An Alternative Model for Pro-Poor Water Services: Improving Water Tariff Payments in Low Income Communities

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Abstract

The paper aimed at presenting an alternative model for pro-poor water services. The failure of public or public private sector partnerships to meet the expectations of both the service providers and low income communities in terms of service quality and meeting the operational cost of production, has given rise to the need to develop alternative strategies to address the situation.The paper presents the Multi-factorial Pro-poor Community Water Service Model or the Malongza's Model as a special recommendation for improving the ability of low income communities to pay for public water tariffs. The paper maintains that poor tariff payments in low income communities are due to the inability of the implemented models to address the root causes of poverty itself. This study is of the exploratory research type, and basically prospective by design. In other words, it sought to prescribe a model that could sustainably reduce water poverty. The model is typically of the tripartite partnership category, and its multi-factorial basis implies that it does not only advocate for partnership involving the public, private and community level institutions, but also prescribes multiple factors for execution by the various partners based on their respective potentials. The Malongza's model has five main tenets, namely the initiation for partnership; tripartite partnership formation; definition of geographical scope of operation; identification of low income communities with sector specific problems for intervention; and project implementation or intervention. Though the model focuses on pro-poor water services, it could also be considered as a multi-factorial community development model and its provisions modified for any sustainable community development project that is participatory by nature.

Key descriptors: Alternative model, tripartite partnerships, pro-poor water services, water tariff payment

Introduction

The purpose of this study was to present an alternative model for pro-poor water services. The realisation that several models of public and public-private sector participation in potable water supply have failed to meet the expectations of both the service providers and low income communities in terms of service quality and meeting the operational cost of production, has given rise to the need to develop alternative strategies to address the situation (Mu, Whittington & Briscoe, 1990; Caincrose; 1992; Kendie, 1992; Bacho, 2001; Zibechi, 2008).

The paper presents the Multi-factorial Pro-poor Community Water Service Model (MFPCWSM, also known as the *Malongza's Model*), postulated by Francis Issahaku Malongza Bukari in 2011, as a special recommendation for improving the ability of low income communities to pay for public water tariffs. This followed an assessment of the Tri-sector Partnership (TSP) model of pro-poor water services in water tariff collection in the Dalun-Tamale Corridor in the Northern Region of Ghana. Based on a post-graduate thesis conclusion that the TSP model could not account for 71% of annual water tariffs, despite the incorporation of community participation into the existing public-private sector activities in water services, Bukari (2011) observed that the failure was due to the inability of the implemented model to address the root causes of poverty itself, despite the model's pro-poor claim. This view was similar to the findings of Kendie (1992), that in rural north Ghana, service providers are unable to meet the operational cost of production of potable water, because the responsibility of paying for water tariffs is often left in the hands of housewives, who constitute the poorest segment of society (See also Cleaver, 1997).

This study is of the exploratory research type, and basically *prospective* by design. In other words, it sought to prescribe a model that could sustainably reduce *water poverty;* which is a condition of lack of access to the daily average amount of safe drinking water required to sustain good health (Bacho; 2001; Kendie, 2002; Castro, 2007). This does not only mean the inadequacy of potable water, but also includes other accessibility constraints such as the inability to pay for water tariffs and inadequate distribution of potable water facilities

which could increase distance and time taken to access the water. The model is typically of the tripartite partnership category, and its multi-factorial basis implies that it does not only advocate for partnership involving the public, private and community level institutions (JICA, 1997; Picciotto, 1997), but also prescribes multiple factors for execution by the various partners based on their respective potentials, such as the provision of physical infrastructure, opportunities for technology choice for low income communities and funding of projects by the public or public-private sector, effective joint management by representatives of all stakeholders, capacity building and economic empowerment interventions and positive attitudinal development by the civil society or Non-governmental Organizations (NGOs), effectuation of pareto optimality in favour of the poor in urban water tariff determination by service providers, and beneficiary responsibility for quota contribution in terms of project funding and system maintenance among others (Washington State Legislature, 1997; Abrams, 2000/2001).

What is special about the MFPCWSM is that, it advocates for the joint implementation of poverty reduction strategies with improvement in low income community water service projects, and at the end of the intervention (after a minimum of five years), it offers the opportunity to measure impacts by assessing the direct effects of the multi-factorial approaches by partnership as the independent variables, on water poverty reduction indicative by the reduction in water tariff arrears due to increased ability and willingness to pay and general improvement in the access to, and the quality of potable water services as the dependent variable.

The Malongza's model has five main tenets, namely the initiation for partnership; tripartite partnership formation; definition of geographical scope of operation; identification of low income communities with sector specific problems for intervention; and project implementation or intervention. Though the model focuses on pro-poor water services, it could also be considered as a multi-factorial community development model and its provisions modified for any sustainable community development project that is participatory by nature. It is therefore suitable for adoption by public and private sector institutions, Metropolitan, Municipal and District Assemblies, multi-lateral and bilateral organizations, and consultancy firms in the area of sustainable community development planning. The ensuing sections provide detailed description of the tenets of the Model.

The Multi-factorial Pro-poor Community Water Service Model

The Malongza's Model is illustrated in Figure 1. To begin, we discuss the most peripheral tenet of the model: the *initiation for partnership*, at which stage the initial decision to address water poverty upon the detection of the need to do so has been by a public, private or public-private sector service provider or developer, which calls for partnership. The next is the *tripartite partnership formation,* based on the idea that once partners have been identified and their interest in the partnership is obtained, formalities are pursued for the actual formation of the partnership. This is followed by the *definition of the geographical scope of operation*, which entails mapping out the broader area of coverage. Within the identified geographical area, the fourth tenet has to do with the *identification of low income communities with specific water poverty related problems*, a process which involves four sub-elements including the purposive selection of target communities, the indicators of the need for pro-poor interventions, baseline survey and problem diagnosis. Finally, the *intervention* process itself is discussed, which also entails five steps: problem awareness creation for community acceptance, project identification for addressing the problem, preparation of the project, project appraisal for risk management and the implementation of the project.

Initiation for partnership

The first tenet of the Multi-factorial Pro-poor Community Water Service Model involves an initial idealization, identification of potential avenues for application and relevant stakeholders, and the invocation of the stakeholders to enter into partnership, by a public, private, public-private sector, donors or community-based organizations engaged in or related to pro-poor community water services. It may start with an invitation of potential partners to a platform during which the initiator explains the idea, such as alternative ways of providing sustainable water services to poor communities through partnership. It would be useless to form a tripartite partnership to implement the Multi-factorial Pro-poor Community Water Service Model in an area without a situational analysis to prove that a particular pro-poor water project is required (Abrams, 2000/2001).
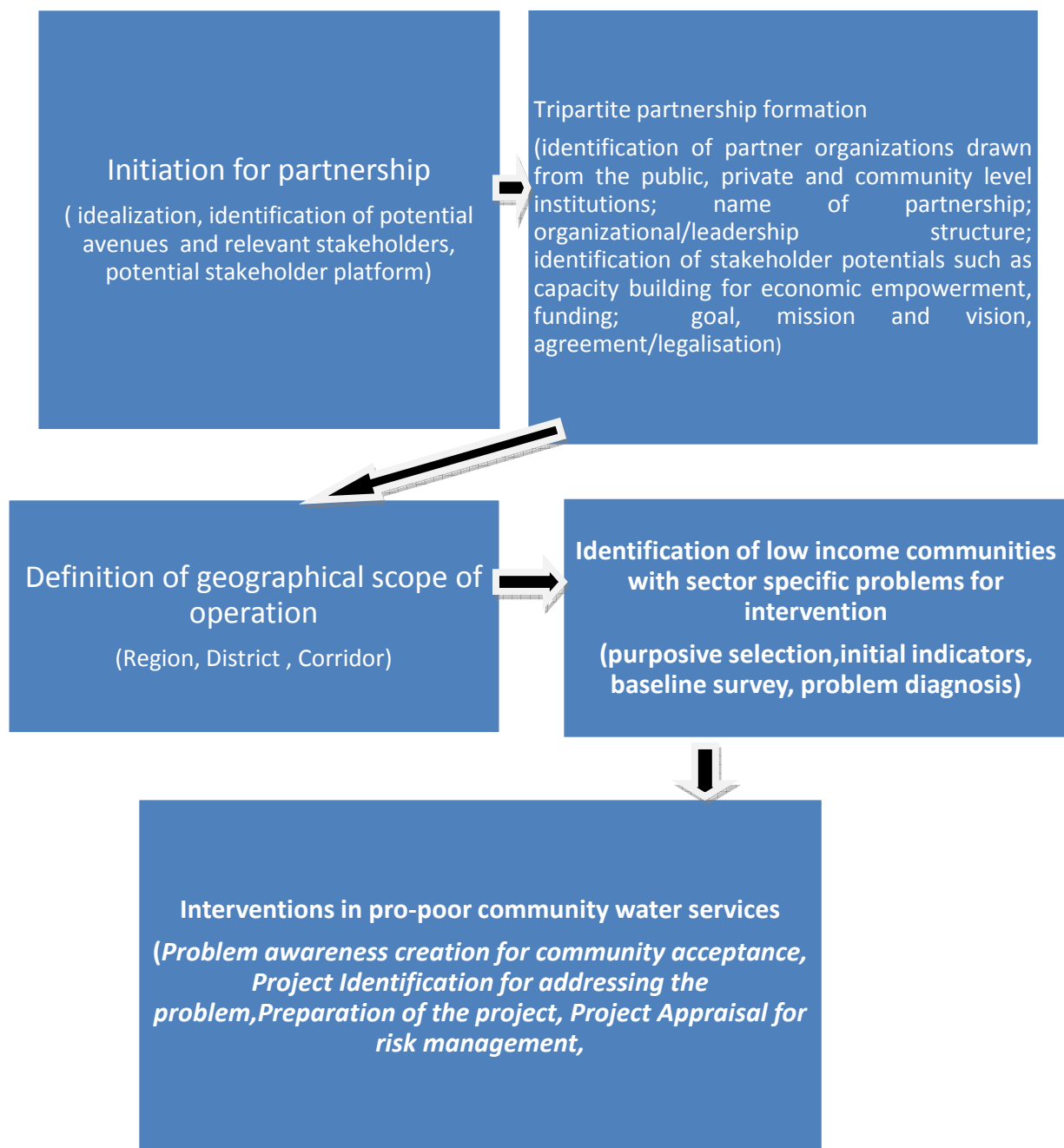
Figure 1: The Multi-factorial Pro-poor Cummunity Water Service Model

Source: Authors' own design

Tripartite partnership formation

Organizations from the public, private or public-private sectors that are satisfied with the idea and express interest agree to enter into partnership with the relevant institutions in the beneficiary communities. This involves the formal identification of the partner organizations by names, the choice of name for the tripartite partnership, organizational/leadership structure, identification of the relevant sector specific potentials of the partners (such as water related technology, infrastructure, finance, project planning, environment, economic

empowerment, capacity building, positive attitudinal development for change), central location of the partnership, goal, mission and vision statements, procedures for entry and exit of partners, sources of funding and/or contributions of partners, procedures for sharing benefits and risks resulting from the projects, and legality (signing of agreements and legal registration of the partnership). These conditions constitute a partnership deed (Washington State Legislature, 1998).

Definition of geographical scope of operations

Best results from pro-poor community water services are obtainable if the tripartite partners are drawn from a common geographical area (such as within the same region, district or corridor of a country) with the target beneficiary communities. This is because apart from their familiarity with the socio-economic conditions of the local people, easy communication and interaction among the partners, project implementation, monitoring and evaluation become easy due to proximity (Philippe, 1999). Partners should therefore be guided by this principle in the definition of the geographical boundary for their operations. Where extensions are required outside the defined zone, new partners in the immediate new locations must be identified and incorporated if branches of the existing partners do not exist there.

Identification of low income communities with sector specific problems for intervention

Usually a public or public-private water service provider has customer details, involving the segmentation of customers into geographical service areas and service categories. These are hierarchically arranged on a water bill statement of account, and in the case of the Ghana Water Company Ltd. (GWCL) the service point or the smallest service location is rather at the top and the largest down (Bukari, 2011). The top locations or service points are usually villages or smaller towns and the service category (Domestic or Stand Pipes) is related to the income stratum of the target customer. Domestic pipe connections are meant for high or middle income households, commercial connections are meant for larger business organizations while stand pipes are for low income people (Njiru, 2002; SNV, 2009). A number of factors are considered under this tenet.

a. The need for the identification of target communities for intervention should be purposive. This could be through a request from a government ministry as a component of rural development planning, a donor for the purpose of project sustainability, expressed demand from the local people and a service provider in an attempt to reduce revenue losses.

b. Initial indicators
There should be an initial source of information as prove that a particular or a set of problems exist(s) in public water services in an area considered as a low income community (such as problems of tariff payment, cost sharing in system maintenance, low infrastructural base, waste of water, illegal tapping, irregular water supply, high tariff rates, poor community participation among others). Some of these could be obtained from the service provider's records.

c. Baseline survey
The public-private sector partners of the tripartite organization should carry out a socio-economic survey to map out the affected service area clearly, to examine the extent of the problem, and identify the socio-cultural and economic factors (such as belief systems, occupations, the size and nature of household income flow, leadership structure and other aspects of social organization and how they influence decision-making processes among others) with the purpose of establishing a relationship between these and the specific problem for which intervention is required. The data obtained from the survey should be compiled to constitute a baseline or community profile document as a source of reference for problem identification and ranking.

d. Problem diagnosis
The partners examine the detailed information in the community profile and diagnose the problem(s) on the basis of the socio-economic conditions that spell out the cause-effect variable relationships, after which prioritizations are made for project proposals and interventions, using Participatory Rural Appraisal methods (PRA) (See Twumasi, 2001).

Interventions in pro-poor community water services

This is the last tenet of the Multi-factorial Pro-poor Community Water Service Model, and constitutes the stage for the completion of the tripartite partnership through the inclusion of community representation, and the

commencement of the participatory pro-poor community water services intervention. It employs the tri-sector and multi-factorial approaches as considered in the following steps.

Step 1: Problem awareness creation for community acceptance
The public-private sector partners of the tripartite organization arrange to meet the appropriate community leadership structures such as traditional and local authorities including the chief and elders, the Assembly person and other relevant stakeholder organizations in the community such as the Community Water and Sanitation Agency (CWSA). The purpose is to disclose the identified problem(s) of water services in the area as expressed by any of the parties indicated earlier, and the diagnostic report based on the baseline survey. The community leaders are given the opportunity to discuss the problem(s) for confirmation, alteration, acceptance or rejection. The agreement by the community leaders that the problem exists and a subsequent expression of desire for intervention is a precondition for project success (Abrams, 2000/2001).

Step 2: Project Identification for addressing the problem
Based on the identified problems in the public water services in the community, at a community forum or stakeholder platform the most pressing need could be selected by pair-wise ranking or any other PRA method (Kane, 1995) for a specific project to be designed to address the problem. For the sake of specificity and as an example, this study shall adopt poor tariff payment as a problem and community participation in the tariff collection process as a project for the rest of the fifth tenet of the Malongza's model (since it was the problem this study has examined and seeks to improve upon). Thus, we assume the identified project is the incorporation of community participation into the water tariff collection process as a component of a tripartite partnership in pro-poor public water services.

Step 3: Preparation of the project
At this stage the public-private sector partners reveal themselves and declare the intension to establish partnership with a community structure (such as a Water Board), and the local level authorities allowed to use their own criteria for the selection of the members of such a structure (but there must be representativeness in membership composition on the basis of gender and spatial factors). This is also the stage for coming out with a comprehensive proposal on what is to be done by each partner, the goals and objectives, the indicators and means of verification, the resources (material and financial) needed and the expected sources, as well as the social cost and benefits of the project (Botchwey, 2006). This stage considers the possible challenges from the existing situation such as poverty as an influencing factor on willingness to pay for water, and alternative ways of overcoming that. Here again, the skills, knowledge, and other qualities of the partners are identified for specific areas of application in the project for role sharing during the implementation stage (OECD, 2005).

Step 4: Project Appraisal for risk management
Since the Malongza's Model is pro-poor oriented, it takes the inability of the beneficiaries of the project to make adequate payment for public water services into consideration. In other words, a cost-benefit analysis of the project may be necessary, but does not lead to the rejection of the project on the basis of unprofitability, but rather to find solutions that ensure the sustained extension of water services to the poor (IFIC & JICA, 1997) by finding alternative ways of financing water tariff deficits in poor communities. The Multi-factorial Pro-poor Water Service Model suggests the following issues for consideration in the appraisal stage.
   a. Community annual tariff determination:
       An estimation (or adoption based on research findings from other communities of similar income levels) of the proportion of the annual water tariff that the community is capable of paying, say 20 to 30% (see IFIC & JICA, 1997; SNV, 2009), should be made.
   b. Determination of alternative ways of absorbing the proportion of water tariff that cannot be paid by the low income community:
        This could be by proportional allocation to benevolent public and private sector organizations outside the tripartite membership (and operating in the central place of the service point under consideration) but which have been confronted to extend aid to the poor community, and so become affiliated organizations. About 30% of the tariff deficit could be shared out among the affiliated organizations with an estimated level of profits (as part of profit tax), such that the impact on the individual organizations would be insignificant (say 2% each). The Government could also maintain the 10% contribution to water investment cost (CWSA Act, 1998- Act 564, as in Bacho, 2001), as water tariff subsidy for poor communities benefiting from existing public water services, by incorporating it into the District Assembly Poverty Alleviation Fund.

For the remaining 60% of the deficit, the pareto optimality principle (Munasinghe, 1992) could be applied by sharing it among the rich households in the central place of the low income community under consideration in the form of additional tax on public water use, which might not also have significant effects on the urban people (such as 0.5% added to actual water bill, depending on the value of the remaining tariff deficit for the poor). This idea of the model derives it origin from the success of the National Health Insurance Scheme in Ghana, in which employees on the Social Security and National Insurance Trust (SSNIT) scheme make compulsory contributions of 2.5% of their insurance premiums to cover themselves and the needs of the aged and children, as well as state subsidies and institutional contributions to pro-poor water services in the USA (IFIC & JICA, 1997).

c.   Project duration:
For an appropriate duration of the project, this pro-poor deficit management strategy should last for a grace period of three years, which is the suggested duration of the tripartite partnership project in a community (See IFIC & JICA, 1997). Within this period effort is made to promote income generating activities in the community to increase the capacities of the beneficiary communities to take full responsibilities for water tariff payment by the end of the project period through multi-factorial approaches (Munasinghe, 1992; Todaro and Smith, 2009). This could be facilitated by non-profit private sector partners, with support from the state poverty alleviation fund and/or multi-lateral and bilateral international organizations. In other words, the Malongza's model is multi-factorial problem solving oriented, and the associated activities are contributory to the meeting of long-term development goals, such as the first Millennium Development Goal (MDG 1), which aims at eliminating absolute poverty and hunger (See Todaro and Smith, 2006). The main objective in the context of this model is to reduce water poverty, by increasing the ability of low income households to pay for water services for sustainability.

Step 5: Implementation of the project
This is the actual execution of all the other steps discussed above. It is appropriate for the public and private sector partners to develop a work plan to guide the step-by-step execution of the model (Botchwey, 2006). The following are relevant considerations for this step.

a.   Identification of the community representative structures:
The appropriate community participatory structures should be identified, such as Water Boards and their formal integration into the tripartite membership, as well as their capacity building for efficiency.

b.   Role definitions for the members:
The potentials and capabilities of the partners should be assessed and their roles defined and allocated, such as described in the partnership deed.

c.   Inventory and rehabilitation of existing water infrastructure by the public sector:
This is followed by a display of technological options for water supply for low income communities (provided previous models did not consider this, such that the existing technology is inappropriate), as well as the associated cost and the implications on water tariff rates for the beneficiaries to select from. This is to promote democracy, service quality and affordability and so increase willingness to pay (Munasinghe, 1992; Abrams, 2000/2001).

d.   Public awareness creation and education on positive water use behavior:

 This could be through the formal introduction of the Water Boards and other partners of the tripartite and their duties to the local people, their responsibilities for tariff payments, contributions for maintenance of service components of the water system, reporting faults to the Water Board, preventing high tariff rates through water conservation, and ensuring environmental friendliness by draining all accumulated water around the standpipes to prevent disease. This could happen at a community forum at the chief's palace.

e.   Determination of an appropriate tariff structure and most suitable mode of payment:
If a comprehensive socio-economic household survey is conducted it could be possible to determine the average household income of the area, and so facilitate the determination of a tariff rate based on a

proportion of the income, such as the 5% rule (Alexander, 1993). This might, however, be misleading if income is skewed towards a few rich people; the average income could be high while the society could be full of the poor majority, hence such a tariff structure could be regressive. Bargaining could also be adopted, but since the model has an estimated percentage of the annual water bill for the people, bargaining could have a dangerous effect of yielding returns far below the set target.

Since the model proposes the introduction of low cost technology, tariff rates for existing high cost technology could be relatively higher than those for the low cost technology. The model incorporates an aspect of land use planning by assuming that settlements are stratified on the bases of zones of poor people, middle income and rich people's homes (See Getis, Getis and Fellmann, 2006). Thus, the zones of the rich and large scale water consuming industries are given private household or commercial connections, the relatively expensive public standpipes should be relocated at the zones of the middle income people, and low cost technology systems such as mechanized wells should be provided for the poor to increase affordability and accessibility. However, there should be democracy in the choices, but with emphasis on the ability to pay.

It is possible to obtain data for the computation of the annual average quantity of water used in the community from past consumption records from the main service provider, which go along with the annual water bills. The 20-30% tariff allocation to the community can then be computed. It is this figure that is presented to the Water Board in the presence of other community members at a forum, for authentic participatory discussion (Midgley *et al*, 1986; Millar, 2007) regarding its distribution among the various income strata by a progressive tariff approach guided by experts from the revenue division of the service provider.

The generally agrarian nature of rural African communities makes income flow in such areas seasonal. Results from past and present surveys show that cash-and-carry and monthly payments of water bills have not yielded successful results in reducing water bill arrears (Kendie, 1992; IFIC & JICA, 1997; Water Aid Malawi, 2008). Bukari (2011) revealed that the people of Dalun in the Northern Region of Ghana were able to pay for water services better during the post-harvest period (usually from September to November). The tariff payment performance for the year 2006 for this community confirms this view. Focal Group Discussion results with men and women groups disclosed that the people prefer to pay water bills annually after harvest. Here again, the experience of the transition from the District Mutual Health Insurance Scheme (DMHIS) to the NHIS in Ghana compels the proponent of the Multi-factorial Pro-poor Community Water Service Model (Malongza's model) to support the idea of introducing annual payment of water bills instead of the existing methods in low income agrarian communities. Thus, an annual household water premium based on the pressure each household exerts on the water system (Munasinghe, 1992), and calculated from the proportion of the annual tariff allocated to the community could be a prudent policy. These factors would not only ensure a perfect allocation of the percentage of the annual bill to the community, but also bring about equitable distribution of quality water services, increased ability to pay and sustainability of the project.

f. Effectuation of pareto optimality and tripartite affiliated organizations' benevolence:
The 60% of the pro-poor water tariff deficit to be absorbed by Pareto optimality (P.O.) should not be an imposition onto the urban population, other wise it could generate social disorganization effects (Byron & Robert, 1989). Geographically appropriate media, such as radio, schools, Churches, Mosques and market places could be used for public campaigns on the need to save the poor communities from water poverty. The campaign should emphasize that the effects would not be heavy on the individual and it is for a specified period of time, which should be declared (say three years). For best results the campaign should be persuasive, and the implementation should follow after a convenient time of the campaign (say one or two months). Partners then observe urban public reaction after the implementation of the P.O. principle for policy review.

At a multi-stakeholder platform to which the tripartite organization shall invite prospective public and private sector institutions, the intended 30% as an extension of benevolence to the poor community people should be declared for discussions leading to acceptance or other wise, and the criteria for sharing among the interested parties, which could be based on business profit levels, size or any other factors agreed upon.

The platform should also include community development practitioners, such as NGOs engaged in skills training for non-farm activities, small and medium scale micro-finance organizations, agricultural development organizations among others. These should be briefed on the profile of the target community and possible areas of interventions based on their respective areas of operations, and

bidding them to implement intervention projects in the community for poverty reduction within the specified period of three years.

Interested parties could register and submit project proposals to the executives of the tripartite organization, who would scrutinize the proposals to ensure that they are pro-poor oriented and consistent with the overall project goal, and subsequent approval. This is an exhibition of the character of the model in incorporating multi-pronged approaches (Todaro & Smith, 2009), for the sustainable reduction of water poverty in low income communities.

g. Implementation of the tariff collection process:
   After all the above stages have been covered, the new tariff collection process could be implemented after the capacity building of the Water Boards to increase their efficiency in the tariff collection process.

h. Project Monitoring and Evaluation:
   This stage would be easier if the work plan embodied the project monitoring and evaluation components. The multi-sector and multi-factorial nature of the Malongza's Model demands two levels of monitoring and evaluation, involving different parties from different sectors. The model establishes a tripartite administrative body as contained in the partnership deed, which should be responsible for regulating the activities on the work plan. The first level of monitoring and evaluation takes place while the project is on-going and is known as formative monitoring (See Botchwey, 2006). During this period the partner organizations periodically monitor and evaluate their activities to see whether they are conforming to the objectives set, and whether resources are being used as intended, what the associated deviations are and the possible remedies. Formative monitoring should be done jointly with representatives from the various partner organizations to ensure checks and balances or accountability of partners. This could be done quarterly, half yearly or annually.

   At the end of the project period, summative evaluation is conducted. This is aimed at assessing the overall project in terms of the goal and objectives (Botchwey, 2006). It is conclusive of the general performance of the project and its partners; whether it was a success or a failure. This often leads to project review and the way forward. It is recommended that summative evaluation should involve local students from tertiary institutions. Local consultants may also be involved but they have high cost implications (Philippe, 1999; SNV, 2009). The use of external evaluators is to allow donors and project partners to get a real picture of the intervention without biasness in the evaluation report. The main aim of evaluation is to measure the effects of the multi-factorial approaches as independent variables, on water poverty reduction as the dependent variable by the end of the intervention period of three years (minimum project duration).

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