

Where tanks have served as a form of irrigation for many centuries, traditional systems evolved to regulate water use and management. Mudiyanur tank in Kolar district provides an example of such a traditional system that is by no means unique, but which is gradually dying out.

This Working Paper is the output of a study on the Mudiyanur Tank that specifically aimed to understand:

- the inherent strengths of these social institutions
- the effectiveness of practices adopted in water management for crop production and allocation of benefits in terms of social equity
- the feasibility of the continued functioning of the institutions
- possibilities for adopting the principles, practices and other favourable institutional aspects of the traditional institutional structure.

Whilst it may not be appropriate in the 21st century to promote and replicate traditional forms of management, much can be learned from them – particularly in matters such as conflict management – to build more effective and sustainable systems of community-based tank management for today. This working paper should be of interest to policy makers and practitioners working in community-based natural resource management, particularly the management of water.

## TRADITION MEETING MODERNITY:

A case study on the management of Mudiyanur Tank, Kolar District

**KARNATAKA**



SWISS AGENCY FOR DEVELOPMENT  
AND COOPERATION SDC

inter  
cooperation

Natural Resource Management  
Rural Economy  
Local Governance and Civil Society

inter  
cooperation

Natural Resource Management  
Rural Economy  
Local Governance and Civil Society

---

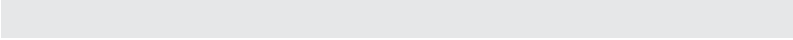
# **TRADITION MEETING MODERNITY**

A CASE STUDY ON THE MANAGEMENT OF  
MUDIYANUR TANK, KOLAR DISTRICT

Intercooperation in India

**WORKING PAPER 2**

---



# **TRADITION MEETING MODERNITY:**

## **A CASE STUDY ON THE MANAGEMENT OF MUDIYANUR TANK, KOLAR DISTRICT**

The use and sharing of information contained in this document is encouraged, with due acknowledgement of the source.

Working Papers are produced to encourage an exchange of views and information. The views expressed are not necessarily those of SDC or of Intercooperation.

### **Contributors**

The main authors of this text are STS Reddy, NV Hiremath, Raja Mohammad and Ashok Alur. Overall coordination by Jane Carter

### **Design, Layout and Printing**

Books *for* Change

### **Photos**

Photographs: S Jayraj and Jane Carter

### **Publisher**

Intercooperation; Delegation - India, Hyderabad

### **Citation**

Intercooperation in India (2005) Tradition meeting modernity: A case study on the management of Mudiyanur tank, Kolar District, Karnataka Working Paper 2 Intercooperation Delegation, Hyderabad, India. 33 pp.

### **Copies available from:**

Delegation - Intercooperation India,  
8-2-351/r/8, Road No. 3, Banjara Hills,  
Hyderabad 500 034, India  
Tel: +91 40 2335 5891  
email: [info@intercooperation.org.in](mailto:info@intercooperation.org.in)

## Contents

<b>Acknowledgements</b>	<b>iv</b>
<b>Acronyms</b>	<b>v</b>
<b>Executive Summary</b>	<b>vi</b>
<b>1. Introduction</b>	<b>1</b>
Background	1
Why water management through a tank system?	1
<b>2. Contextual situation of Mudiyanur Tank</b>	<b>4</b>
Location	4
History	5
Catchment area	7
Climate and rainfall	9
Command Area	10
<b>3. Structure and functions of the social institution for water management</b>	<b>12</b>
Genesis of the council of elders	12
Structure of the council of elders	12
Decisions by the council of elders	16
Role of caste and class in the council of elders	21
Decision making processes and conflict resolution	23
Weakness in the system	24
<b>4. Learning from the traditional tank management system</b>	<b>29</b>
The tank as a social system	29
Conflict resolution	30
<b>References</b>	<b>33</b>

## Acknowledgements

This working paper is the product of more than a single study commissioned by the SDC-IC NGO Programme Karnataka-Tamil Nadu. It has been enriched and elaborated by other persons who have visited the tank of Mudiyanur and met with the people of the area. Dr Ashok Alur, then Deputy Programme Coordinator and now working for ICRISAT, was a key person in identifying the need for the study and guiding its content. The three principle authors, Dr STS Reddy, Dr NV Hiremath and Dr Raja Mohammad, have shown much patience with all the modifications that have been made to their original text. Mr Bhubeshkumar is also thanked for his editorial inputs on the draft document.

Beyond the authors themselves, I would particularly like to thank the users of Mudiyanur tank who gave their time and thoughts in various meetings held over the past few years. A key person was Dr Dakshinamurthy, local historian, who provided many insights. Others who should be mentioned particularly are Mr Venkataramanashetty, Mr Ramshastri, Ms Jayamma, Mr Venkataramappa and Mr Ramappa.

Throughout, the NGO Prakruthi has provided much support in arranging village meetings and facilitating links with key persons. P Narayanappa, Chief Functionary, and Mr Raghavappa are particularly thanked in this regard.

At PSMU, I am particularly grateful to Aparna Chintamani for her work in word-processing various versions of the document, and to Dr Jane Carter for her support in commenting on and editing the final document, and for providing photographs.

**Prem Kumar**  
Programme Coordinator  
SDC-IC NGO Programme Karnataka-Tamil Nadu



## Acronyms


IC	Intercooperation
NGO	Non-Government Organisation
PSMU	Programme Support and Management Unit (based in Bangalore)
SDC	Swiss Agency for Development and Cooperation

## Executive Summary

This working paper arose out of the recognition of an interesting traditional form of tank management practised by seven villages in Mulbagal taluk, Kolar district, Karnataka. In order to learn more about the social institutions involved in managing the tank concerned – named Mudiyanur tank – the SDC-IC NGO Programme Karnataka-Tamil Nadu commissioned a study. Subsequent to this initial study, a number of further village meetings and discussions with key informants provided material that enriched this final document.

In areas such as Kolar district, where tanks have served as a form of irrigation for many centuries, traditional systems evolved to regulate water use and management. Mudiyanur tank provides an example of such a traditional system that is by no means unique, but which is gradually dying out. It has its base in the worship of the local goddess '*Chowdeswari*', whose temple is located at the foot of the tank bund. Management of the tank with regard to issues such as the release of water, cropping pattern employed, and adjudication over any conflicts, is determined by a 'council of elders', who are representative of all castes in the villages concerned. Village functionaries, normally drawn from the scheduled castes, are nominated on a rotational basis to carry out the instructions of the council of elders – of which they are also a part. Notable positions amongst these functionaries are that of *Neerganti* (the man responsible for releasing water and delivering messages), *Thooti* (village guard), and *Talawara* (originally the personal attendant to the village head).

As a system rooted in caste-based roles, with only men occupying decision-making positions, the traditional management of Mudiyanur tank is not



entirely in keeping with modern values of democracy and equity. However, it provides an interesting example of a system of management that ensured fair distribution of water to the land of all households, promoted respect for different roles in society, and sought to resolve conflict between different parties in as harmonious a manner as possible. The council of elders recognise that changing village dynamics provide challenges to their traditional leadership. According to them, such changes include an increasing number of absentee landlords, the emergence of new leaders, external political influences, and government institutions themselves.

Whilst it may not be appropriate in the 21st century to promote and replicate traditional forms of management, much can be learned from them – particularly in matters such as conflict management – to build more effective and sustainable systems of community-based tank management for today.

## ***Background***

This working paper arose out of the recognition of an interesting traditional form of tank management practised by seven villages in Mulbagal taluk, Kolar district, Karnataka, all of which use the tank of Mudiyanur for irrigation purposes. Mudiynaur lies within the project area of the NGO Prakruthi, a partner of the SDC-IC NGO Programme Karnataka–Tamil Nadu. It is important to investigate and document the traditional form of tank management in an area where tanks continue to be the major source of irrigation, in order to better understand the social institutions involved. The study reported was originally conducted in early 2003, but has since been updated and enhanced by further field visits and discussions with key informants.

Mudiyanur is part of a chain of tanks<sup>1</sup> in the project area of Prakruthi. This chain of tanks lies in the watershed of Uttanur, and extends from Sathanur to Mudiyanur tank.

## ***Why water management through a tank system?***

Tanks occupy a predominant place in the history of irrigation of South India. About 44,000 tanks serve 27,000 villages of Karnataka. The area irrigated by

---

1. A chain of tanks refers to a situation where in the tanks are in succeeding sizes and the flow of surplus water is from the smallest to the biggest tank.

tanks in Karnataka during the pre-independence era was 6,84,000 hectares. Due to various factors this has come down to 2,40,000 hectares, and is declining year after year (Madangopal, 2002).

Tanks are the structures built against a stream or valley for harvesting rainwater or the surface run off. The rocky tanks of South India are potentially best suited to recharge ground water and to extend safe drinking water to the families in the command area (Reddy 1991). In spite of this, they have lost their significance over the last few decades due to:

- Emphasis of the state governments on large-scale irrigation projects and well irrigation (including bore wells), over highly decentralised tanks (WCD, 2001) in the post-independence period.
- Lesser allocation in the budgets for operation and maintenance of tanks (Reddy and Ananthramaiah 2002).
- Introduction of superior water lifting technologies and rural electrification which has encouraged farmers to prefer private well irrigation to community based tank irrigation (Reddy, 1997).
- Take over of management of tanks of all sizes by the Minor Irrigation Department (Reddy and Ananthramaiah, 2002).
- Marginalisation of age-old social institutions constituted by the communities for tank management.
- Alienation of the community for the outputs from tanks and subsequent transfer of such rights to respective departments.

Despite all the above listed causes, there are documented and reported cases of tanks (Reddy, 1991, Sengupta, 1993), such as Mudiyanur of Mulbagal taluk, which are being effectively managed by communities as a source of irrigation. The community in this particular case has a management institution, and its practices appear effective not only to meet the irrigation needs of the villagers but also to conserve ground water levels.

This study specifically aimed to:

1. Understand the inherent strengths of these social institutions for their survival under the existing social, economic and political conditions.
2. Examine the effectiveness of practises adopted in water management for crop production and allocation of gains in terms of equity and social considerations.
3. Study the feasibility of continuing the working of the institutions under various socio-economic conditions and political conditions.
4. Understand the possibility of adopting the principles, practises and other favourable institutional aspects of traditional institutional structure, within the new institutional structure framed by various government organisations involved in natural resource management.

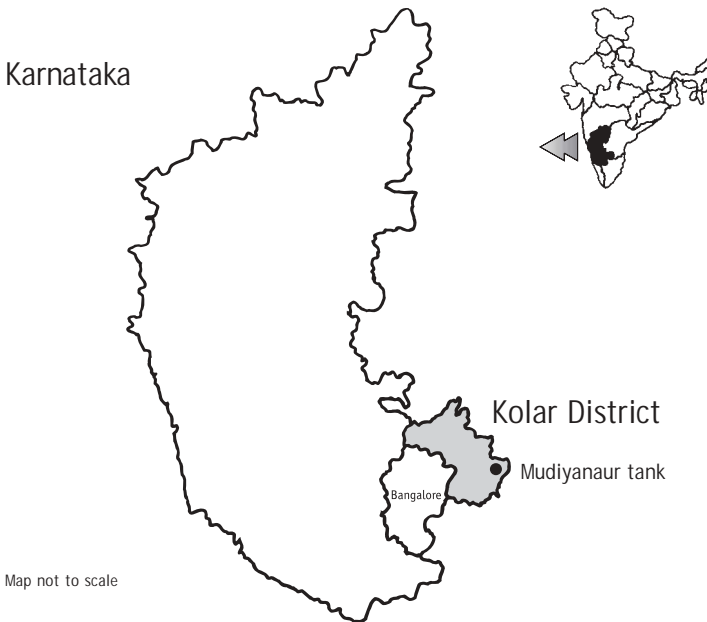


# 2

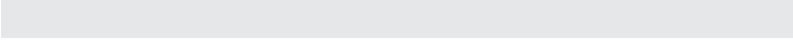
## Contextual situation of Mudiyanaur Tank

### *Location*

MAP 1 – Location of Mudiyanaur Tank



Mudiyanaur tank lies in the South-Eastern part of Karnataka in Kolar District, a semi-arid region along the eastern Dry Zone 5 of the Deccan Plateau. The



average summer temperature is 32°C and winter temperature is 20°C. The South-West monsoon causes precipitation from mid-June to mid-September and the average annual rainfall for 26 years stands at 787 mm. Peak rainfall occurs towards the end of July and continues till mid-August. In this area of rocky granite, outcrops are common features, and tanks are a traditional means of water storage, dating back over many centuries.

Mudiyanur tank is situated between Mudiyanur and Bestrahalli village on the main road connecting the taluk headquarters, Mulbagal. This town lies some 15 km away, whilst the district headquarters, Kolar is situated some 45 km away. The National Highway (NH4) passes at about 20 km from the village. Mudiyanur tank is in the downstream of chain tanks located in the watershed area of Uttanur. This tank is succeeded by the Uttanur tank, which empties the entire surplus from the chain of tanks into Palar River. Consequently, Mudiyanur tank succeeds several tanks of various sizes (refer Map.2)

## ***History***

The history of Mudiyanur tank is not clearly known. As per information available it was built around 828 AD, and was the exclusive property of the *Jodidars* residing at Mudiyanur village. There were 56 families having rights to the *Jodidar* system and each family head took it in turn to be the head of the village, bearing the name *Patel*. As the tank was an exclusive property of *Jodidars*, the entire command area was also exclusively owned by them. Only the *Neergantis* were given *inam land*. The villagers in the neighbourhood villages were hired in as tenants. After the abolition of the *Jodidar* system in 1957, the *inamathi* system in 1976 and subsequent land reforms in the 1970s of the last century, the *Jodidars* started selling their holdings within the command area to the farmers within the Mudiyanur village and other villages in the neighbourhood. Even today, about 40 per cent of the land in the command area is cultivated by tenants.

### Box 1. Traditional terms and occupations

*Jodidars* are those appointed by the British during colonial times to collect revenue and also administer law and order in the village.

*Jodi* refers to the village and the land within its administrative boundaries for which land tax had to be collected by the designated person (*Jodidar*).

*Neerganti* is a person identified by the community for allocation and distribution of water in the command area of a tank, and protection of crops in the command area from thieves, cattle, etc.

*Inam* land is a piece of land given in lieu of a salary to those who are in the services of the British or the native king and located at the village level. This piece of land was inheritable.

*Inamathi* refers to the ownership of *inam* land.

*Patel* is the title of the village head – traditionally, a position rotated amongst the *Jodidars*. Officially, the post of *Patel* is now abolished.

*Thooti* is a person who guards the village and implements the orders of the council of elders pertaining to law and order. At the time of British he was also the security guard to the village.

*Talwara* refers to the individual who acts as personal attendant to the *Patel* and *Shanubog* (assistant to the *Patel*) and acts as a messenger. He was to assist the *Shanubog* in tax collection.

### Informal but recognised social institution

To achieve efficiency in water use, farmers dwelling in the command area of Mudiyanur tank respect the decisions of an informal institution. Described in the next section, it comprises a council of elders from all the seven villages, who make decisions on both the tank and water management overall. No one is sure about the genesis of this institution, but an examination of the system reveals that it must date from the time of the *Jodidars*.

## ***Catchment area***

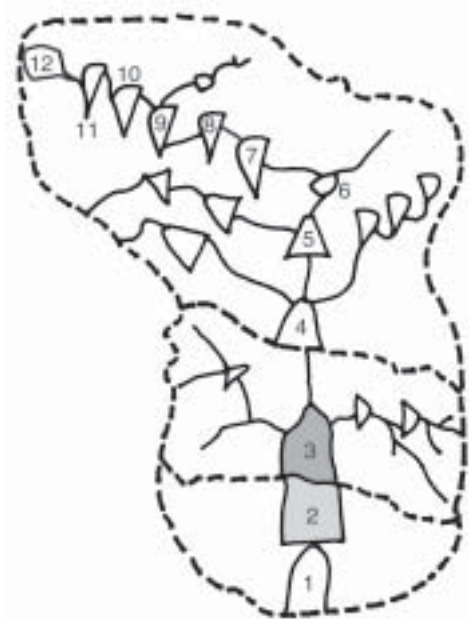
The catchment area of the Mudiyanur tank comprises about 993ha. The catchment area is the dry land tract of Mudiyanur (869ha), Bestrahalli (44ha), Chickkanahalli and J Vammasandra (150ha) villages.

Secondary data indicates that the maximum elevation difference between the highest and lowest point is 52° along longitude and it is about 34° along the latitude of the watershed. The average slope of the watershed is sometimes more than 6.5 per cent and hence the soil erosion in the watershed area along the fringes is high. The Mudiyanur catchment area indicates a slope of about 3.5 per cent.

No.	Particulars	Units	No.	Particulars	Units
1	Catchment region of the tank	923ha	9	No. of sluice	2
2	Tank area (Water spread area)	96ha	10	Location of sluice	0.09 & 0.9km
3	Command area on record	103.6	11	Sluice type	Plug and rod
4	Command area on cultivation	185ha	12	Sluice sill level	809.19
5	Bund length	990ha	13	Number of waste weir	1
6	Bund top width	12m	14	Waste weir type	Sloping apron
7	Bund height	5.8m	15	Waste weir length	30m
8	Maximum water level	811.5	16	Tank Capacity	1.11H/mcm

Mudiyanur tank is a part of Uttanur watershed. This watershed contains 12 tanks, as shown in the map below.

## MAP 2



Map not to scale

- |                          |                 |                  |
|--------------------------|-----------------|------------------|
| 1. Uthanur               | 5. Thavaerae    | 9. Muruhanakunnu |
| 2. Mudiyanur tank ayacut | 6. Mandigal     | 10. Bisnalli     |
| 3. Gujjanalli            | 7. Gondalli     | 11. Sathanur     |
| 4. Malagalamma           | 8. Konnanahalli | 12. Renugunda    |

The watershed under Mudiyanur tank occupies about 15 per cent of the Uthanur watershed. The villages in the Mudiyanur catchment region include Mudiyanur, J Vammsandra, Bestarahalle, Chickkanalli and Gujjanalli.

---

### ***Climate and rainfall***

*'There are no rains in proper times, with the change in human nature, there is a change in the rainfall' says Venkataramashetty of Bestrapalli. According to him the tank used to overflow by Kruthika rain or during the last week of May. Now even in October it never overflows. His voice is supported by others; all agree that there is a decrease in rainfall and hence the tank does not overflow at all.*

---

### **Reasons for reduced water in the tank**

A variety of factors have contributed to the reduced filling of the tank. According to the farmers, they include:

- Average annual rainfall has come down over the last four years (Somappa, Kenchanahalli village).
- Bunding and plantation activities taken up by the forest and horticulture departments in the catchment area have drastically reduced water flow into the tank (Ramashastry, Mudiyanur).
- *Gomalas* (grazing lands), temple lands and other common lands have been taken over by the government and distributed to the poor – thus virtually no water flows into the tank (Dakshinamurthy, Mudiyanur).
- Several schemes of the government have supported land development activities in these villages and farm bunding has reduced surface flow (Narayanappa, Mudiyanur).
- Apart from bunding, the construction of farm ponds has further resulted in complete harvesting of surface water, leaving none to flow into the tank (Jayamma, Kenchanahalli).
- Severe siltation in the tank is yet another important reason for reduced filling of the tank.

Whether or not the construction of a check dam by the Forest Department in the upper reaches has resulted in the reduced filling of the tank was a matter of debate amongst villagers.

---

According to one farmer, "Construction of ooddu (small bunds) by the forest department has stopped the flow into the tank." It was pointed out that the tank next to the forest is filled up with silt and has no capacity to hold water. Of the twelve tanks, three tanks in the upstream are silted and insufficient to hold the quantity required for a crop. The other farmers concur on the issue of siltation. "Yes, the pillars to the bridge at the foreshore of Mudiyanur tank were visible totally about 10 years ago, but now they can only be partially seen."

---

## **Command Area**

The command area of Mudiyanur is structured in such a way that it conserves every drop of water harvested into the tank. The structure is so well designed that its efficiency in distribution of water is achieved by a good network of canals and drainage system. Water distribution is through two sluices located on either side of the tank. The canal extending from the sluice runs all along the command area, and is named *Rajakaluve*<sup>2</sup>. From this canal, distributaries are drawn both vertically and horizontally. At the lowest point of the command area<sup>3</sup> and at the tail end, arrangements are made to collect the drained water from the fields on either side of the command area.

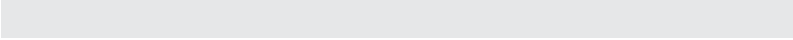
## **Divisions within the command area**

The command area is divided into seven divisions based on the linkage to the distributory. Those lands next to the bund receiving water from the right bank canal are identified as *modalagadde*. This is followed by 8 *vemaguntagadde* which are irrigated from another small tank nearby. This is followed by *Aiduberala gadde* followed by *baralagadde*; the portion at the lowest point and receiving the seepage water from the tank and the

---

2 *Rajakaluve* is the main canal drawn from the sluice. Normally, there will be two on either side of the tank called right and left.

3 This starts from almost middle part of the upper reach of the command area.



command area. Fields receiving water from the left bank canal are called *vanamu gadde* (garden land) as this portion is elevated compared to the rest of the command area. The entire surplus from all these portions flows into *ooddu* or the bund at the lowest point, irrigating a few fields. This collected water is then reused for irrigation purposes. Apart from the canal used in utilising drained water, there are three other points where small bunds called *ooddu*<sup>4</sup> are created to tap the surplus water flowing out of the tank along with the seepage from the fields. Water collected at each of these *ooddu* is reused for irrigation. Along with these the surplus water flowing from the dry lands around the command area and from small ponds in the vicinity of the command area is collected at the *ooddu* and used for irrigating the land at the tail end.

Complementing the good network of canals in the command area, the cultivation of crops is also efficiently planned. As the tank is located in a low rainfall region, a catch crop is planned to allow the collection of water to its potential capacity during the monsoon season. This catch crop is partially irrigated and that too for one and half a months in the later stages of the crop. The catch crop is followed by irrigated paddy only during summer months if the tank is holding water to its total potential.

### **Change to meet shortages**

Experience over the last few years has compelled the 'council of elders' to search for alternatives to meet the water shortages faced during summer months even when tank is in at its full capacity. Of the various options examined, the informal institution has preferred to divide the command area into three portions and to release water for irrigation to each of the divisions on a rotational basis. This new approach is being put into operation from this summer. It is reported that all farmers in the command area have accepted this change.

---

<sup>4</sup> *Oodu is small earthen bund laid to store water.*

### 3

## Structure and functions of the social institution for water management

### *Genesis of the council of elders*

When the utilisation of the tank is examined, there seems to be a specific organisation for the management of Mudiyanur tank. In reality there is no separate institutional structure for the tank as such. The institutional structure identified as a council of elders is constituted for the general administration of the seven villages of Mudiyanur, Bestrapalli, Chickkanahalli, J Vangasandra, Krishnagiri, Hosur and Kencharanahalli. These villages were traditionally *Jodi* to the *Jodidars* in Mudiyanur village. The major stated task of the council of elders is to organise festival for the goddess '*Chowdeswari*' whose temple is located at the foot of the tank bund. Villagers of these seven villages perform day-to-day *poojas* (worship) to the goddess and also conduct an annual festival.

### *Structure of the council of elders*

The structure of the council of elders is two-tiered. Representatives of each caste group residing in each village constitute the first tier, and the village functionaries constitute the second tier. These village functionaries include *Thooti*, *Neerganti* and *Talwara*. These village functionaries normally belong to the scheduled castes. They are provided with *inam* (free) land in the command area and elsewhere as an honorarium for their services (see box 2). They also normally act as representatives of their caste at the council of elders. Such representation is not necessarily based on the economic or political position of an individual, but on the capability of

the person to command respect from his fellow caste members – or his ability in dispersing work to his fellow caste members in a manner beneficial to the caste and to the general welfare of the village.

### **Box 2. Services and payment of the village functionaries**

At the end of the harvest, the *Thooti* gets 6 bundles of paddy, *Neerganti* gets 12 and *Talwara* 3 from one unit or half acre (*dala*) of land. During a good harvest, *Neerganti* may end up getting 25–35 bags (each bag of 60kg) of rice and other two get half and quarter of that. In addition, the four families of *Thooti*, *Neerganti* and *Talwara* have been given 16 acres of dry land and 5 acres of irrigated land. The services expected of the respective functionaries are as follows.

#### **Neerganti**

- Repairs the leakages in the sluice, tank and the bund
- Acts as the information man on water management and takes care of water distribution
- Plays an important role in conflict resolution.

#### **Thooti**

- Mainly responsible for organising village level festivals, making announcements in the villages, participating in auspicious (marriages) and inauspicious (death) occasions.
- Also responsible for making all announcements related to the tank.

#### **Talawara**

- Attends the council of elders and has watchdog functions.

The council is first constituted at the village level by inviting representatives from each caste residing in the village. Irrespective of its size, one member represents each caste. Each village selects one person to represent the village at the council of elders constituted for performing various activities associated with the temple. Normally this representative will be from the largest caste group and also from that which commands the largest area under cultivation.

If there is a division within the caste at the village level due to political or economic rivalry, representation is provided to each factional group – who are asked to re-examine their representation at the council. A representative of a caste can continue as long as he enjoys or commands the support of his fellow caste members in terms of adherence to the decisions arrived at by the council of elders. If the ability is questionable, the one who commands more support may replace him.

In the case of village functionaries, the head of the office changes every year on the basis of an understanding arrived at by the families of the scheduled caste. In Mudiyanur there are four households of scheduled caste and each family takes up a different role each year. Only these four families have the right to be the *Neerganti* for the Mudiyanur tank, and to claim *inam* land (although this is independent of performance of duty as a *Neerganti*). No other family from any other village has the right to be a *Neerganti*.

Traditionally, the council of elders is headed by one of the *Jodidars* from Mudiyanur. Normally, it was the *Patel* who heads the council of elders constituted for the temple. Although the post of *Patel* was abolished in 1976, the son of the last Patel is recognised as the head of this council. This continuation is not challenged, although people do recognise the emergence of another capable person. Though this emerging person is not invited officially to the meetings, he is consulted on various issues pertaining to the temple and the tank.

### **Participation of women**

Women have not been elected as members of the council of elders as they are not traditionally considered to be leaders; further, it is said that a woman cannot be elected to the council due to the cycle of 'impurity'<sup>5</sup> that she undergoes.

---

<sup>5</sup> Impurity refers to the menstruation cycle of women.

### Box 3. The viewpoint of *Neerganti*

#### Venkatramappa

Venkatramappa is in his seventies; of his three children, two are sons. He is the acting *Neerganti*, a position that he has already occupied some seven times. Asked about the positive and negative aspects of the job, he commented that he enjoys being the acting *Neerganti* as the role brings him respect and prestige in the village, and he is invited to many functions as a result. He would happily take on the role every year. Nevertheless, he also said, "In years gone by, whatever I said was accepted... . But these days I don't have full decision-making power – people interrupt and intervene. These days I get less respect." Although Venkatramappa has always envisaged his sons becoming *Neerganti*, now he is not so sure that it is a good thing for them.

#### Ramappa

Ramappa is younger, in his twenties. He comments that sometimes he enjoys being a *Neerganti*, and finds that people respect him, but other times he gets really fed up and does not enjoy the job. This is when there is a conflict and it is his task to call all the parties to a meeting, but they don't come. Then, he says, he has to repeatedly call the meeting perhaps 3 or 4 times. Once this even happened for temple work – he visited everyone, drumming at night, but not everyone came. On the other hand, he says, people usually do come eventually. Furthermore, he sees no alternative for himself. He was born a *Neerganti*, and no-one (in his opinion) gives up being a *Neerganti*. It is a way of life – of a secure livelihood.



---

*According to the current Neerganti, as the temple of shakti (goddess of energy) is located within the command area, no one women will be addressed with bad words and the behaviour towards women has always been good. Thus even though women are not included in the decision-making process, they have respect.*

---

As the words of the *Neerganti* indicate, the council of elders essentially upholds a traditional attitude to women, excluding them from decision-making whilst affording them respect. However, villagers questioned on the role of women acknowledged that roles are gradually changing, especially due to the growth of Self Help Groups (SHGs) in the area (mainly supported by the NGO Prakruthi). Through SHGs, women have become more confident and outspoken – although it remains the case that no woman has been invited to become a member of the council of elders.

---

*Earlier women were not involved in decision-making but nowadays they are participating.* – Dakshinamurthy

---

### ***Decisions by the council of elders***

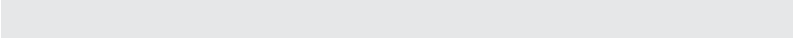
In the case of Mudiyanur tank, most decisions are on the release of water for irrigation, attending to repairs required for the infrastructure for effective delivery of water and, above all, conflict resolution. Decision making with regard to water and infrastructure management are largely guided by well-established patterns of behaviour. No one is aware of the genesis of these patterns, but they are well understood and practised by each and every one related to the tank. Any deviation from the pattern is considered as a risk factor and is normally avoided.

### **Decisions on crop and water management**

---

*According to the Thooti, the pattern of water distribution is determined by the elders (predecessors) as established in the past and no one knows the date of establishment. It is functioning very well and everyone is happy with it.*

---



Meetings and discussions with key informants indicate that the farmers mainly grow traditional varieties of paddy using customised seeds during the *Khariff* season. Direct sowing or broadcasting of seeds is carried out during mid-June as soon as the monsoon sets in. The soil, being clay loam, holds lot of moisture. The tank sluices are not opened until the end of July, at the time of weeding. This saves nearly 30% of the tank water. In former times (fifteen years or so ago), if the tank overflowed before June or if the storage reached the optimum level, farmers would transplant the seedlings. Over the years, farmers have experienced water shortages even after the tank filled up in June. Hence they have resorted to direct sowing which better suits the water scarce situation. More over, it is very difficult to cultivate other crops in this stretch during *Khariff*, since the clay loam soils can quickly become waterlogged if there is a sudden outburst of rains.

Of late, farmers have started experiencing water shortages for growing paddy in *Rabi* season (summer crop) even with the tank overflowing in the month of December. Consequently, better wisdom prevailed on the farmers and from last year the council of elders arrived at a conclusion to irrigate only part of the command area. i.e., 80 acres out of the total 240 acres. The command area was divided into three divisions of 80 acres and in the first year, the first division was irrigated during summer. In the coming year the second division will be taken up for irrigation and in the third year the last division will be taken up for cultivation.

### **Decisions on cropping pattern**

With regard to the crops to be grown, at present in both the seasons, all the farmers cultivate only paddy. The only change across the crops grown in different seasons is a change in the paddy variety. During the rainy season (monsoon) a variety called '*pedda byra voddalu*' which has proven qualities is planted on the ill prepared land (no seed bed preparation and puddling). This variety of paddy has proven abilities to withstand shortage of water or drought conditions.

During the summer, there is no restriction on the variety to be grown and individual preferences of farmers are honoured. However, the preference is for short-term varieties as they reduce the risk of shortages at the end of the season and the chances of losing a crop due to stray cattle grazing, if the duration is beyond the cropping season.

### **Decisions on the release of water**

Concerning water management, the council of elders follow the established patterns on release of water and the consequent practises to be followed in each season. Accordingly, during the rainy season no farmer, irrespective of the level of water stored in the tank, is allowed to draw water for raising a seedbed or puddling the field. Water is not released for irrigation purposes till the commencement of *Magge*<sup>6</sup> rainfall. By this time the crop sown would have reached earhead formation stage and irrigation will definitely boost the yield.

Water is released for irrigation after the consultative meeting of the council of elders in the first week and last week of December during which the council of elders with the assistance of the *Neergantis* and other farmers estimate whether water accumulated in the tank is sufficient for a crop or not. To estimate the sufficiency, there are indicators, which are proven to be practical over the years. According to these indicators, if the water level in the tank is up to the uppermost division marked on the exclusive stone pillar erected for the purpose of measuring the depth of water which is located closer to the sluice, or if the water level touches the horizontally laid stone slabs over the sluices then it is estimated as sufficient to raise a crop of paddy. If the level is far below the set pattern then no crop is raised and water will not be released for irrigation. If the level of water is just few feet lower than the marks for the full tank, then the opinion of the *Neerganti* is sought. If the *Neerganti* expresses his confidence on the water stored in

---

<sup>6</sup> *Magge* is one of the rain stars according to Hindu calendar and coincides normally with first or second week of August.

the tank to help in raising a crop, then the council decides to release water for irrigation. Based on these estimations, the dates for the release of water are decided. Normally, it is the *Neerganti* who will advise the council of elders on the exact day for release of water. This suggestion of *Neerganti* is essential, as he has to attend to the repairs and maintenance of canals before the release of water.

---

*According to the Neerganti, distribution of water in summer has to commence in the evening and has to be completed in the night. This will prevent intervention of the landowners and also evaporation. If landowners are allowed to intervene, their demand for storing water has no limit; accommodation of such demands will affect the supply of water to the fields. Based on the stage of the crop, water has to be distributed. If it is in the growing stage, little irrigation is required. On the other hand, at the stage of ear head formation there has to be good irrigation. Once ear head formation has completed, the field can once again be less irrigated.*

---

### **Decisions on infrastructure management**

Basic infrastructure for the delivery of water in the command area is regarded as the property to be managed by the council of elders and the rest, including sluices, bunds and other structures in the catchments are not regarded as the properties to be managed by the council. With such options the council of elders seek the opinion of *Neerganti* in the maintenance and management of these properties. Based on the suggestions of *Neergantis*, the council advises the farmers to attend to the repairs of the tank infrastructures.

Structures that require repairs are the sluices and the delivery canals. As the sluices are built of stone pillars, no repairs are required. But to tap every drop of water in the tank, silt accumulated around the sluice has to be removed. Normally this will be accomplished by the concerned *Neerganti*. If the canal has to be drawn from the point where water is accumulated within the bed, then the farmers receiving water from considered sluice will be summoned to make a canal.

Farmers attend to the major canals and distributaries on a regular basis. Works in these canals are attended to only if the *Neerganti* summons all the farmers served by the canal. Farmers are summoned for two kinds of activities. Firstly, to remove weed and desilt the canals regularly in each season prior to the release of water, secondly, to attend to major repairs like breach in the canal or strengthening the canal bund with additional reinforcement, etc. To attend to regular weeding and desilting during each season, through informal consultations, the *Neerganti* collects the opinion of several farmers, especially those who hold land on a large scale, and fixes the day for weeding and desilting. Normally, the day fixed will be a Monday<sup>7</sup> and the work is scheduled to start during the morning hours.<sup>8</sup> All canals are weeded out and desilted in each season from top to bottom with the collective participation of all the farmers served by that canal. If the work remains incomplete, farmers could be summoned on the next day or on the following Monday.

The distributaries have to be desilted by the individual farmers served by that distributary. Normally, the length of the distributary passing next to one's field is desilted. A person failing to participate in the desilting and weeding activities without prior permission is liable for punishment. Punishments are decided by the council of elders based on the complaint filed by the *Neerganti* identified for the respective canal. Normally, farmers are let off with verbal sanctions and with a warning not to repeat such actions. In fact, the very act of being questioned by a *Neerganti*, who hails normally from a lower caste, is considered a sanction. Farmers from upper castes generally avoid getting into situations which will entail questioning by the *Neerganti*. If the matter does come to the council of

---

7 On Mondays, as a custom no farmers engage animals for any activity in the field. Consequently, farmers have fewer activities and thus more time to attend compared to other days of the week.

8 On the day agreed, early in the morning the neerganti beats the drum in each village and brings every one to the canal for the work. He continues to beat the drum as long as the work is to be continued. Once the drum stops work will also stop.

elders the representative of that village or the caste leader may be asked to reprimand the actions of the particular farmer. The council of elders has the right to stop the supply of water to the fields of the offender. In some cases, release of water may be delayed in order to exact a change in behaviour, although the extreme step of cutting off irrigation supply entirely is not generally exercised.

### ***Role of caste and class in the council of elders***

The management decision-making process has clearly evolved along the lines of caste hierarchy. The *Jodidars* are Brahmins, and they continue to head the council. This leadership has evolved out of both the prominence of the temple and the ownership of land; the two were intertwined. However, with the gradual transfer of ownership of land to other caste groups, the process of consultation with all landowners is reducing the domination of the Brahmins.

---

*With many Brahmins employed outside the village their population has reduced in Madiyanur village. Furthermore, people of other castes are now educated and employed. Some are better connected politically than the Brahmins. Consequently, the domination of Brahmins has declined.*

---

This process of consultation is once again based on the size of the caste and its importance in carrying out certain activities of the temple, especially at the time of the annual festival.<sup>9</sup> While reckoning caste as the basis for representation, it is not proportional representation, as each and every caste in the village is represented irrespective of its size. Even

---

<sup>9</sup> *During the annual festival, Brahmins will be the central focus and the priests to perform all the activities, but each activity is sponsored by a different caste. On the first day, Thogata host flag hoisting at the temple, Kalayanotsava is by Achari, Vasantotasava by Paligas. Beating of the drum on all the days and attending to activities such as general cleaning, erection of pendals, supply of fuel wood etc., are the activity of scheduled castes. Apart from these castes, other castes are responsible for activities such as deepaalankara (festival of lights), annadhana (food offering to the poor), chandihooma and rathotsava (cart festival). The costs and materials required are shared by all the castes.*

if there is only one family belonging to a caste, it will be represented in the council. This obviously benefits those castes which are small in number and who cannot muster support in terms of number of votes.

At the village level, the rich are generally selected as leaders of a caste and as members of the council of elders. This may not happen to all situations. It is expected that the leader should have the abilities to avail services from the government, elected leaders and officials at various levels; get the work done, assist people in distress, get justice in conflict resolution, and above all, discuss and convince others about his view point. Villagers of Bestrahalli of the *Vokkaliga* caste select their leaders not only based on wealth but also on the overall acceptance by other caste groups. With the same criteria, the *Thogata* caste group has selected their leader.

### **The link between wealth and leadership**

---

*According to key informants, the person selected has to be wealthy, as his absence from work has to be replaced by a paid labourer. Expenses to meet the officials and politicians have to be met by him. Above all, he has to host these officials and politicians if they visit the village – and he needs to have the resources to do this.*

---

The selected leader does not attend the meeting alone. Those who can convince others in the caste, especially the potential opposition within the caste, will accompany him. Villagers do not select the rich alone as their leader and the decisions of the council will be in favour of all the people and not favouring the rich alone.

Decisions of the council of elders are always implemented by the scheduled caste. Traditionally, the three positions of *Thooti*, *Neerganti* and *Talwara* are reserved for the scheduled caste unless totally rejected by the scheduled caste families. These people are supposed to be the eyes of the council of elders. As noted earlier, each village functionary and their respective works are clearly defined. Payments are also very well proscribed.

---

## ***Decision making processes and conflict resolution***

---

*According to one of the leaders of the council, decision-making (on punishments) is difficult, as you live with the same person in the same village and participate along with that person in all activities and share joy and sorrow equally with him.*

---

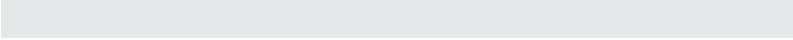
Normally, when a decision has to be reached on an issue, the members of the council informally explore how the concerned issue is understood, and what villagers expect. If the opinion of the villagers is against the legal domain outside the village, the leaders explain the consequences in an informal way. Further, informally, each member will explore all possible alternatives available and the potential response to each alternative before pronouncing a decision.

### **Conflict Resolution**

The feeling that judgement should be helpful to a plaintiff to reconcile the friendship or relation in future with the person or parties against whom he has complained, acts as the guiding force in resolving conflicts at the council. However, one essential step that is invariably followed is to first consult the relatives<sup>10</sup> of the parties involved in the conflict and also those who help them in carrying out economic, agricultural and religious activities. In fact, these parties are consulted before meeting the party involved in the conflict. This consultation is normally carried out to understand the point of view of the relatives and others who provide support to the party and also with an assumption that the party involved must have shared his views on the issue with these people. After a series of such consultations, the members of the council arrive at the most feasible and plausible decision. Punishments are decided in such a way that it harms the parties or culprit in least terms. The decision should cause least damage to his/her status and reputation. According to the council of elders, the decision should never lead to caste clashes. It should

---

*10. Relatives can be very close such as parents, wife or husband, or brothers and sisters, parents-in-law etc.*



not create hatred among the parties involved and it should keep avenues open for reconciliations between the two parties at any time. The relatives of both the conflicting parties educate and prepare the parties involved to accept the decision to be pronounced by the council of elders. On the day of verdict, both the parties are allowed to express their views, feelings and emotions, but the parties involved in informal decisions will be acting as guards in not allowing the situations to go beyond a level. This way of resolving a conflict by involving relatives and those who matter the most and not the party concerned protects the position of the leaders in the council. Such guarding is considered essential for the leader to be perceived as impartial.

This methodology of resolving conflicts has been helpful over the years. The absence of monetary punishment for those who fail to contribute labour for maintenance of canals and to those who water their fields against the rule speaks in favour of the effectiveness of compromise and reconciliation.

By involving individuals beyond the conflicting parties, a level of transparency is achieved. According to a renowned member of the council, 'at present it is difficult to resolve the conflicts in a way acceptable to both the parties. With the present generation of youngsters gaining ability to question the decision arrived at, decision making becomes more difficult'. To overcome this problem, in Bestrahalli, one of the most dissenting youths in the village has been elected as a member to the Gram Panchayat. Villagers say that the behaviour of the selected youth has changed.

### **Weakness in the system**

Whilst the council of elders system of decision-making has operated effectively for many generations, it has a number of inherent weaknesses, especially when viewed in a modern perspective. These are both at the social, and more technical (water management) level.

## Changing social norms

As noted earlier, the village functionaries are broadly positive about the traditional system of tank management, noting that it provides them both with respect (even if this is thought to be less than earlier) and a secure livelihood. Nevertheless, as a system based on the maintenance of caste hierarchy and *status quo*, the validity or authority of the traditional council of elders in modern, democratic times may be questioned.

---

*Whatever respect is afforded to women, the decision-making system does not give them a voice; whatever respect and remuneration given to the village functionaries, they are not expected to step beyond their allotted caste-defined role. Is this equality or democracy?*

---

The council of elders themselves note that there are many changes in the villages, and that these changes pose a major challenge to them. According to them, these changes increase the number of absentee landlords; lead to the emergence of new leaders; and bring in ability among the villagers to develop contact with outsiders. Changes brought in by the government have also reduced their authority.

### ***Increase in the number of absentee landlords***

Changes in the families of *Jodidars* in terms of achievements in education and consequent employment outside the village have increased the number of absentee landlords. According to one estimate, such absentee landlords command three-fourths of the command area. The chances of their return to the village are remote. They take less pain to maximise the returns from the fields that they own in the command area. Thus, they fail to contribute to developing the tank. The tenants also do not cooperate with the council, as their employment for the next crop season as tenants is not assured. Many a time the agreement between the tenant and the landlord is not finalised by the time maintenance activities have to be initiated. Hence, as complained by the *Neergantis* it is difficult to summon farmers to maintain the infrastructure in the command area.

### ***Emergence of new leaders***

The youth, especially from the traditionally marginalised castes, are able to emerge as leaders with good access to education and employment opportunities and political backing. New leaders and the leaders of the council of elders fight for recognition. The process and style of functioning of the council of elders are different from the functioning of other systems that generate new leaders.

---

*According to the council of elders, they work informally and the process involved in their system of administration is time consuming. Comparatively, the new leaders want to be formal and approach the institutions outside the village for speedy settlements. The council of elders feel that this may cost more in terms of finance and is potentially manipulative. Consequently, the conflict in the village will assume greater proportions and last longer.*

---

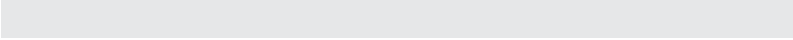
### ***Ability to contact outsiders***

Politicians outside the village often become involved in playing power games within the village. With education and increased awareness, villagers (particularly the youth) have become aware of how to approach higher officials and claim benefits from the government. This may have an undermining effect on the council of elders. A case in point is the success of the villagers of Bestrapalli in getting telephone connections to their village – which has caused discontent amongst the villagers of Mudiyanur, who have not.

### ***Changes introduced by outsiders***

The council of elders tends to be hostile towards attempts by outsiders, particularly the government, to promote participatory processes of decision-making. They see the creation of user groups as threatening, since

- Benefits can no longer be dictated by the council of elders, but must be shared equally
- The leaders have become answerable to the questions of the 'lowest' in the social hierarchy.



The leaders of the *Jodidars* are particularly alert to analysing the emergence of user groups. They note that the *Jodidars* no longer enjoy total control over all the activities within the seven villages, having lost control over several institutions and activities. The first to go away from their hands was the school. Then it was the cooperative society for milk, followed by the Gram Panchayat. Now the attempts to form user groups for watersheds and tanks are seen as attempts to snatch away the institutions from their hold. Hence, attempts to form a user group are being prevented by the council of elders by ordering the people not to contribute any amount or to participate in those activities.

### **Water management challenges in current times**

#### ***Catchments or watershed***

Even with an understanding that the system is very well related to the status of the catchments, the institutional structure is not able to address the issues of the catchment effectively. The council of elders has not taken up the issue of changes in the land use pattern or the diversion of runoff from the tank. Though admitting the tank is the lifeline of the poor villagers around the tank, the present system has totally failed to check silting of the tank.

#### ***Drinking water***

Ground water depletion has led to drinking water scarcity in the study area. Though the government agencies have taken appropriate steps to provide drinking water facilities, the problem of declining ground water and consequent impact on the availability of water are addressed neither by these agencies nor by the council of elders.

### *Control over ground water exploitation*

The institutional structure for tank management has not been able to address ground water exploitation, in spite of awareness of the impact of bore wells on the ground water depletion. The institutional structure has not checked drilling of bore wells close to the tank. They have no norms to control pumping of water from a well located in the command area, which is taken to a far off place.



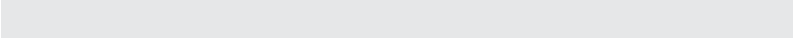
## 4

### **Learning from the traditional tank management system**

The management of Mudiyanur tank provides an example of a still-functioning traditional system of decision-making, a system that was common in the area in earlier times but which is to be found less and less. Whilst the system has flaws – and may be particularly criticised for the lack of participation of women and the manner in which roles are caste-determined – it can nevertheless provide interesting lessons. Building on and enhancing traditional systems of management are often more effective than introducing completely new mechanisms. Understanding the traditional system provides an insight into the tank as a natural resource that is the focus of a social system. Secondly, it provides insight into the methodology of conflict resolution.

#### ***The tank as a social system***

Villagers complain that the tank is defunct and of no use to the community due to the shortage of rainfall and the tank's reduced water holding capacity (due to siltation). The harvesting and conservation of water are no longer so important for sustaining livelihoods within the communities. Those who are better off have work outside farming, and rely on bore wells for their water requirements. In answer to such complaints, members of the council of elders argue that the tank at Mudiyanur, and other tanks in the chain are particularly useful to the poor as a means of sustaining livelihoods. In a drought prone region, the availability of water for production purposes is crucial for crop irrigation, for livestock, for bathing



and washing clothes. Having access to tank water means that the poor can avoid situations of seeking favours from the rich farmers owning wells. Women's domestic drudgery, in particular, is reduced if they have ready access to water.

### **Resource shared by more than one community**

Since seven villages share the Mudiyanur tank, they provide an example of the management of a resource used by more than one community. The formation of the council of elders at different levels and the power shared by each council at each level may provide insights in developing a system for the management of a resource owned or used by many communities. The council at each level being responsible to its members is also an example of decentralisation of power.

### **Adaptation to short supplies**

The way in which water shortages are shared not only in Mudiyanur, but also in the tanks of Mandikal, Kothamangala, etc, provides insight on how farmers tailor paddy cultivation to short and uncertain water supplies. As has been seen, water use is judiciously regulated, paddy varieties chosen carefully, and the method of cultivation adapted to low water availability.

An additional important point is that shortages in water supplies are shared in a manner that is accepted by the community members as equitable.

### ***Conflict Resolution***

Perhaps the most important learning from the example of Mudiyanur tank is in terms of understanding traditional approaches to conflict resolution. Key points in this are:

- The parties have to live together for their life times
- Escalation of conflict is strenuously avoided

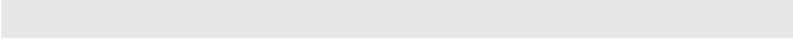
- Persons on whom the parties are emotionally or economically dependent are involved in the resolution process
- Penalties are chosen in a manner that avoids loss of face.

### **When conflicting parties have to live together for lifetime**

One of the underlying principles in conflict resolution at Mudiyanur tank is to consider the parties in conflict as people who will live the rest of their life in the same village. Hence, resolutions are framed to allow both parties to develop rapprochement in an honourable manner. The council of elders even point to cases in which parties once in conflict have discarded their differences to the extent of developing martial relations between their families. If the conflicting parties own land next to one another, conflict resolution demands that they are able to tolerate intrusion of animals into each other's fields, to cooperate with one another in managing surface runoff, and in other agricultural activities. The elders report that the failure to manage surface canals in the catchments these days is due to the lack of cooperation between neighbouring farmers.

### **Avoiding escalation of conflict to higher levels**

Another underlying principle in resolving the conflict is to avoid it escalating into conflict between kin or caste groups. Leaders fear that such escalations are not only dangerous to the unity of the village, but also difficult to resolve, as positions become increasingly intransigent at each level of escalation. This is avoided by involving the kin of the parties as negotiators at the first level, so that they do not act as agents for escalation, but rather as agents who can check emotions, and have a personal responsibility for resolving the conflict. If the parties are from different castes it is necessary to involve the leaders of each caste in the resolution process.



### **Involve friends, family and those on whom the parties are otherwise dependent**

It is the firm belief of the elders at the council that parties involved in a conflict will be charged with emotions. Such emotions are strengthened and sustained by family members. To avoid the escalation of such emotions, it is essential for the leaders to dampen them at the initial stages. This is possible only when the leaders are aware of the details of all concerned in terms of their economic, social and emotional dependencies. Leaders feel that by summoning individuals who provide support to the parties concerned, and involving them in resolving the issue, the conflict is not allowed to spread. Those who would be the potential agents in spreading the conflict are instead charged with the responsibility of resolving it.

### **Determine penalties which avoid loss of face**

To ensure better and continued management of the canals, conflicts should be resolved in such a way that the event is forgotten as quickly as possible. This is only possible when the punishments awarded do not affect the position of a person in the village, and the conflict can be quickly forgotten. Thus it must be done without bitterness, and without the penalty or the cost resting in the memory.

In summary, the manner of conflict resolution that has evolved in Mudiyanur – and no doubt other traditional systems – is one from which there is considerable potential to learn. It may be argued that when designing new institutional mechanisms for tank management, building on the positive aspects of traditional systems is likely to result in greater institutional sustainability.

## References

Government of Karnataka (2002). *Report of High Power Committee For Redressal of Regional Imbalances*

Madangopal (2002) 'Introductory Speech' to Consultative group on legal Aspects for Community Based Tank Rehabilitation Project.

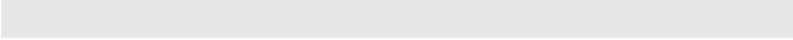
Reddy ST (1997), Impact of Commercial Crops on Farmer Managed Irrigation Systems. PhD, Thesis submitted to Dr. Ambedkar Open University, Hyderabad

Reddy ST and Anantharamaiah KM (2002), Institutional Approach to Community Based Tank Rehabilitation in Karnataka Submitted to Jala Samvardane Yojana Sangha, Government of Karnataka, Bangalore.

Reddy STS (1991) *Forfeited Treasure* Prarambha, Bangalore

Sengupta N. (1993) *User Friendly Irrigation Systems* Sage Publications, New Delhi

World Commission of Dams (2001) *Report on India*.



Intercooperation is a leading Swiss non-profit organization engaged in development and international cooperation. We are registered as a foundation and are governed by 21 organizations representing the development community, civil society and the private sector. Intercooperation is a resource and knowledge organization, combining a professional approach with social commitment.

Intercooperation supports partner organizations in more than twenty developing and transition countries on mandates from the Swiss government and other donors. In South Asia, Intercooperation is present in India, Pakistan, Bangladesh and Nepal.

Intercooperation has been working in India since 1982, as a project management and implementation partner of the Swiss Agency for Development and Cooperation, SDC. Our early experience focused on the livestock and dairy sector, providing technical expertise through a series of bilateral projects with state governments in Kerala, Rajasthan, Andhra Pradesh, Orissa and Sikkim. Intercooperation now works with governments, technical and research organisations, NGOs and Community Based Organisations (CBOs) on initiatives in natural resource management for sustainable livelihoods. Our working domains in India comprise:

- Livestock and livelihoods – particularly small ruminants in semi-arid India
- Participatory watershed development with a focus on equity
- Participatory agricultural extension
- Farming systems approach to sustainable agriculture
- Human and institutional development
- Policy formulation and development of decision support systems
- Decentralisation and local governance.

In all our work we seek to support gender balanced, equitable development, focusing on the empowerment of the poor and marginalized.