



DRIVING AND RESTRAINING FORCES IN IMPLEMENTING PARTICIPATORY IRRIGATION MANAGEMENT IN THE LITERATE STATE OF INDIA

George Chackacherry¹, K Madhavachandran²

ABSTRACT

Kerala, elongated coastal state of India, lags behind many states in the country in participating farmers in the management of irrigation, and implementing PIM. It has no rich tradition in community management of irrigation, may be due to rich water resources it enjoyed (annual average rainfall 3000 mm). Government manages the irrigation projects and distribution of water to its 0.3 mha irrigated area, which includes wetland crops like rice, and garden land crops like coconut. Fragmentation and subdivision of land and resultant small size of holdings (average 0.3 ha); part-time cultivation of farmers who are literate (literacy rate 91%); lack of sufficient labour availability and high labour cost; and lack of coordination among various departments are the major threats to irrigated agriculture in Kerala. PIM pilot projects being implemented at Neyyar and Malampuzha Irrigation Projects of the State have shown that, in spite of all the above issues, farmers are highly motivated and are ready to share responsibilities of PIM. Since spouses of farmers are also inducted as members of WUAs, enthusiasm shown by women in managing irrigation is encouraging. Preference ranking of institutions to manage operation and maintenance (O&M) under different water availability conditions, carried out at the pilot project area through Trade-Off Method, shows that majority of the farmers have given preference to WUAs to manage O&M under both ways, as well as sometimes adequate, timely and equitable water availability conditions. The pilot project experiences are also encouraging. But the hesitation of officials to depart from the existing system, the reluctance of operational staff to involve users in management, and lack of legislative backing, are the main blocks noted.

1- Scientist & Officer in Charge, Centre for Water Resources Development and Management (CWRDM) Sub Centre, Trivandrum, Kerala State – 695121, India Tel.& Fax: +91-471-2222319; Mobile: +91-9446404780; email: g_chackacherry@eth.net

2- Scientist, Water Management Division, CWRDM, Kozhikode, Kerala State – 673571, India

INTRODUCTION

Kerala State is one of the smallest states of India located at the southernmost tip of the Country. It lies between 8° 18 ' and 12° 48' North Latitude and between 74° 52 ' and 77° 22 ' East Longitude, with a geographical area of 38,863 km². The State is a narrow stretch of land 566 km in length. The settlement pattern is linear along roads and water ways, and the typical village dwelling is not seen in Kerala. Due to this fact, the State is called as an 'elongated village'. Though no distinct urban-rural dichotomy is found, now urban values have strong hold in the State. Better transportation facilities, educational status, and income from abroad (Remittances from Keralites working abroad, mainly in the Middle East, make up over 60% of the state's gross domestic product) are believed to be the reasons for this situation. The total population of Kerala is about 318 lakh, with a density of 819 persons per km² (national level it is 324 persons). Women outnumber men in the State. The sex ratio is 1058 females per 1,000 males. Literacy rate of the State is high compared to all other states of India. When the national literacy rate is 65%, in Kerala it is 91%. Striking difference is not found with regard to the literacy rate of male and female in Kerala; it is 94% for male and 88% for females; whereas it is 76% (male) and 54% (female) in the national level (Census Report, 2001).

Although Kerala accounts for only 1.18% of the land surface of the country, her water potential accounts for 5.4%. The State receives an average annual rainfall of 3,000 mm; it is bestowed with 44 rivers and several lakes and ponds. However, 60% of the rainfall in this humid tropical region is received during the south-west monsoon (June-August), 25% during the north-east monsoon (September-December) and the rest 15% during the non-monsoon period (January-May).

The net area irrigated (20% of total farming area) from all irrigation sources in Kerala works out to 3.81 lakh hectare (ha), out of which the contribution of major/medium irrigation projects is about 3 lakh ha. Rice is the main crop cultivated in the command areas of irrigation projects. Except one project, all others are designed for irrigating wetland crops, mainly rice. However, the area under upland (garden land) cultivation under irrigation is increasing tremendously in almost all the irrigation projects. For example, in the Neyyar Irrigation Project, it is estimated that 70% of the irrigated command area is occupied by upland crops (GoK, 1990). Most of the lands here have been reclaimed to cultivate coconut. Within a period of 15 years from 1980-81, the proportion of area under rice declined from 27.79% to 16.51%. During the same period, the area under coconut increased from 22.58% to the 29.88% (Thomas, 1999). The average land holding size in Kerala is only 0.33 ha, whereas it is 1.68 ha at the national level. More than 90% of all the holdings are below half hectare in size. However, the State is predominantly an agriculture state where more than 60% of the population is engaged in farming and the processing of agricultural produces. For India, Kerala is the main producer of perennial crops such as coconut, rubber, black pepper and areca.

COMMAND AREA DEVELOPMENT AND PIM

Kerala has no rich tradition in the management of irrigation systems by farmers, though farmer-managed traditional systems are present in various parts of the country, for hundreds of years. This may be due to the better availability of water resources in

Kerala in the past, which might not have encouraged community action for irrigation management (Chackacherry, 1995). Though the command area development (CAD) programmes started in Kerala during 1980, the activities gained momentum only after 1986. According to the CAD Act 1986 (GOK, 1986), the 'beneficiary' farmers of one or more outlets, ordinarily an extent of about 40 ha of command area, have to form together a beneficiary farmer association for looking after the operation and maintenance (O&M) of sluices and field channels, and distribution of water to the command area. Accordingly a total of 4,011 associations were formed in the 16 project commands till the end of March 2005 (CADA, 2006).

As reported by several studies, CAD Authorities (CADAs) in various states of the country, though was envisaged to improve the irrigation and agricultural productivity through effective farmer participation and system management, could not achieve their targets due to several reasons. Kerala also followed the same line. The major reasons for the shortfalls of CAD activities in the national level are: (i) inability to achieve adequate, reliable and equitable distribution of water; (ii) failure to ensure participation of farmers in the management of the irrigation systems; (iii) inadequacy of existing organisational set up; (iv) limiting the concept of CADA to a field channel construction programme; and (v) lack of coordination among the Irrigation Department and CADA, and also among various disciplines of CADA. The study conducted at Neyyar Irrigation Project for three years during 1990 – 92 found that though operation plan was made, it was not followed, thereby the very purpose of irrigation is questioned. As a result, a cropping pattern based on the irrigation supply, which is the most important prerequisite for improved productivity could not be adopted in the command areas (Chackacherry, 1993).

Though there have been more than 4000 farmer associations formed in the irrigation commands, most of them are non-functional. Studies have shown that most of these organisations are either defunct or mal-functioning. 25-30% of them are only functional (Chackacherry, 1995; CWRDM, 1999), and they could not play a significant role in the irrigation management processes. However, the main reasons identified for the non-functioning of farmer associations are: (i) the associations were organised on a war-footing through 'government order' ignoring the farmer initiatives; (ii) non-availability of water in their areas at required time; (iii) discontentment of the farmers, as they lost faith in the officials who promised assured water, and also since they failed in making profits; (iv) weak farmer-officer relations; (v) lack of incentives; (vi) political interference; and (vii) insignificant role of the farmer organisations (Chackacherry, 1993). It has been felt that no part of the irrigation system can be handed over to these organisations, if at all they are functioning, as they are not socially capable of taking over the tasks assigned to them (Chackacherry & Madhavachandran, 2006). Either they should be reorganised/restructured or adequately strengthened. On the other hand, the government agency concerned with these activities is neither physically nor socially conducive for taking up a joint management with farmers (CWRDM & CADA, 2001). Therefore, Kerala lags behind many states in the implementation of PIM. Inclusion of a Chapter on PIM in the Kerala Irrigation and Water Conservation Act 2003, and two pilot projects on PIM implemented in two irrigation projects of the State are the only achievements in the history PIM in Kerala.

PILOT PROJECT ON PIM

The pilot projects on PIM which are almost completed in Neyyar (mostly catering garden land crops) and Malampuzha (mostly catering rice) Irrigation Projects, which are almost completed, expect to evolve a strategy for the implementation of PIM in all irrigation projects of Kerala, by demonstrating its possibility and convincing officials, farmers and other stakeholders concerned. The programme envisaged is to transfer O&M of one branch canal each at Neyyar Irrigation Project (Olathanni branch canal – 6.41 km length, 501 ha of ayacut area with garden land crops) and at Malampuzha Irrigation Project (Kuthannur branch canal – 14.63 km length, 1664 ha of ayacut area with rice crop) to farming community. Since the existing farmer organization structure and government set up are not congenial for the implementation of PIM, changes are brought in. Three-tier system with sluice based Water User Associations (WUAs), branch/distributary level WUAs, and project level Project Management Council are the structure tried in the farmer organization set up. Land holder and his/her spouse are members in the sluice WUA, and 1/3rd of the leadership positions at all levels are reserved for women. Overseer, Assistant Engineer/Assistant Executive Engineer, and Executive Engineer, respectively, are attached as competent authorities to these associations to help them in implementing their decisions. Works in the irrigation systems are identified, prioritized and implemented by the WUAs. The payments are made from the bank account jointly managed by President of the Branch WUA and Assistant Engineer of Water Resources Department. The competent authority concerned renders technical advice and ensure that the works are carried out as per technical specifications. Encouraging group farming, bringing women to the mainstream of irrigated agriculture, establishing relations with panchayats, creating opportunities for coordination among the departments/agencies concerned, mobilizing tie-ups with marketing establishments, etc. are other allied activities carried out under the project. The programmes are carried out through five different phases – Preparation, Organisation, Rehabilitation, Capacity Building and Turn-over. Projects at present are in the turn-over phase, where the O&M responsibilities are being transferred to the Branch WUAs.

The experiences of pilot projects so far are encouraging. Impact assessment of PIM from farmers' perspective was done initially using the trade-off model (Naik and Karlo, 2000) in the pilot project area. The results show that farmers have high preference for WUA to manage water allocated to them under PIM. Location of WUA on canals, which influences water availability, was found to be significantly associated with their preferences for WUA. The relative importance assigned by farmers was found to be more for adequate and timely water availability than the agency to manage water under PIM, which indicated the need for adequate maintenance of canals to be handed over to WUAs, and delivery of the required quantity of water at the appropriate time. The farmers attach higher utility to WUA in all the reaches of both the irrigation projects. In all the reaches in Malampuzha project farmers prefer WUA as the agency, even if water supply becomes sometimes adequate and timely. However, in Neyyar project, preference for WUA is seen only when water supply is always adequate and timely. In Neyyar project, farmers in all the reaches have second preference for Panchayath (local self government) as the agency, but only under always adequate and timely water availability condition.

The sluice WUAs have taken over the management of control structures and field channels in both the pilot project areas. The Branch WUAs are in the process of taking over the branch canal systems. Interventions made through the pilot projects have contributed to irrigate an additional area at the rate of 35% and 26% at Neyyar and Malampuzha, respectively. Other positive responses are, better attendance in WUA meetings, promptness in meetings, direct involvement of women in matters related to irrigated agriculture, control over the misuse of canals, improvement in the farmer-officer relations, etc. Another aspect worth mentioning is that the farmers agreed for need based fund allocation for rehabilitation works, though they insisted for equal allocation of the funds initially during prioritization workshops. The allocation ranged from Rs. 0.3 lakh to Rs. 3.0 lakh. The feeling of sense of belonging created through community organisation motivated the WUA leaders to circulate leaflets and pamphlets on the hazards due to the misuse of the canals, and the legal measures taken against that. At Neyyar, where the misuse of the canals is more, the WUA leaders conduct inspections and report to the authorities concerned. In some cases they directly give warning to the violators.

Based on the experiences of the pilot projects on PIM and other studies carried out in Kerala, the contributing and hindering factors specific to Kerala for the implementation of PIM are identified and are discussed below:

CONTRIBUTING FACTORS

BETTER EDUCATION STATUS OF FARMERS

As mentioned earlier, Kerala is the highest in literacy rate than all the states of the country (91%). The State was declared as 100% literate in 1991. In the pilot project areas it was found that less than 2% of the farmers are only illiterates; more than 60% of the farmers have Secondary School Leaving Certificate and above. This capacitates easy communication and understanding, which is one of the major contributing factors for the introduction of PIM.

EXPERIENCE GAINED FROM DECENTRALISATION

Decentralised planning and implementation of development activities is a landmark in the history of Kerala State. The State has established precedence in institutionalising decentralisation and democratisation in development programmes. The experiment on the participatory decentralised planning and implementation started in Kerala during 1997 has obtained tremendous achievement so far. At present, more than 40% of the State Government funds are made available to the local self governments, where the development programmes are planned at the grassroots level. Since PIM enunciates user management at the local level, the existing climate of democratic decentralization could also stimulate PIM.

EXPERIENCES OF CAD AND IMT IN MINOR IRRIGATION

Though the State does not have a long tradition of farmer management, command area development programmes started during 1980s, and community irrigation projects implemented during 1990s, mainly through international funding, have their own contribution in the history of PIM in Kerala. Though CADA could not yield the expected outcome, it provided a platform for change in the outlook of farmers and officials towards a decentralized and democratic system of irrigation management (Chackacherry & Madhavachandran, 2006). Efforts to catalyze farmers will definitely stimulate their initiatives further.

SCOPE FOR WOMEN INVOLVEMENT

Since majority of the men farmers in the command areas of the irrigation projects in Kerala are part-time in agriculture, they have limited interest in irrigated agriculture. Customary gender roles still usually conceive of irrigation management as work for men. But women have great interest in agriculture. Gender Assessment Study conducted earlier by the first author in Kerala has pointed out that when only 25% of men are directly depended on agriculture, as much as 46% of women are involved in it in one way or other (Chackacherry, 1995). In the PIM model tried in the pilot projects, women are members of sluice WUAs as land holders and their spouses are members in them. 40 – 45% of the office bearers of sluice WUAs are women. 1/3rd of the positions in the branch WUAs are women. In most of the training programmes, main participants are women. They show great interest to know about agronomic practices, fertiliser application, water management, etc. In the pilot projects, It has been observed that the men did not have any problem in bringing women to the irrigated agricultural activities. In fact, Kerala women have more influence over their own lives and those of their families than many women elsewhere in the Country. Maybe this is because of better education level of both men and women (Chackacherry & Sudhamony, 1995). All these have great significance, especially when men tend to neglect farming in their small pieces of land.

REPLENISHMENT OF OPEN WELLS BY CANALS

About 79% of the households of Kerala depend on open dug wells (average density of wells is 220 per km²) for their drinking and domestic water demands, though public piped water supply is there to about 67% of the households (SPB, 2006). Though the State gets high rainfall, as it is spatially and temporally uneven, many of the dug wells dries during summer season (February – May). Discharge through the canals during water distribution often helps to recharge these open wells. Therefore, the people need the canal system, at least for recharging the groundwater source.

HINDERING FACTORS

PART-TIME FARMING

The problem of fragmentation and subdivision of land, contributed by the high population pressures combined with the State Land Reforms Act, is a very serious problem in Kerala (ETS, 1996). As mentioned, the average land holding size is only 0.33 ha, and therefore farming may not be the major income source for many farmers. Majority of the farmers are part-time in cultivation, and therefore, they have to engage in some other vocation for their livelihood. Study conducted among the farmers of an irrigation command in Kerala has found that almost 74 % of farmers in the area are part-time in cultivation (Chackacherry, et al., 1994). Severe decline is observed in the area of rice cultivation. It declined from 7.42 lakh ha in 1952-53 to 6.04 lakh ha in 1987-88. Conversion of rice land (wetland) is occurring in Kerala at an alarming rate (Prakash, 1999). Shortage of labour, and the resulting high labour cost, is another major problem faced by irrigated agriculture in Kerala. More than 55% of the total investment in farming is for labour charge alone (CWRDM & CADA, 2001). All these aspects have led irrigated agriculture to a secondary activity in the State.

LACK OF POLITICAL AND ADMINISTRATIVE ORIENTATION

It is necessary for the political, administrative and irrigation agency leadership to take interest in adopting PIM. It has been reported that though the administrative and technical personnel had satisfactory level of perception regarding participation, attitude towards the same was below the minimal desirable level. Government staff working with command area development programmes, community irrigation projects, and even with the pilot projects on PIM found problems in adapting to the concepts and requirements of the programmes with a clear social dimension. This difficulty to accept social dimensions precludes effective coordination among the staff drawn from different disciplines. There is also considerable reluctance, if not opposition, from the operational staff of irrigation agencies to involving users in management. Reluctance of irrigation officials to organize farmers is yet another concern. In general, Non Governmental Organisations (NGOs) are not accepted either by farmers or officials, mainly because NGOs are not much appreciated in Kerala, and there are very limited successful NGOs in the State. With all their shortcomings, farmers prefer government officials to NGO personnel as 'Catalysts' and 'Facilitators' (CWRDM & CADA, 2001). That is one of the reasons why the Competent Authorities of WUAs have been given a key role in the PIM model evolved for Kerala. Since the local self governments (panchayats) have a strong hold in the local level water resources development, their involvement also is expected to fill the gaps.

MOTIVATIONAL GAPS

There is no incentive structure for the officials to go for PIM. Officials in the pilot project areas tried to ignore the projects and even to delay their implementation. Many officials felt that if the pilot projects are successful, it might lead to retrenchment of positions. Another concern is about funds for rehabilitation works before the systems are handed over to farmers. The impact on agencies depends on whether within their

bureaucratic structure they have incentives for solving problems and improving performance, or whether revealing the extent of previous problems only creates difficulties. If agriculture is more profitable, then the farmers will be more interested in irrigation management and scientific agriculture. Increasing incentives and better aligning of PIM with farmers' incentives is essential if participation is to have any hope of being sustained. Without post-turn over support, the goals of turnover will not be achieved and the project effort would largely be wasted. Adequate guidelines, resources and incentives are needed, if guidance and support are to be provided after turnover and the performance of turnover systems sustained.

PAUCITY OF FUNDS FOR SYSTEM REHABILITATION

The paucity of funds and resultant deferred maintenance has caused serious defects in the canal system. The financial outlay for irrigation sector has shown severe decline during the years. When the IXth Five Year Plan (ended during March 2002) outlay for irrigation sector was 6.8% of the total budget of the State, it is only 3.88% during Xth Five Year Plan (ending in March 2007). In Kerala, the water rates are very low compared to the costs of maintenance of major irrigation projects. Though the returns from the irrigation supply have improved over the years, even then it is only about 1/10th of the maintenance expenses. During 1999 – 2000 the maintenance cost was Rs. 2177 lakh, where as the receipt was Rs. 70 lakh (3.4%). During 2002 – 2003 the cost was Rs. 1614 lakh and receipt Rs. 102 lakh (6.3%) and during 2003 – 2004, the cost was Rs. 1401 lakh and receipt was Rs. 157 lakh (11.2%). In fact the water rates collected are based on the estimates of 1974. There is no Irrigation service fees concept formulated in Kerala to support O&M. WUAs are not involved in the collection of fees. In the pilot projects also effort was not taken for it as it may create protests and hinder the implementation of the projects. The Revenue Department is expected to collect the water cess, which most of the time is not done systematically. Rehabilitation of the irrigation systems are important because the average rehabilitation cost of existing canals is worked out as Rs.0.1 lakh per ha, whereas the investment required for creating new capacity of irrigation potential is Rs. 1.2 lakh per ha (Anonymous, 2006). For rehabilitation of canals in the pilot projects the amount spent is only Rs. 3040 per ha.

INSUFFICIENT LEGISLATIVE BACKING

While other states have enacted exclusive PIM Acts with all necessary details for the implementation of PIM, Kerala has only a chapter on PIM included in the Kerala Irrigation and Water Conservation Act 2003. Many of the provisions required for the implementation of PIM are yet to be included in the Act. It appears that the PIM Acts of other states, guidelines issued by the National Government on PIM, CAD Act of the State, etc. were not referred when the Act is prepared. The model evolved by CWRDM and CADA for the implementation of PIM in the State, after a one-year long study, was also ignored. This, in effect, reflects the lack of interest and/or reluctance of some corners to accept the concepts of empowerment of farmers and PIM. There is only one tier organization mentioned in the Act, namely, WUAs at the sluice level. Transfer of the irrigation system, agreement between Government and WUAs, etc. are not mentioned. The Act 2003 does not speak about the involvement of women, handing over of O&M, etc (Chackacherry & Madhavachandran, 2006). Therefore, PIM can not

be implemented in the State effectively without improvements/changes in the Act, or bringing out a separate Act for PIM.

CONCLUSION

There are several problems that may hinder the implementation of PIM in Kerala, as mentioned above. But prospects are not too bad, as there are several contributing factors. If the irrigation agency supports and nourishes, PIM will flourish in Kerala also. Almost at all levels, it is accepted that there needs a change. But their apprehensions regarding job security and loss of mandate compel them to opt for maintaining the status quo or keep away from the efforts to initiate change. It is expected that the lessons learnt from the pilot projects on PIM may help to gear up the political and administrative will to counter this.

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