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The Decline of Innovative Local Self-governance Institutions for Water Management: The Case of Pani Panchayats

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Water scarcity to a large extent is manmade and large irrigation projects are seen as a solution to the problems of water scarcity. But the solution to the problems that such scarcity generates lies in recognizing the fact that water is a common resource and can be managed sustainably, based on the principles of local and collective self-management. India has a rich history of indigenous systems of water management, some of which are still in use even after thousands of years. Pani Panchayats in Maharashtra are examples of such indigenous self-governance institutions formed for ecological and equitable use of water on the basis of collective control and decision making. But, today, these innovative institutions have collapsed due to various reasons. A study funded by the Australian Center for International Agricultural Research (ACIAR) was carried out to identify the reasons for the decline of Pani Panchayats from a farmer's perspective. The results revealed that lack of effective institutional protocol to enforce the rules to govern water use, resolving the conflicts, accompanied by lack of support from the government and other agencies are the major reasons for the decline.

Introduction

Water scarcity to a large extent is manmade and large irrigation projects are seen as a solution to the problems of water scarcity. But, in many countries including India, such irrigation systems have collapsed due to the failure of the public agencies to address issues such as efficiency, equity and conflict management. Lack of community participation has been identified as the major reason for the

failure. So, 'community participation' has become the common mantra among the world's water managers, water planners and researchers who are advocating inclusion of community participation as an essential aspect of managing natural resources (Kolavalli and Kerr 2002). People's participation can either be direct—participation in meetings, contributing labour towards resource management—or indirect—obeying institutional rules and providing moral support (Sinha and Suar 2005).

India has a long tradition of users' participation in water management. Evidence from history reveals the existence of kudimaramat in southern India where farmers involved themselves in the operation and maintenance of irrigation tanks, distribution of water and collecting water fees (Mosse 1999). In Maharashtra, which happens to be the study region, early history of farmer participation in water management can be linked to the existence of the *Phad*s—group of farmers maintaining the physical system, water allocation and distribution on small river diversions for the last four centuries (Datye and Patil 1987) and the formation of the *Bagaitdar* (irrigator) Society at Samvastar village in Ahmednagar district in 1937. The evolution of the Pani Panchayat (water council) experiments in 1972, involving communities, is another innovative practice found in the state to manage water resources (Deshpande and Reddy 1990; Thakur and Pattnaik 2002).

Pani Panchayat represents the collective action of farmers to implement community lift irrigation scheme(s) based on the integrated microwatershed model. These indigenous self-governance institutions initially achieved their objective of ecological and equitable use of water on the basis of collective control and decision making. But, over the period of two decades, these innovative institutions have collapsed due to various reasons. Therefore, a study funded by the ACIAR was carried out to examine the reason for the failure of these innovative local self-governance institutions, from a farmer's perspective. The present article highlights the findings from the study and is presented in five sections: the second section explains the emergence of the Pani Panchayat model and its salient features, the next section describes the empirical settings of the study, the fourth section discusses the results and the last section concludes the article.

OVERVIEW OF PANI PANCHAYATS

During the early 1970s, Maharashtra faced one of the nation's worst droughts causing severe shortages of water and food in several hundred villages across the state. Purandhar Taluka in Pune District was among the worst hit areas during this drought. The pathetic sight of the calamity disturbed Vilasrao Salunkhe—an engineer turned industrialist residing in Pune who began to think of ways and means to mitigate the problems. He soon realized that the problems of water

scarcity and food shortages in the area could be solved by community participation. This marks the beginning of Pani Panchayat experiments—an innovative local self-governance model to manage the scarce water resources.

Pani Panchayat represents the collective action of farmers to implement community lift irrigation scheme(s). But, the most difficult task while initiating community projects or programme is to make people come together collectively. It is observed that whenever any new method or technology is proposed, people generally hesitate to accept the idea. In rural India, which comprises of people with diverse socio-economic backgrounds, it is even more difficult. According to Deshpande and Reddy, 'culturally, enforcing a new method of work or technology does not get ready acceptance in rural India. This is both because of the risk aversion and the scepticism about the expected incremental returns' (1990: 356). The authors further state that the rural masses have a high sensitivity towards demonstration effect. So, aware of such a situation arising during initiating his experiments, Salunkhe thought of first demonstrating his model/idea to gain acceptance of the locals.

To achieve this, he established a trust by the name Gram Gourav Prathishtan (GGP) with financial aid from different industrialists and agencies. Through the Trust, he then leased in 16 acres of degraded temple land in Naigaon village, one of the worst hit villages during the 1970 droughts, to demonstrate his model. Thus, emerged the first Pani Panchayat in the year 1979 (GGP 1983).

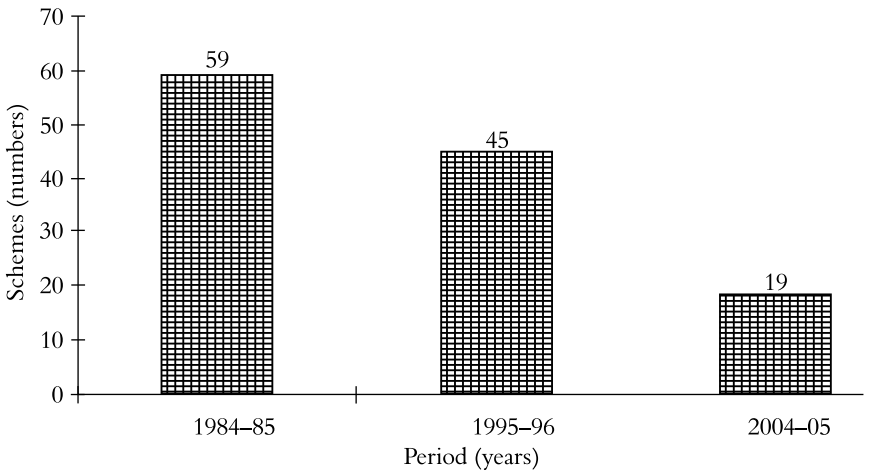
The model was innovative in the sense that it was based on certain guiding principles aimed at addressing issues such as community involvement, equity, employment generation, capacity building and reduced migration. These principles evolved from continuous discussions with the farmers who finally agreed upon the following seven principles (ibid.):

1. Only group schemes will be implemented and no individual schemes shall be entertained.
2. Water sharing will be on the basis of the number of members in the family and not in proportion with landholdings. Each member shall be entitled to half an acre of irrigation with an upper ceiling of two and a half acres for a household.
3. The water rights will not be attached to land. If the land is sold, the rights shall revert to the Trust.
4. The total cost of the scheme will be shared among the beneficiaries (20 per cent), GGP (30 per cent as interest free loan to be repaid in five years) and the government (50 per cent as subsidy). In schemes without government subsidies, GGP contributed 80 per cent as interest free loan.
5. The beneficiaries will be fully responsible to administer and operate the scheme.

6. Water intensive crops like sugarcane, paddy and banana will not be grown on the benefited land.
7. The landless can also share water, so that they gain employment in the village itself by becoming sharecroppers.

The results of the initial experiment were encouraging which ensured irrigation to crops for eight months even in the dry season. This resulted in the change of cropping pattern, increased yield and, more importantly, the farmers realized the potential of rainfed agriculture with marginal supportive irrigation (Deshpande and Reddy 1990). Following the success of the initial scheme, few more schemes were initiated in Naigaon by some motivated groups. As a result, eight schemes were operating at one time in Naigaon village, the highest number in the entire taluka. Success of these schemes caught the attention of farmers in neighbouring villages resulting in the implementation of few more schemes. At one stage (during 1984–85), 59 schemes were operating in different stages. But today, the number has been reduced to 19 and among the schemes that are presently operating, in most cases, there has been a decline in the number of members over the period of time (GGP 2005) (Figure 1).

Figure 1
The Decline of Pani Panchayat Schemes (1984–2004)



Source: GGP Records, 2005.

The year 1984–85 is considered for comparison because this period marks an elementary shift in the growth and development of Pani Panchayats. It was during this period that Salunkhe lost the Maharashtra Assembly elections while competing as an independent candidate from the Purandhar constituency, the region where he had initiated all the development work through GGP. Following

the defeat, he lost interest in the developmental work of GGP which ultimately did have a detrimental effect on the performance of Pani Panchayats (Thakur and Pattnaik 2002).

Empirical Settings

The present article is based on both secondary and primary data obtained from the GGP official records and field visits. Naigaon village in Purandhar taluka, Pune district, was selected for study because of these reasons: it is in this village that the initial experiments were implemented, the first Pani Panchayat in the state was formed in this village and the village had/has the highest number of Pani Panchayats in the taluka.

Naigaon village is located 55 kilometres south of Pune city and has a total population of 1,840 with 358 households. The Fact-Finding Committee appointed by the Maharashtra state government in 1973, identified Naigaon village as one of the drought prone areas in the state. The total cultivable land is 1,430.58 ha with only 137 ha under irrigation (private bore wells). The average rainfall in this area varies from 250 mm to 500 mm. Besides being inadequate, the rainfall is very erratic and untimely, thus making rainfed agriculture non-lucrative.

Initial discussions with the GGP staff and the farmers revealed that Pani Panchayats can be grouped into three categories based on their operational status: fully functional; partially functional; and closed. Fully functional Pani Panchayats are those which are operating with the same number of members as the initial number. Partially functional are those which are operating but the number of members has reduced for different reasons, while the closed panchayats are non-operational. Likewise, for our study, four Pani Panchayats in Naigaon village representing these categories were selected (Table 1). It was clear from the records of the GGP that there was a significant reduction in the number of members over the period of time in the selected Pani Panchayats. The reduction in number was mainly because the farmers had migrated to nearby cities for employment. So, in total, 38 farmers were interviewed which includes 16 present members and 22 former members who have abandoned the scheme but reside in the same village (Table 1).

Data collection was done using a questionnaire designed for the study through face-to-face interviews with help from professional interpreters. The questionnaire used a number of 10 point likert scales that were translated into Marathi (local language) allowing the respondents to mark the document when asked if they agreed or disagreed with the proposed statements. Tabular analysis using frequencies and percentages was employed to arrive at the results. Chi-square estimates were calculated to examine any differences in the perception of the farmers, across different age groups and farm size groups.

Table 1
Distribution of Respondents across the Schemes Selected in Naigaon Village

Name of the Scheme	*Operational Status*	*Initial no. of Members*	*No. of Members Reduced*	*Present no. of Members*	*Total Respondents*
New Tawal Scheme	Fully Functional	07	00	07	07 (00)
Khese Scheme	Partially Functional	28	07	09	21 (12)
Srinath Scheme	Closed	12	05	00	00 (07)
Mahatma Pule Scheme	Closed	13	10	00	00 (03)
Total		60	22	16	38 (22)

Source: GGP Records, 2005.
Note: Figures in parentheses indicate number of members who have left the scheme but reside in the village.

RESULTS AND DISCUSSION

The failure of community irrigation projects is often attributed to the lack of effective institutional arrangements (Marothia 2003; Ostrom 1992; Tang 1992). Effective institutional arrangements include formulation and enforcement of the self-created rules to govern the resource in question. In case of Pani Panchayats, they did not have any formal organizational structure nor any bylaws except the seven operating rules discussed earlier. Hence, the study aimed to examine the causes of decline with focus on the operating rules and certain additional propositions from the farmers' perspectives. This section of the article discusses the results under different sub-headings.

Since the study was perception based, a post-survey classification was made to group the respondents under two groups: age and farm size. This was to examine the variation in responses across different categories (Table 2).

Table 2
Distribution of Respondents across Age and Farm Size Groups

Age Group	*No. of Respondents*	*Farm Size Group*	*No. of Respondents*
Young Age (up to 30 years)	7 (18.4)	Marginal (< 1ha)	6 (15.8)
Middle Age (31–50 years)	22 (57.9)	Small (1–2 ha)	15 (39.5)
Old Age (50 + years)	9 (23.7)	Medium (2–4 ha)	15 (39.5)
		Large (> 4ha)	2 (05.2)
Total	38 (100.0)	Total	38 (100.0)

Note: Figures in parentheses indicate percentage of sample farmers.

More than 35 per cent of the respondents were small and/ or medium farmers and around 15 per cent were marginal farmers. In case of the age group, majority (> 55 per cent) of the respondents were middle aged.

General administration process

Inclusion of the irrigation management transfer concept in the National Water Policy has resulted in handing over the responsibilities of operation and maintenance of the irrigation systems to the Water Users Associations (WUAs) formed on the irrigation canals in most of the states, including Maharashtra. These WUAs are registered water users' cooperative societies with a formal organizational set up. In contrast, the Pani Panchayats, though responsible for the operation and maintenance of the irrigation systems, are not registered and do not have any formal organizational set-up. These are innovative self-governance institutions formed to govern water management based on certain mutually agreed upon rules. In every Pani Panchayat, there is a *Gat Pramukh* (group leader) and the administration and operation of the irrigation scheme is the joint responsibility of all the members with some assistance (mostly technical) from the GGP. The farmers were asked about what they thought about the general administration processes in Pani Panchayats (Table 3).

Table 3
Farmers' Perceptions about General Administration in Pani Panchayats

Category	*Process of Forming the Committee is Fair*	*Process of Choosing Leader is Fair*	*Committee is Fair in its Processes*	*All Caste members get an Equal Hearing*	*Large Farmers have the most Influence*
Young Age (up to 30 years)	3	6	4	7	2
Middle Age (31–50 years)	3	20	22	21	3
Old Age (50 + years)	0	9	8	9	1
Chi-Square	NS	NS	NS	NS	NS
Marginal (< 1ha)	0	6	6	6	1
Small (1–2 ha)	0	15	14	15	2
Medium (2–4 ha)	6	13	12	14	3
Large (> 4ha)	0	1	2	2	0
Chi-Square	14.355; $p \leq 0.05$	NS	NS	NS	NS
Total	6 (15.8)	35 (92.1)	34 (89.4)	37 (97.4)	6 (15.8)

Notes: (i) Only the number of farmers agreeing is tabulated.
(ii) NS = not significant.
(iii) Figures in parentheses indicate percentage of sample farmers.

When asked whether the process of forming the Panch Committee (management committee) was fair, around 15 per cent of the respondents agreed to the proposition. In the field situation, the Pani Panchayats had no formal procedure to form the committee like the secret ballots adopted by many WUAs in the state. Every farmer associated with the scheme was a representative and there was no separate management committee. The perception among the farmers was that there was no need to form any separate committee since everyone represented the Panch Committee.

Any community project involves people's participation and therefore the role of the leader is very important. According to Sinha and Suar, 'effective leadership can supplement collective action by inspiring people, enforcing institutional norms, resolving conflicts, networking with development partners and assuring expected benefits to people' (2005). Hence, choosing the right person as their leader becomes necessary. Therefore, the farmers were asked if they believed the process of choosing a leader to be fair. Around 92 per cent agreed that the process is fair.

However, in case of Pani Panchayats, it is worth mentioning that in the absence of formal arrangement(s) to select/elect a leader, any individual who commands the respect of fellow members; has good knowledge about the scheme; and volunteers to accept the responsibilities becomes the leader. It is usually the senior farmer in the group who becomes the *Gat Pramukh* (leader) based on his farming experience. The perception of farmers about choosing a leader becomes clearer from the statement made by one of the respondents who said, 'there is no election, we respect our *Gat Pramukh* and seek advice from him'. Around 89 per cent of farmers agreed that the Pancha Committee was fair in its processes since all the farmers represented the committee and the farmers are responsible for their own actions.

Field observations revealed that generally the Pani Panchayats comprised members from a single community and some of them were also named after a particular community (For example, the Tawal Pani Panchayat). So, when asked if all the castes received equal hearing during the meetings, around 97 per cent agreed to the proposition. Only 15 per cent of the farmers agreed to the proposition that 'large farmers had more influence in the proceedings'. This is understandable given the fact that Pani Panchayats mostly involve small and medium farmers (Table 2) and is in line with the findings of a previous study that stated that Pani Panchayats comprise farmers belonging to a single caste and possess small or medium size holdings (Thakur and Pattnaik 2002). The chi-square estimates, except for one, were not significant implying similar perceptions across different categories. However, perception regarding the process of forming a committee being fair varied across the farm size category as the chi-square was significant ($\chi^2 = 14.355$).

Rules governing water use and sharing

The success of any community irrigation system largely relies on the effective formulation and enforcement of rules to govern the use of the resources. According to Tang 'farmers in many community irrigation systems develop rules and enforce these rules by themselves without involving external authorities' (1992). This enables farmers to cooperate in the operation and maintenance of the resource system as these self-crafted rules are more relevant to local circumstances and based on the farmers' own experiences and knowledge. As mentioned earlier, the Pani Panchayats are formed based on certain mutually agreed upon rules to govern the water use and sharing among the beneficiaries. The perceptions of the farmers about some of these rules were the reasons for the initial success of the Pani Panchayats (Table 4).

Table 4
Farmer's Perceptions of the Rules Governing Water Management

Age/Farm Size Category	*Water Distribution by Family Size is Good*	*Having Crop Restriction is Good*	*Regulating Groundwater Use is Fair*	*Water Trading between Members should be Allowed*	*Electricity Pricing is Fair*
Young Age (up to 30 years)	7	3	0	1	2
Middle Age (31–50 years)	18	12	7	3	5
Old Age (50+years)	8	6	3	0	2
Chi-Square	NS	NS	NS	NS	NS
Marginal (< 1ha)	4	3	2	0	1
Small (1–2 ha)	14	8	4	2	3
Medium (2–4 ha)	13	8	4	2	5
Large (> 4ha)	2	2	0	0	0
Chi-Square	NS	NS	NS	NS	NS
Total	33 (86.8)	21 (55.2)	10 (26.3)	4 (10.5)	9 (23.7)

Notes: (i) Only the number of farmers agreeing is tabulated.
(ii) NS = not significant.
(iii) Figures in parentheses indicate percentage of sample farmers.

One of the important guiding rules of Pani Panchayats was to 'distribute the water based on family size'. When asked what farmers thought about this rule, more than 85 per cent of the farmers perceived it to be fair. Though this rule aimed to address the equity issue, its failure to define a family or household resulted in making this rule more favourable to farmers with large families (joint families). Such farmers, by claiming to be separate units/households on paper,

managed to maximize their holdings under irrigation (Thakur and Pattnaik 2002). Further, extension of this provision to the landless was vague given their economic condition, since it is practically impossible for a landless to raise 20 per cent of the overall cost of the scheme (personal contribution) which was mandatory to avail the benefit of irrigation. Moreover, there is no evidence of any landless receiving water entitlement since the formation of the first Pani Panchayat in 1979 which demonstrates the impracticability of the principle.

Another rule enforced in order to ensure efficient management of water was to have restriction over the crops grown by the farmer members. When asked if this was a good rule, around 55 per cent perceived that it to be good. To cope with the situation during the period when the schemes were implemented, the farmers agreed to this rule. However, observations during the study revealed that over a period of time, many farmers in the region had drilled their own private bore wells and practiced commercial cropping much against the rule of crop restriction and hence opted to stay out of the scheme. The farmers who agreed and abide by the crop restriction rule were those with either no private bore well or those who had experienced a decline in the output in their bore wells due to three successive years of drought in the region before the study period.

In addition to the existing operating rules, the study went on to ask the farmers about a couple of more propositions related to water management. When asked if 'regulating the use of ground water was fair', around 26 per cent agreed. Regulating ground water here implies preventing farmers from digging private bore wells and controlling ground water extraction. The percentage who agreed to this proposition was low since a lot of private bore wells have come up in the region over the past two decades. Furthermore, more than 95 per cent of the irrigated area in the region is under privately owned lift irrigation schemes (Thakur and Pattnaik 2002). When asked if 'water trading between members should be allowed', only 10 per cent agreed to the proposition. By 'water trading' we meant sale of water for cash or kind and not switching turns which is sometimes followed among farmer-members of WUAs in the study area. Given the fact that water is a very scarce resource in the study area, it is clear why only 10 per cent agreed to this proposition. When asked about electricity pricing, around 23 per cent agreed it to be fair which is surprising as the pricing policy adopted by the Maharashtra State Electricity Board (MSEB) was highlighted to be one of the major causes for the decline.

The chi-square estimates were not significant implying that farmers had similar perceptions about the propositions made across different categories.

Conflicts and their management

Transparency (fair and reliable record keeping) in the administrative process is necessary for a self-governed institution to be effective and sustainable in the

long run. Failing to do so can raise conflicts among members and also disputes between members and the leader. However, the Pani Panchayats selected for study had no documentation of these meetings either at the scheme level or at the GGP field office. The study therefore tried to understand farmers' perceptions about conflicts and their management within the Pani Panchayats (Table 5).

Table 5
Farmer's Perceptions on Conflict and Management

Age/Farm Size Category	*Conflicts between Members are Common*	*The Upstream Members Take too much Water*	*The Conflict Resolution Mechanisms are Clear*
Young Age (up to 30 years)	2	4	4
Middle Age (31–50 years)	8	6	9
Old Age (50 + years)	1	2	5
Chi-Square	NS	NS	NS
Marginal (< 1ha)	1	2	1
Small (1–2 ha)	3	3	10
Medium (2–4 ha)	7	5	7
Large (> 4ha)	0	2	0
Chi-Square	NS	NS	NS
Total	11 (28.9)	12 (31.6)	18 (47.4)

Notes: (i) Only the number of farmers agreeing is tabulated.
(ii) NS = not significant.
(iii) Figures in parentheses indicate percentage of sample farmers.

According to Matiru (2000), conflicts in natural resource management arise due to disagreement over access to and control and use of natural resources—water, in this particular case. From the perception of the farmers it appears that conflicts among members are not serious issues in case of Pani Panchayats as only 28 per cent of the farmers agreed that 'conflicts between members were common'. However, in contrast to these findings, the GGP office records indicated closure of seven schemes mainly due to internal disputes (GGP 2005). So, it is clear that conflicts or internal disputes among members have a serious impact on the decline of the Pani Panchayats.

Knowing that conflicts over water mainly arise over water sharing, the farmers were asked about their perceptions regarding 'upstream members taking more water' to cross check if there were conflicts among the farmers. About 31 per cent agreed to this proposition indicating that there were conflicts among the members within the Pani Panchayats.

The study further went on to ask the farmers if there were any explicit mechanisms to handle the conflicts. Around 47 per cent revealed that the conflict resolution

mechanisms were clear. However, field observations revealed that like any other informal water institution in India, the Pani Panchayats too had no formal arrangements to deal with the conflicts. In the event of a conflict, it is resolved internally with intervention of the *Gat Pramukh*, the *Patkari* (canal operator) and the representative from GGP. However, no documentation regarding the conflicts and the way it was handled could be traced in the Pani Panchayats studied. The chi-square estimates were not significant implying that farmer perceptions about the propositions across different categories were similar.

Absence of explicit conflict resolution mechanisms to deal with internal disputes had a serious bearing on the decline of Pani Panchayats. Had there been clear mechanisms to resolve conflicts it is possible that the closure of schemes could have been prevented. Understanding the situation, the GGP which intends to refurbish the existing, fully functional Pani Panchayats, has initiated a study to identify the reasons for internal disputes which seems to have come up a bit late.

Trust of the leader and neighbouring farmers

Generally, in community driven projects, trust is an important element for success. Trust in the leader, trust in neighbours and fellow members and trust in associated agencies all play an important role in the success of community projects. The farmers' perceptions about propositions related to trust are presented in Table 6.

Table 6
Trust in Leader and Neighbours Regarding Water Distribution

Age/Farm Size Category	*I Trust the Leadership of the Pani Panchayat*	*I Believe my Neighbour Regarding Judicious Water Use*	*We all Talk to each other about Water Use and Management*
Young Age (up to 30 years)	7	3	4
Middle Age (31–50 years)	20	13	21
Old Age (50 + years)	9	5	8
Chi-Square	NS	NS	NS
Marginal (< 1ha)	5	5	4
Small (1–2 ha)	15	6	14
Medium (2–4 ha)	14	8	13
Large (> 4ha)	2	2	2
Chi-Square	NS	NS	NS
Total	36 (94.7)	21 (55.2)	33 (86.8)

Notes: (i) Only the number of farmers agreeing is tabulated.
(ii) NS = not significant.
(iii) Figures in parentheses indicate percentage of sample farmers.

In case of Pani Panchayats, the *Gat Pramukh* normally commanded tremendous respect of the fellow members in the group. So, when asked if they had trust in their leader, around 94 per cent agreed that they trusted the leader. Tang (1992) and some other experts (Lowdermilk, Clyma and Carly 1975 and Merrey and Wolf 1986 cited in Tang 1992) argue that, division of irrigators by cultural and/or other social differences affects their capacity to communicate with one another. In the case of Pani Panchayats, it was observed that all the members had a similar socio-economic background (small or medium landholding and belonging to the same caste) implying that the trust and communication among members is good. This view is further supported by the findings wherein majority (55 per cent) believed their neighbours with respect to water use and more than 85 per cent agreed that they discussed issues related to water use and management with each other, thus implying better communication and trust. The chi-square estimates were not significant implying that farmers had similar perceptions about the propositions made across different categories.

Government policies and support

Apart from factors such as lack of institutional arrangements and loopholes in the guiding rules, another important reason that has contributed to the decline of Pani Panchayats are the policies and lack of support from the government.

When the policies were discussed, it was highlighted that the policy of the MSEB to charge for its services even when they were not being used had a detrimental impact on the functioning of the Pani Panchayats. When asked about the fairness of the MSEB policy for electricity billing, very few respondents agreed it to be fair (Table 4).

In lift irrigation schemes, no access to electric power makes water delivery impossible which creates a water scarcity situation. The impact of such a situation can lead to closure of the schemes as seen in the present case where 13 schemes have been closed due to this problem (GGP 2005). The problem with electricity pricing creates a vicious circle putting the farmers' lives in jeopardy.

The study region is prone to droughts and often faces the problem of water scarcity. Especially during dry seasons, the farmers have limited or no access to water resulting in low or no production. Hence, they have no source of income ultimately turning them as defaulters unable to pay the electricity bills which, due to stringent MSEB polices, are regular irrespective of whether there is drought or the schemes are in operation. The farmers, thus, are left with huge debts to be cleared and the only alternative for them to avoid further bills is to have the supplies disconnected. This finally ends up in closure of the schemes leading to water scarcity induced distress migration (Shah 2001).

In addition, lack of government support has hindered the process of expansion of the initial efforts by GGP and limiting the scope of this model to a particular region. It is evident that spread of this innovative model in the state has been

highly concentrated in Purandhar taluka and failure to create replicates even in adjacent districts (barring a couple of schemes in other districts) has turned this model to be 'location specific'. Unlike irrigation projects which receive state or federal government back up in spite of being ineffective and uneconomic (Thakur and Pattnaik 2002), these self-governance institutions have always lacked support from government agencies.

In case of self-governance institutions or community projects things often work with motivation from an inspiring force or 'local champion(s)'. In this case Vilasrao Salunkhe was the sole inspiring force behind the implementation of these schemes. With his sad demise in 2002, the GGP gradually withdrew from promoting Pani Panchayats, which has a deep impact on the failure of these schemes.

CONCLUSIONS

Although the Pani Panchayats provided an innovative model to set pace for group action towards resource sharing (Deshpande and Reddy 1990) and showed the direction for the ecological and equitable use of water (Shiva 1991), the fact that they are declining cannot be ignored. As the findings and feild observations indicate, the underlying principles of water sharing and use were not being implemented in total due to the loopholes. In actual field situations, the most important principle for water allocation—half acre per capita with a maximum ceiling of two-and a-half per household—has benefited the farmers with large families more than those with smaller families. Also, extending the provision of providing the landless with water rights on the same basis makes this principle impossible in practice and can lead to exploitation of the landless. Again, the farmers having got their own private sources of irrigation (bore well) are engaged in commercial cropping against the principles of crop restriction and have quit the Pani Panchayat. Apart from the loopholes in rules, the absence of explicit mechanisms to resolve internal disputes in some cases had caused the schemes to close. Other important factors causing the decline of Pani Panchayats are lack of government support, stringent policy of MSEB and water scarcity induced distress migration of the farmers.

To conclude, Pani Panchayats, although managed to provide substantial gains to the farmers in the area where they were implemented (Phadke 2004; Rai 2005), have failed to achieve the desired results in the long run. The study revealed that loopholes in the operating rules or water allocating principles; internal disputes; erratic electricity supplies; farmers having their own private bore wells for irrigation; limited scope of these schemes; and gradual withdrawal of the GGP have a clear bearing on the decline of the Pani Panchayats. Further, given the current situation where privately owned lift irrigation schemes account for

more than 95 per cent of the irrigated area in the region (Thakur and Pattnaik 2002); the Pani Panchayat model is likely to face the debacle.

Establishing institutional preconditions is crucial to carrying out water management functions (Sakthivadivel et al. 2004) but in case of Pani Panchayats, lack of effective institutional protocol to enforce the self-created rules accompanied by insufficient support from the government prevented growth on a sustainable basis. However, the fact that these experiments have demonstrated that water can be treated as a 'common resource' and community management of such a scarce common resource will ensure justice and sustainability, cannot be ignored. The contribution made by this innovative self-governance institution towards rural development through community participation is indeed commendable.

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References

Datye, K.R. and R.K. Patil. 1987. *Farmer Managed Irrigation Systems: Indian Experiences*. Mumbai: Centre for Applied Systems Analysis in Development.

Deshpande, R.S. and R.V. Reddy. 1990. 'Social Dynamics and Farmers' Society: A Case Study of Pani Panchayat', *Indian Journal of Agricultural Economics*, 45 (3): 355–61.

Gram Gourav Prathishtan (GGP). 1983. *Origin of Gram Gourav Prathishtan and Pani Panchayat*. Khalad, Pune: GGP.

———. 2005. *Pani Panchayat* Office Records. Hadpsar, Pune. Viewed on 31 January 2005.

IWMI. 2003. *Pro-Poor Irrigation Management Transfer: The Importance of Small Farmer Participation in Irrigation Management Transfer in India*, Water Policy Briefing, Vallabh Vidyanagar, Gujarat: IWMI.

Kolavalli, S.L. and J. Kerr. 2002. 'Mainstreaming Participatory Watershed Development', Special Article, *Economic and Political Weekly*, XXXVII (3): 225–42.

Marothia, D.K. 2003. 'Enhancing Sustainable Management of Water Resources in Agricultural Sector: The Role of Institutions', *Indian Journal of Agricultural Economics*, 58 (3): 406–27.

Matiru, V. 2000. *Conflict and Natural Resource Management*. Rome: FAO.

Mosse, D. 1999. 'Colonial and Contemporary Ideologies of Community Management: The Case of Tank Irrigation Development in South India', *Modern Asian Studies,* 33 (2): 303–38.

Ostrom, E. 1992. *Crafting Institutions for Self-governing Irrigation Systems*. San Francisco: ICS Press.

———. 2000. 'Reformulating the Commons', *Swiss Political Science Review*, 6 (1): 29–52.

Phadke, R. 22 April 2005. *The Dreams of Water Warrior*. http://www.india-seminar/2002/516/516%20roopali%20phadke.htm

Rai, U. 22 April 2005. *Pani Panchayats Create Reverse Migration*. http://www.goodnewsindia.com/Pages/content/inspirational/paniPanchayat.htm

Sakthivadivel, R., Gomathinayagam and T. Shah. 2004. 'Rejuvenating Irrigation Tanks Through Local Institutions', *Economic and Political Weekly*, XXXIX (31): 3521–26.

Shah, A. 2001. 'Water Scarcity Induced Migration: Can Watershed Projects Help?', *Economic and Political Weekly*, XXXVI (35): 3405–10.

Sinha, H. and D. Suar. 2005. 'Leadership and People's Participation in Community Forestry', *International Journal of Rural Management*, 1 (1): 125–43.

Tang, S.Y. 1992. *Institutions and Collective Action: Self-Governance in Irrigatio*n. San Francisco: ICS Press.

Thakur, M.K. and B.K. Pattnaik. 2002. 'How Effective are Pani Panchayats? A Field View from Maharashtra', *Sociological Bulletin*, 51 (2): 243–68.

Trawick, B.P. 2001. 'Successfully Governing the Commons: Principles of Social Organization in Andean Irrigation System', *Human Ecology*, 29 (1): 1–25.

Shiva, V. 1991. '*Ecology and Politics of Survival: Conflicts Over Natural Resources in India*. New Delhi/Newbury Park/London: United Nations University Press and Sage Publications.