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Participation in Water Management in the Mena Region – Perspectives from Refugee-Hosting Communities in Rural Jordan

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Abstract
Jordan is categorised by the UN as a country with extreme water scarcity. The ongoing influx of refugees from Syria into Jordan is placing a heavy burden on its already strained water resources. This brings existing deficiencies in water supply to the forefront, leading to frequent, sometimes aggressive protest among the population – refugees and Jordanians alike. Main objectives of this study are an understanding of stakeholders' current practices and experiences in water management as well as proposing suitable forms of public participation as an approach to increase the satisfaction of water users. A special focus is on vulnerable groups (e.g. women, people with special needs). 71 semi-structured qualitative interviews and transect walks through three Northern Jordanian villages have been conducted. Refugees, local community members and representatives from the local water company were interviewed. Particular attention is given to understanding perceptions on water supply and demand as well as its management, as well as people's willingness and capacities for participation in water management, or limitations thereof. Research results show that strong family ties are central in community life and in dealing with problems, including those related to water. Syrian refugees often remain outside these connections for various reasons. Jordanians use personal relationships to employees of the water company for pressing their issues. Experience with public participation is minimal. However, possible strategies for future public participation were identified within the existing social structures. Conditions for their implementation and possible limitations are discussed, too.
Keywords: Institutions, Middle East, natural resource management, public participation, water governance

Introduction
Jordan ranks as one of the world's water-poorest country and has been struggling for years to find new ways to tackle the chronic shortage of water and steady decline in its quantity [1]. After the massive influx of refugees fleeing the Syrian crisis since 2011, the sudden population increase has raised water demand [2]. The three refugee-hosting communities of Samar, Fo'arah, and Kharaj (the host communities), located in the Irbid Governorate, suffer from deficits in water supply. Both Jordanians and refugees voice complaints through various channels, including demonstrations after Friday prayers.

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Although absolute quantity cannot easily be increased by the state company responsible for water supply, it may be possible to improve water infrastructure and water management practices, so as to increase the satisfaction of water users. The German Agency for International Cooperation (GIZ) and the Jordanian Ministry of Water and Irrigation have started to promote public participation as a way to channel complaints of residents and to raise the legitimacy and quality of decisions in the provision of public services, since participation tools are widely considered beneficial improvements to environmental projects [3], including in particular water governance in the Arab region [4].

This research is a contribution to GIZ's design of a facilitated participatory process leading to improved water supply management in selected pilot communities. Overall, the study aims at answering the following two research questions:

1. How is water management organized in and for the three Jordanian refugee-hosting communities?
2. What is the potential for public participation as an approach to increase the satisfaction of all water users?

Material and Methods

The tailor-made analytical framework has a process perspective based on Esser's adaptation of Coleman's Macro-Micro-Model, integrating elements of Institutional Economics, Social Capital and public participation theories. It depicts the relationship between the current water management situation and its potential improvement through participatory processes. On its basis, 71 guideline-based semi-structured interviews have been conducted with the inhabitants of the host communities (including also refugees, families of disabled people, male and female religious authorities, mayors and members of associations) as well as employees of Yarmouk Water Company (YWC), responsible for distributing water within the district. Furthermore transect walks though the villages were performed. Data has been analysed using qualitative content analysis.

Results and Analysis

The water supply situation in the three host communities is considered unsatisfactory by all stakeholders groups. However, the perception of the reasons differs. All recognise physical water scarcity and poor condition of water supply infrastructure. However, the personnel of the YWC focus on problems in technical water supply (e.g., lack of equipment and technical personnel, high costs of infrastructure maintenance etc.). The villagers meanwhile emphasize the water consumption and infrastructure management behaviour of their fellow citizens (e.g., installing of powerful water pumps, illegal connection to pipe network, illegal operation of valves etc.) besides the technical shortcomings. Refugees depend on their landlords for water supply. Although water supply is seen as problematic, unemployment and financial difficulties are perceived as more fundamental challenges.

The perception of water management functioning differs among stakeholders and depends on a variety of physical and social factors. The physical factors ensure better water supply to those who possess water reservoirs, those located close to the main pipe and at lower topographical level. The social factors relate mostly to the social capital of an individual or family. Social capital increases access to financial resources necessary to construct a rainwater reservoir and to information on water supply or opportunities to improve it. Further, it improves family's connection to the personnel of the YWC. This might contribute to quicker processing of the water-related complaints by the latter and motivate the valves operators to act in the interest of those they know in a village. Finally, social capital prevents collective action by the villagers against those fellow citizens who violate the rules when tapping water illegally or causing unequal distribution of water within the village.

Overall, the functioning of the water management in the three communities is enabled by the institutions (rules and strategies) developed to cope with numerous problems. Two interrelated clusters of water management institutions can be distinguished:
a) Institutions regulating water supply and management towards the communities. These determine frequency and reliability of water supply, as well as quantity and quality of water delivered centrally. They include both formal rules set by the YWC which organize the daily routines for the YWC personnel, and informal rules regulating the latter's communication with water users and some of their activities.
b) Institutions regulating water distribution and use within the communities and families: the social norms which coordinate relationships among inhabitants and their effects on water distribution, in particular inequalities in supply to different households.
Formal rules regulating water management often are not or cannot be implemented. Thus, informal rules gain importance. They have been identified to regulate both relationships between water provides (YWC) and water consumers, and among water consumers. E.g., the YWC personnel shares their telephone numbers with citizens to be accessible and be able to react faster on the problems related to water supply; the villagers stay awake at night waiting for the water to come through pipes and open their tap.
Stakeholders have different types and degrees of social capital which may or may not support their participation. A general involvement in social networks, e.g. large *Ashera* or active associations, is conducive for participation in this context. Formal or informal platforms of exchange, e.g. diwans, school meetings, mosques, facebook groups or regular meetings in private houses, are central for any group of people to form a common understanding of the problem and possibly elaborate a joint position towards it. Refugees, some women and otherwise marginalised residents are much less equipped with this form of social capital. In consequence, they are not constituted as a group, do not have a common understanding and position and no representative. The importance of social capital is a challenge to the mobilization of these people and their potential participation in water management.
Another form of social capital – the relationships based on cronyism (*wasta*) – may be seen as an informal way of participation. However it is likely to hinder more formal participation methods to be effective, in particular if the latter threaten the reciprocity of *wasta* relationships in fields central to people's livelihoods.
Other factors influencing public participation are access to information, availability of transport to reach the meetings, readiness of participants to invest their time in participation process which is highly time-consuming, openness of participants, their readiness to discuss difficult issues, to hear and respect the position of other participants, and consider various interests when taking common decisions.

Overall, any intervention into the existing water management system – and a participatory process as such is considered an intervention already - would lead to shifts in the reward structure of stakeholders: from a systemic point of view the present way of functioning exists because it makes sense for some, if not for all actors:

- it is predictable for those within the system and thus reduces complexity;
- it gives various benefits to stakeholders, and
- as a sub-system of Jordanian society it stabilises the social system as a whole.

It follows that there is an interest in maintaining an existing system, even if it is not considered efficient by stakeholders. Hence, there are forces and mechanisms within the system that try to maintain the existing patterns – a phenomenon which is called autopoiesis [5]. Consequently, change may be perceived as a threat – there is something to lose for all stakeholders: predictability of the system, material benefits (money/income, water access), social status (prestige), formal authority, or informal power. In order to anticipate resistance to change it is

helpful to be aware of what different stakeholder might not want to lose, in particular if they face difficulties to compensate for this loss.

Conclusions

Two arenas for potential participatory processes for the improvement of water management have been identified: A) Institutions regulating water supply and management towards the communities, i.e. the relationship between the water utility (YWC) and all water users, and B) Institutions regulating water distribution and use within the communities and families, i.e. social norms that fail to alleviate water supply inequalities caused by low water pressure. Community members have a role and hence may contribute to solutions in both arenas.

Our analysis indicates that differences in social capital lead to different degrees of vulnerability towards water scarcity and their capacity to participate. This has implications for their potential level of participation and the choice of suitable participation measures.

Regarding the stakeholders, increasing the level of participation for some – i.e. women and Syrian refugees - is implied in the definition of the project outcome [6]. Youth is suggested to be considered as a different stakeholder type as their perspective and stake are different from that of older people. Moreover, poor residents with houses on hilltops and/or at the end of distribution pipes may have a particular stake.

We imply that satisfaction may be increased even if changes in water infrastructure or management are limited. This may happen as a result of joint learning and exchange throughout the participation process, which has the potential to take the edge off existing conflicts of interests. Any participation process may concentrate on the relationship between YWC and water users, but there may be room for improvement in intra-community water distribution, too. Both would need external facilitation and a specifically designed process, involving an analysis by the inhabitants of the distribution problems and their causes. This should start a joint learning process (on the subject and on each other's perspectives) [7], which may catalyse social and technological change compatible to the existing system.

However, the currently observed strong emotions, shaping the perceptions of at least some of the stakeholders, might make learning impossible. A transition to a learning culture needs to be facilitated, e.g. through creation (at least in the beginning) of separate spaces for different interest groups to avoid a frustrating clash of cultures and opinions experienced in daily life.

Questions might come up as people discover knowledge gaps on how the system works. Some of them may be used to involve people into the process by assigning small investigations. For example, existing formal and informal rules of water governance are a field where people are likely to have partial knowledge only and where they might want to verify the findings of this report.

Building trust in the process is essential, given the mixed previous experiences of people with projects. Creating small successes is an intriguing way of doing so. First choosing a relatively small, but pressing problem to which a visible solution may be found creates confidence for tackling more complex problems. The uncertainty over water delivery schedules could be an example. External and impartial facilitation is required for the process as a whole, as well as moderation for separate methods and events.

After the public participation is organised, and common decisions on water management are taken, the degree of improvement in water management will further depend on the rules designed during public participation process: if these rules address the multiplicity of water-related interests, if they are supported by some sanctioning mechanisms, and if they are finally implemented by different actors.

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