CHAPTER VI

UTILISATION OF IRRIGATION POTENTIAL AND COMMAND AREA DEVELOPMENT AUTHORITY: AN EVALUATION
In the preceding chapter, it was observed that the Command Area Development Programme has a positive impact on different aspects of the farm economy, such as, crop area, crop pattern, yield rates, output and employment. However, in spite of such favourable impacts, the target level of crop intensity, desired cropping pattern mix and optimum crop productivity have not yet been realised. In fact, the achievements on these fronts have fallen short of the expectation. For attainment of the desired objectives, the need for efficient utilisation of irrigation potential, scientific water management and effective implementation of on-farm development works is imperative.

This chapter seeks to evaluate the performance of all the four CADAs of the State with special reference to utilisation of irrigation potential and the drainage system. The different constraints operating in the system have also been identified.
Utilisation of Irrigation Potential
(1975-77 to 1985-86)

One of the main objectives of command area development being optimal utilisation of the created irrigation potential, the success or otherwise of the programme, can in fact be measured from the extent to which it improves this level of utilisation. In this context, it is relevant to note that full capacity utilisation is only of notional significance. Wade appears right when he suggests that about 90 per cent of utilisation can be considered good enough. Thus while evaluating the role of command area development in promoting utilisation of created irrigation potential, one hundred per cent capacity utilisation may not be insisted upon.

Data relating to the creation and utilisation of irrigation potential in the four command areas of the State have been presented in the Table 5.1.
<table>
<thead>
<tr>
<th>Year</th>
<th>Mahmudadi Jagir Potential created</th>
<th>Hirakud Potential created</th>
<th>Hirakud Potential utilised</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kharif 2</td>
<td>Rabi 3</td>
<td>Kharif 14</td>
</tr>
<tr>
<td>1976-77</td>
<td>154.29</td>
<td>101.36</td>
<td>153.24</td>
</tr>
<tr>
<td></td>
<td>(99.93)</td>
<td>(79.36)</td>
<td>(95.22)</td>
</tr>
<tr>
<td>1977-78</td>
<td>157.23</td>
<td>104.74</td>
<td>153.24</td>
</tr>
<tr>
<td></td>
<td>(117.63)</td>
<td>(79.36)</td>
<td>(95.84)</td>
</tr>
<tr>
<td>1978-79</td>
<td>164.20</td>
<td>106.30</td>
<td>153.24</td>
</tr>
<tr>
<td></td>
<td>(119.55)</td>
<td>(76.55)</td>
<td>(96.70)</td>
</tr>
<tr>
<td>1979-80</td>
<td>174.41</td>
<td>107.60</td>
<td>153.24</td>
</tr>
<tr>
<td></td>
<td>(139.42)</td>
<td>(77.32)</td>
<td>(96.05)</td>
</tr>
<tr>
<td>1980-81</td>
<td>179.41</td>
<td>107.50</td>
<td>153.24</td>
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<td></td>
<td>(133.48)</td>
<td>(77.64)</td>
<td>(97.26)</td>
</tr>
<tr>
<td>1981-82</td>
<td>179.41</td>
<td>107.60</td>
<td>153.24</td>
</tr>
<tr>
<td></td>
<td>(143.54)</td>
<td>(81.48)</td>
<td>(97.89)</td>
</tr>
<tr>
<td>1982-83</td>
<td>179.41</td>
<td>107.60</td>
<td>153.24</td>
</tr>
<tr>
<td></td>
<td>(143.28)</td>
<td>(81.55)</td>
<td>(98.86)</td>
</tr>
<tr>
<td>1983-84</td>
<td>179.41</td>
<td>107.60</td>
<td>153.24</td>
</tr>
<tr>
<td></td>
<td>(143.80)</td>
<td>(81.41)</td>
<td>(99.19)</td>
</tr>
<tr>
<td>1984-85</td>
<td>179.41</td>
<td>107.60</td>
<td>153.24</td>
</tr>
<tr>
<td></td>
<td>(143.96)</td>
<td>(81.60)</td>
<td>(95.35)</td>
</tr>
<tr>
<td>1985-86</td>
<td>179.41</td>
<td>107.60</td>
<td>153.24</td>
</tr>
<tr>
<td></td>
<td>(143.53)</td>
<td>(81.42)</td>
<td>(99.52)</td>
</tr>
</tbody>
</table>

(Area in '000 hectares)

(Figures in parentheses)

Source: Reckonings of Water Resources.
The table seeks to present two aspects,

(i) the extent to which the command area development programme introduced since 1976-77 has led to improvement in the level of utilisation of created irrigation potential in all the four commands of the State and (ii) the extent to which there is shortfall in the level of achievement of the potential causing non-realisation of 300 per cent cropping intensity, as envisaged by the CAD Authorities.

It is seen from the table that increase in the utilisation of irrigation potential has taken place in kharif as well as in rabi season over years in all the four command areas. In Mahanadi Stage-I, the potential utilisation has increased from 64 per cent in 1976-77 to 92 per cent in 1985-86 in kharif and from 45 per cent to 72 per cent over the same period in rabi season. In Mahanadi Stage-II, the percentage utilisation has increased from 59 to 90 in kharif and from 34 to 68 in rabi season during the same period. In Salandi command area, the percentage has gone up from 84 to 99 in kharif and 51 to 63 in rabi season and in Hirakud command area the utilisation percentage has increased from 95 to 99 in kharif and 66 to 76 in rabi season in 1985-86 over 1976-77. From this, it is evident that command area development programme has resulted in improvement in the level of
utilisation of the irrigation potential created in all
the four command areas in both kharif and rabi season.
This lends positive support to the basic hypothesis of
the thesis that command area development programme is
principally meant for improving the utilisation of the
created irrigation potential.

In regard to the second aspect, it is revealed
from the same table (no.6.1) that although command area
development programme has pushed up the utilisation of
irrigation potential already created to boost agricultural
production, yet the utilisation level has not gone up to
that level where the index of cropping intensity can go
upto 300 per cent.

Examining the issue in detail, it is seen that
by 1975-77, irrigation potential created was full in
Mahanaída Stage-II and Hirakud command areas. The magni-
tude of potential was: 156.89 thousand hectares for
kharif, 118.54 thousand hectares for rabi in Mahanaída
Stage-II and 153.24 thousand hectares for kharif and
97.91 thousand hectares for rabi in Hirakud command area.
These potentials were maintained from 1976-77 to 1985-86.
But in Mahanaída Stage-I, the potential created was of
154.29 thousand hectares for kharif and 101.36 thousand
hectares for rabi in 1976-77 and these areas were
extended to 174.41 thousand hectares for kharif and 107.60 thousand hectares for rabi by 1979-80. Such extension is also found in case of Salandi command area in 1976-77, irrigation potentials created under Salandi was limited to an area of 37 thousand hectares during kharif and 16.10 thousand hectares during rabi. While full irrigation potential of 41.96 thousand hectares in kharif was created by 1980-81, the full irrigation potential in rabi (18.18 thousand hectares) was created by 1978-79. After these years, the maximum potentiality have been maintained till 1985-86. However, the extension of such area having irrigation potential in Mahanadi Stage-II and Salandi command areas have been made by the construction of new canals and extension of old canals in the initial years of the implementation of command area development programme.

So far as the utilisation is concerned, the table shows that the percentage of utilisation is much higher in kharif season than in rabi season. In Mahanadi Stage-I and Stage-II the irrigation potential utilised during kharif season is 96.53 per cent and 97.45 per cent respectively during 1985-86. The corresponding percentages are 99.21 in Salandi command area and 99.52 per cent in Hirakud command area. In other words, utilisation of
Irrigation potential is quite satisfactory during kharif season. But since the area generally gets adequate rainfall in monsoon months, kharif irrigation does not appear to be very much important for the crops grown in that season. It only tends to act as an insurance against drought and uneven distribution of rainfall and makes up deficiency of water requirements for the crops and as such can be called supplemental in character. Thus, it helps in creating conditions for varietal planning in agriculture, even in case of monsoon failure, by stabilizing water supply. It also makes up the reserve deficiency, if any, for rabi. On the other hand, quantum of rainfall being negligible during the rabi season, irrigation during that season is essential for raising crops. In other words, without irrigation a second crop cannot generally be raised by farmers and even if, it is raised, the chances of its survival under the moisture strain in rabi season is always doubtful. As such, it is only rabi irrigation which increases the cropped area or cropping intensity and boost up agricultural production. As regards the finding at the macro level that the magnitude of under-utilisation of irrigation potential in kharif is marginal, a note of caution may not be irrelevant. This table is based on only official figures on utilisation as was available at the project levels. The actual facts
are somewhat different as was observed by the researcher during the course of her household survey. The high utilisation figures in Government records seem to emerge from the fact, often the authorities count certain areas, particularly at the tail ends of canals as irrigated, although virtually some of these do not actually receive the irrigation facility. Research scholar herself observed that the water meant for the entire target area did not reach the tail-ends and a part of the target area towards the tail-end remained fallow on account of non-availability of irrigation water. This was in contrast to what irrigation authorities claimed regarding the utilisation. It may be stated at the risk of being general that the official figures on "irrigated acreage" has been misleading very often.

The potential utilised is 72.01 per cent of the potential created in Mahanadi Stage-I. The percentage is 67.60 in Mahanadi Stage-II, 63.42 in Salandi and 76.24 in Hirakud command area in the rabi season. In other words, under utilisation of irrigation potential is 27.99 per cent in Mahanadi Stage-I, 32.40 per cent in Mahanadi Stage-II, 36.58 per cent in Salandi and 23.76 per cent in Hirakud command area. This gives a disquiet picture. In this connection it may be mentioned that under utilisation is reported to be as high as
50 per cent of the gross irrigation potential in the plan document "Perspective Plan of Economic Development of Orissa, 1973-74 to 1983-84". To conclude, under-utilisation of irrigation potential during rabi season persists in all the command areas.

Several micro studies conducted in different limited zones of command areas also reveal that under-utilisation of irrigation potential persists. A sample survey conducted in Hirakud command area covering 14 irrigated villages, conducted by the Bureau of Statistics and Economics, Government of Orissa, reveals that the extent of under-utilisation was 18.85 per cent.

This observation is corroborated by another study conducted in Salandi command area by Champati on the basis of official figures, shows that almost the entire kharif potential was utilised and utilisation of rabi potential was to the extent of 93 per cent. The study conducted by State Evaluation Organisation in 1978 showed that under-utilisation of irrigation potential in Salandi major project area varied from 35 to 63 per cent. Under-utilisation of irrigation potential is also revealed from the cropping pattern adopted in the command areas. In the earlier chapter it was seen that the cropping pattern adopted in the four command areas are not in
conformity with the suggested cropping pattern. Further, although rabi potential is given on a composite cropping pattern consisting of heavy, medium and light duty crops, farmers still dwell on light duty crops in considerably large areas, which are grown with available moisture, mostly with the help of a pre-sowing irrigation. As a sequel to this, high percentage of area is being covered by "other crops". This shows that the utilisation pattern of irrigation facility in the command areas is also not satisfactory.

The question that now arises is as to why has the CAD Programme failed to ensure full utilisation of created potential.

Factors Inhibiting utilisation of Irrigation Potential

Under-utilisation of irrigation potential in the command areas is the outcome of several factors. Some of these factors are inadequate maintenance, poor distribution system of canal water; non-participation of the farmers in the water distribution system etc. Such inhibiting factors are highlighted in the succeeding paragraphs.
(i) **Inadequate Maintenance**

Inadequate maintenance of embankments and structures in all the command areas is the first and foremost cause of under-utilisation of valuable water. As already mentioned, in the delta region consisting of Mahanadi Stage-I and Stage-II the flow of water through the canal system is maintained by a 100-year old anicut on the river Mahanadi at Cuttack. Although, the anicut is now being replaced by a barrage, 50 m. down-stream of the anicut, yet the general complaint is that the maintenance of the anicut along with the canals is poor. Similarly, although the Hirakud canal system is about 25 years old, during this long period no major repairs and improvement have been attempted. Annual maintenance is also low. Resultantly, the condition of the canals has been deteriorated and they have become incapable of delivering the required flow of water. Further, the canals are not provided with shutter gears for opening and closing parts thereof according to the need for ensuring controlled irrigation. Low level of utilisation of irrigation potential in Salandi command area is attributed to poor maintenance of canals.

The reason for such poor maintenance of the irrigation structures is ascribed to inadequate provision
of per hectare maintenance expenditure. The State Government have accepted in principle, the norm of maintenance cost of Rs.34.70 per hectare of the ayacut area fixed by Government of India for major and medium works. But this amount has been considered inadequate by State irrigation engineers in view of the current escalation of costs of construction and labour. They suggest that an amount of Rs.60/- to Rs.75/- may be provided towards the cost of maintenance per hectare of ayacut area.

(ii) Poor Distributive System

Poor distributive system characterised by absence of field channels constitutes a major cause of under-utilisation of irrigation potential in the command area. The present method of distribution of water in the command area may be described as "jointly managed system", under which the irrigation authorities are more concerned with acquisition, transport and storage of water, but less with its distribution. The Government provides channels upto the outlet of one cusec capacity (approximately 40 hectares). Its responsibility ends at the point where water is supposed to leave the outlet and enter the farmer's water course. The farmers in their turn are expected to excavate field channels and drains and make arrangements on their own to share water and carry out necessary repairs.
But the farmers have not shown interest in construction of field channels in the command areas. Some studies made in this connection show that the failure of the farmers to construct field channels within the irrigation commands has caused under-utilisation of water from irrigation projects. To this, it may be mentioned that under Hirakud command area, 50 per cent of the total land was over-irrigated, 30 per cent got normal irrigation whereas 20 per cent of the area faced scarcity of irrigation water in the absence of field channels. In absence of field channels, the normal practice of irrigating the area not covered by OFD works is adopted by flooding method, which adversely affects agricultural production.

Although the construction of field channels has been taken up as a chief component of the OFD programme, only 18.78 per cent of the total culturable command area has so far been covered under field channels. Till end of 1981-82, little attention was given for the construction of field channels in the command areas. No annual targets for construction of field channels were fixed to ensure annual achievement against the targets. Further, as against a target of 134 thousand hectares to be covered under field channels, the achievement was
only 97 thousand hectares by the end of 1983-84.\textsuperscript{11} Reasons for short-fall in the achievement are attributed to non-finalisation of the modalities regarding recovery of loans from the beneficiaries, non-execution of consolidation operation, shortage of staff and non-availability of suitable categories of registered contractors.\textsuperscript{12}

(iii) Improper levelling and shaping of land.

Another inhibiting factor associated with the poor utilisation of irrigation potential is the improper levelling and shaping of land. Existing water resource can be better utilised if lands are properly developed, shaped and well bunded. No financial provision is made under the present arrangement for items like land levelling, land shaping, bunding correction and construction of bridges, etc.\textsuperscript{13} These are left to the farmers themselves for making their land well developed and properly shaped out of their own funds. However, since consolidation of holdings is under operation in different areas, farmers are not sure of getting their exact piece of chak. In addition to this, due to uncertainty in the supply of water, some farmers are not interested in developing their lands by spending money from their own resources. Further, they are also not interested to borrow money
from the financial institutions for the purpose as it involves hazards of running to banks for several times arranging for security deposits, etc. In view of the above, land development and shaping programme has not made much headway thereby resulting in under-utilisation of the potential.

(iv) Inadequate Drainage Facility

The existing drainage facilities (natural drains) are inadequate in all the command areas. But the problem of drainage congestion is more acute in the deltaic zone, i.e. in Mahanadi Stage-I and Stage-II command areas in comparison with other two zones. This is because of weak bunding of plots. In this zone the entire cultivable area has been bunded in the past for cultivation of rain-fed paddy only. Irrigation has been added later. Flow within the outlet command was by inundation from field to field and this was also the system of drainage. Moreover, since the outlets are not always located at the highest contours of the area, normally served, a proportion of the area does not always get irrigation water. Conversely, with continuous and unregulated irrigation flow normally practised, the lower undulations receive excess water through seepage and in the absence of drainage often become water-logged.
The extent of area affected in Mahanadi Stage-I and Stage-II command due to the poor drainage conditions is presented in Table 6.2 below:

Table 6.2
Area Affected due to poor Drainage Conditions in Mahanadi Stage-I & Stage-II Command Areas

<table>
<thead>
<tr>
<th>Name of the Area to the East of HDC, Range-I.</th>
<th>CCA</th>
<th>Area Affected due to poor drainage to Col. 3</th>
<th>Col. 4 as percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mahanadi Stage-I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mahanadi-Kathjuri-Devi</td>
<td>72</td>
<td>21</td>
<td>29.17</td>
</tr>
<tr>
<td>Mahanadi-Chitrotpala-Luna-Birupa-Brahmani.</td>
<td>85</td>
<td>31</td>
<td>36.47</td>
</tr>
<tr>
<td>Luna-Chitrotpala</td>
<td>9</td>
<td>3</td>
<td>33.33</td>
</tr>
<tr>
<td>Area to the East of HDC, Range-I.</td>
<td>14</td>
<td>3</td>
<td>21.43</td>
</tr>
<tr>
<td>Total:</td>
<td>180</td>
<td>58</td>
<td>32.22</td>
</tr>
<tr>
<td>Mahanadi Stage-II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kathjuri-Kusabhadra</td>
<td>63</td>
<td>21</td>
<td>33.33</td>
</tr>
<tr>
<td>Kusabhadra-Bhargavi</td>
<td>38</td>
<td>11</td>
<td>28.95</td>
</tr>
<tr>
<td>Daya-Bhargavi</td>
<td>48</td>
<td>30</td>
<td>62.50</td>
</tr>
<tr>
<td>West of Daya</td>
<td>8</td>
<td>4</td>
<td>50.00</td>
</tr>
<tr>
<td>Total:</td>
<td>157</td>
<td>66</td>
<td>42.04</td>
</tr>
<tr>
<td>Grand Total:</td>
<td>337</td>
<td>124</td>
<td>36.80</td>
</tr>
</tbody>
</table>

Source: Executive Engineers, Drainage Master Plan, Puri and Cuttack.
The table shows that 124 thousand hectares (36.80 per cent) of the total culturable command area (CCA) of both Mahanadi Stage-I and Stage-II commands have been affected by poor drainage condition.

A classification of such poor drained areas of 124 thousand hectares shows that about 14.7 per cent of this area including 3.1 per cent of the area which cannot be retrieved economically, has been rendered unfit for cultivation. While in 36.9 per cent of the area no kharif crop can be grown, in the rest 48.4 per cent of the area cropping is possible in kharif with reduced yields.15

Thus, inadequate drainage facilities in about one third of the total irrigated area of Mahanadi Delta is a serious threat for ensuring effective utilisation of water resource.

However, the nature of drainage problem in Hirakud command area is different from the deltaic zone. Here it is a product of the inherent characteristics of the physiography and nature of soil profile. In Hirakud command area mostly the low-lying (Bahal) lands suffer from water-logging in the absence of a drainage facility.

The low lands suffer from drainage because of excessive percolation of water from the canals as well as
the paddy fields situated in high and medium lands. No surface drainage has yet been provided. As a result of this, the sub-soil water accumulating in the soil profile does not get a chance to dry up and hence the water logged condition is created. A sample study conducted a few years back showed that about 7 per cent of the culturable command area accounts for the water-logged area because of inadequate drainage facility. Taking this into account for the entire GCA, the total area requiring drainage network would be in the region of nearly 11 thousand hectares. 16

Drainage facility is also found to be inadequate in Salandi command area. However, its extent has not been estimated till now at the macro level, yet the information elicited from the sample farmers through field enquiry indicate that during kharif season about 4 to 5 per cent of their cultivated area are subject to water-logging, because of inadequate drainage facilities.

Thus, poor drainage condition is found in all the command areas leading to water-logging, the extent of which varies from area to area and year to year depending upon density of rainfall and intensity of water supply through canals.
(v) **Predominance of Heavy Duty Crops**

Utilisation of irrigation potential is also determined on the basis of cropping pattern adopted in a particular area. Irrigation potential is estimated with the hope that farmers would adopt a composite cropping pattern consisting of heavy, medium and light duty crops. But the cultivators raise only heavy duty crops like paddy, both during kharif and rabi. It is because of the food habits of the people in consuming rice; the small and marginal farmers concentrate more on the production of crops for family consumption only. Consequently the ayacut in real term becomes less than what is estimated by the canal authorities. The area which could get water for the crop was only grown and the rest of the ayacut was kept fallow like unirrigated area. Both the former and the latter were considered officially as irrigated area, while the cultivators had taken the former only as irrigated. Owing to this, some part of the command area remained fallow. An estimate made in this respect in Salandi command area shows that the percentage of land remaining fallow was ranging between 37 and 65 during the period from 1973-74 to 1976-77. Thus, the predominance of paddy crop, a heavy duty crop, also acts as an inhibiting factor for the under-utilisation of irrigation potential.
(vi) **Fragmentation of Land Holdings**

Another problem in the delta area is the high degree of fragmentation of holdings; individual holdings are frequently smaller than 1/10th of a hectare. This poses a problem for construction of inland water distribution system. Consequently, mis-utilisation of water takes place. However, looking to this problem a decision has been taken by the State Government to give the highest priority in respect of consolidation of holdings in the command area.

(vii) **Defective Land Consolidation System**

Proper utilisation of irrigation potential can be made only when sufficient areas are earmarked for the construction of field channels. This is done at the time of consolidation of holdings by the Land Consolidation Authority. But consolidation of holdings is not taken up along the entire distributary as a unit, but in patches in a number of distributaries. Land reserved for field channels cut across consolidated chaks and as such, do not provide for optimal water distribution within the outlet command. Because of such defective land consolidation system the construction of field channel work is much delayed and sometimes conflicts arise between the CADA and the beneficiary farmers. This delay in the work of construction of field channels leads to wastage of
water resources in the command area.

(viii) Absence of Water-Regulatory Structures

In the absence of sufficient and permanent water regulatory structures some amount of water released from canals has been mis-utilised in the command area. The requirement of pre-cast structures in Hirakud Command area was found essential because of the presence of the undulating terrain. The utilisation of irrigation potential can be increased by increasing the return from one unit of water and one unit of land, if the water released is properly controlled through the use of the regulatory structures and sufficient number of controlled gears. The water thus saved through these structures can be pushed to the tail-end areas where the coverage of irrigation has shrunk over the years. There are a large number of tail-end villages which were receiving water from the Hirakud canal system and the farmers there were raising two or more crops in a year. These tail-end villages are now not getting any irrigation water during the rabi season and even during the kharif season water does not reach a major part of these villages. There are numerous such instances in the tail-end areas of each of the major canal systems. It has been reported that about 15 or more villages in four Gram-Panchayats of Sambalpur district are now not getting irrigation water. Thus,
there has been a recession in the water supply in the tail-end villages of the command area. On the other hand, however, in the head-reach villages people have brought more area under irrigation. This signifies that irrigation water has not yet been controlled because of the absence of regulatory structures.

Sometimes, although structures are installed in some areas they are not technically tested before their installation. Some of these structures are not up to the required design, standard and quality. Some structures constructed by the Soil and Water Management Division in the command areas have also remained unutilised because of their design and quality. In Salandi Command Area though 1,23,524 pre-cast structures were manufactured during 1979-80 to 1982-83, only 69,453 structures were utilised. The unutilised stock by March, 1984 was 54,071. Similar is the case in Hirakud command area. All these indicate that there is an urgent need for the installation of such structures in the command area to ensure optimum utilisation of water resource.

(ix) Inadequate Technical Personnel

There has been increasing need for technical personnel for effective execution of the command area development programmes aiming at optimum utilisation
of water resource in the command areas. These personnel should have adequate knowledge in water management, construction of low-cost irrigation structures, operation of regulatory structures and convincing the cultivators for adopting suitable cropping pattern in order that the available water could be properly utilised. But in the command areas such works are mainly conducted by a large number of field staff engaged previously in the topographical survey. Some of them are also inducted as 'irrigators' for implementing the Rotational Water Supply Programme. Some works of CADA are also being done by diploma holders in Civil Engineering deputed by Irrigation Department. No formal training institute for imparting training on Water Management has yet been started in the State. Therefore, a Land and Water Management Institute may be established in the State for equipping adequate number of trained personnel to work in the command areas exclusively for better utilisation of irrigation water. Further, the existing personnel should go for a short orientation training course in water management, so that they can be more effective in implementing the programmes in the command areas.

(x) Lack of Participation among the Farmers

Water utilisation ultimately depends on its application by the farmers. In many cases it is found
that farmers do not participate in various programmes designed to have better utilisation of irrigation potential. First, they do not adopt the desired cropping pattern. Second, for the construction of field channels although loans are given, they are not inclined to take up the work. For this, the Commissioner, CAD reported that because of the absence of farmers' participation in the construction of field channels, the programme could not be implemented till 1980-81.20

As the progress of OFD works became tardy due to such dependence on the beneficiaries financing the cost, which was not forthcoming, the State Government ultimately decided in 1981-82 that field channels and field drains upto the 5-hectare blocks would be constructed, in the first instance by the Government in the areas covered by OFD programme. Despite such incentives provided by the Government and financial institutions, the progress of construction work of field channels in the command areas has not been encouraging because of the apathy of the cultivators towards the programme. In other words, the lack of participation of the farmers is one of the several factors responsible for the under-utilisation of irrigation potential in the command areas.

In the light of the above discussions, it may be pointed out that under-utilisation of created irrigation
potential still continues to be a fundamental weakness of the existing water management system in the four command areas. This has resulted in a considerable wastage of water and uneven distribution of such water from the point of view of equity. Further, continuous flooding of water leads to excessive seepage and water-logging in the lower lands in the absence of drainage. It may be mentioned that the low lands running the risk of water-logging and ultimate salt effervescence are generally computed to be as high as one-third of the total crop area of the State. Finally, in the absence of adequate field channels, it has become difficult for the introduction of an optimum crop pattern.

**Policy Implication**

Taking into account the above grim consequences of canal irrigation system in the command area, urgent steps are to be taken for the modernisation and regular repair of major canals. Adequate funds are to be provided to the Command Area Development Authorities and their proper utilisation need be ensured in order to realise maximum benefits of irrigation. The consolidation programme is to be taken up in the command area in a planned manner and local peoples' participation is to be encouraged in preparing maps indicating the area to be earmarked for
drainage works. So also, adequate technical personnel are to be recruited for water management in the command areas. Since the provision of drainage as well as reclamation of land are quite costly propositions and as such private initiative cannot be expected to play any significant role in the near future, the Government should come forward with adequate funds for ensuring better utilisation of irrigation potential in the command areas of the state.
REFERENCES


13. Ibid., p. 183.

14. Chatterjee, S.L., "Irrigation Development in Orissa, With Special Reference to Command Area Development


20. Ibid., p. 181.