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## **Institutional and Organizational Bottlenecks to Community Initiated Water Projects in Elgeyo-Marakwet County, Kenya**

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### **Abstract:**

*The success of community implemented projects in developing countries remains a factor of a combination of efforts by multiple development partners. Timely implementation of projects however, is largely dependent on resource provision by government agencies and other actors at various stages of the projects. While at the onset, many community projects prepare adequately for implementation, numerous challenges stand in the way to their timely implementation. This paper discusses institutional and organizational challenges and their effects on timely implementation of water projects in Elgeyo-Marakwet County. It examines the roles of various institutions and organizations in the water sector in the county and how their participation hinders timely implementation of the projects. The paper concludes by evaluating how the various challenges which include financial, management, insecurity among others can be addressed with a view to ensuring projects are delivered to the users on time to guarantee benefits.*

**Keywords:** *Community participation, Elgeyo-Marakwet, institutional bottlenecks water projects*

### **1. Introduction**

In many developing countries, it is recognized that most of the challenges to successful implementation of water resources development projects is traced to organizational, administrative, political, managerial or financial rather than technical factors. Effective co-ordination however has to be established for the proper management of water resources (UNEP, 1982). In a study of Odzi catchment area of Zimbabwe, Kujinga (2002) observed that decentralized water management had its own challenges ranging from stakeholder varied interests to inadequate financial resources alongside political interference. Tambudzai et al (2013) pointed out that water user participation in water resources development would be hampered by a wide range of reasons. They identified inadequacy of technical personnel, poor infrastructure, compromised user participation and unclear communication lines between institutions.

In the Democratic Republic of Congo (DRC) and Djibouti, the IMF (2015) found institutional weaknesses, poor regulatory environment coupled with high infrastructural costs to hamper water sector development thereby not attracting stakeholders to participate.

Overall, in many African countries, a number of challenges stand in the way for effective stakeholders' participation in water development projects. Common among these being; inadequate and untimely financing, poor infrastructure, poor governance, low education level and low capacity amongst the participating stakeholders (UNESCO, 2015). On the other hand, The Technical Center for Agricultural & Rural Co-operation (TCARD) (1996), identified lack of transparency and other vested self-interests on the part of government officials to hinder full-scale people's participation as a major challenge. In South Africa, Jan, et al (2017) found the failure by agencies such as government ministries to sensitize the public about their roles as outlined in relevant laws to be a hindrance to their participation in decision making processes.

Like in many developing countries, effective participation in water resources development in Kenya is hampered by challenges which affect not only the success in implementation of projects but also causes delays in completion rates. Many of these challenges though mainly internal, negatively impact on participation leading to undesirable outcomes (Lucie et al, 2016). This study therefore sought to examine the institutional and organizational challenges which stand in the way to successful and timely implementation of community initiated rural water development projects in the study area.

The paper is based on a study undertaken in Keiyo North sub-county of Elgeyo-Marakwet, Kenya. The study sample population was drawn from forty-six registered water development groups funded by the constituencies development fund (CDF) from 2009. Twenty-three groups were randomly selected to participate in the study. Using purposive and simple

random sampling, a total of 142 respondents were selected. In addition, eight key informant interviews and three focused group discussions were conducted, one in each of the three agro-ecological zones in the area i.e. the valley, escarpment and highland. The study utilized the group theory by Kurt Lewin (Burnes, 2004) to unpack the negative forces (bottlenecks) which work against the successful implementation of water projects in the study area.

### 1.1. Institutional and Organizational Based Bottlenecks

Projects across sectors are faced with a wide range of challenges, some internal others external. The extent to which such challenges affect project activities depends on the level of management of the challenges by the project management team. Study findings in Elgeyo – Marakwet reveal that all the groups experienced challenges ranging from financial, conflict related, lack of cooperation between stakeholders, delays in delivery of materials to low skilled personnel. These challenges were grouped into seven categories namely; financial, conflicts, human resource, management, procurement, security and technical services. This information is presented in table 1.

Type of challenge	Examples
Technical services	Delayed provision of technical services especially by the ministry of water and irrigation
Financial	Delayed disbursement of funds by stakeholders Variable costs of materials Delayed payment of bills High cost of replacing vandalized and stolen water pipes and taps
Conflicts	Disagreements between groups and contractors on quality of work Disagreements amongst group members on pipelines Time management issues during project meetings
Human resource	Unskilled manpower Reliance on trained artisans who sometimes are unavailable during critical stages of project implementation Reliance on stakeholders for verification of work standards
Management	Delays in decision making by project management team Non-action by management on members who delay paying their subscriptions
Procurement /Quality of work	Delay in payment of suppliers leading to delayed delivery of materials Procurement of low quality items Poor quality work
Insecurity	Theft of materials such as water pipes Vandalism of laid water pipes and taps

Table 1: Challenges Encountered by Water Resource Development Groups

The challenges in table 1 were identified as contributing to non-effective group members participation, contributing to slow implementation of projects. Speranza et al (2016) on community-based water projects in Laikipia, Kenya, also identified poor and inadequate funding, poor leadership and management, lack of appropriate skills as major challenges to water development in that region. The manifestation and dynamics in the interplay of the bottlenecks were however varied in the two regions.

The challenges in Elgeyo-Marakwet County included; firstly, inadequate and delayed provision of technical expertise from government line ministries especially the ministry of water and irrigation. In instances where their services were required to verify the quality of materials supplied and or work done by a contractor, there were delays leading to delayed implementation of work and therefore delaying project results and benefits to the beneficiaries. The resultant effect of this was that group members were de-motivated therefore not actively involved and this led to cost overruns in project implementation.

The second challenge was delayed disbursement of funds by CDF. Whereas group members made their cash and material contributions on a timely basis, CDF delayed disbursing money meant for purchase of essential materials such as pipes and for payment of contractors. Such delays sometimes lasted for over 3 months. The implication of this included delayed decision making and implementation of the projects, delayed delivery of materials, and variation of material costs due

to inflation which was not captured in project budgets. Ultimately, these led to delays in project completion and added costs to the projects which were borne by the members. The African Development Fund (2014) in its progress report on rural water development projects identified delays in disbursement of finances, slow procurement processes in addition to delays by contractors and consultants to deliver their services as major challenges facing rural water development projects in several African countries. This implies that the situation in Elgeyo-Marakwet is not unique but a reflection of a general problem in a number of African countries.

Conflicts were identified as a challenge in project implementation. Conflicts were mainly internal over issues of resource use and member subscription. In some cases, however, there were conflicts between the group and contractors and or suppliers over delays in payments for items supplied. Though groups were not entirely to blame for delayed payments, such stakeholders could not understand since groups contracted them to supply materials. Such conflicts led to mistrust amongst members and between the groups and suppliers/contractors. In certain instances, suppliers would deliberately delay delivering materials since payments were not being made promptly. This negatively affected timely decision making and ultimately delayed project implementation. A study by Ngaruiya and Scaffan (2016) in Loitokitok, Kenya found that conflicts negatively affected the performance of local groups in water resources development. The role of informal structures such as council of elders was instrumental in conflict resolution.

Over-reliance on skilled labour from outside the group/community was a human resource challenge contributing to low members' participation in project activities. This arose from low group members' capacity, resulting in low and slow participation in project implementation phase. Many groups did not have skilled personnel in artisan-based fields such as masonry and plumbing. This situation compelled them to seek the services of skilled manpower from outside the community. Such manpower proved to be both expensive and unreliable in times of need. Skilled labour from outside the community was expensive in the sense that such labour required accommodation, sometimes transport and also security all at the cost of the group. This compelled group members to make additional contributions to shoulder such expenses thereby increasing the project costs. The chairman of Kibusien water project in the escarpment made the following comments regarding inadequate skilled manpower,

"One of the major challenges faced by our groups remains the inadequacy of skilled personnel in artisan-based courses. Masons and plumbers are particularly important in water projects yet are rarely found within the community. The absence of people with such skills has pushed the cost of procuring labour from outside the community".

From the study, delayed decision making by the groups' leadership was pointed out as a management challenge. This was in relation to payment of members' subscription either as the groups' contribution as a requirement for implementation of water projects or for group operations. Delays in making the subscriptions led to delayed decision making on group activities negatively affecting group members active participation especially at the project implementation stage which requires cash, labour and material resources for accomplishment of work. This challenge can be attributed to members low levels of education and inadequate experience in managing projects.

Procurement and quality of work was classified as a challenge in water project development. This challenge relates to delays in payment of contractors and suppliers occasioned by delayed disbursement of funds by CDF which in some instances led to procurement of low quality materials, subsequently culminating in poor quality work. Delays in delivery of materials demotivated group members as they would wait for long to implement the water projects. This affected work plans and delivery of the projects.

Insecurity of water projects materials was also a challenge. Water pipes and other materials were occasionally stolen from project sites especially for water tank construction and water distribution projects. Chebagon water project group for example reported theft of water pipes worth Kenya shillings twelve thousand (USD 120) while Kongotich water project lost tank construction materials worth over Kenya shillings seventeen thousand (USD 170). As a result of such thefts, groups incurred extra costs.

In relation to Kurt Lewin (1960) group theory, all these challenges acted as negative forces which singularly or in combination negatively affected group members' active participation in water development process. The impact of the challenges varied from one group to another, for instance the challenge of insecurity of project materials affected groups in the valley most compared to the escarpment and the highland zones. Overall, the challenges de-motivated members from active participation especially at decision making and implementation stages of the project cycle, resulting in delayed implementation and completion of water projects according to schedule.

Ted et al (2016), in their study on social actors in water development projects in Malawi and Zambia found that vandalism and the culture of theft of water facilities was common in rural areas. These findings are in agreement with the study findings in which vandalism of water facilities was reported by the respondents.

### *1.2. Impacts of the Bottlenecks on Implementation of Water Projects*

Project challenges pose a threat in a variety of ways. If not properly managed, they may lead to early project termination and subsequently deny project beneficiaries the anticipated benefits. Table 2 represents information on the impacts of the challenges on water projects in Elgeyo-Marakwet.

Type of Impact	No of Responses	Percentage
Delay in project implementation	90	63.38
Increase in project cost	27	19.01
Poor quality work	25	17.61
Total	142	100

*Table 2: Impacts of Challenges on Water Resource Development Projects in Elgeyo-Marakwet*

A majority of the respondents (63.38%) pointed out that challenges contribute to delays in project implementation. This response level points out to a low number of groups which completed their projects on time. Out of the 23 water resource development projects, only five were completed on time. This means only 21.7% of the groups managed to complete their projects on schedule. This leaves out 18 projects (78.3%) which were not completed on time, others having delayed by over one year.

Project challenges increased the cost of implementation of projects. This is explained by variations in the cost of items. In addition, the high cost of project implementation was explained from the point of view of delays in disbursement of funds by stakeholders leading to payment of penalties imposed by contractors for breach of contract. A smaller percentage of respondents (17.61%) indicated that project challenges were responsible for poor quality work. This point is validated by the challenge of inadequacy of trained personnel in the community thereby leading to over-reliance on personnel who sometimes may not be available when required.

Ndeti (2013) found that financing mechanism for Water Resource Users Associations (WRUAs) greatly delayed project implementation and completion in Kibwezi, Kenya. Respondents in her study indicated that inconsistencies associated with the funding cycle occasioned delays in funding and slowed operations at Water Resources Management Authority offices. This coupled with inadequate funding and bureaucracy; all contributed to project implementation delays.

A study of integrated water resources management in Africa by Donkor and Wolde (1998) found that inadequate funds and trained personnel had resulted in unsatisfactory operation and maintenance of water supply and sanitation systems across a number of countries. In addition, mechanisms for integrated multipurpose development of river basins as a basis for socio-economic development remained largely undefined in many of the African countries (Donkor & Wolde, 1998).

A study by Rutto et al (2011) on the contribution of project integration services to successful implementation of Constituencies Development Fund (CDF) projects in Eldoret North constituency reveal that inadequate finances, slow disbursement of money, lack of political good-will, were some of the challenges facing projects in Uasin Gishu county. Text box 1 provides an example of a water project in Elgeyo Marakwet which failed due to a combination of project challenges.

#### Chebati Water Project (1982-2011)

Chebati water project was started in 1982 by a retired chief of Kiptuilong location and a few community members in the escarpment of Keiyo North sub-county, then Elgeyo Marakwet district due to severe water shortages which faced more than 50 households. The walking distance to the nearest water point for the residents was estimated at 8 kilometres. The water project was upon completion expected to serve three sub-locations in the area namely; Kipka, Kapterik and Setek. The group had a membership of 43 drawn from the three sub-locations. After meeting all the registration requirements and putting in place a project management committee, the group wrote a proposal to the Rural Development Fund for initial funding, which was approved and the work of dam construction at Kipka began. Due to internal conflicts, the project stalled in 1985. ASAL came in to finance the project between 1985 and 1988, but due to mismanagement of finances, it pulled out. The project stalled for ten years. In 1998, SARDEP, a local NGO supported the group with financial and technical expertise sourced from the ministry of water and irrigation. The same year, Iten-Tambach town council, through LATF allocated some funds to the project. The efforts by the two funding agencies did not yield much as the project resources were mismanaged and the members were reluctant to contribute 30% of the project cost leading to a halt in project implementation in 2002. In late 2003, the project committee applied for funding from the then newly established CDF to facilitate implementation of work. The project was funded and made significant progress in pipe work to communal water points across the three sub-locations. However, in 2008 due to leadership wrangles, and non-accounting for resources from CDF, it was never funded again by CDF, leading to another stall. In 2009, WV, Soim ADP revived the project after the project committee wrote a proposal to the NGO for support. The NGO supported the group through provision of water pipes and paid the contractor for pipe laying. Two years later, the NGO stopped supporting the group due to mismanagement of resources and non-commitment by group members to pay their monthly subscription fees of fifty shillings for operations and maintenance. In 2011, World Vision formally informed the community of its decision to pull out and reasons for the same. The community was then left to run the project having frustrated efforts by several agencies to complete it. To date the project is incomplete though over 60% of the intended beneficiaries can access water at approximately 2 Kilometers away from their homesteads. The project has been implemented for over 29 years yet it was anticipated to be completed in 5 years. Chebati water project has seen its project leadership changed 16 times due to mistrust by the members over resource use. This project gives an illustration of how a culmination of issues leads to project failure to meet its objectives and especially when the community does not own the project from the inception stage. In addition, stakeholder collaboration in helping the group solve its problems contributed to delays in project implementation. (Fieldwork notes, 2014)

*Figure 1: Chebati Water Project Challenges*

It can be concluded that the many challenges affecting water projects implementation in the study area across the three agro-ecological zones affected group members' participation in project activities culminating in many effects. Challenges such as delays in funds disbursement by CDF strained groups' active participation due to cost overruns while underdeveloped human resources lowered groups' participation in project activities.

### 1.3. Strategies to Address the Bottlenecks

In order to ensure group plans are implemented, strategies are important to guide the execution of activities to guarantee anticipated results. Groups outlined four strategies to ensure proper implementation of project activities.

The first strategy was the formulation and implementation of group by-laws with the aim of reducing internal conflicts and thereby enhancing cooperation and delivery of project results. To deliver the strategy, groups organized regular meetings and educated members on the provisions of their by-laws, including penalties attracted by breaking them. Groups also established internal mechanisms of conflict resolution which involved the setting up of a conflict resolution committee.

The second strategy was to ensure members made their monthly/annual subscriptions. This helped groups meet their bills such as stationery, snacks during meetings, communication and travel. The treasurer is in charge of collecting such subscriptions and deposits the same in the group's bank account. Expenditure plans were made by the PMCs and this guided the group leadership in releasing the funds. Accountability structures are put in place, in which the group leadership is expected to provide the financial status of the group on a monthly basis.

The third strategy was that of use of water meters by members connected to tap water to measure consumption levels and a charge calculated for water use. Members are therefore expected to promptly pay for the water consumed so that the proceeds can be channeled to meet costs of purchase of water treatment chemicals, operation and maintenance and salary for the water operator and meter readers. Any monies which remained after meeting these needs go into the group savings accounts.

The fourth strategy is to conduct regular meetings attended by all members for purposes of updating them on project progress. Such meetings are also used to obtain information from members on changes they would want incorporated to the projects. In such meetings, members are given an opportunity to present ideas on how and where to get support in funding and technical services. Project Management committees play a crucial role in such meetings by updating members on the status of project implementation. Representatives of some stakeholders such as the ministry of water and irrigation, World Vision, Semi-Arid Rural Development Programme (SARDEP) and Kerio Valley Development Authority (KVDA) are sometimes invited to meetings to guide groups on how to attain project results. Doe (2007), in a study in Ghana also found that chiefs, community elders, representatives of resident associations and group leaders played a key role in addressing challenges through organization of meetings with the beneficiaries to come up with acceptable solutions. This way public participation in water resource development was achieved.

To further enhance the implementation of the strategies, groups organized community meetings (*barazas*) and invited stakeholders to disseminate information on the importance of water resources in development across sectors such as agriculture, health and sanitation, processing and education. The meetings are used to encourage community members to join and or form groups to help develop water resources for domestic and commercial uses. Notable stakeholders who attend such meetings are Constituencies Development Fund Committee (CDFC) members, ministry of water and irrigation and Non-Governmental Organizations (NGOs) which had taken part in sponsoring specific water projects.

Other than forums organized by groups, Constituency Development Fund (CDF) – Keiyo North constituency organizes meetings with all funded groups to educate them on fund management and how to monitor project implementation especially by contractors. They are equally educated on accounting for funds disbursed to them and project progress reporting procedures and methods. The ministry of water and irrigation occasionally organizes meetings with PMCs to educate them on project implementation. Areas of emphasis in such meetings include tracking project implementation using the implementation schedule, quality issues, testing of the functioning of water taps and adherence to timelines in the delivery of project results.

To reduce the negative impacts of challenges on projects, several measures were put in place by groups. In addition, stakeholder participation complemented group efforts in addressing the challenges. Most of the measures were group generated and situation specific. One of the measures taken to reduce delays in implementation of work was conducting local fundraising to purchase materials such as water pipes and other accessories. Part of the money raised went into partial payment of contractors and artisans. This strategy worked fairly well across groups. Once stakeholders disbursed funds, those who contributed their monies were refunded. The financial challenge affecting groups was addressed substantially by CDF, though other stakeholders such as World Vision, Christian Child Fund (CCF) and SARDEP also had inputs. Financial assistance offered by these stakeholders was meant for payment of either materials or labour. This varied with groups depending on how they justified their levels of need. Therefore, the stakeholders greatly complemented government and group efforts in ensuring that projects were implemented successfully.

To address the challenge of conflicts, stakeholders were called upon to provide trainings on conflict resolution strategies. These stakeholders included CDF- Keiyo North constituency, Ministry of Water and Irrigation, the Catholic Diocese of Eldoret, KVDA, World Vision, SARDEP, Japanese International Co-operation Agency (JICA) and ministry of water and irrigation. Different forms of conflicts were experienced by groups, which ranged from internal to external and included payment conflicts, decision conflicts, results-based conflicts and resource use conflicts. Of particular focus on conflict resolution was the role of effective communication between parties involved in specific conflicts such as delayed payment of bills. Groups also had committees dealing with conflict resolution and their recommendations were later presented to the whole group membership for adoption and subsequent implementation. In some instances, the department of social services

would be called upon to help in addressing conflicts especially those related to decision making touching on the groups' by-laws.

Human resource and management challenges were addressed by providing training to project management committees (PMCs) by stakeholders who included World Vision, Ministry of Water and Irrigation and Catholic Diocese of Eldoret. The trainings focused on human resource management, conflict management, financial management, stakeholder management, quality management, time management, contract management, decision making and allocation of tasks and tracking of project progress. Members of groups were also trained on how to monitor and evaluate progress of projects. This is a critical area in project management due to its central role in ensuring that beneficiaries draw long-term benefits from projects. Further to addressing capacity issues, all stakeholders also engaged project management committees (PMCs) to encourage their members enroll for artisan-based courses such as plumbing, masonry, electrical and other technical courses which would enable them offer their labour for better pay whenever artisan-based assignments were needed. This also helped groups access local and reliable labour with ease and at affordable rates thereby contributing to faster project implementation.

On procurement and security challenges, PMCs were trained by CDF-Keiyo North and the Ministry of Water and Irrigation on how to check the quality of items using the quality standards outlined in the tender documents. In addition, the ministry of water assisted the groups in ascertaining the quality of items whenever they were not able to verify the quality of items procured. Occasionally, other stakeholders which provided financial assistance to the groups would follow up on the procurement of materials of quality standards outlined in the tender documents. On security issues, groups set up committees to be regularly patrolling water pipelines to check on vandalism and report to group management for further action. Further, government agencies, notably the ministry of interior in helping groups trace stolen and or vandalized materials. Storage of group materials in safe custody was also adopted as a strategy by the groups. Such places identified by groups included assistant chief's/chief's offices, administration police stores, schools and ministry of water offices if located near any of the water projects. This was preferred because of security presence in these institutions.

A study of constraints to effective performance by small-scale irrigation in Ethiopia by Amede (2015) found institutional and technical challenges as largely responsible for the underperformance of such projects. The study pointed out minimization of conflicts, capacity building of local institutions and collective action by all participating stakeholders as key to addressing water related challenges.

To address challenges faced by groups in water development, Focused Group Discussions (FGDs) suggested the need to set up joint stakeholder's committees to oversee project implementation, conflict resolution as well as fast tracking the timely disbursement of resources by all stakeholders which pledged to make such contributions. The importance of organizing regular stakeholder meetings to review progress made in project implementation was proposed. Such forums would be used to clearly spell out the roles and responsibilities of every participating stakeholder in the water projects.

In summary, stakeholders are special partners in project work whose inputs at various stages of execution shape the results of the project. Cooperation on the part of the project implementing team or PMCs reinforces the contribution of stakeholders and works to enhance the attainment of project deliverables.

## 2. Conclusions

External factors remain a major hindrance to effective group participation and project completion. This was demonstrated by the slow completion of projects in the study area due to delays in disbursement of finances by CDF and the inadequacy/late provision of technical services by concerned government agencies. In addition, procurement of labour and materials remain other contributory challenges to late completion of rural water projects.

A combination of internal and external efforts by water development groups to address challenges is paramount to ensuring active group participation and subsequently, successful implementation of the projects. Sustaining such efforts, calls for commitment from all the concerned parties.

Group participation in project activities right from idea generation to implementation is an indicator of project ownership. There is need however to include the groups in project evaluation activities so that they may evaluate the performance of the entire project especially the contribution of stakeholders. This will specifically inform the stakeholders on their expected roles and how they have been doing them with a view to addressing project delays resulting from stakeholder ineffective participation.

The Constituencies Development Fund (CDF) – Keiyo North and all development groups within the constituency should agree on a workable funding agreement which allows projects which can be completed within one year to be financed fully in one financial year. This arrangement will not only reduce delays in project implementation but also reduce cost overruns in projects brought about by prolonged implementation periods. Implementing such a plan will also enable project beneficiaries realize project benefits within a relatively shorter time period. The provision of technical services can be devolved to locational levels where operation costs to groups seeking such services will be relatively low compared to instances where such services are procured from sub-county or county offices.

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