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〈論文〉

Preliminary Results on the Participatory Approach Practices Applied in Water Management in Jordan

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Abstract

This paper is aiming at understanding the reality of applying the participatory approach practices in Jordan within water management context. It uses grounded theory methodology to understand how the concept of public participation is perceived according to different stakeholders and how it is affecting the currently applied participation practices. The data used in this study was collected through interviews including key water experts and specialists working in the water sector in Jordan for governmental and non-governmental institutions. The results of this study showed that a distinct difference in perception of public participation between two groups; the "officials" and "non-officials" which in turn had influenced other aspects of participation mainly the objective and preferred type of participation, justification for implementing the participation and the characterization of current practices.

1. Introduction

Water shortage is becoming a global problem in which increasing water demand is putting a great pressure on fresh water resources and Jordan is one of countries that is suffering the most from this crisis. Jordan is characterized by an arid to semi-arid climate with severe weather conditions; rainfall is law, irregular and unevenly distributed over the country. The annual average rainfall ranges from 50 mm in the desert, which forms about 80% of Jordan's to 600 mm in the highlands, while 91% of the country receives an average annual rainfall of less than 200 mm (Haddadin, 2000). The over population is the main reason behind the imbalance in the population-water resources equation which is best presented by the per capita share of water resources compared to the need of water resources per capita. In 2004, the per capita water share of water resources was 396 m^3 compared to a need of 1,700 m^3 which indicates that in 2004 Jordan had only 23.3% of its water needs (Salameh and Haddadin, 2006). Additionally, with population growth rate of about 2.2%; the population is expected to reach 8 million by the year 2025 (DOS, 2009, Phillips *et. al*., 2009). If the current trends continue, it is expected that by the year 2025 the per capita water supply will fall from the current 0.144 m^3/day per person to only 0.064 m^3/day putting Jordan in the category of having an absolute water shortage (MWI, 2007). Unfortunately no single action can overcome the increasing gap between limited water supply and growing demand in Jordan and it will

require careful policies and programs to conserve and manage water properly (Al-Karablieh *et al*., 2006).

The governmental authorities in Jordan have been active in addressing the country's water problems and trying to alleviate the situation, with a tendency to concentrate investments more on the development of new water sources and supply side management. Also water management in Jordan, as in other developing countries, is usually characterized by an overdependence on government to plan, develop and operate water systems, along with a top-down decision making approach where stakeholders are not normally involved in the process. But the responsibility of water management should not be only on the governments; water users, as well as the general public who may affect and be affected by water management decisions, should be part of the decision-making process. Thus, the water policy in Jordan needed to move towards the introduction of new water management approaches. Accordingly the Ministry of Water and Irrigation in the Jordan's Water Strategy (2008-2022) has recognized the need for private and public sectors to share the responsibility for water management (MWI, 2009).

It is argued that the implementation of public participation especially in water management[1] has the potential of producing more informed decisions that responds more to the interests and values of the community. Public participation can also help in resolving conflicts among users as well as building trust and educating the public regarding any environmental issue at stake (Kessler, 2004). Since public participation provide feedback to policymakers by encouraging the public to give their input to the decision making process, it will help in gaining public acceptance for future policies and projects and having them actively contributed to the solutions (Kolokytha *et al*., 2002).

But despite the wide use of public participation in water management, there is no clear definition for most of its key concepts. A general definition of public participation could be the practice of involving members of the public in the decision and policy making activities of institutions responsible for policy development. But, this definition could be subject to different interpretation because the policy may be involved at different levels in various ways. These differences depend on the challenges they face, their experience, and their role in the participation process political power and concepts of democracy especially in terms of the representation and legitimacy of decisions concerning water management (Feeny *et al*., 1990). So the different interpretation of "public participation" might lead to misunderstanding among stakeholder (Arnstein, 1969; Rowe and Frewer, 2005; Wiedemann and Femers, 1993).

Most of the literature on public participation is full of successful stories of case studies and focuses on problem solving with little attention given to the analysis of the problem and its definition (GWP, 2000, 2004; Ridder *et al*., 2005; World Bank, 1993, 1996, 1998). Little is known about stakeholders' own understanding of public participation regarding their preferred definition and type of participation. Hence, it is important to compare and contrast the meaning and definition of public participation as expressed by different stakeholders. Different perspectives will in turn affect other aspects of public participation such as the objectives and methods of participation.There are few studies that have compared between these issues among different stakeholders (Chilvers, 2008; Webler *et al*., 2001). This paper reports the preliminary results of Grounded Theory (GT) approach to investigate the

[1] In this paper we refer to water management as the activity of planning, developing, distribution and managing the optimum use of water resources.

perception of public participation concept in water management according to key stakeholders in Jordan and how it is affecting the currently implemented practices.

2. Research Method

We considered a qualitative research design appropriate for this study given the absence of previous research that discloses quantitative data on the subject of public participation. In this study we used grounded theory methodology (GTM) to develop a theoretical framework for understanding public participation in the context of water management in Jordan. GTM is a qualitative research method used to developing theories by analysing systematically gathered data. It is applied by reading texts with specific questions in mind and using keywords to code passages as answers emerge. These keywords will then be used to sort the quotes into themes that will eventually used to develop the theory. In this method, data collection, analysis and conceptualisation generally take place simultaneously hence both the method and the theory are developed together (Glaser, 1978; Glaser and Strauss, 1967). Using this approach will allow issues that we might not have considered to emerge from data, which have otherwise not arisen by testing an existing hypothesis. It helps as well in minimizing any influence of the researchers by allowing the principles to emerge from data itself, it seeks to find verifiable and explicit ways to draw conclusions (Corbin and Strauss, 1990; Strauss and Corbin, 1998; Knigge and Cope, 2006).

2.1 Data sampling

In GTM, the aim of data sampling is to select participants that will help the researcher to better understanding the problem and research question. The sampling in GTM starts by talking to informants who are most likely to provide us with early information. The point is to choose a small number of cases that will result in-depth data to construct the theory rather than using random selection of large number of data that will likely generate statistical information of an entire population (Creswell, 2003). This is an iterative process by which we keep collecting and analysing data until data collection stops yielding any additional relevant insight into the research problem and all relationships between categories are validated. In this study, 14 respondents were interviewed.

2.2 Data analysis and coding

The GTM has two basic phases in terms of data elicitation and analysis; open or inductive phase consist of breaking raw data into text units through coding that permit a precise description of the content's characterization. The coding is followed by categorizing using constant comparison and the unitized data are organized into categories. Sorting into categories is based upon "look-alike characteristics. The second phase is selective or theoretical phase where coding and sampling focus on the theory development (Glaser and Strauss, 1967). The advantage of using GT is that it provides exact and explicit approach to data analysis. Analysis proceeds through overlapping stages of coding data, grouping initial concepts together into categories and delineating the properties and dimensions of these categories to stimulate theory development. Various techniques such as memo writing and diagrams are useful adjuncts to this process (Corbin and Strauss, 1990).

For this study; individual initial interviews with 14 key water experts in Jordan were conducted between August and September in 2010. The interviews included academics two professors in the University of Jordan, senior officers in relevant authorities including two engineers working as units' directors in the MWI, senior officer in WAJ, two engineers working as units' directors in JVA in addition to three engineers working as head of their respective units in the Ministry of Agriculture (MOA). The interview also included experts working with different foreign development agencies; two experts working as project managers with the U.S Agency for International Development (USAID), expert working as knowledge manager with the French Embassy as well as an engineer working as a head unit in private company that handles the water management. All the interviews were audio taped and transcribed and analysed by open coding according to the GTM. This process involved reviewing the transcripts and looking for the emergence of common themes over time. The data collected was broken into distinct ideas and incidents, if they were mentioned more than once they will be defined as concepts. After the open coding, the emergent concepts were grouped into distinct categories. This gave us the initial explanation for the current situation. The second phase of the study will focus on the emergent categories from the first round of interviews and will be used to further investigate these emergent concepts and categories. The use of GTM will help us in understanding the various aspects of public participation in water management according to different stakeholders and how they interact.

3. Results and Discussion

The preliminary results of the research are summarised in one framework presented in Figure 1. The analysis of the first round of interviews had resulted in the emergence of 5 initial categories that describes the interviewees' general understanding and perception of public participation and its implementation in Jordan. The main observation that had been detected throughout the analysis was the emergence of two distinct groups of interviewees; experts working in governmental institutions labelled as "officials" in this research and the other group was labelled as "non-officials" including academics and those who work in funding agencies. It showed that these two groups had different, and sometimes, opposite opinions and responses regarding the understanding of public participation and its implementation in Jordan. The analysis and discussion of the emergent categories is done based on the contrast between the opinions of these two groups as shown in the following sections.

3.1 Meaning or definition of public participation:

The main factor affecting the understanding of public participation concept was the "meaning" or "definition" of public participation to the interviewees. According to the officials the meaning of public participation is for the users to help the public sector by showing "responsibility" and "use water efficiently" and for some of them participation is equal to "privatization" of the management of water sector. On the other hand, the definition of public participation as perceived by the non-officials is the "involvement in planning", "involvement in decision making" and "involvement in management". This shows that the officials believe that the public can participate in water management by managing water on their level and rather than being involved in the decision making process. While the non-officials think that the current management of water sector is not enough and it requires more involvement from the public.

3.2 Type of desired participation:

The two groups have again different perception regarding the desired form or type of participation that should be applied which is influenced by the definition they gave for public participation. The officials had expressed their preference toward an "indirect" form of participation through using water saving tools or by just rational use of water and it better be applied on a small scale. On the other hand the non-officials said that participation should be in a form of "direct" involvement of stakeholders and they also mentioned that it should be an "informed" and "shared" participation. But at the same time both groups had participation should involve a wide range of stakeholders within the preferred form of participation. The participation should include professionals, policy makers, local NGOs, donors and end users. But where non-officials believe that participation in Jordan should be applied in all sectors, the officials expressed the implementation of participation should follow a setting that gives the priority to the sector that consumes more water i.e. agriculture which is related to their reason for applying public participation in the first place.

3.3 Justifications for applying public participation:

The reasons for applying public participation in water management had reflected the nature of the challenges which each group believe that they could be overcome by applying public participation. For the officials it's all about trying to overcome "physical" challenges such as water scarcity, reducing water losses and increase the public's awareness regarding Jordan's water problem. The non-officials believe that public participation should be applied to overcome the "management" challenges, because involving the public in decision making that creates a level of trust and understanding that will help in "enforcing the law", achieving "justice" and "efficiency" in management. We can see clearly that the main focus of the officials is the current general water challenges but the non-officials believe that the focus should be specifically on management level.

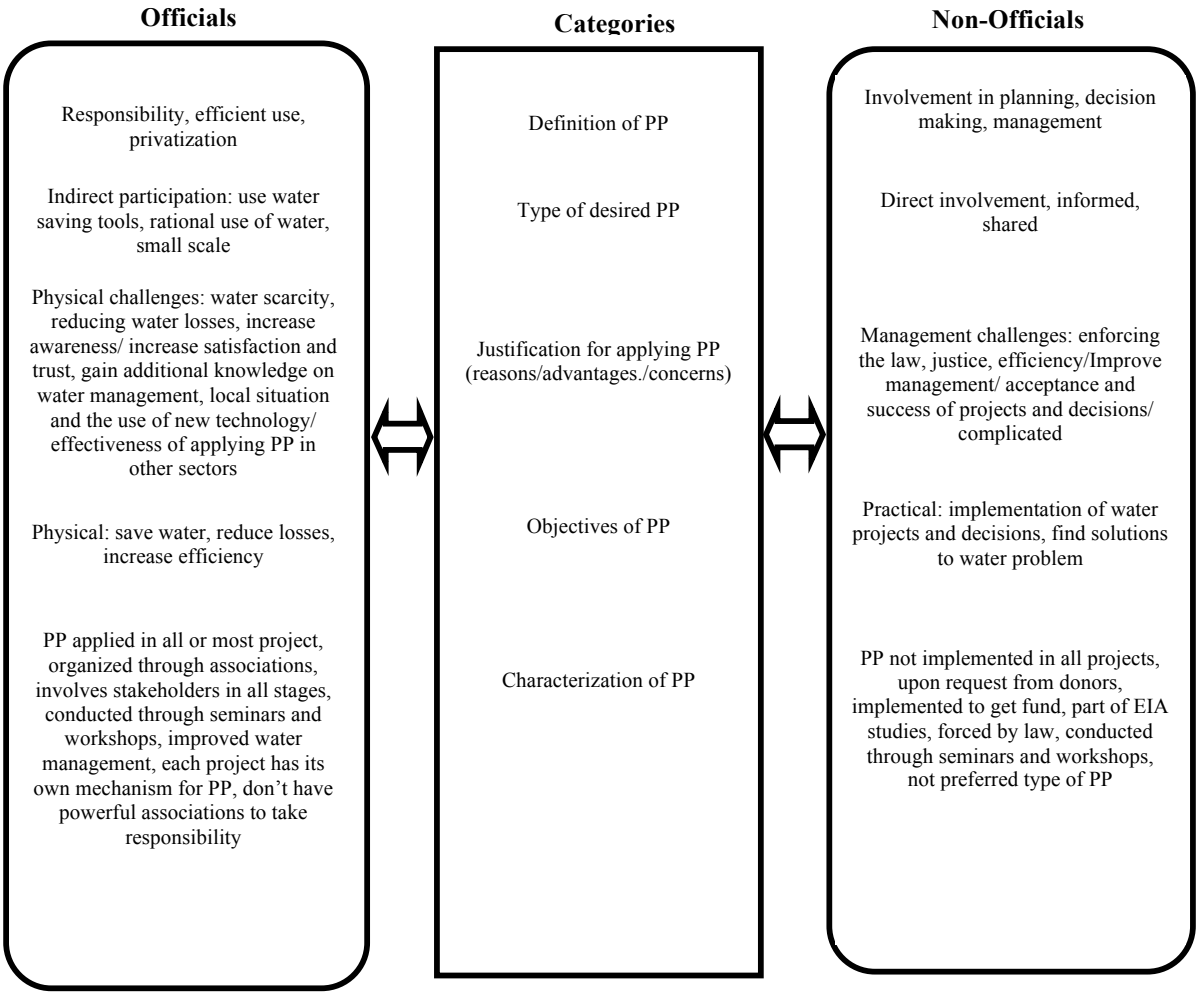

Figure 1: Interpretative framework for understanding the perception of Public Participation (PP) according to stakeholders

Both groups believe that applying public participation in water management have its advantages, even though they expressed different advantages. The main advantage of public participation according to the non-officials is improving the management in general since it will ensure the acceptance and success of water projects and decisions and it will help reducing the gap between the public and the government. The officials think that public participation can help in increasing the level of satisfaction and trust, gain additional knowledge on water management, local situation and the use of new technology. On the other hand both groups had expressed some concerns over applying public participation. The non-official described the process to be "complicated" and pointed out the low level of public's awareness regarding water problem that might affect the nature of applied participation. The officials however, have expressed their concerns regarding the effectiveness of applying public participation in all sectors. Currently, there are some attempts to implement public participation in water projects aimed specifically at agricultural sector in Jordan[2], which is in agreement with the previously expressed opinion of the officials on the sector to apply public participation in. It seems that the focus of the officials is directed toward the agricultural

[2] For details see Al-Najar and Funamizu (2013).

sector since agriculture in the highest water consuming sector in Jordan so it has been given the priority when it comes to the attempts to apply public participation in water projects. The officials believed that their employees are still not convinced with the effectiveness of public participation which would affect the implementation of the approach and its effectiveness on the ground.

3.4 Objectives of public participation:

The objectives of public participation are direct reflection of the definition of public participation perceived by each group and the reasons for applying it. The officials again focus on the "physical" objectives that will save water, reduce the losses and increase the efficiency of water. The non-officials on the other hand focus on the "practical" objectives in terms of implementation of water projects and decisions in addition to finding solutions to the water problem.

3.5 Characterization of current participation practices:

Each group had different perception regarding the currently applied participation practices. The non-officials see that public participation is not necessary implemented in all projects and what is currently applied is done "upon request" from the donors and funding agencies, therefore the reason for including these practices in the projects is to "get fund". They also believed that most of the time participation is implemented only as a part of the EIA studies and that makes participation, in a sense, "forced by law". They see participation being applied through conducting seminars and workshops with stakeholders and that is not the type of participation they prefer. Some had even declared that the only project that actually applies public participation in Jordan is the "Water Users Association" in the Jordan Valley. On the contrary; the officials see that participation is being applied in all or most of the project and it is organized through associations and is involving the stakeholders in all stages of the project through participating in seminars and workshops and its implementation had actually improved the level of water management. They pointed out at the same time that each project has its own mechanism of implementing public participation and the main obstacle facing the wider implementation of participation is that in Jordan we do not have strong or powerful associations to take such responsibility. We can see that the groups agree that for the currently applied participation practices is the indirect type and mostly focus on the management side and do not extend to decision making. It also shows that the current participation is kind of subjective and depends on the type of project and who is implementing it.

Conclusions

The analysis of the first round of interviews had clearly indicated a difference between the point view of the officials and the non-officials who both influence the way water is managed in Jordan. The main difference was apparent in the way they defined public participation; officials see it as efficient use of water while the non officials believe participation should involve people in decision making. This contrast had in turn influenced and shaped the other emergent categories, especially the desired type or form of participation from indirect type preferred by the officials against direct form of participation that meets the definition given by the non-officials. Both groups had different perception regarding what participation "should" be and what is "currently" being applied. This concern is especially expressed by the non-official group who believe that there is a gap between the participation that should be applied to improve the management and the actual practices being implemented in Jordan. Thus, it is essential to further study this difference in perceptions and compare them with the actual

experiences currently implemented in Jordan which would help in improving the public participation practices in Jordan.

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