

**SHAPING WATERS.
VISIBLE AND INVISIBLE INFRASTRUCTURES IN THE EVERYDAY MANAGEMENT
OF WATER RESOURCES IN CENTRAL TANZANIA**

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Abstract

This short article is based on the results of a research that is part of the Sani Project, led by the Ngo Lvia, and aims to evaluate the participation and role of the *Community Owned Water Supply Organizations* (Cowso), in the management of water for domestic use in some rural areas of the Central Tanzania. In the project economy and for methodological reasons it was decided to conduct qualitative and participatory visual research in a single context characterized by a newly formed Cowso (2019), in order to explore the social and political processes that reveal the logic of appropriation and transformation of the resource into a common good.

Questo articolo è tratto dai risultati di una ricerca che si inserisce nel progetto Sani guidato dalla Ong Lvia. La ricerca mira a valutare la partecipazione ed il ruolo delle “Community Owned Water Supply Organizations” (Cowso) nella gestione delle acque ad uso domestico in alcune aree rurali della Tanzania centrale. Nell’economia del progetto e per ragioni metodologiche è stato deciso di condurre una ricerca visuale qualitativa e partecipativa in un singolo contesto caratterizzato da una Cowso di recente formazione (2019), al fine di esplorare i processi sociopolitici che rivelano le logiche di appropriazione e trasformazione della risorsa in un bene comune.

Keywords

Water, management, community, rural areas, development

Introduction

This research is part of the Sani project¹, conceived and implemented by the Italian Ngos Lvia and Cuamm – *doctors with Africa*, in partnership with Hydroaid, with the University of Turin, (Unito), the Interdepartmental Centre of Research and Technical and Scientific Cooperation with Africa (Cisao), the University of Dodoma (Department of Geography), the District Council of Kongwa, the District Council of Chamwino, the District Council of Iringa and the District Council of Mufindi. The very nature of this partnership describes a “configuration of development” (Olivier de Sardan 1995) that deserves to be questioned. What is important to note, and which has directly influenced the methodology used in this research, is the co-presence of academic institutions, international development actors and local authorities. An analysis of the Sani project and of its specific actions in particular, as well as the extent of the reflection that derive from it, must put under examination

¹ Sani – Integrated Support for the Right to Water, Hygiene and Nutrition in Central Tanzania (2017-2020).

such configuration. Recognizing the nature of this configuration actually means recognizing and calibrating the responsibility of each partner in the process of social change brought by the project. Not all partners, in fact, have the same relationship to the territories concerned. The Districts seem to be the closest subject to the contexts of intervention. But this proximity must not be denied even to the project leader and its main partner, the Ngo Lvia and Cuamm. Despite their international vocation, the long experience of these organizations in Tanzania as well as their widespread commitment in project management, makes them real local development actors. This expertise reveals a prominent position consolidated over time, which implies important effects on project management, on the political responsibility associated with it and on the local imaginaries of well-being and social change.

The partnership with the universities tries to guarantee, in the dialogue between development processes and evaluation of project activities, a degree of scientific validity and rigor that only a position external from the contexts of intervention can provide. This distance of the gaze is not, however, synonymous with pure exteriority: as a fully-fledged project partner, the University cannot claim to be considered external actor without denying its ethical and political responsibility. As project partner, the University of Turin, represented here by the authors of this article, intends to recognize its role within the project and therefore intends to propose a participatory and innovative methodology, which we will present in this article. Our intention is to take a full part in the project, guaranteeing, on the one hand, the scientific nature of the analyses produced through a rigorous method that respects the ethical implications of fieldwork research and, on the other hand, the *circularity* of the data and results at the internal network of actors generated or implemented by the project itself.

The object

Water is a resource inseparable from social relationships and cultural representations in which it is immersed. Behind its materiality and visibility, water weaves relationships, condenses meanings, builds bonds between people and places, communities and landscapes. These bonds are not always obvious or tangible but this does not make them less efficient and important. Our approach therefore starts from the assumption that water is a good to be revealed, deeply relational, full of meanings and power relations. This premise is not intended, however, to lead to a purely relativist vision, which would reduce our research to a contextual description, to the study of an isolated and incommensurable case. The central concern of our work starts precisely from the desire to build a constant dialogue between the numerous and often innovative legal and institutional reforms that

regulate water management in Tanzania, the translation of these policies into a project of international dimensions such as the Sani and the concrete forms of implementation or incompleteness that take shape at a ground level. This dialogue aims, ultimately, to produce an interpretative framework that can be used outside the specific context investigated during our research.

We chose to set our research in Hogoro and Nyerere, two villages in the district of Kongwa, with a total population around 10000 people. Very close one another, just separated by a road and sharing the same water scheme and life. These villages were exemplar for the study because (1) the water scheme was managed by a Cowso; (2) the Cowso had been trained and encouraged by Lvia, the Ngo running the project Sani, where our study was insert; (3) they had a conflictual situation about how to manage water and in the acceptance of Cowso as an organization; (4) besides we were intentioned to live there, the village wasn't too far to make possible to come back from time to time to share the information collected with the Ngo staff, have access to the archive and plan the new steps together.

The methodology

We followed a qualitative research methodology, inspired by three main pillars as schematized in the Figure 1. The process of data collection has been carried on mainly using an ethnographic approach. We spent most of the time living in the two villages of Hogoro and Nyerere, following the daily activities of the Cowso, and trying to trace and unveil the deep and complex grid of relations between them and the main social actors of the “visible” and “invisible” infrastructure of waters. The process of data gathering undertook through, interviews, focus groups and participant observations has been accompanied and inspired by a participatory action research process² (Par), along all the experience and particularly in the final part. This means that the investigation was aimed not just to describe a situation, “how it is”, but was interested also in using the data collected and the experience gained to discuss with all the actors involved, the participants, the Ngo, the policy makers, at different scales, “how it could be”. Generating cycles of discussions, using the data collected and the themes which came up as a way to stimulate debates, proposals, ideas, that became new data, new information to be used in their turn, meeting after meeting, during the mentioned cycle process. While the third and final pillar is about the visual perspective an essential

² This way of conducting a research is aimed to make possible the raising of solutions during the very process of investigation, making possible for the actor involved, especially for the most vulnerable, to really have a role in the process, giving a sense to the world “participation”, mostly used improperly in this kind of works (Baum 2006; Chevalier 2019).

element of our work through which we captured the relevant moments and scenes during participant observations, guiding as well the reconstruction of the social and technical map of Waters, through *photographic transect walks*³ or *mental maps* sketching.



Figure 7. The table shows the theoretical umbrella used to design the research, based on three methodological pillar: the ethnographic approach, the action research process and the visual perspective.

Research findings

Geographical and political diversities

The research reveals an important diversity of waters both in the representations of the various social groups and in the configuration of the territory and its relationships between natural resources and human activities. Such a diversity requires a double shift: (1) The geographical exploration of the location of waters reveals a diversity of landscapes, uses and meanings. The distribution points of the water scheme widely overcome their technical function to become places of life and socialization, the real squares of the village. Furthermore, the project to build a new source (*kisima*) is the subject of a political dispute rather than a technical necessity. In fact, the claim by the population and the Local Authorities, of the need for a new infrastructure and a new Cowso, so that the two adjacent villages become independent, hides a political will expressed in terms of appropriation of the water infrastructure. (2) The identification of the ground/local level with a *community* must be called into question. Management and practices related to water at a ground

³ As transect walks we mean going around with the participants following specific, or in some case improvised tours to get information about the ecological, social and technical environment, “[...] observing, asking, listening, discussing, identifying different zones, soils, land uses, vegetation, seeking problems, solutions and opportunities; and mapping and diagramming the zones, resources and findings” (Chambers 1994, p.960). To this we used the photos to capture the information alongside fieldnotes.

level reveal differences, divisions, or even conflicts between social groups, unequal subjects, interests and logic of appropriation that do not allow us to reify the *local community* as a single, homogeneous and coherent actor.

Juridical-institutional incompleteness, social practices and power relations

The multiplicity of actors involved in the governance of the resource imposes a close look to concrete practices. Such a look reveals and accepts the presence, at a local level, of a juridical-institutional incompleteness of the norms, laws and policies produced at national level beyond appearances. The path designed by the latter, in particular the Water Supply and Sanitation Authorities, Wssa (2009), and the Rural Water Supply and Sanitation Agency, Ruwasa (2019), which stimulate the creation and the empowerment of Cowsos in a “decentralized centralization” (Mangione et Pozzobon 2019) perspective, is not only sporadically unfinished in most of the local context. Everywhere, as in the study case, the landing of national policies implies a wide range of social practices, interpretations and forms of negotiation with the actors present, which requires an analysis of articulated power relationships, often of long duration. In this perspective, foreign Ngos are not mere technical variables at the service of a higher cause (policies) but local actors that play a role of great responsibility in promoting social and political changes. Recognizing this role makes possible to take full advantage of a privileged and authoritative position capable of balancing the widely documented tendencies of this incompleteness, which range from punctual form of arbitrariness of local powers to systematic and widespread micro-corruption. But incompleteness is also synonymous with processualism: it opens up spaces of possibility, of empowerment and definition of new groups (Cowsos) and actors (among members of Cowsos).

Visible and invisible infrastructures

A purely technical vision of management leads to an emphasis on limited knowledge and interventions, focused exclusively on the water scheme and its ordinary administration. This drastically reduces the breadth of practices, meanings and forms of collaboration and solidarity that come to life around a good collectively and symbolically central to everyone's life. Such “invisible infrastructures” (Simone 2004) concern both practices integrated to the management of the scheme and alternative forms of interaction, exchange and profit around the resource. For example, we have documented numerous forms of facilitation towards elderly, disabled or poor people, which are not foreseen by the rules and by management contract but which are practiced in a widespread way in

the daily distribution of resource. There are also markets parallel to the public service, forms of exchange and credit that cannot be underestimated also from the point of view of the management of the village water scheme, (the Figure 2 shows the broader spatialization of the waters, parallel to the “official” and “formal” water-scheme). The study therefore shows as an extreme scheme-centred technicalization of the resource leads to a total de-politization of the role of the Cowso which goes hand to hand with a naturalization of the (dis) service they provide. The rhetoric and practices of development interventions often contribute to reinforce this technicalization and de-politization. One of the main symptoms of this process is the excessive bureaucratization (Hibou 2012) of the role/lexicon of Cowso at the expense of the enhancement of these invisible infrastructures and of a broader reflection on Cowso’s political agency as water consumer association.



Figure 8. A brief scheme of the socio-technical map of water. On the upper part the three main “waters”, the one of the formal scheme, the one owned by the privates, connected to the public scheme but escaping the control of the public and any form of legal regulation. The last one of the first line is instead an example of “natural” sources, following again other rules and dynamics. On the bottom part an example of the water practices, from the activity of fetching

water that occupies an important space in the society, to the water usage for the house's purposes or for the agricultural activities. (All the pictures have been taken by the authors during the fieldwork).

Shaping Cowso

The main obstacle of the process of formation of Cowso as social institution, is the fact that their members move in a space (the water scheme) that remains strongly influenced by the local administrators and by part of the local community. Their role frequently is not recognised, their activities are often hindered or just ignored by most of the village. They do not operate calculations and decisions that can be isolated from the circumstances of each single intervention of maintenance or administration. Their actions remain tactical, not strategic (De Certeau 1990), in a fragmented perspective that is not able to capitalize on its own advantages, its position, preparing expansion and independence with respect to the Village Authorities. The consolidation of the Cowso does not take place through a declared recognition of one's rationality or skills, but through a laborious daily shaping process. The Cowsos are not the object of real and public construction (as wished by the policy), but of micro and often hidden negotiating processes, (the Figure 3 shows an example the “face” and the quotidian of the water management activity). A greater coordination between Cowso and higher administrative levels than village/ward context could constitute a promising horizon in this sense.

WATER COMMUNITY- BASED MANAGING

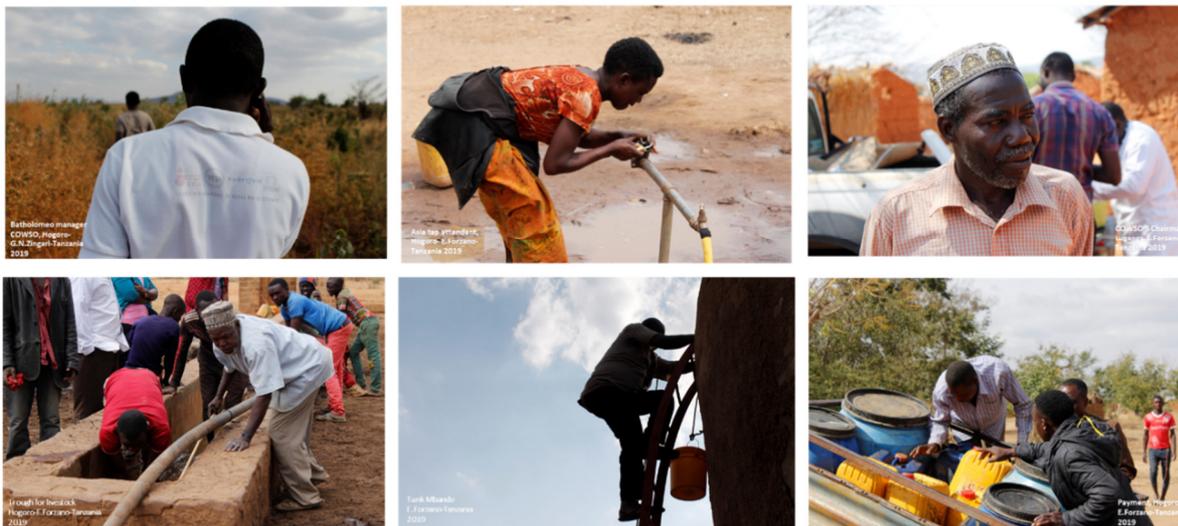


Figure 9. On the top's line water managers of Cowsos of the regions of Dodoma and Iringa. On the bottom an example of daily Cowso's activities. (All the pictures have been taken by the authors during the fieldwork).

Conclusions

After this brief overview of the research, we can argue that in order to unveil the complexity of water management it is necessary to go beyond a purely technical and reductive perspective, rather trying to deeply study the social and cultural dimensions, the visible and invisible infrastructures shaping and reshaping the socio-technical map of waters.

On this regard, the methodology designed for this research has been a valuable tool to investigate these aspects in a flexible and open way, giving the chance to a “vulnerable” group of the local society to bring their voices to the policy makers, to put the information in circle in order to improve the work of all the actors involved in the resource’s management and usage.

All in all, the article described as water management doesn’t coincide with the water scheme, but is a broader matter that has to be addressed and understood in its complexity. The incompleteness of the national policy on water is a key aspect undermining the work of the community’s organizations: Cowsos are at the mercy of the local village’s authorities, squeezed between the responsibility of the management of the most important resource in the village on one hand, and the missed attribution of an actual independency in their activity on the other, as well as the recognition of their role. This strongly undermines the capacity of the Cowsos to do their job, to improve as organizations and reach a real autonomy, as well as a sustainable management of the resources. This gap in the application of the law, opens the space for a micro-scaled process of negotiation of the Cowso’s position in each village context, of whose result depend on the local history of power relations. Consequently, fracturing a national effort to improve the water’s management and supply in thousands of microscopic uncontrollable competitions.

At the same time, the iper-technicalization of the water-related issues, that most of the time characterises the perspective of the policy makers at each level, reduces the work of the Cowsos in terms of economic performances, avoiding or ignoring to assess if they are effectively able or not to do what they are asked to. The aforementioned de-politization and downscaling of the alleged role of the community water organizations, contributes once again to make more opaque and weaker their position among the local societies, exposing them to the possible abuse of the village authorities.

In conclusion, to overcome this impasse, it is crucial to focus on the social and cultural mechanisms that a village level determine the success or the failure of the water management, aiming to scale up an effective strategy able to fill the gap between national policy and reality. Therefore, we think that the only way to improve the management of water-resources relies in recognising the role of the Cowsos as democratic and independent institutions in charge to manage water as a public-good for the common interest.

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Acronyms

Cisao	Interdepartmental Centre of Research and Technical and Scientific Cooperation with Africa
Cowso	Community Owned Water Supply Organizations
Cuamm	Doctors with Africa
Lvia	Lay Volunteers International Association
Ngo	Non-Governmental Organization
Par	Participatory Action Research
Ruwasa	Rural Water Supply and Sanitation Agency
Sani	Integrated Support for the Right to Water, Hygiene and Nutrition in Central Tanzania
Unito	University of Turin
Wssa	Water Supply and Sanitation Authority