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Co-production as deep engagement

Co-production as deep engagement

Improving and sustaining access to clean water in Ghana and Nigeria

81

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Abstract

Purpose – While there is an urgent need for clean water in Ghana and Nigeria, governments lack the financial means to do much to address this need. This does not mean that improving access to clean water is impossible. On the contrary, this paper argued that engaging citizens through co-production, as is already being done in developed countries in the fields of care-giving, waste management, healthcare and community policing, could provide a successful strategy. The purpose of this paper is to examine how public water facilities are being managed to improve and sustain access to clean water for domestic use in rural areas in Ghana and Nigeria.

Design/methodology/approach – A survey interview with households and in-depth interviews with water professionals were conducted in Ghana and Nigeria to help the authors understand the practicalities of the co-production of clean water and how this is improving and maintaining access to clean water sources. The paper draws on a philosophical framework of “deep” citizen engagement to describe the merits of co-production and how it works in practice in developing countries.

Findings – Based on the interviews with officials and surveys among the population of rural areas in the two countries studied, the authors found that the two countries vary significantly in their approach to water management decisions and the extent to which citizens are involved. Ghana’s approach seems much more successful than Nigeria when it comes to maintaining boreholes for water supply with the help of the population. In Nigeria, three-quarters of the public water facilities are non-functional, while in Ghana, community involvement in maintaining public water facilities has resulted in the sustained use of boreholes and eliminated the lack of access to clean water in many communities.

Originality/value – This paper contributes to the practical understanding of co-production in developing countries and the potential of such co-production in improving clean water access. To the best of the authors’ knowledge, no previous scientific research has studied how co-production can improve and sustain access specifically to clean water sources in developing countries, and this paper aimed to fill this gap.

Keywords Developing countries, Co-production, Improvement initiatives, Access to clean water, Citizens engagement, Public professionals

Paper type Research paper

Introduction

Despite the acknowledgement of the importance of water to livelihood, over 783 million of the world’s population has no access to clean water sources (www.worldbank.org/en/topic/watersupply). The region with the greatest needs (in terms of spending and investment) is Sub-Saharan Africa (World Health Organisation (WHO), 2012). The Sub-Saharan population



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with no access to clean water source is 319 million people. In rural areas, eight out of ten persons live without “improved drinking water sources” (World Health Organisation (WHO), 2017). The scale of the challenge of providing clean water is enormous and increasingly complex in Africa. According to the World Health Organisation, this is due to a population explosion and flawed public policies (WHO, 2017).

This problem also applies to many rural areas of Africa, including Nigeria and Ghana. While the need for clean water in Ghana and Nigeria is great, governments lack the financial means to address this need (WHO, 2012; Mangai, 2016). This does not imply that improving access to clean water is impossible. On the contrary, this paper argues that engaging citizens through co-production, as is already being done in developed countries in the fields of care-giving, waste management, healthcare and community policing, could be a successful strategy (Vamstad, 2012; Vennik *et al.*, 2016; Bovaird and Loeffler, 2013; Coulter *et al.*, 2008). In general, such co-production can help to improve information flows, optimise policies because of the diversity of views that are incorporated, harness community resources and improve the effectiveness of service delivery (cf. Stewart, 2009, p. 15). Whether such outcomes are achieved depends on the way that co-production is sought. Some have claimed that in order to make co-production a successful practice, it is necessary to ensure that citizens are deeply engaged (Stewart, 2009; Mangai, 2016). The deep engagement of citizens can encourage the diversification of policy advice, thereby increasing the chances of a successful policy or programme (Stewart, 2009).

This study adds to these findings by investigating citizens’ and water professionals’ viewpoints and experiences about what is needed to ensure that co-production is effective in maintaining and sustaining water supply in rural Ghana and Nigeria. The outcomes are based on in-depth interviews with those officials and surveys among the rural population in both countries. Although a previous study, we conducted in the same countries indicated that a major factor in the explanation of widespread co-production in local healthcare facilities is whether people are asked to contribute, this study indicates that this factor is a crude composite of the mind-set on the part of the officials, and whether or not deep engagement is created on the part of the populace.

The research question that guides this study on engaging citizens in the co-production of clean water provision is the following:

RQ1. Which factors explain the extent to which water professionals make citizens engaged and willing to collaborate in improving access to clean water in developing countries such as Ghana and Nigeria?

The following secondary questions arise from this main question:

RQ2. What is already known about citizen engagement and citizens’ willingness to contribute to improving public service delivery in general and water supply in particular?

RQ3. What are the main differences in the policies concerning the supply of clean water in Ghana and Nigeria?

RQ4. How can we characterize the opinions of officials in water management in rural Ghana and Nigeria in this regard?

RQ5. What does a survey among citizens in both countries show about the factors that are important to their engagement and willingness to co-produce?

RQ6. What do these outcomes contribute to our knowledge of the way in which co-production is brought about?

Ostrom’s (1996a, b) research provided a basis for the framework for our analysis. As she already found in the 1990s, “physical facilities do not operate or maintain themselves automatically.

Nor is the allocation of trained personnel sufficient. Social capital is a necessary complement for physical and human capital to have a long-standing impact” (Ostrom, 1996a, p. 3). This paper substantially draws from Ostrom’s finding based on her research into effective co-production in water and sanitation in “urban and peri-urban” communities in Brazil and similar co-production in Sub-Saharan Africa, i.e. Ghana and Nigeria. Especially her observation that “[w]hen co-production is discouraged [...] by creating chaotic changes in who was responsible for funding and running a [...] system, and by top-down administrative command as the style for all decision making, only the most determined citizens will persist in coproductive activities” (Ostrom, 1996a, b, p. 1078) triggered this research. Whereas Ostrom’s research focussed on education and the maintenance of peri-urban infrastructure, this investigation is on the co-production in rural water supply in Ghana and Nigeria. The mind-set of officials, their interpretation of national regulations, and the way they induce or discourage citizens to make a contribution in the water supply might make a huge difference in the inclination to co-produce and the actual co-production of citizens in the maintenance of water supplies. The varying ways in which officials engage with the people, and the varying engagement among the people to co-produce one might expect follows from that, resulted in the research questions given above.

In the next section, we will review the philosophical framework of citizen “deep engagement” in public service provision, and also address the practicalities of citizen engagement, the forms of engagement found and the impact of such forms of engagement in clean water access and sustainability in the two countries studied. In the final section, we will discuss our findings and present final conclusions.

Co-production and deep engagement

Co-production was originally conceptualised by a development economist (Ostrom, 1996a, b), and is now widely used by public administration scholars to describe the advantages of collaboration between citizens and public officials in public service delivery (Brandsen and Honingh, 2015; Whitaker, 1980; Bovaird, 2007; Weick, 1995). In an effort to harmonise the conceptual understanding of co-production from a public administration point of view, a recent article by Brandsen and Honingh (2015, p. 431) on “Distinguishing different types of Co-production” collates the various definitions of co-production in public administration literature and presents the following definition of co-production: “the relationship between a paid employee of an Organisation and (groups of) individual citizens, which requires a direct and active contribution from these citizens to the work of the Organisation”. According to this view, citizens are not just to be seen as the beneficiaries of public services, but also as service contributors to those services. Their skills, knowledge, assets, income, experience and capabilities are needed for the effective delivery of any public services (Bovaird, 2007; Holmes, 2011).

Co-production has become one of the main themes of the discipline of public administration, serving as a basis for many reforms to public service delivery. The delivery of services is seen not just as the preserve of public professionals, but citizens and communities are also seen as the major players in managing and delivering those services (Joshi and Moore, 2004; Ostrom, 1996a, b; Bovaird, 2007; Bovaird and Loeffler, 2013).

One of the main questions in this field is how to achieve such co-production and one of the answers to that question is given by Stewart. She points out the need to create engagement among citizens. Stewart (2009, p. 3) conceptualises deep engagement as “deliberate strategies for involving those outside government in the policy process”. She refers to the policy process as “ways of making policy decisions and ways of implementing them”. She alludes to the processes specifically as “horizontal engagement”, i.e. the process “through which those in government (the political and bureaucratic executives) relate to those who are not in direct power relations with them”.

In psychological theory, engagement refers to more than just motivation or satisfaction; in that discipline, it is defined as: “[...] a positive, fulfilling [...] state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli *et al.*, 2002, p. 74). As Kahn (1990) notes: “in engagement, people employ and express themselves physically, cognitively, emotionally and mentally during role performances” (p. 694). Deep engagement is a phenomenon that allows for the participation of citizens and other stakeholders in the affairs of government. This is done with regard to the recognition of citizens’ rights and duties to participate actively in services that benefit them directly. Citizen engagement is seen as a catalyst for achieving the aim of such collaboration (Stewart, 2009; Holmes, 2011).

Determining the extent of engagement, and particularly how it occurs in practice and its impact on policy change, are important factors in understanding the concept of deep engagement. Stewart (2009) asserts that the mind-set of public servants and their political masters is the main factor that determines engagement, particularly with regard to how it occurs in practice and the policy changes that it may bring about. Stewart’s explanation of the forms of engagement provides an elaborate understanding of the extent to which citizens are engaged in service delivery. In order to elaborate the concept of engagement, Stewart (2009) distinguishes five levels of engagement (see Table I) based on whether citizens are informed, consulted, involved in deliberation, involved in partnerships with government or even given the power and authority to make key decisions themselves. Similar levels had earlier been distinguished by Arnstein (1969).

The particular feature of Stewart’s continuum is that her levels of engagement are cumulative. Consultation presumes information sharing, for instance, and co-production presumes partnership, joint deliberation, consultation as well as information sharing. The extent to which interaction between public servants and citizens is comprehensive determines the level of engagement (Table I). In a one-way exchange, information can be passed to citizens while a two-way activity means getting feedback, opinions and comments through a consultation process.

In Stewart’s model of engagement, consultation implies the exchange of information. The exchange of information between public servants and citizens is mainly done in order to evaluate reactions, but these may not necessarily be incorporated into decision-making. With consultation as a form of engagement, finding out the preferences of citizens contributes to decision-making, but does not have a decisive influence on the decision made by public servants in relation to that policy, programme or service. The aim of consulting citizens is simply to understand which preferences exist regarding the policy, programme or service.

Deliberation is viewed as a “vehicle of learning” because it involves the processes by which the preferences of the citizen become known and actually incorporated in the

Type of engagement	Strategy and target
<i>Increasing participation</i>	
Information	Informing citizens of proposed policy changes
Consultation	Seeking feedback/comment from the public (community consultation) and/or from stakeholders
Deliberation	Fostering the formation/transmission of new views/opinions through structured conversations among citizens
Partnerships	Contracting with non-governmental organisations to perform functions such as service delivery
Participatory governance delegation – Co-production	Giving full authority to bodies outside government to make key decisions

Source: Adapted version of Stewart (2009, p. 4)

Table I.
The continuum of engagement

decisions to be made. A weak form of deliberation is simply a form of citizen consultation. It incorporates citizens' opinions into the principal policy information. Citizens' juries or deliberative polls can be used to structure discussions. Therefore, weak deliberation indicates that interests of the population may be taken into account. Strong deliberation, by contrast, emphasises the rights of the group, who they represent and the substance of the decisions made (Stewart, 2009).

Partnership as a form of engagement is the result of a contractual agreement between government agencies and other stakeholders (citizens and interest groups). Depending on the scale and type of the agreement, the contract leads to a form of implementation that involves both public and private partners (including citizens) and it therefore has direct policy implications. According to Stewart (2009, p. 6), "the terms of this form of engagement are defined by the work to be done and can involve service delivery and influence policy resources/programmes".

The last form of engagement, participatory governance delegation, allows for the meaningful and independent engagement of citizens in policy-making and the implementation of programmes. This form of engagement determines the scale and depth to which bureaucratic players involve citizens and other stakeholders. According to Stewart (2009), a network of relationships explains the depth and extent of the stakeholder's involvement.

In the same line of thought, Holmes (2011) states that "for those governments and advocates with a genuine commitment to citizen engagement, the term co-production has become familiar". He argues that the concept of co-production is a good example of a deep engagement practice and that this is a prerequisite for co-production. The distinction of co-production from other engagement concepts is reflected in the commitment of both public professionals and citizens to collaborating on policy-making, design and the delivery of services. Deep engagement therefore needs to be promoted at every stage of a policy cycle, from policy preparation, through decision-making to policy implementation and policy evaluation. This is a somewhat broader conception of co-production, in line with Bovaird (2007), as opposed to the common approach of focussing primarily on policy implementation/actual service delivery and the involvement of citizens and societal groups in just that phase of the policy process. Following Stewart, it is hypothesised that such co-production depends on the engagement created in the previous phases of the policy process. This requires an inclination among public officials to involve the public by informing them, consulting them, making decisions jointly, creating partnerships and ultimately giving citizens the power and authority to contribute to these services independently.

With "deep engagement", public services can be managed more efficiently and effectively and meet users' needs in a better way (Bovaird, 2007; Holmes, 2011; Stewart, 2009). Holmes (2011, p. 23) asserts that co-production is "to the extent that 'public administrations' are vehicles for expressing the values of preferences of citizens, communities and societies".

We investigated whether Ghana and Nigeria differ in these respects and whether this could explain why the level of co-production otherwise "deep engagement" in the two countries varies. The next section describes how we investigated this question, and the subsequent section presents the outcomes of our investigation.

Methodology

This study presents part of a wide range of 720 survey interviews conducted in Ghana and Nigeria in the Spring of 2016 to enhance our understanding of the practice of citizen engagement in improving service delivery, particularly in water management and healthcare. In the water sector, we were looking for the ways in which citizen engagement can lead to improved water resources at the local level of governance in Nigeria and Ghana. We conducted a semi-structured survey among 180 citizens (i.e. households) and 12 in-depth interviews with water professionals.

As for the public officials – in-depth interviews were conducted with the directors and frontline managers. The topics to be discussed were determined beforehand, but the manner in which the interview proceeded determined in what way and in what order the questions were posed. The topics included questions about how the respondents proceeded to provide clean water, the challenges faced, the initiatives and innovations to improve service delivery, the support they received, the information provided, the importance they attached to their work and in the end specific questions about citizen involvement, and their ideas for improving co-production. All the interviews lasted for an hour.

The citizen survey was conducted using semi-structured questions with some questions having pre-fixed response categories. First, a few background questions were asked to determine the respondent's age, socio-economic status and so on. The interview continued by asking about the importance of the quality of the service for the respondent. This was done to show the respondents the relevance of the interview. Subsequently, we asked them about substantive aspects of the water supply: the challenges they face to get clean water and who they think is responsible for the quality of the services provided. Then the questions relevant to this study were asked: whether they had received information from the policy makers/public officials, whether the policy makers/public officials asked for feedback on the water supply and whether they were consulted as citizens, whether they were involved in the decision-making process, whether their involvement was requested by the policy maker and finally whether they are actually involved in maintaining the water supply. In this way, we were able to build up a picture of each of the levels of co-production proposed by Stewart.

A designated primary sample unit was mapped out before going to the field to conduct the interviews. We sampled households at random for the survey interview. The sampling starting point for the household survey was a random selection using a residential map of the area. In every household, an interview was conducted with a randomly selected respondent: an adult in the household with a recent date of birth. The only selection criterion was that the respondents had to be 18 years or older. In the subsequent household, a respondent of a different gender was interviewed to prevent gender bias. After the first interview, the interviewer then moved to the next household by skipping two households to allow for randomisation. Gender alternation continued until the interviewer had completed the required number of households to be interviewed. The total number of households interviewed was 180, out of which 90 interviews were conducted in Nigeria and the other half in Ghana. Below is a summary of our research design.

The interviews were not based on a focus group discussion as a source of data. Our approach avoided the outcomes to be biased due to potential concerns about “loyalty-pressure” or “mind-guards” during the interview. We had individualised in-depth discussion with the respondents about the topics concerned. This is needed, as Ostrom (1996a, b) already found that service delivery arrangements in developing countries are mostly organised and delivered in a traditional public administration setting, characterised by hierarchical control (cf. Mangai, 2016). Although it is imaginable that respondents discussed the interviews among one another, we may safely assume that this took place after the interviews were conducted, and that this did not result in bias in answering the interview questions or in a kind of group-think.

Another problem we took care of was to prevent that the respondents – especially the professionals – were not retelling conventional stories. Therefore we asked for substantive personal experiences of them. As will be shown in the outcome section, this did not prevent that the narratives of the officials within both countries appear similar, thereby suggesting a notion of a conventional stories. The reason for the possible uniformity in the respondent's narratives within both countries is most probably because of the national coordination of the water resource management in the rural areas. Nonetheless, we were very particular in capturing the personal experiences of the front-liners (Table II).

Aim	Type of data	Source of data	Method of data collection	Method of data analyses
To understand the practicalities of engaging citizens in improving access to clean water in rural Nigeria and Ghana	Practical knowledge about engagement practices	12 water professionals in Ghana and Nigeria	In-depth interview	Verbatim transcription/ Coding – thematic analysis
To identify the type of citizen engagement practices in water agencies in Ghana and Nigeria	Forms of engagement present and its merits	12 water professionals in Ghana and Nigeria	In-depth interview	Verbatim transcription/ Coding – thematic analysis
To evaluate citizens' resource contribution to clean water provision	Citizens resource contribution	180 households in Ghana and Nigeria	Semi-structured interview	Descriptive statistical analysis using SPSS

Table II.
A summary of the
research design

Analysis of results

Because the differences in actual co-production in the two countries under investigation is so huge, it might be expected that the context in which our research was conducted is important, that is the formal structure for rural water provision in Ghana and Nigeria.

The institutional setting of rural water provision in Ghana and Nigeria

In Ghana, the National Community Water and Sanitation Agency (NCWSA) has a national programme that coordinates, facilitates and implements water and sanitation programmes in the country's rural areas. The execution of water and sanitation projects is carried out directly by the planning unit of the various municipalities. The NCWSA has an office in all ten regions of Ghana. The agency's objectives are threefold: to provide safe water, to promote hygiene education and to improve sanitation (National Community Water and Sanitation Agency, 2015).

The Ghanaian decentralisation policy framework is the platform under which the NCWSA was established in 1994. The agency became an autonomous body in 1998, although technically it is still positioned under the Ministry for Water Resources, Works and Housing. The responsibility of NCWSA is to coordinate and monitor the activities of various actors (public sector organisations, private sector, beneficiary communities and NGOs) involved in rural water provision. The NCWSA also monitors the effective use of the financial support provided by donor partners for water and sanitation projects (NCWSA Report, 2015).

According to the programme of the NCWSA, water projects are provided to communities on a demand-led basis. The budget for a community water project includes a 5 per cent community contribution, a 10 per cent municipal contribution and an 85 per cent development partner or national government contribution. The NCWSA relies mainly on external funding for its water and sanitation projects in Ghana. It operates a so-called "multi-donor budgetary support mechanism". A voluntary water and sanitation committee (WATSAN) takes care of the water facilities themselves. The WATSAN committee is specially trained to generate funds, and to repair and maintain water facilities. Minor repairs are usually carried out by local mechanics who are also the members of the community. The policy of the NCWSA ensures that water tariffs generated by the WATSAN committee cover operations, maintenance, replacements, major repairs and extension of water facilities to new areas. The WATSAN committee activities is regulated by a by-law and monitored by the planning unit of municipal assembly (Komives *et al.*, 2008; NCWSA Report, 2015).

In Nigeria, responsibility for water provision is shared between the federal, state and local levels of government. Local government is responsible for improving water sources

and sanitation in rural communities under the directorate of works and housing, allocating the budget for community water projects. The allocation of water projects to rural communities is often politically motivated. Water projects form part of the constituency projects of political office holders. Politicians lobby for such projects for their own constituency, especially if the project is a public service that is needed in their constituency. The successful completion of water projects depends on the State Government's Monthly Financial Allocation to the local governments, and also the tenure of local government executives. The state governor can choose to dissolve these at will. The Nigerian Constitution does not provide for autonomy for local government, so financial allocation to local government is solely at the discretion of the state government. The Nigeria Constitution has no clear provision for fiscal decentralisation. This has hampered efforts made by local governments to provide basic public services to local people, including improved water sources (Enefiok and Ekong, 2014).

In Nigeria there is a self-organised rural community water and sanitation committee (WASCO), which was established to operate and maintain water facilities in some communities. These were established in 1993 during an Africa Development Bank Water Project Intervention. The WASCOs collect tariffs from community members in order to maintain water facilities. During the 1993 ADB project, a national policy document on strengthening the community participation in rural water provision was produced. The policy document was not implemented nationwide, however, as it was only in existence during the ADB project. Studies have detailed the challenges facing rural water provision in Nigeria, including a lack of funding, the lack of a maintenance culture, the lack of community participation and projects that are abandoned for political reasons (Enefiok and Ekong, 2014).

Despite the diverse range of outcomes, the institutional structure of water provision is not that much different in Nigeria and Ghana with WATSANs and WASCOs. The main difference is that in Ghana, the improvement of water provisions is based on the needs, while in Nigeria it seems to be more politically motivated and supply-based.

The inclination of citizens to co-produce the water supply

This section and the subsequent one presents the results of our research regarding the opinions and experiences of the public officials and citizens who were interviewed, and the relationship between the actual involvement of citizens and the factors mentioned by Stewart that resulted from the survey.

The findings regarding the varying mind-sets of the officials, as presented in the previous section, will explain the differences in co-production in Ghana and Nigeria.

Table III shows the willingness to invest either time, money, knowledge, skills or assets to improve local water provision. The results show that rural dwellers in Ghana are somewhat more willing to contribute their time and assets to improve access to clean water

Resource contribution	Responses (%) Ghana		Responses (%) Nigeria	
	Yes	No	Yes	No
Time	81	9	72	18
Income	74	16	37	53
Assets	62	28	58	32
Skills	60	30	43	47
Knowledge	24	66	30	60

Table III.
Citizens' perceived willingness to contribute to improving rural water provision

Source: Field Survey

sources than those in Nigeria. Concerning financial support and support using their skills, the difference is huge. A vast majority (74 and 60 per cent) of rural Ghanaians are willing to contribute their income and skills to ensure that they have clean water for household use, while only a minority of the respondents in Nigeria show the same willingness.

Another indicator is the actual involvement in the co-production of clean water of the respondents (see Table IV). The percentage of respondents who reported that they actually contribute to the maintenance of boreholes and clean water supply is 84 per cent for Ghana and only 5 per cent for Nigeria (see Table IV). Such co-production by citizens involves clearing the area, providing water during the project and any form of labour to facilitate the smooth completion of the project. After the boreholes have been drilled, citizens can then help to keep it clean and functional, clearing the grasses around the water facility site from time to time to discourage reptiles.

The advantage of Ghanaian citizens' involvement in clean water sources is that there are fewer challenges in the provision of clean water for household use, and people are less affected by water-borne diseases because they always have access to clean water, as indicated by the majority of the respondents. The disparity between the two countries in terms of citizens' involvement in co-production is not just statistically significant (see Table V), but also very relevant in substantive terms.

In Ghana, almost all villagers contribute to maintaining a clean water supply, while in Nigeria almost none do. These villagers do not know about the mind-set and opinions of public officials regarding their role in maintaining and sustaining the water supply in their villages. So what determines the level of co-production by citizens, according to the citizens themselves? Our analysis corroborates the expectations of Stewart regarding the importance of being informed, consulted, involved and trusted to collaborate and act independently to a large extent. It is this difference in actual involvement in the service delivery that this study seeks to explain.

Table V presents the correlations between being informed, consulted, involved in decision-making, being told clearly what is expected and the actual involvement of locals in the water supply.

The correlations in Table V show that in whichever way one measures co-production – in the citizen's own perception, the actual number or hours invested or the number of citizens involved in co-production in the village – co-production mainly depends on whether the locals are asked to participate ($R^2 > 0.80$). This is indicative for (informal) partnerships. The second factor is whether their feedback is appreciated ($R^2 = 0.10$), indicative for deliberation, whether they are consulted ($R^2 = 0.15$), and whether they receive information about, for instance, how to report a case of broken pipe, how to report a contaminated water source, about water treatment methods and about the effect of unsafe drinking water (all $R^2 > 0.20$). These findings all conform to the idea of cumulative levels of co-production, as described by Stewart.

A regression-analysis was conducted (Table V), but when one variable is included as an exogenous factor, the impact of others becomes immediately insignificant. It seems to be a cluster of mutually related factors that determines whether or not co-production will take place, as predicted by the theory of Stewart. When only the country and the question of

	Active involvement in co-production	
	Actively involved in co-production (%)	Not actively involved in co-production (%)
Ghana	84	6
Nigeria	5	85

Source: Field Survey

Table IV.
Actual citizen
engagement in
improved
water sources

Table V.
Correlation analysis
of the practice of
co-production

	Active involvement in co-production	Whether citizens were asked to contribute an aspect of the water services they are receiving	Number of citizens that contributed to water provision	Citizen's contribution to improving access to clean water provision	Number of man hours invested in co-production
Active involvement in co-production	1				
Whether citizens were asked to contribute an aspect of the water services they are receiving	0.933**	1			
Number of citizens that contributed to water provision	0.928**	0.988**	1		
Citizen's contribution to improving access to clean water provision	0.692**	0.707**	0.703**	1	
Number of hours invested in co-production	0.376**	0.366**	0.353**	0.654**	1
Citizen's willingness to co-produce with water providers to improve access to clean water provision	0.225**	0.211**	0.231**	0.230**	0.119
Q28 Respondent actively involved in the provision of clean water their area	0.802**	0.846**	0.823**	0.566**	0.281**
Q56 Whether respondent has been involved, participated or rendered self-help or volunteered in improving access to clean water in their area	0.752**	0.793**	0.769**	0.533**	0.285**
Q54d Whether water providers shared any of the following information (how to report a case of broken pipe)	0.322**	0.322**	0.304**	0.256**	0.142
Q54c Whether water providers shared any of the following information (how to report a contaminated water source)	0.347**	0.347**	0.331**	0.272**	0.166*
Q54b Whether water providers shared any of the following information (water treatment methods)	0.184*	0.184*	0.165*	0.157*	0.112
Q54a Whether water providers shared any of the following information (effect of unsafe drinking source)	0.197**	0.197**	0.183*	0.126	0.097
Q53 Whether water providers asked for respondent opinion on how to improve the quality of water provision	0.152*	0.152*	0.145	0.119	0.101
Q50 Whether citizen was asked for feedback on the quality of water provision they received	0.101	0.169*	0.161*	0.132	0.083
Q48 Whether citizen's contribution was accepted or rejected or kept-in-view	0.396**	0.491**	-	0.529**	0.414**

Notes: -, missing data, * **Significant at 95 and 99 per cent confidence levels respectively

whether respondents were asked to co-produce are included, the variance explained is already extremely high. Nonetheless, the argument that providing information, being consulted, being involved in deliberate decision-making and being asked to form a partnership is needed for extensive co-production, is also corroborated by this research.

The inclination of professionals in Ghana and Nigeria to involve citizens

The following themes were the basis of our analysis with the professionals in Nigeria and Ghana: the decision-making processes and the extent of citizen engagement.

The interviews with officials from the rural Ghanaian agencies responsible for improved water sources made it clear that the needs-based approach is central to their decision-making processes. Their work on providing water facilities (hand pumps or mechanised boreholes) depends on the demand for clean water in a particular community. In fact, before the interviewer had even asked about co-production, the officials started talking about the involvement of the local communities. As one official remarked: “We have moved away from hand pumps towards the mechanised drilling of boreholes that rural communities can manage themselves. As a matter of policy, the water facility is sold to the community for maintenance purposes and the Assembly does not maintain it. The borehole becomes community-owned after the drilling has been completed”. The official continued: “There are area mechanics among the WATSAN committee who are responsible for the repair of boreholes, and also who educate the communities about borehole sanitation”. Other Ghanaian officials corroborated this. One striking answer related to what the respondent thought the agency was doing well. He answered: “We go to the community to find out if they are interested in an intervention. Any community that is interested will force us go to drill a borehole for them. Interventions usually come about with community participation. We ask the community to form a WATSAN committee to look after the water supply and manage the money that is acquired from the sale of water”. Yet another example was the Ghanaian official who remarked: “We have a water management model in which the community ownership of the water facilities and services is crucial. We drill the borehole, but the community manages it, even though they are non-technical people. This makes it difficult to coordinate”.

The need for community engagement was also acknowledged. The director of a major community water and sanitation unit in Ghana remarked: “I think we need improvement in the area of engagement with the communities. There are still some people who do not see the water facilities as their own, so the engagement should be ongoing. So that everybody will know what he/she is supposed to do with the water provision and facilities. As an organisation, we support the Assembly’s water and sanitation unit with logistics for the periodic monitoring of the water facilities in the communities. They go to the communities, interact with the people, so that when there is a problem at the community level, they are able to resolve it themselves and resolve it quickly. This means that they contribute to improving access to water in the community”.

The core message of the transcripts of the interviews is the acknowledgement of the need to involve local people, educate and inform them about what they are expected to contribute, consult them before important or even minor decisions are made, listen to their needs, build trust, and not let the local population down. As the same director commented: “As we engage them, they tell us about their needs and, based upon those needs, we prioritise and provide for them” and “they express their needs and if at the end of the fourth year (i.e. at the end of an administration), not even one of their needs has been met and you go back to them, they will be very hostile”.

The Ghanaian front-liners meet regularly with the community in “durbar” meetings for consultation, deliberation and information sharing of water-related issues. As one of the front-liners stressed further this assertion: “I am part of the professional team that trains the

community on how to repair and manage the boreholes. I am also present in their durbar meetings especially during meetings where WATSAN committee is presenting the financial statement to the community. We encourage social accountability.”

It seems to be part of the Ghanaian officials’ strategy to engage the citizens in maintaining the water facility that they provide. The reason seems to be that the water professionals have established a strong belief that if the citizens themselves are responsible for looking after their own water facilities, they will value such facilities more and take care of them better. Based on their own experiences, the water professionals have understood that citizens are less concerned about water facilities provided for them if they are not involved from the outset of the project. By empowering citizens to take care of the water facility, the professionals are dispelling the assumption that is commonly found – that citizens do not pay much attention to government property, and simply abandon a facility if it stops functioning as it should.

Only one Ghanaian director pointed out the obligation to adopt this approach, saying: “We have the local government act 462. It mandates all municipal and district assemblies to engage community members in whatever they are doing. So in anything we do, we make sure we engage the users”.

The findings for Nigerian water officials were completely different. When asked what they did right for the supply of clean water, they immediately started to talk about historical procedures, the role of national and local governments and the distribution of concrete lined wells that are manufactured at the headquarters of local governments and then distributed to the villages. They talked about administrative reforms that make their work more difficult, about the reports they expect from the locals but are not received, about the difficulties with mobility to go for assessment and feasibility studies of villages. People were talked about as potential wrong-doers who have to be kept under control because of the potential vandalization of the boreholes. Where the needs of the local population differ from the plans of government, feasibility studies are carried out. As one official remarked: “The lesson is on how to control the populace, politically and otherwise” and “Most of our projects fail because of the insensitivity of our staff when they are talking to local people, and the other aspect is there is no time for us as government officials to go and talk to them directly”.

As for possible solutions, this manager said: “In terms of context, collaboration with heads of villages is needed. We also need to work with the politicians to succeed” and “More scope to improve these services should be given to the staff who are responsible for the project. The politicians need to give them that space to do things in their own way. The politicians also need to tell people in the rural areas to always cooperate with government officials who come to help them in whatever capacity”.

The officials were positive about involving local people, but not about listening to locals or involving them in decision-making, but by telling them what to do. As a director told us: “We need to re-orientate them. They need to know that it is not government alone that can provide such facility. So we first hope to make this clear to them. After that, we set up small groups in each community. We also have a group within the government, so that the little that we have will be supplemented by community labour. The community can provide sand or gravel which reduces the cost of the facility. We have to do this because of the very limited financial resources”. He continued: “What is needed is the sensitisation of the community. They need to understand that when a water facility is to be installed in their community, that facility is for the community. From past experiences, we had some prominent people in the community that insisted that the facility was sited at a particular location. We tried to discourage communities from doing so, because a geophysical investigation is usually carried out. So the point that will yield the most water is the location that we choose. We need sensitisation to communicate the correctness of our choice to the community”.

None of the Nigerian officials interviewed said anything about listening to rural villagers, involving them in the process of decision-making, consulting them or trusting them to collaborate in service delivery. Even though they answered positively about their willingness to involve local people, they mentioned none of the factors considered important in our framework. Their approach was technocratic, seeing the population as a target group that needed to be controlled and certainly not to be taken seriously if their opinions differed from the officials' own preferences. When these officials talked about stakeholders, they mentioned the engineers, quality control officers, account and administrative staff, mechanics and electricians. They mentioned, the government and funding partners, but never once mentioned the people living in the villages as a potential stakeholders or co-producers.

Conclusion

This paper began with the question of which factors can explain the extent to which water professionals work to engage citizens and are willing to collaborate in improving access to clean water in developmental countries such as Ghana and Nigeria?

One of our key findings is that all citizens are willing to contribute one or more of their resources to improve their access to clean water. Citizens in Ghana are particularly willing to contribute their money and time, while in Nigeria, citizens are willing to contribute part of their time. Water professionals in Ghana have taken advantage of citizens' willingness to engage in water projects. Our research shows that the engagement of citizens in Ghana is ongoing and has been institutionalised. This is not the case in Nigeria. While the willingness of Nigerian citizens to become engaged is also relatively high, the ability of water professionals in Nigeria to profit from this is weak.

The sustained collaboration between water professionals and citizens in Ghana has resulted in sustained access to clean water for that country's citizens. The durability and sustainability of water facilities in Ghana is the result of collaboration between water professionals and a community-appointed committee (i.e. WATSAN). This collaboration was cited unanimously by water professionals in Ghana. This mind-set on the part of the officials and the institutionalisation of that mind-set has reduced the rate at which rural Ghanaians become infected with water-borne diseases as indicated by the respondents.

Although we noticed that in the two countries studied water professionals are seeking to provide improved water sources to the rural communities, this effort is not enough to guarantee the sustained provision of clean water. By this, we mean that installing water facilities to a community is only part of the solution to access to clean water over the long term. A continuous flow of clean water is just as important for a healthy community as building boreholes and water pumps. The only way people will continue to have access to clean water is when these facilities function properly over the long term. We found that in Ghana, rural communities with water facilities continue to have clean water because of the way citizens are engaged in managing the water facilities. In Nigeria, by contrast, many of the water facilities do not function adequately, compelling people to use surface water from streams, ponds and rivers. In Nigeria, little has been achieved in terms of improved water sources due to poorly organised water resource management, poor maintenance of water facilities and the failure to involve citizens.

The variation in the access to clean water in Ghana and Nigeria is largely due to the degree of engagement in these countries that is created by the public officials. We have used Stewart's (2009) continuum of engagement to understand how citizens are engaged by water professionals in the management of water facilities to improve access to clean water in rural communities. According to Stewart, public servants can interact with citizens in one way or multiple ways depending on the type of engagement. While there are different forms of engagement, we understand from our analysis that the extent of the engagement of citizens makes a significant difference to the sustained availability of clean water in Ghana and Nigeria.

We have seen that the level at which citizens are engaged in clean water provision has a decisive impact on the co-production of citizens in ensuring the sustainability of the clean water supply itself.

In Ghana, all forms of engagement are explored by water professionals to engage the citizens. This implies that water professionals inform, consult, deliberate and partner with local people, and coproducing water resources with local people during the planning, management and monitoring of the water facilities. In the interview transcripts, Ghanaian water officials appeared to be categorical about their personal involvement with the people in organising durbar meetings to plan and install water facility in communities. In Nigeria, however, the most efficient forms of engagement, i.e. partnership and co-production are absent. Water professionals in Nigeria do not engage with the local people to co-produce clean water, especially when it comes to managing the water facilities. As our interviews showed, this is simply not a part of their mind-set, as they are concerned first with the question how they themselves can comply with the law and how they can induce people to enable them – as officials – to do their job adequately.

Another advantage of collaborating with the communities as seen in Ghana is in the acquisition of additional water facilities in growing communities. As the custodian of the water facility, the WATSAN committees are required to be socially accountable to local people, resulting in the prudent utilisation of the money generated from the sale of clean water.

We conclude that there is a deep engagement among rural Ghanaian citizens to co-produce clean water through the effective management of their water facilities. The local people are not only inclined to help out, but also actually do help out in maintaining the water supply. Water professionals and citizens co-produce clean water supplies using an organised facility management, resulting in sustained access to clean water. Ghana has a water management model that is citizen-centric, referred to as the “Community Ownership, Operation, and Maintenance Model”. The water management model effectively ensures sustained access to clean water for domestic use. Citizens have assumed a management role, enabling water facilities in rural Ghana to be managed successfully.

The Ghanaian water management model is built around a deliberate government policy to promote the engagement of citizens, assign maintenance responsibilities, ensure community ownership of the water facility and the acceptance of payments for water and social accountability. In Ghana, we see a bottom-up approach to water provision which is sustainable. We see a regular and sustained relationship between water professionals and citizens in their rural communities. Engaging citizens in clean water provision and facility management is at the heart of policy formulation by the responsible water agencies for rural water provision. Contrary to the traditional public administration perspective of the unwillingness of public servants to engage the citizens in their services (Ostrom, 1996a, b; Holmes, 2011; De Vries, 2016; Joshi and Moore, 2004), water professionals in Ghana are optimistic about engaging citizens in clean water provision in Ghana. The “pay-as-you-fetch policy” is the contribution of the citizens towards a sustainable water supply.

The form of engagement that we found in Nigeria is much weaker. The inclination to co-produce is still visible, but the actual co-production by the local people through investing their time and energy in the maintenance of the water supply is absent. This has had a negative impact on the availability and sustainability of improved water sources in Nigeria. While it is the responsibility of government to provide basic services such as clean water, we see an opportunity for water professionals in Nigeria to utilise the willingness demonstrated by citizens to co-produce a clean water supply. However, this would involve abandoning the procedural, technocratic point of departure. Rather, public officials should focus on building trust, taking citizens seriously, moving away from prioritising bureaucratic procedures and seeing only one’s own supervisors as stakeholders. Such a change in the mind-set on the part of the professionals could create a much-needed framework for sharing information,

consulting and listening to citizens, involving them in decisions, establishing partnerships and eventually allowing them the power and authority to maintain and sustain their own water supply.

The communalities in the mind-set within the two countries and the large differences found between the two countries might be seen as too good to be true. This huge variance can also point to another issue, namely that this common mind-set among officials within both countries is created by the institutionalisation of the maintenance of the water supply at the national level through national policies. The differences in national policies and the rules and regulations through which they are implemented might have induced the communalities in the mind-sets of the officials responsible for the water supply within both countries and the differences therein between the countries. To answer the question whether there are indeed arguments to substantiate that claim is the aim of a subsequent paper on this issue.

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Further reading

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