Rural Water Access: Governance and Contestation in a Semi-Arid Watershed in Udaipur, Rajasthan

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A significant focus of policy in recent years has been to devolve decision-making and management of water systems to the community level. This paper is based on a study of a minor irrigation project in the semi-arid Udaipur district of Rajasthan, where the livelihoods of people in the watershed are dependent on canal water and there are serious inequalities in the distribution of water within and between villages. This study points to both the social and spatial dimensions of inequalities in access to water. It also focuses on governance arrangements and highlights inequalities that arise from the delegation of management of water systems to communities. These reflect the democratic deficit in local governance institutions and, in turn, the larger political economy.

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1 Introduction

In the last two decades, a number of policies and programmes in areas ranging from irrigation and watershed management to drinking water have exhibited a convergence towards managing water use through decentralised local community institutions. This is in contrast to the conventional understanding of supply-side provision of water services by the state. In canal irrigation, the shift to participatory irrigation management (PIM) was to enhance the role and responsibility of local communities in managing canals at the tertiary level, bring in greater community ownership of the infrastructure and make the state more accountable. The role of the state was still paramount but with the community being included on specific and (state) defined terms. Water users' associations (WUAs) were therefore introduced in various forms in different states of India and they are not only meant to be governed and controlled by the people who pay for services, receive benefits and manage the infrastructure, but also provide an institutional structure that delivers the services that a public authority would with participation and decentralisation as concurrent elements (Cullet and Roopa 2009).

The challenge to large-scale, state-led irrigation systems of storage and transmission with their social and environmental impacts came from various quarters (Dharmadhikary 2005). The distribution of water resources from dams among different stakeholders (Chowdhury et al 1997) is problematic with costs and benefits unequally accruing to various sections of society, which leads to conflicts (Phadke and Patankar 2006; WCD 2000). Successful experiments have proved that decentralised, small surface storage structures are not only effective but also scalable.[1] The equity rationale has provided the basis for a number of attempts, such as the Sukhomajri and Pani panchayat experiments, which have met with different degrees of success, both in terms of provision of water rights and ensuring and converting the endowment into entitlements (Sangameshwaran 2006; Apte 2001; Patil 2000). Such an understanding of water resources development focuses on the limited supply of water and managing demand to fit supply, therefore arguing for a shift from large storage to primary and local water harvesting structures and watershed development programmes (Iyer 2003).

Watershed development offers a way out of stagnation and degradation for areas that economic development seem to have bypassed, typically in drylands and semi-arid and arid regions perpetually under the shadow of drought (Shah et al 1998). Experiments of locally managed systems in rainfed areas prompted policy from the mid-1990s to focus on a greater allocation of

funds for the development of rainfed areas through watershed management programmes (GOI 2006).[2] This shift acknowledged the needs of the poorer sections of the population living on marginal lands and extended programmatic support for achieving the goals of environmental conservation, productivity enhancement and greater inclusion (Kerr 2002). Importantly, the emphasis was on the creation of watershed development committees with total inclusion of the local community. However, class, caste, patriarchy and ethnicity were identified as barriers to inclusion (Shah 2003; Shah 2001), along with locational inequalities arising from the biophysical characteristics of watersheds themselves (Joy and Paranjape 2004).

The late 1990s saw the emergence of rural drinking water schemes sponsored by international financial institutions, where decentralised, sub-village-level beneficiary groups bore part of the capital costs. They also fully managed operation and maintenance of these systems (Sampat 2007). The National Water Policy (NWP) of 2002 further reinforced and gave direction to a more decentralised and community-managed paradigm of water management; though it has been criticised in some quarters for encouraging commercial development by private actors. More inclusive decision-making with greater accountability is to be achieved through the creation of community-managed institutions, both for irrigation and drinking water. Hence the main trend has been towards the devolution of power to quasi or non-governmental entities (Cullet 2006).

The paradigm shift entails a spatial shift from large to small water storage structures or watersheds and a governance shift from centralised to more decentralised systems. This has two advantages. The spatial shift brings in more water to the local context because of the scale of operations and watershed management that enhances supply, while the governance shift to a more decentralised and community-managed system resolves problems of accountability, access and equity. These approaches presume that there is a single entity called "community" that will manage water resources at the local level despite several studies pointing to disunity and unequal power relations within different communities (Sangameswaran 2006; Sampat 2007; Shah and Singh 2007; Bakker 2008; Narayanan and Irshad 2009). This paper examines the micro manifestations of this shift against the backdrop of water sector reforms in the state of Rajasthan, India to understand whether these claims are borne out and what implications they have for different groups. By studying a minor irrigation project catering to six villages and the decentralised system set up to manage it, we also explore notions of "community".

The study brought to light inadequacies in the powers and support given to communities to implement the decentralised management agenda. Traditionally, caste and class have played an important role in influencing the mechanisms governing access to water in rural India. When there are deficits or failures in public provisioning of water, villagers turn to groundwater and it is the affluent sections, which already have strong control over traditional mechanisms, that have better resources to access it. This leads to widening inequalities in access to rural water. In this setting, the implementation of participatory systems of governance, as envisaged in recent policy shifts, has not been successful in breaking down existing decision-making structures as they tend to reflect the prevailing disparities and asymmetries in society.

The methods used for this study included participatory research, analysis of policy documents and land records/cadastral maps, and a household survey. The research methodology was qualitative in nature and employed repeatedly in response to questions that emerged during the research process. The paper is divided into five sections. The next section focuses on the watershed context and provides details of the irrigation system and rainfall in the study area. The third section examines inequalities in access along spatial and social dimensions and linkages between the two. The fourth section studies the inequalities in access due to governance processes and institutions. The concluding section provides a summary of the main arguments and a few larger observations.

2 The Watershed Context

Two-thirds of Rajasthan comprises the Thar Desert and, according to its water policy, the status of water in the state can be described as "most critical."[3] Moreover, with population growth and increasing urbanisation, the demand for water is increasing, exerting more pressure on available resources. Micro-watershed number 19, the selected unit of analysis for this study, is about 60 km south-west of Udaipur.[4] In 1968, a minor irrigation project was conceived in response to demands from the community for irrigation facilities and construction of the structure was completed in 1980 with a dam at Kanthariya village (hereafter referred to as the Kanthariya dam).[5] Three villages lie in the catchment area of the dam – Kharadiya, Adkaliya and Parab. The catchment area once had tropical dry deciduous forests but they were felled in the 1970s. The irrigation canal from Kanthariya dam passes through six villages across three gram panchayats. It begins at Pathara in Kanthariya panchayat, then passes through Lunawaton ka Kheda, Badad and Dhimdi villages of Lunawaton ka kheda panchayat and finally reaches Banswari and Kalimagri of Sultanji ka Kherwara panchayat. Watershed 19 comprises these six villages with a total population of 7,805.

The entire area comes under Jhadol tehsil of Udaipur district with the proportion of tribals varying from 45% to 80% in the different villages. The main tribes in the area are Bhils, Bherras and Kharasiyas, with Bhils being the majority. Upper castes such as Rajputs, Mahajans and Bairagis and Other Backward Classes (OBC) such as Patels, Lohars, Gayris and Darogas are also present. Agriculture is the main occupation of the people in the area. Many tribals commute daily to Udaipur for work and seasonal migration to neighbouring states is more prevalent among the higher castes.

2.1 Rainfall, Storage Levels in Reservoir and Groundwater Use

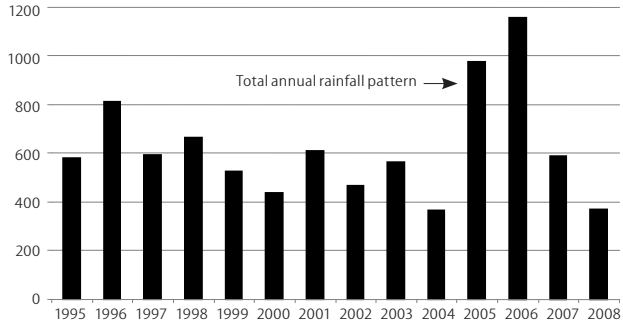
Rainfall data for Jhadol tehsil from 1995 to 2008 (Figure 1, p 67) shows a maximum annual rainfall of 1,156 mm in 2006 and a minimum of 367 mm in 2004. The number of months of rainfall each year varies between five and eight, with the average being closer to five.

Data on the amount of water stored in the Kanthariya reservoir from 1997 to 2009 shows that the storage closely follows the

amount of annual rainfall received in the region. A comparative graph of the amount of water stored in the reservoir and total annual rainfall is given in Figure 2.

Thus, despite formally being an "irrigated" area, in reality, it remains a rainfed one with a strong correlation between the amount of rainfall, storage in the reservoir and volume of water available for irrigation. Our field study also revealed that the increasing dependence on groundwater is progressively making

Figure 1: Total Annual Rainfall in Jhadol Tehsil (mm)



Source: Jhadol Office, Department of Irrigation, Government of Rajasthan.

the canal irrigation system redundant. Groundwater extraction continues unchecked despite Jhadol tehsil being classified as "over-exploited", which means that the rate of withdrawal of groundwater in the region is much more than the recharge rate.[6] The government itself seems to overlook the unsustainable nature of long-term dependence on groundwater and has permitted a panchayat in the area to construct 30 new wells. Permission for the construction of new wells in an over-exploited region can only be given if the water from them is to be used for drinking. This is possibly how sanction for the new wells was obtained, but, once constructed, they can and most probably will be used for irrigation.

2.2 Inequalities in Access: Socio-Spatial Dimensions

The location of villages in relation to Kanthariya dam plays a major role in access to water. As one travels north from the dam along the canal route, the availability of water declines. The farmers of Kalimagri, the village at the tail end, said that they had received water from the dam only on four occasions in the past 30 years and those of Dhimri village complained of receiving less water than they ought to. Both groups accused villages upstream of utilising more water than their share.

Within the villages, the location of landholdings along the route of the main canal determines access to water. The distance to both east and west of the canal also plays a significant role, more so on the western side as much of the land slopes upwards from the canal making irrigation difficult. The lands of upper-caste farmers are mostly located in valleys through which the irrigation canal passes and so they get easy access to canal water as well as groundwater. In contrast, tribal lands are located on lower slopes above the canal, giving them no access to canal water and poor access to groundwater. The houses of the dominant castes are located in the main villages, where amenities are available, and tribal habitations are on the peripheries of villages.

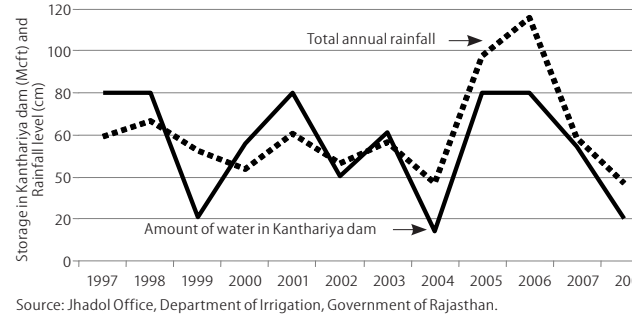
The spatial inequalities are deepened by the social structure, which is defined on the basis of caste, economic status and gender. To gain a better understanding of how the caste system widens inequalities, the village of Badad was studied in detail. The revenue land records and cadastral maps at the *patwari's* (land record officer) office were examined to assess the caste-wise breakup of the ownership and location of canal-irrigated land. The best cultivable lands in the valleys are mostly owned by the upper-caste Rajput families.

Figure 3 (p 68) shows that upper-caste Rajputs, represented on the chart as "General" have more average cultivable area per household and a significant amount of the valley land that is better endowed with surface and groundwater. This helps create a water market that is largely controlled by Rajputs, with tribals serving as buyers of water. Rajputs also own a greater quantum of undivided land because they tend to live as joint families and this permits economies of scale in farming. Tribal communities on the other hand have a nuclear family structure with habitations that have, over time, spread out and moved further up the slopes as families have enlarged. Due to smaller landholdings and less fertile hilly land, the tribals mostly practice subsistence farming. This is tellingly seen in the large number of goats reared by them, which they rely on for cash income in the absence of formal lending mechanisms. Larger landholdings and better access to water resources (surface and ground) have led to a deepening of inequalities and also to the upper castes gaining more social and economic importance, factors which give them political clout.

2.3 Inequalities in the Use of Groundwater

With canal water becoming scarce in the last two years there is an increasing reliance on groundwater and new wells are being dug and existing ones deepened. Tribal-dominated Dhimri village has the highest number of groundwater structures per household, thanks to Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) funds.[7] Due to low incomes, tribals rely on the MGNREGS for gaining access to groundwater despite reported

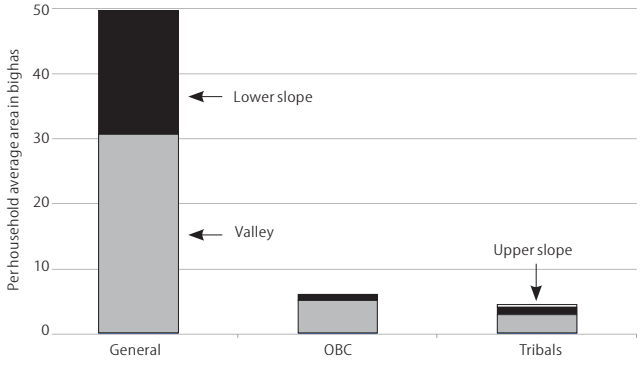
Figure 2: Comparison of Annual Rainfall and Storage in Kanthariya Reservoir



Source: Jhadol Office, Department of Irrigation, Government of Rajasthan.

instances of misuse of funds, non-adherence to technical specifications and low quality work that has contributed to many wells going dry. Sultanji ka Kherwada on the other hand has the least number of wells since it is dominated by Patels who do not have access to MGNREGS funds. Falling groundwater levels and the growing desperation of tribals to improve their access to water are the major reasons for the new wells in Dhimri, according to villagers. That

Figure 3: Badad Village – Variation in Landholding with Caste and Location



said, though Dhimri has the highest number of groundwater structures and new wells per household, it does not necessarily mean that its inhabitants have access to plentiful water.

Since groundwater is now available only at greater depths, those who can afford to do so, typically higher-caste villagers, are sinking tube wells that enable tapping water from underground aquifers. The head-end village of Kanthariya, dominated by Patels,[8] has the most number of tube wells. In Dhimri, which has a semi-arid climate, MGNREGS funds cannot be used for tube wells and the largely tribal population has less access to water because groundwater levels are fast receding. The overall picture of access to and usage of groundwater thus seems to be one where there are growing inequalities between the tribal and non-tribal populations in the study area.

While serious inequalities in access to water arise from socio-spatial issues, it is claimed that the recent move towards a community-managed water system will mean greater inclusion in decision-making and accountability. The following section looks into this by studying the numerous challenges confronting the implementation of a new system of governance.

3 Processes and Institutions of Governance

The shifting of responsibilities from the state government to local communities is part of a larger move from state-led to community-managed systems of water governance. This is meant to encourage responsibility among community members in the usage and governance of water. This section profiles the policies and the new governance structure (that is, WUA) created to translate the policy shift to the local level, analysing how it works on the ground and its coordination, or lack of it, with existing (formal and informal) arrangements of governance.

3.1 From State-led to Community-managed Water Governance

The key features of the Rajasthan State Water Policy 2008 (RWP) include reducing the demand of water for irrigation, encouraging WUAs to participate in water management and enacting amendments to both control groundwater decline and improve the efficiency of water management. The water distribution and allocation strategies in the state accord priority to domestic, commercial and municipal uses of water over agriculture despite the RWP's stated goal of irrigating "as large an area of land as possible with the available water" (clause 3.1.1).

A WUA is a community-based organisation formed under the supervision of the irrigation department to manage the local usage of water. The WUA for the command area of the Kanthariya dam was formed in June 2009 and it has five members. It has held only two meetings till date. The first was to form the association and the second to decide that no water could be released for irrigation in the first year because the water level in the reservoir was very low. What follows is an analysis of the institutional arrangements of the WUA, mainly based on interviews with its members.

Skewed Representation: The issue of representation in the WUA has much to do with whether inequalities are done away with or reinforced. First, the narrow way in which "community" has been defined in the policy means that only farmers who own land in the command area are included in the WUA and have voting rights. There is no representation in the WUA for the two villages at the tail end of the canal that receives the least amount of water from it. Further, no evidence was found that people living in tribal hamlets are involved in the WUA; most women are not even aware of its existence. This finding is contradictory to the claim of the RWP that "Water User Groups will be chosen by democratic means, with fair representation by large and small-scale stakeholders including women" (Clause 2.1.3).

The process by which WUA members were selected also raises questions about the potential of the institution to adequately represent different sections of the population in the command area. When asked how they were selected, the WUA members said they were unanimously elected without opposition. In other words, they were nominated. These findings are in line with Cullet (2006), who points out that while there are a number of rules attempting to ensure the participation of women and the lower castes in panchayati raj institutions, the existing policy makes it quite likely that WUAs will generally be dominated by male upper-caste members.

Lack of Transparency and Accountability: The by-laws for the management and governance of the WUA were not publicly discussed or framed in forums such as gram sabhas, which are mandated to represent all sections of society. There is little coordination or even communication between the WUA, the irrigation department, the gram panchayats concerned and the agriculture department. Though the RWP states that engineers from the irrigation department will provide technical support to farmers so that they can efficiently manage water resources, this has not happened. While local farmers complain about their lack of technical skills to manage the canal, engineers suggest that the WUA is avoiding its responsibilities and still looking to the state to operate the canal.

No Clarity on Powers and Authority: There is a lack of clarity on the legal powers and responsibilities of the WUA to manage water resources. This has had an effect on its legitimacy, as revealed by this instance. The president of the WUA convinced villagers not to release water from the canal in 2009 due to the low level of water in the reservoir. In direct violation of this, some farmers at the head end began using water from the reservoir

and the WUA found it difficult to stop them.[9] The WUA is also supposed to be responsible for collecting an irrigation tax from beneficiaries of the canal water. However, the field survey revealed that there was confusion among the villagers on this, with some saying no tax would be collected and others saying that some amount could be collected. Clearly, the lack of representativeness of the WUA, the want of transparency in its functioning and the inadequate delineation of its responsibilities (and resources) by the state government casts serious doubts on its ability to represent the needs of the community as defined in the RWP. Thus the policy shift to WUAs seems to be driven more by "managerial" than "democratic" concerns.

The only social equity consideration reflected in the RWP is that it specifies water should be first supplied to tail end farmers. In practice, however, the head-end villages first get access to water with a progressive reduction down to the tail end. Head-end farmers argue that they disagree with the irrigation department's directive because they are the ones who lost their land to the dam and also because their need for water is high. When tail end farmers realised they were not in a position to influence decision-making in their favour, they resorted to "stealing" from the canal by diverting water from it at night on an ad hoc basis.[10] Over time, the partial and unequal nature of water governance has had an adverse effect on the operation and maintenance of the dam and canal system. At the time of field study, the dissociation of tail end villages from the governance of the canal system was complete. Farmers from these villages are not invited for meetings to decide on release of water from the dam and they no longer consider themselves stakeholders in it.

The state's effort to pass on the responsibilities of management is based on the claim that the local community will do it more efficiently because it has a greater stake in doing so. However, while the responsibility of collecting an irrigation tax and depositing it in a separate bank account has been transferred to WUAs, they have no power to fix the tax rate. This remains with the revenue department. So WUAs are involved in day-to-day management, but have no decision-making power when it comes to tax. In addition, it is not clear whether the tax money will be controlled by WUAs and ploughed back into maintenance of canal systems, thus giving them and local farmers an incentive to collect and contribute taxes. In the area studied, the irrigation department is now responsible for maintenance of the dam and main canal and the WUA is responsible for the tertiary canal system. However, neither the irrigation department nor the WUA has a share in the tax now collected by the revenue department in the name of the district collector.[11] When the irrigation department needs funds for maintenance of the dam, it has to submit a proposal to the state government.

Overall, therefore, the study finds that water reforms seem to have a limited understanding of the terms "participation" and "decentralisation". In irrigation law reforms, participation is conceived of only for landowners and excludes landless people (Koonan 2010). Decentralisation has meant forming new community organisations like WUAs without giving them enough powers and resources and also not even giving a role to formal democratically-elected bodies such as panchayats and gram sabhas, leave alone informal institutions. Ignoring informal institutions of governance, particularly in tribal-dominated areas, have serious consequences for already marginalised tribal populations, as the next section describes.

3.2 From Informal to Formal Governance Institutions

The study area falls under the Panchayat Extension to Scheduled Areas (PESA) Act, 1996[12] and seats in the panchayats are reserved for tribals in proportion to their population, with the post of the sarpanch (head of the panchayat) permanently reserved for a tribal. Despite control of the formal decision-making structure of panchayats being largely in the hands of tribals, the lingering influence of the old feudal structure ensures that the upper-caste communities hold considerable decision-making powers. For example, the current president of the WUA is from a Rajput family and also a prominent local contractor. This shows the continued influence of economically and socially dominant caste groups as well as individuals even in newly formed decision-making institutions like the WUA.

Existing norms, sanctions and folklore in society also play key roles in influencing decision-making and one of the most common but powerful ways in which they are spread and reinforced are through stories. Stories circulated by upper-caste communities in these villages dwelt on how the irresponsibility of tribals was to blame for reduced rainfall in the area. Examples of wayward behaviour cited included reckless felling of surrounding forests and "uncontrolled drinking and stealing of water" at night, which had led to deterioration of the canal system. This indicates a general perception among the upper castes that tribals are incapable and do not deserve to be part of decision-making structures. Interestingly, the study indicated that tribals themselves seem resigned to the idea of not being part of important decision-making bodies, including those for water allocation. In a discussion, several senior members of the tribal community said that debating and decision-making in the gram sabhas were matters for literate and "clever" people; by implication, not for them.

The crux of the issue is that tribal populations do not identify with panchayats in the modern sense but with *phalas* or tribal habitations, and their allegiance is to tribal jati panchayats (caste councils). This makes it difficult for them to participate in the working of present-day panchayats. Moreover, panchayats in the command area are dominated by the upper castes, particularly Rajputs, who have a history of conflict with tribals.[13] This reduces the scope and space provided by this institution of governance to tribals. The tribal jati panchayat headed by a chairperson called the *gamiti* includes people from different phalas. Earlier the gamiti in the area of study played a major role in tribal life, mediating disputes, resolving conflicts (many of which pertained to water) and making and influencing decisions. The gamiti also functioned as an important link between the tribal and non-tribal populations. When there were inter-caste disputes, people went before the jati panchayat and leaders of each caste group (the gamiti in the case of tribals) resolved the dispute.

Field interactions revealed that the previous gamiti, Laluba, was so well respected that he was often even called to resolve disputes in faraway Udaipur. Laluba played a crucial role in the

building of the Kanthariya dam. According to a close companion of his, he supported the construction of the dam, along with the Congress Party, in opposition to the Patel community that stood to lose much of its land. Laluba did so reportedly because he believed that tribals would get jobs once the dam came into being and that the water in the reservoir would enhance water levels in their wells.

The customary system of governance based on the gamiti provided respect and predictable platforms and processes for exchange and mediation among tribals and between tribals and non-tribals. It provided a legitimate, publicly accepted forum for the redress of grievances and this contributed to the effective functioning of informal institutions such as the canal monitoring committee, set up by landholders to manage water distribution from the canal system. This committee used to help the chowkidar, or guard, appointed by the irrigation department in monitoring the distribution of water from the canal. All the families benefiting from the canal used to pay five kilograms of grain to the guard. The local people said that initially nobody broke canal walls, that all communities were represented and the system worked well. Over time, there was less water in the dam due to deforestation, siltation and inadequate maintenance, which led to an increasing number of conflicts. With the effectiveness of the gamiti declining, the system of governance and conflict resolution lost force and the guard was not able to successfully function, resulting in a breakdown of the fair distribution of water.

The gamiti obviously played an important role in maintaining a balance and mediating between tribal and non-tribal groups and institutions that had different understandings of "community", competing needs and a history of deep, entrenched conflict. However, there seems to have been little connection between the system of the jati panchayat and that of panchayats in the study villages. In the last 10 years or so, much more money has been flowing to the panchayats and the role of the sarpanch has become prominent while the role of the gamiti has diminished. People now perceive the tribal institution as being unable to access the money or programmes that come to panchayats. While the gamiti's role in village development and even mediation has decreased, he still has the power to dispense moral sanction. Interactions in the field revealed that the gamiti has to approve candidates for the panchayat elections because only then will the tribal community vote for them. In many other respects, the jati panchayat and gamiti system has been so weakened that it cannot address conflicts and compensate for failures of governance as it did in the past. It is this gap that non-governmental organisations (NGOs) are now trying to fill.

Tribals had a collective agency, bargaining power and voice in decision-making, which has waned with the emergence of "modern" institutions of resource management such as WUAs, village forest protection management committees (VFPMCs), self-help groups (SHGs), and so on, that reflect the "democratic deficit" in the local and larger context. The new shift to community management reveals an expanded role for NGOs and an increase in their influence. The field study revealed that NGOs play several different kinds of roles. They are engaged in filling critical capacity gaps; for instance, training local farmers on cultivation and irrigation techniques, which help create awareness among them on the efficient use of water resources. NGOs also play a role in building and strengthening local institutions such as village development committees (VDCs) and VFPMCs. The experience of local NGOs such as the Foundation for Ecological Security (FES) reveals the importance of building strong community institutions based on the principles of treating resources as commons, universal participation, representation for the weaker sections and linkages with gram panchayats. For instance, by-laws for VFPMCs are framed and ratified in gram sabhas so that villagers are aware of them and have the opportunity to participate in their design. In addition, the focus is on promoting and strengthening conventional mechanisms of community-based protection that help build bridges between traditional and modern institutions of governance.

A local NGO, Jan Chetana, which receives funding from the Watershed Organisation Trust (WOTR), has been charged with the task of constituting local institutions for watershed management by the irrigation department. This gives it a substantial role in deciding the structure and form of such community institutions but there are no clear mechanisms by which community members can hold it answerable, which raises the serious question of ensuring the accountability of NGOs. Further, Jan Chetana is concentrating on the village as the unit for building community-based institutions but without forming any linkage with democratic institutions such as panchayats. This could result in a governance mismatch between the biophysical unit of the watershed and the political jurisdiction of the panchayat. Moreover, this is in an already fraught situation where tribals living in a village do not see it as the community to which they belong.

While NGOs strive to fill the governance deficit brought on by the withdrawal of the state and smoothen the transition to new governance structures, their efforts are typically project-based, with short-term horizons. This paper throws into relief the larger question of the role or agency of civil society in the joint governance network of state, civil society and the market. Are NGOs that get enhanced space in governance and funds for action because of the policy shift the legitimate representatives of civil society? Although the new institutional forms allow NGOs to bring funds to the local context, they are also found to mostly facilitate technical interventions ignoring the important vantage points of equity and democratisation.

Far from strengthening local institutions, there are also serious concerns that numerous government, donor and NGO projects have resulted in a fragmented approach, multiple strategies and overlapping interests. Achieving convergence in planning and implementation at the local level is made challenging when there are a multiplicity of schemes and actors, different funding streams, different plan requirements for different schemes, and varied project expectations and timelines. This governance deficit has to be bridged by gram panchayats, which are the lowest tier of local self-government. However, panchayats now lack the capacity for such coordination and have to be capacitated to take it up progressively. The more serious problem in this model is the

governance deficit in local self-government institutions that tend to reflect the social structure and power relations of where they are.

The people who are losing out on access to water do not take it passively, but actively strategise to get a share. Thus water-related conflicts are on the rise. While these conflicts have a negative impact on the fabric of sections of society, they can also be read as a sign of the rising tide of democratisation, which is the only way to address inequalities in access to resources.[14]

4 Conclusions

The overarching concern of this paper has been to examine the issue of access to water in a water-scarce context. The distinction between the categories of rainfed and irrigated seem to collapse in the case of small storage structures as the one studied. Three broad dimensions of inequalities were investigated – spatial, social and administrative. Spatial and social inequalities of access were seen to reinforce each other, accentuated by the growing dependence on groundwater. Inter-village spatial inequalities depended on distance from the dam and intra-village ones on distance of landholdings from the main canal. Lands in advantageous positions are owned by the upper castes and communities. The access to groundwater resources also shows the same tendencies as those observed in the case of surface water.

A study of the processes and institutions of water governance also told a story of inequalities in access to institutions and structures responsible for the management of water resources despite the stated intention of formal policies such as the RWP and PESA to give local (marginalised) communities an enhanced role in water use and management. The paper traces the role and importance of traditional informal institutions such as jati panchayats and gamitis in negotiating disputes and resolving conflicts, along with the agency and leadership quality shown by members of these institutions. Informal institutions enabled a greater role for tribals in decision-making and redressing grievances, including those related to water access. It was in this social setting that the Kanthariya dam was built. Over time, anthropogenic factors like deforestation, siltation and lack of maintenance reduced water availability in the dam. Simultaneously, traditional governance structures declined in power and legitimacy, in part a consequence of being bypassed by more recent panchayati raj institutions, followed by local community-managed institutions like WUAs. Since newly created institutions like WUAs are overlaid on the existing social structure, they reflect existing problems in local resource access and power asymmetries, as our study clearly revealed. WUAs are not found to represent all sections of the population, particularly marginalised groups. The functioning of WUAs and the constraints they operate in thus raise serious questions about their ability to fulfil the ambitious responsibilities entrusted to them, especially given the lack of commitment of the state government to genuinely decentralise water governance. The issue of non-inclusion in irrigation institutions commonly discussed in PIM debates is thus reflected in small structures of water storage as well. The shift in governance is "managerial" to bring in operational efficiency and not oriented towards "democratisation" to create beneficiaries and rights-bearing citizens.

Finally, the issue of groundwater governance and regulation is raised as an issue of critical concern, especially because it is fast becoming the main source of water. While regulation of groundwater is a must, equally important is the need to consider the use and governance of both groundwater and surface water conjunctively. Local nested institutions, both formal and informal, seem best placed to fulfil this function. In a situation where the state is withdrawing and there is an attempt to decentralise water distribution and management, democratically elected panchayats seem to be better placed to regulate water resources. Yet panchayats are neither represented nor are they expected to play a role or coordinate with newly formed bodies, including WUAs. The democratic deficit in the formation and functioning of panchayati raj institutions also raises questions about the equity of rural water access, which obviously is linked to the democratisation needed in the larger political economy.

Our attempt in this study was to understand the paradigm shift in water policy in the last few decades that envisaged two types of shifts – first, to small storage structures and watershed management, and second, to more decentralised and private management of water. It is clear that both these shifts imply enhanced availability of water at the local level and increased local influence in decision-making. However, such advantages do not ensure social equity. Rather, they are found to deepen existing inequalities.

NOTES

1 For a critical appraisal of the Rajasthan experience, see Shah and Singh 2007, and for a review of the Gujarat experience, see Ahmed 1998.

2 With the Parthasarathy Committee Report (GOI 2006) suggesting greater fund allocation for watershed development and the 11th Five-Year Plan giving greater priority and allocation, watershed development is seen as an important development intervention.

3 Groundwater in the state was exploited at the rate of 125% in 2004 compared to 35% in 1984.

4 The main stream in this watershed is the Harnia Nala (stream), a tributary of the Mansi River, which, in turn, is a tributary of the Wakal (Sabarmati) River.

5 The exact location of dam is 73° - 28' - 4" East and 24° - 18' - 15" North. The dam is an earthen structure with a maximum capacity of 80 million cubic feet. The cost of construction of the dam and canal system was Rs 1.5 million when it was completed in 1980. Water was first released from the dam into the canal in 1981.

6 There has been a significant and increasing dependence on groundwater in the region. In Kanthariya, Badad, Dhimri and Sultanji ka Kherwada, there are a total of 114 open wells, 11 tube wells and 11 hand pumps to fulfil household requirements and also to irrigate the rabi crop.

7 In the three villages of Kanthariya, Dhimri and Sultanji ka Kherwada, all new wells (since 2006) have been constructed in tribal hamlets using MGNREGS funds.

8 As Patels do not receive funds for digging wells through the MGNREGS, they prefer tube wells, which are cheaper than open wells.

9 WUA members plan to address this in future by including a provision in their by-laws that punishes those who violate the decisions of the association.

10 Farmers would break the canal wall and divert water into their fields, which was easy to do because it was made of mud. But they would not rebuild the broken part, often wasting a lot of water.

11 Until 1999, the patwari from the irrigation department collected the irrigation tax from canal users in the command areas. Irrigation tax depends on the irrigated area and crops grown by local farmers. From 2000, the patwari from the revenue department began collecting the tax. The collected amount is deposited in an account in the name of the district collector.

12 Fifth Schedule areas are tribal-dominated areas and Parliament in 1996 passed a separate legislation as an annexure to the 73rd Constitution

Amendment Act giving special powers to gram sabhas in Fifth Schedule areas for strengthening governance and protecting the rights of tribal communities. They include the power to manage natural resources, the power to conserve and protect customs and traditions, the power to manage community resources, the power to resolve disputes through customary methods, and the control and management of non-timber forest products (NTFP).

13 Tribals said they have sided with the Congress Party for long because if they vote for the Bharatiya Janata Party (BJP), the Rajputs will be in power locally.

14 Developed further in Narayanan 2008.

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