneurs and agro-businesses in the programme area. This is to be done through capacity building of Participating Financial Institutions (PFIs). The capacity building exercise involves: (a) Technical assistance i.e. training of PFIs in Rural and Agricultural Finance (b) Development of Innovative Products and Services (c) Logistical support (provision of motorbikes and maintenance cost) and (d) Operational support for PFIs (top-up allowance for credit staff of PFIs who will be dedicated to NRGP agricultural loans) (NRGP, 2014).
- 4. Programme management, coordination and monitoring and evaluation component which is the fourth component had the objective to ensure efficient and effective management and coordination of the Programme. It sees to the day to day management of the Programme and coordinates the activities of all implementing partners. It also ensures that Programme implementation is on track using M & E as management for feedback and planning. This component has two main sub-components namely; (a) Programme Management and Coordination which is responsible for the day to day implementation and coordination of the programme and (b) Support to Monitoring and Evaluation which is responsible for tracking the overall implementation of the programme (NRGP, 2014).

2.2: Understanding Community Participation

For the successful implementation of projects like the NRGP, there is the need for the inclusion of project beneficiaries and staleholders. A concept that is popularly called "participation". As postulated by Anne (2009), Norad (2013) and others, community participation is a powerful development process that ensures sustainability at various levels such as institutional, community, national and international levels. It is not surprising that the relevance of community participation was highly encouraged in the Rio Declaration 1992, where the international community agreed on the fact that "environmental issues are

best handled with the participation of all concerned citizens, at the relevant level" and that "each individual shall have the opportunity to participate in decision-making processes". They further established that governments should facilitate and encourage public awareness and participation in dealing with environmental issues by making information widely available to the citizens (United Nations, 1992). It is very important to note that this definition acknowledges the roles of everybody in the society in ensuring environmental issues are addressed.

In farming communities like those in the study area such as Northern and Upper East regions, men, women and children all contribute to either sustaining or destroying the environment. However, in postnational policies and livelihood interventions, little attention is given to, more especially, the role of women and children in environmental management. It is therefore relevant to indicate that the UN (1992) proposition is not only limited to the national government but by extension all social change agents such as NGOs and multilateral organizations. From years of experience in rural development in northern Ghana, the assumption of participation by the international organization is that the right to information is universal and non-restrictive which is not the case. Clearly, participation can only be effective and relevant when beneficiaries have access to the needed information at the right time. However, it is common in developing countries like Ghana where most projects have their information kept in secret under the cover of "confidential information" and even at best where available, it is scanty and not up to date; a situation resulting from poor data collection and information management. At the community level, it is common to find also that people do not even know what type of information they will require not to talk about the source of project information. Again, this is a situation emanating from the fact that project initiators are not able to make communities know what information is available and where such information can be accessed. Project budgets are held in secrecy while project targets and intervention areas are made public in a spicy way to get community interest for participation. The top-down and bottom-up accountability are often lacking making participation a hidden agenda rather than a transparent process. This double-edged access to information for participation affects project development negatively.

Moreover, Narula and Pearce (1986) maintain that development programs must improve the quality of life of individuals and that projects and programs should be planned or implemented with and not for the recipients of the interventions. The argument suggests that participation by the community should not be restricted to a therapeutic invitation to community members by development agencies after crucial development planners have already taken decisions. Alternatively, the members of the community should express their views specifically on specific development plans and design issues, as well as on the execution and evaluation process. Communities will have to promote and steer their own development priorities for leading initiatives that have a beneficial or a negative effect on them. From Greyling (1998) point of view, participation is not about building consensus; rather, it is aimed at "generating a diversity of opinions, views, ideas and thoughts". This one will need to have a clear glance of the traditional African political and social structure where the news and opinions of all who matter in communal development are heard in a truly participatory manner. Fresh memories still play when all family heads met under a big tree in the village square or the head of the clan and each family head had a say on an issue

that needed to be addressed. Indeed agreeing to Greyling (1998) it is not about consensus building that the elders met but to a very large extent identifying the root causes, finding more efficient solutions that benefit all. To what extent can this traditional concept of participation be built on to modern form of participation? To what extent can development planners institutionalise participation? The purpose of all community engagement in development programs lies in improving efficiency and assessing their willingness to carry out initiatives by differing opinions that might occur as part of the inclusion of community members. Public and community involvement, in other words, can forestall the conflict between communities and alleviate programme implementation and sustainability costs. Bradshaw and Burger (2005) said that, failure to incldue members of the community "during the participation process may contribute to creating a conflict environment" that will actually defeats the aims of community development. Participation by the World Bank (1996) is a process through which the public influences and shares control over development initiatives, decisions, and resources which affect them. However, in the United Nations definition of community participation, "equity" is incorporated which makes the whole concept of participation complete. The notion of participation by UN (1981) is the creation of opportunities to enable all members of a community and the larger society to actively contribute to and influence the development process and benefit from the fruits of development. This definition suggests that those who are affected by a particular change must take charge of their own direction by providing solutions to their own problems. This definition from a broader lens suggests that, the essence of community participation is not only on process level but also how the benefits as outputs of participation are equitably shared or distributed. Further drawing from this argument, it can be said that the community's participation in projects will be high when the benefits of participation are known and appreciated by communities. What is also critical in the concept of participation is that, more often than not facilitators of project development themselves lack or have little knowledge of the knowledge and skills of ensuring full participation. This ends up affecting project results as a result of poor facilitation which is often labeled as poor participation on the side of community members. Over the decades of project facilitation, it has been realized that community participation has been a learning platform for development agents such as government institutions as their capacities and skills are enhanced as a result of their engagement in participatory processes by other agents and communities. This is what is often called institutional capacity development. There is therefore a relationship between participation, empowerment, capabilities, ownership and equity. Generally speaking, the dominant consensus is that by involving people actively in the development process, the promotion of economic and social progress is sustainably accelerated. It provides for sustainable development as it is mutually agreed upon action between all stakeholders and communities which empowers and creates strong ownership spirit among beneficiaries. In light of this, community participation in projects must be "a must" involvement in the decision-making and management of their own lives (UN, 1981).

Similarly, Paul (1988) in his book "community participation in development projects: the World Bank experiences" argued that community participation is a process by which individuals, families, or communities assume responsibility for their own welfare and

develop a capacity to contribute to their own and the community's development. This definition is alluded to by the Norwegian Development Programme framework for analysing participation in development (Norad, 2013). The framework argues that community participation is a process by which citizens act in response to public concerns, voice their opinions about decisions that affect them, and take responsibility for changes to their community. The report suggested that, participation is a process through which stakeholders influence and share control over development initiatives, and the decisions and resources which affect them" (Norad, 2013). The Norad (2013) framework fails to understand the reality of project participation by communities, especially where an external change agent (stakeholders) have their own interest in initiating a project. Interventions are often built on donor interests rather than communities more especially when it is fully funded by an external donor. Experience also demonstrates that in Ghana and more especially in Northern Ghana where there has been an influx of development agents like NGOs, communities do not only understand the drums of NGOs but also local change agents tend to understand and dance according to donor interests and requirements. This makes participation in the development parlance as often reported quite illusive. Even in instances where community members are engaged in project design and implementation, the question has always been who represents who and whether the views of the communities are adequately expressed and presented by the representative(s). Unfortunately, actual community views and interests often do not play out strongly in most development projects. A cross-section of communities who are often members who have worked with development partners and hence understand the development language rally around such opportunities created so as to get the share of the cake. This phenomenon does not allow full community participation.

A study by Wombeogo's (2014) on the impact of the disadvantaged on pro-poor programs in Northern Ghana endorsed involvement to signify "participation in," or "participation," while emphasizing individuals freedoms and options for participation. Therefore, engagement is viewed as a way by which community members are willing to learn, by the involvement of development players in their communities to improve their expertise and their margins for benefits. The decision-making process is a way of shaping the lives of citizens and an ability to shift political power from those who use it to the public on the grassroots level. Community participation in policy interventions is an opportunity to people living in difficult conditions to engage in development intervention programs, review and execution in order to mitigate their livelihood situation. The key stakeholders such as the Department of Agriculture as well as irrigators who are the direct beneficiaries are to be seen as the drivers of the NRGP irrigation activities. With all relevant stakeholders and beneficiaries participating will ensure actual needs are identified and sustainably implemented.

For example, the works of Westrup (2008), Taylor and Pettit (2007), and Oakley (1994) have argued that community involvement can improve development efficiency through a reduction in project costs, time savings, and the provision of authentic resources for the projects. Participation allows individuals to affect plan objective definition, strengthens their dedication to those goals and thereby improves the success of programs. Participation often improves grassroots self-reliance by giving them the chance to move away from being dependent and to improve communication skills that foster shared interaction and

partnerships (Maiter, Simich, Jacobson & Wise, 2008). It ensures that grassroots members continue to collaborate with supportive implementers or players in poverty reduction programs in matters and structures that directly affect their livelihoods and poverty reduction. The range and reach of programs can be expanded through the utilization of local partners 'resources and their continuity can be strengthened by the increased interest and capability of the local community to support ongoing activities. Community engagement may in several circumstances improve the quality, productivity and sustainability of projects, reinforce community stakeholders 'dedication and sense of ownership.

Beneficiaries' shared or collective involvement with groups reflects the engagement of the community. As individuals, beneficiaries may engage in a development project in a number of ways. Community participation can only happen if people collaborate with each other on problems that are best solved through such collective acts to be inform, agree, or act (Korten, 1980), for example, where externalities arise or when organized groups are important to building engagement, understanding, generating trust, sharing costs amongst others. That is why the term 'community' was used. Community participation is a process rather than a product, to the extent that the benefits of the project are shared. Increased power and freedom for poor people are for example gaining economic assets through a project (e.g. land, houses, schools, clinics, roads, etc). It is possible that some people would profit from a project, however, as stated by the World Bank (1987), the advantages of cooperative action, understanding and improving their capacity alongside the projects could be more challenging for these beneficiaries.

For some years now, the issue of people's involvement in their community's pro-poor programs has been a global problem. It is known to be an essential tool for effective rural development in particular in the sustainable development of livelihoods (Chambers, 2004; Fals Borda, 2001). Nonetheless, over fifty years of attempting to implement the participatory principle show that, for example, rural people in Ghana still need to be active in decision making for progress. Even without a common consensus, this concern seems possible as to what community involvement is meant by a sociopolitical dimension. This and interrelated questions related to the extent to which the NRGP project has been implemented, its impact on the livelihood outcome of beneficiaries as well as how it addresses the actual needs of irrigators in a more sustainable fashion are the focus areas of this research.

Community development initiatives aimed at upgrading the living conditions demand that all persons at gender, age and education levels, in particular the participation of women and those who are not educated, take active part. It is strongly encouraged that women participate in community activities move away from traditional restrictions. Women in northern Ghana were encouraged to engage in the Village General Assembly with men at all rates of debate and activities by development practitioners from both the government agencies and nongovernmental organizations, sometimes shy of traditional levels, especially in Muslim communities of northern Ghana (Wombeogo, 2014). Also, in the project planning phase, educated so call technocrats are involved in planning with no inclusion of direct beneficiaries who are often illiterates in the case of irrigation projects. It can be observed over the years of community development that interventionists treat the community as a single entity with a pro-poor intervention. This perception is not often realistic making participation quite illusive. The different communities' experiences and gender, as well as vulnerable levels, are

not the same hence they cannot be considered as a single entity as it comprises many different overlapping communities.

The pursuit of community participation, whether demand driven or a strategy of governments or Non-Governmental Organizations, is critical if community members are to own and sustain development projects and their outcomes. Participation as a development philosophy has therefore taken a centre stage and is being highly promoted by several academics and development practitioners in developing countries like Ghana. Bonye et al. (2013), in their article "Community "Development in Ghana: Theory and Practice", argued that, participation means different things to different people, but essentially it has to do with involving the people, who would be eventually affected by the same decisions, in contributing in making, implementing and monitoring those decisions." But to what extent and at what level communities are to be or are involved is lacking in the author's view. This is critical in contemporary participation discourse. More often than not where you have projects yelling success of participation is nothing than informing and encouraging communities to participate in project implementation. Communities' engagement is required as projects seek to achieve their own set targets, a process that is not farfetched from being what I prefer to call "Creating Problems for own Employment". "Though De Berry (1999) observed that participation credits people with the ability, even in the most extreme circumstances, to engage with the issues that face them, to him with this approach the beneficiary is given more information, responsibility and decision making power in diverse project areas including the project's focus, the targeting of beneficiaries, the implementation strategy and assessment or impact evaluation." This argument by De Berry (1999) confirms and in fact is in line with the UN's (1981) conceptualization of community participation. According to the Human Development Report (UNDP, 1993) community participation is important because it allows people to participate in their own development, indicating that people's participation is becoming the central issue in the face of current development challenges. The above discourse on the subject of participation suggests that participation leads to efficiency, effectiveness and equity when community members are allowed to take part in project conception, planning, implementation, monitoring and evaluation. The ultimate end of this process is that beneficiaries become empowered and self-reliant in the quest for developing themselves and their communities through various livelihood strategies. It can also be argued that, in achieving efficiency, effectiveness and equity will also mean that communities have the capacity to participate while external agents by themselves understand the skills and processes in facilitating community participation. What is often missing in the efforts of project participation is the fact that change agents have little knowledge and skills in facilitating community participation while also interested in targets set rather than within realistic time bound from donors? It is also the case that most donors express their interest areas during the call for proposals or project development. Development agents however in the quest to secure funds with very short calls for project proposals are not able to carry out detailed community consultations. As a result of the little or no consultations, actual community needs are not addressed. Also, due to the experience of many development practitioners, there is often the tendency of projects being developed without even community or beneficiary consultations.

In addition to these challenges, there are other critical limitations to community participation. Community participation is a complex and diffused conception in which stakeholders are heterogeneous. Individuals have divergent complex opinions, competing for divergent interests and differing roles, status and capabilities. Anne (2009) argues that power relations within the community and between different actors are crucial points to consider in the discourse of community participation. Norad (2013), like scholars, concur that community's knowledge and experiences with participatory management, the amount of time available, outsider's skills and instructions, education, skills and income of community members are influential factors that can have serious limitations to their participation in community projects as alluded to by Anne (2009)."This in addition to the myriads of issues already outlined in this literature includes inadequate logistics by change agents, ambitious targets and limited time - all do not allow proper participation. Yet with all these associated challenges resulting in poor or no participation in projects, the issues of sustainability are central to community projects. Various authors like Holmes-Watts and Watts (2008) claim that community participation has to be linked and incorporated in institutions to ensure sustainability and avoid window-dressing.

From a critical assessment of the above literature, it can be concluded that community participation should not be seen as a separate ball game from projects. In fact, participation by communities is the framework or core business of a project hence there should not be the question of institutionalizing participation. Change agents will need to understand the community's world view and approaches of participation rather than designing own concepts of participation. I think this is a gap that both academia and development practitioners will need to understand that participation is not universal and cannot be a matter of rigid rule of principles, standards and processes that can be applied everywhere. Whereas the concept of participation could vary depending on geographical, cultural, economic, environmental and other factors, the levels of participation could not have been the same. In trying to assess the critical factor in community participation, the American Planner Arnstein (1969) concluded on the power relationships within the community and different actors in community participation processes and outcomes. Though Arnstein (1969) did not explicitly indicate the type of power relation whether it is political, economic or otherwise, Arnstein (1969) argues, this relationship influences and determines at what stage are a certain category of people expected to participate in decision making. In Arnstein's (1969) 'ladder' of community participation in terms of gradation of participation manipulation which is the lowest form of participation through to citizen control as presented in Figure 2. 1.

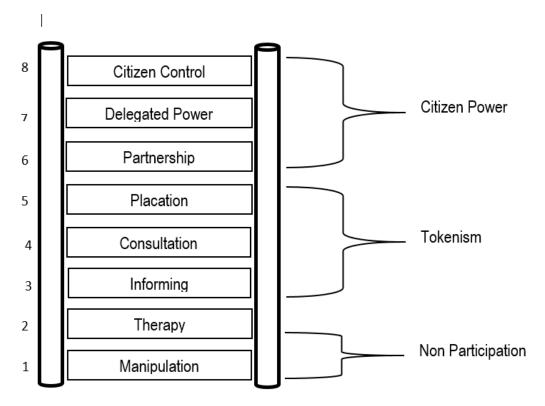


Figure 2. 1: Arnstein Ladder of Public Participation

Source: Arnstein (1969)

The ladder according to the author presents a more unidimensional classification which can no longer reflect the realities and complexities of role-sharing between governments, communities and other parties in the development agenda. Anstein ladder of participation, which has been used in public planning and environmental management has gained wider popularity in the development field where community participation is crucial for project sustainability (Arnstein, 1969). From the tokenism and one way consultation near the base of each dimension to equal power sharing and community control, each step offers equal power sharing. Arnstein (1969) ladder of participation as depicted in Figure 2.1 ranged from no participation, or government consulting the public but not necessarily heeding their advice (tokenistic participation), to complete and equal sharing of decisions or community control. The idea has since been elaborated by others, with small differences. Wondolleck et al. (1996) pointed out that the stronger forms of participation are not necessarily preferable to those lower on the ladder, as communities and organisations can find themselves overloaded in participating in issues that are not necessarily important to them. Ross et al. (2002) also noted that the ladder idea, focused on sharing power, does not cater well for the communitybased types of participation in natural resource management which occur in developing countries." Here the emphasis by these authors may be on fostering, strengthening or restoring community-based action and collective approaches to development efforts which from my point of view is good. However, it is important to note that the gradation by Arnstein could only serve as forms or types of participation that prevails in development interventions which might be good or bad depending on how they are used and what point in time.

The bottom rungs of the ladder according to Arnstein (1969) are (1) Manipulation and (2) Therapy. These two rungs describe levels of "non-participation" that have been contrived by

some to substitute for genuine participation. Their real objective is not to enable people to participate in the planning or conducting programmes, but to enable powerholders to "educate" or "cure" the participants. Rungs 3 and 4 progress to levels of "tokenism" that allow the have-nots to hear and to have a voice: (3) Informing and (4) Consultation. When they are proffered by powerholders as the total extent of participation, citizens may indeed hear and be heard. But under these conditions the "have-nots" lack the power to ensure that their views will be heeded by the powerful who control and direct project resources and focus. When community participation is restricted to these levels, there is no follow through, no "muscle," hence no assurance of changing the status quo and sustainability. Over the centuries of rural development in Ghana, this has been the outcome of most development interventions where rural communities are becoming poorer and poorer while the change agents who are the rich or the so called "the haves" are becoming richer and richer finding themselves in flashy cars and mansions. A process I called "intellectual loot and share" Rung (5) Placation is simply a higher level tokenism because the ground rules allow have-nots to advise, but retain for the power holders the continued right to decide. Again what is missing at this stage is the fact that communities deciding on what does not necessarily mean their decision(s) will be considered making them feel they have decided to make them more pseudo participants.

Further up the ladder are levels of citizen power with increasing degrees of decision making clout where citizens can enter into a (6) Partnership that enables them to negotiate and engage in trade-offs with traditional power holders. At the topmost rungs, (7) Delegated Power and (8) Citizen Control, have-not citizens obtain the majority of decision-making seats, or full managerial power. This is what is desired and can only be achieved from my decades of development experience, only when local community's world views of participation are incorporated in to the development discourse of participation. Also, it is only when development is demand driven where communities themselves are able to identify their needs and are able to get the appropriate platforms to invite donors to support their needs rather than communities responding to donor calls. This is the desired action that development should seek to achieve to ensure sustainable development interventions with real results. Taken a critical assessment of the eight-rung ladder is a simplification, though it helps to illustrate that so many have missed, that there are significant gradations of citizen participation. It is important to note here that whether the government, NGOs or communities are initiating a change, there is the need for an effective participatory process. There is considerable international experience of good community engagement and community involvement systems. It is particularly important that the processes be well designed, and followed with a genuine intent to listen to communities and take their views in to consideration. Some of these considerations as spelled by Ross et al. (2008) for effective community participation include:

All-inclusiveness approach where the processes of participation in projects being opened to all relevant members of society, including women, all age sets, and social or cultural minorities. The processes should be comfortable for the people involved. They should suit their cultures, languages, and convenience, and be held in locations where they feel at ease to speak freely. If the processes are not comfortable or convenient, some people will not attend, or they will not speak up." "There is also the need for a balance in the differences in

power as much as possible through the preparation of the parties, providing the disadvantaged with resources, and facilitating discussions to encourage the less advantaged to speak out. Allowing enough time for the process of participation, so that all can be reached and heard is very key. This is so because people may need extra time, and repeated visits, to understand complex issues sufficiently, or to talk among themselves between formal discussions."

What is observed in the development processes has always been the donor's urgency for the achievement of set targets in numbers within a very short time which does not allow for full participation and think through for effective results to be achieved? Ross et al. (2008) further argued the need for the engagement of neutral facilitators or a team of facilitators who have the competency in participation and the required skills and knowledge in the development issues to be addressed. Where this is lacking on the side of the facilitator it might affect the whole project processes and its outcomes. Where communities also lack or have little information on the project in question and the expected participation processes, there is a need for capacity building or assistance in order to participate effectively. This can be done through preparatory briefings, discussion as well as information sharing on projects. As argued in this chapter, participation will be high when communities see the benefits of the short and long term they stand to gain as a result of their engagement. It is therefore important to consider each participant's perspective in terms of why they should participate, what they stand to gain from participating with less or no lose due to their participation. Ross et al. (2008) concludes that for effective community participation, there is the need for the availability of sufficient resources to be able to conduct the process well, and also enable people to participate without challenges and cost. Typically travel costs, replaced wages if taking time off work, child care and others will need to be considered. Building on Arnstein (1969) gradation of participation, Cornwall (2008) advanced the typologies of participation which in principle is not different from that of Arnstein (1969) and others. Cornwall (2008) in his typologies of participation explained how each typology is and their associated features.

Cornwall (2008) typology of participation is presented in Table 2. 1 Cornwell's Typology of **Participation**.

Table 2. 1 Cornwell's Typology of Participation

Type of Participation	Features			
Manipulative Participation	Pretence, with nominated representatives having no legitimacy or power.			
Passive Participation	Unilateral announcements without listening to people's responses.			
Participation by Consultation	External agents define problems and information gathering processes and so control analysis.			
Participation for Material Incentives	People participate by contributing resources (labour) in return for material incentives			

Functional Participation External agencies encourage participation to meet.

predetermined objectives

Interactive Participation People participate (as a right) in joint analysis,

development of action plans and formation or

strengthening of local institutions.

Self-Mobilization People take initiatives independently of external

institutions to change systems.

Source: Cornwall (2008)

In the context of sustainable livelihoods development, community participation is an active process whereby beneficiaries influence the direction and execution of development projects rather than merely receive a share of project benefits or information on how project is to be executed for endorsement. Throughout Ghana, the government and non-governmental organizations have always been supported by elected leaders or by community members to take part throughout local governance, natural resource managment and other life-support programs (Kendie & Guri, 2006). How these people are selected and whether they actually represent the people at the grassroots level is debatable due to various legitimate questions such as; "to what extent do communities participate in development projects? And do communities really participate in project interventions as may be required to ensure sustainability?" What needs to be noted here is that community participation should not be viewed just as an end in itself but a process within the whole project stages hence how are communities engaged in all these project cycles and indeed how are these benefits equitably shared. It can also be added that there is no single 'recipe' for a good participation process as earlier on alluded to that there are no universally accepted principles and processes in participation but rather appropriate to customize according to the local circumstances without compromising quality of results. It is particularly useful to seek and accept local advice while designing the process so as to enhance sustainability.

2.3: Critique of Participation

From the literature and development planners, the concept of community participation is not only seen as a process but also an end it itself as it is seen as empowering. It is somehow seen as the panacea to development. What the literature also point out is that, community participation is voluntary. This is in line with the work of Wombeogo (2014) who stated the involvement of community members is a volunteering practice and requires equipping the participants with sufficient knowledge and training to fulfill themselves. It should be noted, however, that it is not possible and in some cases perhaps not entirely desirable for all parties involved to fully participate in any phase of the process. It is used often and without clarification in a variety of contexts and has therefore been more or less ambiguous (Jacobs, 2010). Amanda's (2000) claimed in a similar vein that the blank use of the word 'participation' concealed in reality the complexity that is apparent in its understanding. This is because consistency in the approach cannot be taken throughout the participative process of initiating, planning, implementing and evaluating ideas. Theoretically, planning

interveners or developers hold control of policies, and often assume that involvement rises to local or grassroots level In Amanda (2000) preposition of non consistence in approach, I differ in my opinion that participation has a set of tools often referred to as Participatory Rural Appraisal Tools (PRA) which can be adopted to ensure participation. My stand here is that, the ethical considerations in the application of these set of PRA tools might affect the process and outcome of participation. From practical experience in the field of community development over the past 15 years clearly shows that the concept of participation is a mere illusive which do not apply any ethical considerations. Community members only become involved as their involvement leads to community work. Community members often disregard the opinions and recommendations that even they engage in any process that often contributes to a war of silence.

It would not make sense to extend the participatory decision-making process in certain situations and technical issues. If participatory emphasis is decided and a broad consensus exists, for example, for the development of a community warehouse in a negotiated area, it may not be appropriate for all stakeholders to be included in the technical decisions on concrete, roof and other technical specifications for building. Unless there are individuals acquainted with various technical infrastructure specifications, general inclusion would only prolong the cost and time cycle, which would not help the final result. In general, though, the whole participatory phase will be relevant if the warehouse and the other infrastructure project are to be handled transparently, including maintaining fair access to the warehouse in compliance with negotiated policies and pricing.

Amanda (2000) suggests that the participatory phenomenon needs to be addressed at a methodological level and should concentrate on what he called the animation phase. Animation refers to the process of empowering people to see themselves as central players in their lives so that emotional dependency and apathy are unblocked and that they have a creative potential in social situations. Animation involves a learning process through participation, during which the monitoring of the process is given to subjects by the facilitator. According to Amanda (2000), the participatory method seems to have failed to take into account that active participants are able to challenge the way the assessment is conducted and involvement can therefore be viewed as a mechanism to insure that the evaluation is approved. Oakley (2007) makes the important difference between participation as a means and as an end. Participation as a tool means being used in order to accomplish a default objective or goal and is a short-term exercise. Oakley (1991) opposes participation as means to the end, implying an 'unfolding process,' which develops and strengthens the participants' ability to take action. While the arguments for participatory approaches are convincing, I firmly challenge the practical significance of these arguments for communitybased development: community participation may have won a war of words for academia and development, but its success is less obvious beyond rhetoric. A lack of obvious progress arose from the general difficulty of clearly demonstrating the essence of participation and the true purpose of participation. It is also illusive because donor funds do not allow true participation and its outcome reflected in the development process. Cleaver (1999) claims that amid the demand for participation, the long-term effectiveness of participation is little evidence that improves realistically the material base of the vulnerable members of the community or serves as a social change strategy. My issue in this study has been that

development agencies adopt participatory activities in ways which fit their own purpose but making the members of the community think it is the way to improve the identity or society in which they stay. That's the term "act of faith of development" as described by Cleaver (1999); some critical commentators regard participatory development as defective, idealistic, naive (Christens & Speer, 2006) and tyrannical (Cleaver, 1999) for the three main inferences that follow:

First, under the rhetoric and practice of participation the tyranny of the dominance of multinational agency and funding organizations exists and tackles enduring controls of decision making between agency and funding agency. Second, focusing on participatory practices obscures certain weaknesses and manipulations that minimize disparities in local power; however, participatory practices often lead to preserving and exacerbating gaps in local power. This is a tyranny of the Group level that tackles the well-known social psychological dynamics that are completely ignored in the discourse of participation. Tyranny in the third form refers to the dominance of the participatory approach, noting that there is very little dialog and even consideration of the other methods of cultivation of development in acceptance of the participation, particularly the goals and values expressed. Traditional development criticism was that externals and experts set the agenda and took decisions and that participation constituted a remedy to this power. Participation is synonymous with central planning at the level of multinational agencies and funders. Most international organisations (such as Catholic Relief Services, World Vision Foreign and advocacy assistance) and funders defend participatory approaches in the context that participatory methodic strategies are both efficient and successful for achieving the goals of development organisations. In corporate parlance, participation keeps "transaction costs". So the status quo for up-to-date planing is maintained, though Chambers (2005), amid participatory rhetoric, gives the sense that participation ranges from low to high rates. Examples of the low level of participation involve: providing people or communities with information and high degree of participation are: where people actually have decisionmaking power." However, they don't have to be involved directly in decisions, particularly technical decisions which may exceed their specific interest or knowledge after their contribution is taken into consideration. Creating capacity to develop the confidence, self respect and understanding of people encourages their empowerment and participation It's not the same as developing skills that people are equipped to work as agencies traditionally do. Perhaps Dulani (2003) attempts to adjectively qualify explaining as an "active participation" process in this considerable dilemma. Though Dulanis perspective appears to shed some light on what participation and participation are all about by describing participation as active participation, what is active in the expressed opinion is still cloudy and will still need further explaining. The meaning of active is not well understood. Participation is therefore still a process which is not fully available as the term suggests for an absolute community commitment.

A developer or project manager must balance inclusiveness with the time, resources, interests and knowledge of persons and groups linked to the intended change, while allowing stakeholder engagement. Key stakeholders affected by change should be given the chance to take part in the entire policy process to determine the changes needed and how this desired change is measured."

I conclude, therefore, that there are weak notions of providing participants with important roles as they do not recognize the fundamental tendencies for participants' independence from external resources of expertise to make participation a reality. This means that the methodological support of Rahman (1993) is required in the process of animation.

2.4: Community Participation goals

Empowering goal: In addition, participation is inherent in the fundamental objective of empowering people to address challenges and influence the way they live. Deepa Narayan describes empowerment as the turning point: "Empowerment means increasing the capacity and willingness of disadvantaged people to participate in, discuss, manipulate, monitor and keep organizations accountable that affect their lives" (Narayan, 2006). The institutional point of view of Narayan is the participation to empowerment, where capacity building and the demand side of governance are concerned. The World Bank, in the participation source book (1996) defines participation as "a process through which stakeholders influence and share control over development initiatives and the decisions and resources that affect them". "If participation is more influenced by stakeholders than the beneficiary parties or members of the community, the concept of empowerment from the outskirts to the center or differently from the rural communities to the economically equipped urban centers is lost (Wombeogo, 2014)."

Political goal: The causes of many failures in development were due to limited knowledge of local contexts and a lack of local stakeholder involvement. Therefore, misinterpretations and misconceptions of key problems sometimes contribute to limited political support and a flawed nature of the project. Participatory dialogue has been perceived to be a key tool to prevent errors from the past by consciously including partners from the beginning and by finding greater support in implementing policies. If addressed promptly, many conflicts and obstacles can be avoided. In fact, direct participation strengthens the perception that local communities own the programs, thus enhancing sustainability. In order to take into account the many points of view to be reconciled, communication practitioners might, for example, have a more complex process, but they are probably able to achieve additional benefits. For example, communicating the objectives of the project and their output could become obsolete, since many of them already understand the initiatives and are active in the project (Wombeogo, 2014).

Voice Goal: Nevertheless, the importance of participatory dialogue is not only taken into account for better results it can achieve. Increased participation of NGOs, international organizations and UN agencies is also regarded as a right of their own. Participatory communication fulfills a broader social function in these respects, giving voice to the world's poorest and most vulnerable. Participatory communication, by getting involved all relevant actors, becomes an instrument for alleviating poverty, mitigating social exclusion and ensuring that priorities and goals are agreed and improved by a broader constituencies base. The overall results and success of each growth project are improved by this phase (Wombeogo, 2014).

2.4.1: Stages of Participatory Development

Each project issue can be divided into phases, which facilitate the evaluation of when and how relevant a participatory approach is. There have been four major development stages identified by Tufte et al. (2009) from an institutional viewpoint. The stages are as follows:

- 1. The Research Stage provides a definition of the development problem. This process can involve all relevant stakeholders. Research into the problem of development can include studying past experiences, knowledge and attitudes on the individual and the community, current policies, and other important socio-economic information, culture, spirituality, gender, etc.
- 2. Design Stage defines the activities. A participatory approach ensures the ownership and engagement of the participating communities. The goal is to improve both the qualities and relevance of the suggested interventions through the active participation of local citizens and other stakeholders.
- 3. The implementation stage is when planned intervention is carried out. Participation, relevance and sustainability are increased at this stage.
- 4. Evaluation stage participation make sure that the most important changes are communicated and evaluated. In a participatory procedure at the very beginning of the initiative involving all concerned stakeholders, indicators and measures should be defined for meaningful assessment.

2.5: Conceptual Framework

The conceptual framework used in this study is the Sustainable Livelihood Framework (SL), derived from the Department for International Development (DFID, 2001) which is a tool for improving understanding of the processes, interaction and outcomes of rural livelihoods as in the case of irrigators under this study. The framework is suitable for this study, because it serves as an analytical tool in examining the vulnerabilities context of irrigators (farmers) and how the NRGP irrigation intervention has influenced their livelihood (irrigation farming) outcomes. The framework is more particularly relevant to this study as expressed by Fernado (2013), Serrat (2008) and DFID (2001) because it helps to assess and evaluate the extent to which irrigators who are the direct beneficiaries of the NRGP irrigation are involved in the project planning and implementation processes and how issues of sustainability have been addressed. The main components of the framework are the vulnerability context, livelihood assets, transforming structures that influence farmer's livelihood assets (irrigation assets) and livelihood outcomes as postulated by Fernado (2013), Serrat (2008) and DFID (2001). Within the framework, these factors interact with one another to produce positive or negative outcomes.

Since the sustainability livelihood approach to development is human (farmer) centred the framework assumes, as argued by livelihood scholars such as Fernado (2013), Kantz (2001) and DFID (2000), irrigators' assets such as social, natural, financial, physical and economic capitals support irrigators to overcome their vulnerabilities such as shocks (conflicts, droughts and floods), trends (technology changes, changes in governance and policies), seasonality (such as prices, food availability and employment opportunities) thereby

converting these capitals into positive livelihood outcomes such as improved yields, improved incomes, access to food, improved social network, access to production technologies as well as improved production skills. The approach is founded on the assumption that people require a range of assets to achieve positive livelihood outcomes. However, no single category of asset on its own is sufficient to yield the livelihood outcomes that people seek (DFID, 2000; Fernado, 2013). This is particularly true for irrigation farmers whose access to irrigation services tends to be very limited and fluid. As a result, it is postulated under this study that with appropriate irrigation technologies and services farmers' irrigation assets will improve which will have an ultimate positive effect on their irrigation outcomes. Again, the framework argues that the NRGP intervention through the provision of water pumps, rehabilitation and fixing of canals coupled with other irrigation services will contribute to irrigation outcomes positively. The relationship between the major livelihood actors within the context of irrigation in northern Ghana is depicted in Figure 2.

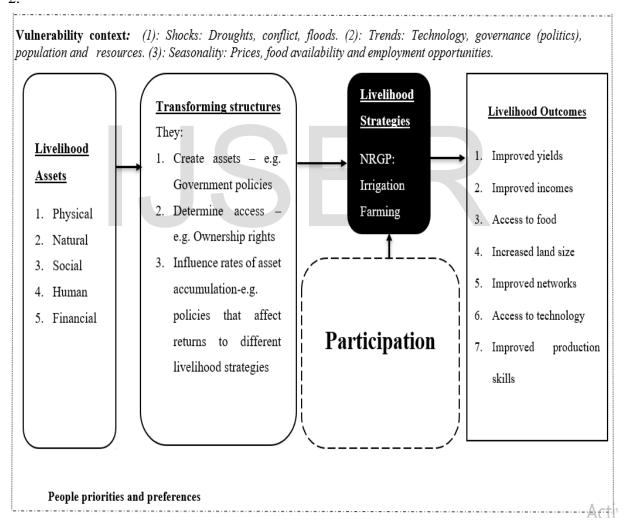


Figure 2. 2: Conceptual Framework of Study Source: Pealore (2019)

3.0: Methodology

The study was conducted in three irrigation sites; "Goog" –Zebila in the Bawku West, "Dipale" in the Savelugu Nanton and "Yapei" in the Central Gonja Districts. The case study approach and comparative sequential mixed method design - qualitative dominant approach were used (Inkoom., 1999). The study population included smallholder irrigators, agricultural extension agents and NRGP staff. With a known study population size of 495, a total sample size of 221 respondents was selected to participate in the study using the sample size calculator developed by US-based Creative Research Systems (CRS). The Confidence Interval (CI) of ±4.9 at a Confidence Level of 95% was determined. According to Sarantakos., (2005).a sample is a subset of the total population and it must always be considered as an approximation of the whole itself (Sarantakos., 2005). I my research I derived the my sample size using a sample size calculator (software) developed by US-based Creative Research Systems (CRS). From the three irrigation schemes studied as presented in Table 3. 1 Irrigation Schemes and Sampling, a total of 221 out of 495primary respondents were surveyed.

Table 3. 1 Irrigation Schemes and Sampling

Regions	Irrigation	Scheme	Direct Beneficiaries	Interviews
	Scheme	location		
Northern	Yapei	Yapei-Yape	120	53
	Yipale	Dipale-Gushie	240	108
Upper East	Goog	Goog-Zebila	135	60
Total	3		495	221

Source: Field Survey, (2017)

The two regions under study were purposively sampled because they are within the project intervention area and are also considered the first two poverty stricken regions in the country. The three irrigation schemes in each region were randomly selected through a lottery process while accidental and exponential Non-Discriminative Snowball Sampling were used for the selection of 122 individual farmers for in-depth interviews. Four key informant Interview participants from NRGP, DADU were purposively selected and interviewed due to their knowledge in the subject matter. Three WUAs were purposively selected and Focus Group Discussion held based on their similar background or experiences.

The study utilized both quantitative and qualitative analytical techniques. Cross tabulations, frequencies, percentages, and charts were used. Spearman's Rank-Order Correlation, Sign Test, Chi-Square Test, Likert Scale and Rating were used to establish relationships and livelihood impact. Under the qualitative analysis thematic approach data and quotes were used in analysis. Also, the conceptual framework which drew the various theories such as the Sustainable Livelihood Framework, Diffusion of Innovation and others such as Arnstein

(1969) ladder of participation and that of Cornwall's typology of participation were used to analyse field data.

4.1: Results and Discussions

Out of 221 respondents, 38% of respondents were within the ages of 18 to 35 years while 48% constitute ages from 36 to 55 years with the mean age observed to be 41. Again, 85% of respondents were men with 15% women. 81% did not have any form education while 19% had some form of formal education. Spearman's Rank-Order Correlation revealed a Correlation Coefficient, rs = 0.066 and p = 0.330. Also, 84% respondents felt there was no information flow from project team to citizens as compered to 11% who felt there was good information flow as presented in *figure 1*. A significant portion (60%) of the respondents did not see the interventions as new or as an innovation while 40% respondents responded in the affirmative. In exploring the management of technologies, 68% of respondents received training on the management of the technologies while 32% did not receive any form of training.

In the selection of project beneficiaries, there was no clear laid down criteria with the exception of having access to land and interest in the project. The study also revealed that 77% of respondents were not involved in the design of the project activities neither were they consulted for their inputs before the commencement of implementation. DADU and WUAs also had the same opinion that there was minimal or no involvement in the project activity design. In assessing the appropriateness of the water pumps and the type of improved seeds (pumpkin) introduced to farmers, it was observed that more than half (57%) of the respondents indicated the technologies were not appropriate and did not meet their needs. In running the Spearman's Rank-Order Correlation between Education and Participation, the Correlation Coefficient, r_s = 0.066 and p =0.330 was observed. The Pearson Chi-Square Test analysis in establishing the relationship between gender and level of participation showed a calculated p-value = 0.068 at a chosen significance level (α = 0.05) with crammer's value of 0.068. A Spearman's Rank Order Correlation in establishing the relationship between farmers' age and participation showed a Correlation Coefficient (r) value = 0.105 with a p-value of 0.121 at a chosen significance level (α = 0.05).

Again the study found that, 80% of respondents concerns were not considered while 5% had their concerns considered with only 15% of respondents not sure if their concerns were incorporated into project interventions during the implementation process.

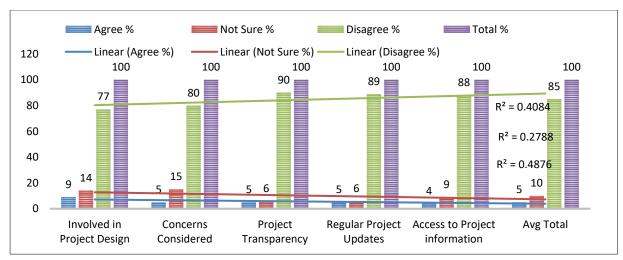


Figure 1: Summary of Farmers Perception of their Participation

Source: Field Survey (2017)

Information flow is not only a social factor but is also a strong political factor that determines the leve of citizen participation in th planning and implementation process. (Morse and McNamara, 2009). Having 84% arguing there was no information flow from project team to communities and stakeholders suggest concerns were not properly communicated and needs addressed. Rogers (2003), OECD (2006) and Williams (2005) all argue that effective communication is key in project implementation. Having considering the target group under the NRGP irrigation project, the use of group meetings updates, radio information sharing and site visits could provide a more feasible and practical information sharing medium. In running the Spearman's Rank-Order Correlation to determine the relationship between educational level of farmers and access to information or perception of information flow, the results showed a Correlation Coefficient, $r_s = 0.069$ and p = 0.306 which suggested a positive association between the two variables. This supports Roggers (2008) argument that as people are well informed or other words educated there is a higher chance of adoption of a particular technology. Also, other factors could account for the lack of information per the study findings. The study observed, few (17%) farmers had access to information about the project and had their concerns addressed. The location of the NRGP office in Tamale with little responsibility delegated to DADU did not provide the needed communication system and structure that allowed majority of farmers to have access to relevant information required by farmers.

Chi-square test was used to test the relationship between gender and level of farmer's participation in project activities. While 176 (80%) indicated they were not consulted for an opinion on the kind of activities that should be included in the project only 19 (8%) responded in the affirmative. 26 (12%) did not have any idea of their involvement or otherwise. The Pearson Chi Square Test analysis relationship between gender and level of participation, with a ccalculated p-value = 0.068 at a chosen significance level (α = 0.05), revealed there is no relationship between gender and participation. The gender of farmers does not influence their participation in project activities. The crammer's value of 0.068 confirms there is a strong disassociation. More men are engaged in irrigation management because of the patriacal societal nature of the study reagion which contradicts de Brauw et

al. (2008) study in China and concurs Rajbhandari (2008) study in irrigation projects in Nepal where women were not actively involved in irrigation management.

Also, in establishing the nature of relationship between farmers age and their participation level in project activities, a spearman rank order correlation was used. The Correlation Coefficient, r_s value showed there was no association between farmer's age and their participation. Since the r = 0.105 is more than our chosen significance level ($\alpha = 0.05$). The age of farmers does not influence farmer's participation in project activities. Farmers' age did not have any influence on their participation in project activities. The study therefore observed that, though age could be an influential factor in farmer's participation as alluded to by Rogers (2003), there are other critical factors as in the case of the study schemes. These factors includ farmer's access to irrigation land, experience from previous projects, level of commitment by both farmers and planners. It also observed that the general level of project participation were within the ages of 36-55 years (48%) and 18-35 years (40.7%). The involvement of these age groups (young and middle age) is connected with awareness of irrigation transfer and the fact that unemployment among these groups have been high. The older generation (56 years and above) who constituted 11.3% could also be in irrigation farming because they had been in these schemes for a longer time (experience).

Innovation is paramount and plays a very influential role in societal progresses and development over time (Rogers, 2003). More than half (60%) of the respondents did not see the interventions as an innovation because farmers were already using such equipment. As Rogers (2003) puts it, an innovation is an idea, practice, or object perceived as new by an individual or other unit of adoption (Rogers, 2003). Farmers therefore think that the irrigation technologies such as water pumps, seeds and planting techniques introduced to them were not new.

The introduction of new technologies can only be well utilized when the users understand how to operate and manage it. Understnading of the benefits derived from the technology, financial and level of education are positively correlated to technology adoption (Rogers, 2003). Training and awareness therefore provides a good opportunity for farmers to manage these facilities. Having 68% of respondents trained on how to operate and manage water pumps was therefore in the right direction. According to the works of IDB (2018), a robust institutional capacity and clearly defined procedures in the management of project is needed. Though participants indicated they are managing their pumps, they still break down because they were not quality pumps. The decision on what type of technology is often relied on the planner rather than the user with the assumption that the planner knows and understands better. This however is not the case as farmers do understand and know certain technologies better which is often not so and should not be encouraged in the development process.

In the selection of project beneficiaries, the study revealed that project adopted farmers who were already farming on irrigation sites without any formal criteria in the seclectio process. As argued by Ross et al. (2008) and Pealore (2012), the processes of identifying project beneficiaries will require time, resources, skills and constant engagement. Planners often ignore this because of the high cost which affects the whole project processes and its outcome. Where communities also lack or have little information about the project, there is a need for capacity building to enable their effective participation. This was evident in the NRGP irrigation support project where respondents felt their involvement was very low. To

ensure effective participation, there is the need for preparatory briefings, discussions as well as information shraring at all levels. Also, respondents were not involved in project design which they attributed to the fact that planners assume they know challenges faced by farmers while also trying to meet the donor requirements rather than the farmers or community needs. Though citizens are the ultimate beneficiaries and stakeholders, they were only brought in when the NRGP PMU needed land and labour to execute some of the activities. The project therefore moved contrary to the popular understanding of participation which according to the World Bank (1996) sees as a process through which the public influences and shares control over development initiatives, decisions and resources which affect them. Based on these analyses, the study concludes that the involvement of beneficiary farmers in the project design was poor. For community or national level development programs to be successful, there is the need for communities especially project beneficiares to be consulted at every stage of the project implementation. More often than not, change agents have the view they are supporting vulnerable communities who have less or nothing to offer. True community development should be devoid of such thoughts. It therefore calls for a new approach to development and orientation for change agents such as NGOs, donnors, Government Departments and Ministries.

In assessing the appropriateness of the water pumps and type of seeds (pumpkin) introduced to farmers, it was observed that 57% of respondents indicated the introduced technology was not appropriate and did not meet their needs. Farmers felt the introduction of the interventions though was to solve their water problem which is a major challenge, the type of pumping machines were not technically good and user friendly. Arrangements in terms of how to acquire them and possible repayment plan were not made clear making it difficult for poorer farmers to have access to if they needed them. Rogers (2003) in his theory of diffusion of innovation indicates the technical and social acceptability of a technology are fundamental for innovation and adoption processes.

5.0: Concusion and Recommedations

From the study, it can be concluded that irrigation has the potential of contributing significantly to the livelihood outcomes of farmers in Northern Ghana. This is only achievable when the necessary steps and processes are taken with due involvement of all who matter in the development process. The conceptual framework of the study stipulates that farmers find themselves within a vulnerable environmental context with shocks, seasonality's and trends. This context makes it difficult for farmers to move out of their current livelihood difficulties or challenges. The concept therefore assumes that farmers can come out or minimise their vulnerability levels with access to assets in the form of the five capitals (physical, human, natural, social and political) coupled with the existence of the transforming structures that influence policies and processes. At the centre of this concept in transforming the livelihoods of farmers is the focus on human and ensuring people participate at all levels in the development agenda process. Based on the key findings and the conceptual framework of the study, the study concludes that beneficiaries and key stakeholders were not fully and appropriately involved in the various stages of the project

design. A Pseudo type of participation was observed which subsequently affected the project implementation and its outcome with a successful rate of 70%.

It is therefore recommended that planners, Ghana Irrigation Development Authority, NGOs and development partners in the irrigation sector should ensure irrigation projects are designed jointly with beneficiaries and key stakeholders. Planners should not engage in pseudo or manipulation type of participation but ensure citizen control in all the various stages of the project design. Planners should ensure there is a conscious and deliberate effort of involving beneficiaries by having a participatory framework that ensures all who matter in a project are involved and their opinions are taken to inform project design.

References

- Apam, L.S. (2012). An assessment of the impact of small scale irrigation schemes on livelihoods and poverty reduction in the upper East Region. MSc thesis submitted to the College of Architecture and planning, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.
- Arnstein, S. (1969). A ladder of citizen participation, Journal of the American Institute of Planners. Retrieved from http://dx.doi.org/10.1080/01944366908977225 (20/07/2016)
- De Brauw, A. et al (2008). Feminization of Agriculture in china. Myths surrounding women participation in farming. China Quarterly, 194(1), 327-348.
- GLSS 6, (2014). Ghana Living Standard Survey Report. Report of the 6th Round, Ghana Statistical Service Accra
- IDB (2018). What is sustainability? A framework to guide sustainability across the project cycle. Retrieved *from http://www.iadb.org*. (Accessed 11/03/2019).
- IFAD (2007). IFAD strategic framework, 2007-2010. Rome.
- Inkoom. D.K.B (1999). Management of non-reserve forest in Ghana: A case study of Mpohor Wassa East District. *Spring Research Series*, No.24. Dortmund: Spring Center.
- LACOSREP II (2006). Interim evaluation report. Report, No. 1757-GH.
- MCA Ghana Programme (2009). Compact completion report. Accra: MCA.
- Mdee. A Wostryii. A, Coulson A, & Maroi. J (2014). The Politics of Small-Scale Irrigation in Tanzania: Making Sense of Failed Expectations. Retrieved from www.future-agricultures.org. (26/08/2016)
- Morse.S McNamara. N (2009). Sustainable livelihood approach: A critical

- analysis of theory and practice: geographical paper No.189. University of Readings. UK.
- Morss E.P, Norman M. Edelstein, Jean Fuger. Hulet, E. K., Gutmacher, Kalina, D. G.,
 Mason, G. (1981). Nine Critical Implementation: Integrated Rural
 Development, Development Alternatives, Inc.624 Ninth Street, N.W.
 Washington, D.C. 20001
- NRGP (2015), Program annual report. Tamale: Program Management Unit, NRGP.
- OECD (2006), Cost-benefit analysis and the environment recent developments. Paris.
- Pealore. Z (2012). The role of the Tono irrigation project in poverty reduction:

 A grassroots perspective, MSc thesis submitted at the University of Stuttgart,
 Germany.
- Rajbhandari, S.P. (2008). Gender equality results monitoring: Irrigation management transfer project (IMTP) in Nepal. Mainstreaming gender equality in infrastructure projects. *Asia Pacific Regional meeting* 10-11 November, 2008. Manila
- Rogers, E.M. (2003). Diffusion of innovations (5th ed.). New York: Free Press.
- World Bank (1996), Water resource management: A World Bank policy paper, Washington: World Bank.
- Ross, H. Powell, B and Hoverman, S (2008) Public participation and community engagement for water resource management in the Pacific, Australian Water Research Facility Policy Brief. Retrieved from www.watercenter.org (12/05/2016).
- Tendeku.K. D (2017), Assessment of the ecosystem, gender and irrigation nexus in the Bawku West District of Ghana: A livelihood approach. Tamale: University for Development Studies. Retrieved from http://www.udsspace.uds.edu.gh (Accessed 20/07/2018).
- URADEP (1987), Project completion report. Report No. 6755-GH.
- UWADEP (2006), Interim evaluation report. Report No. 1758-GH.
- World Bank Group (2017), Community participation in development projects: The World Bank experience. Washington, D.C. World Bank.
- Williams, L.M and Cunningham. F.G (2005). Panning for gold; a clinicians guide to using research. *Journal of marital and family therapy*, 32.
- William W (1997). Crop-Livestock Integration. The Dynamics of Intensification in Contrasting Agroecological Zones: A Review', *IDS Working Paper* 63

.