CHAPTER: 14
PROBLEMS AND POLICY
MEASURES OF WATER MANAGEMENT
14.1 Problems of water management

Agriculture occupies a pride of place in the country’s economy, contributing a little less than half of the national income if being 41.8 percent in 1981-82 as against 49.5 percent in 1971-72. Despite agriculture being the mainstay of Indian economy the distressing fact is that its share in the national income has been declining due to number of causes.

About 72% of the working population is dependent upon agriculture.

Agriculture is the main source of raw material for India’s leading industries, providing employment to a vast number of people in the villages and towns. It also provides a large part of the market for industrial goods, particularly farm inputs like fertilizers, pesticides, machineries, pumps, etc. It brings income to the government railways by transporting agricultural produce from one part of the country to the other. About 50% of the value India’s exports consist of agricultural goods. It is agriculture which supplies not only food grains, beverages and nutritious foods but also sustains a large number of industries.

Indian agriculture is the gamble in monsoon. Monsoon is irregular, ill distributed and uncertain. They also set in too early or too late. The inevitable result is failure of crops, so of only 20% of the area is irrigated.

Continued absence of adequate facilities for 80% of the area for irrigation has made the poor cultivator a helpless tool in the hands of his fate. It has been rightly said, “farm production cannot be quickly expanded or contracted but may be seriously and unexpectedly reduced by bad weather, rests and diseases.

Agriculture is the major user of water in most of the countries. In this context it will be important in future for farmers to receive the right 5 signals to increase water use efficiency and improve agriculture water management while preserving aquatic ecosystems.

In Sriniketan-santiniketan Planning Area canal, tank and shallow tube wells are the main source of irrigation. The farmers use them enormously. But there are some physical, technological, economic, social and administrative problems. These problems hinder the sustainable development in this area. The problems are discussed below.
14.2 Physical problems:

(i) In Binuria, Adityapur, Supur, Islampur and Bahadurpur villages canal is the main source of irrigation. Irrigation is needed mainly during summer season. But in this time canal water decreases due to high rate of evaporation. So these areas cannot get sufficient water for their irrigation. So the agricultural production is hampered.

(ii) In all the five sample villages of the study area another acute problem is seepage loss of water during Pre-Kharif summer season. So the total quantity of irrigational water is reduced. This situation creates severe problem for the farmers.

(iii) In some parts of Supur and Bahadurpur villages some agricultural lands are low land. So during rainy monsoon season when heavy rainfall occurs sometimes water logging condition is created for some days. Due to this situation sometimes production is hampered and the farmers are deprived.

(iv) In all the five sample villages of the study area faces another problem due to uncertainty of monsoon. Like any other business enterprise, agriculture bear high risk because of the volatile nature of the factors involved. For instance, weather is often a problem. There are droughts in one year and heavy rains in the next. In both cases, farmers lose out; hence they have to look for a normal period to make money.

(v) In Adityapur, Supur and Binuria villages main source of irrigation is canal. Here other irrigational facility is very negligible. But canal water is available only in varying seasons. But the area faces the scarcity of water during Rabi and Pre-Kharif season due to monsoonal rainfall. In this period canal water is not available. So the area faces problem.

(vi) Before the alignment of canal tank was the primary source of irrigation in entire study area. But now a day its importance has been reduced after the construction of canal. Despite this the tank irrigation is still an important source of irrigation in the study area. But these tanks are in many cases silted up, neglected and derelict.
(vii) In all the five sample villages most of the irrigated tanks have been silted up, so the actual irrigated area has been reduced considerably. This has given rise to low proportion of actual irrigated area of the tank. This problem affects adversely the cropping pattern, land use, crop productivity and employment potentialities of the study area.

(viii) It is very urgent to help the farmers to a better understanding of the effect of water quality upon soil and crops and to assist in selecting suitable alternatives to cope with potential water quality problems that might reduce production under prevailing conditions of use. But the farmers of Buniria, Supur, Adityapur, Bahadurpur and Islampur villages have lack of this knowledge.

(xi) Irrigated agriculture is dependent on an adequate water supply of usable quality. Water quality concerns have often been neglected because good quality water supplies have been plentiful and readily available. But this situation is now changing in Binuria, Supur, Adityapur, Islampur and Bahadurpur. Intensiv e use of nearly all good quality supplies means that new or supplemental must rely on lower quality and less desirable sources.

14.3 Technological Problems

(i) In Islampur village and partly Adityapur village the researcher has found out one vital problem that the farmers have lack of knowledge about how best to irrigate and how much to irrigate. Apart from this the agricultural infrastructure of this area is not so developed and the farmers have lack of knowledge.

(ii) In Islampur and Adityapur villages problems related to irrigation, market and transport infrastructure add significant cost of farmers operations. So the cost of production of agricultural crops increases which reduces the profit of the farmers.

(iii) In Supur, Binuria, Adityapur, Bahaudrpur and Islampur villages irrigation channel is not properly situated. So all the agricultural lands do not get the canal water uniformly for their irrigation. They get irrigation when heavy rainfall occurs. But at that time irrigation is not needed rather this excess canal water causes damages of crops.

(iv) In all the five sample villages irrigation processes is not scientific. As for example sometimes canal water is supplied when heavy rainfall occurs. So some places get excess
water which is not required. This sufficiency of water does not benefit the area rather the crops are damaged due to excess water. So the farms are hampered due to lesser production of crops. On the other hand, the farmers cannot get water when the irrigation is really needed.

14.4 Social Problems

(i) In Supur, Binuria, Adityapur, Bahaudrpur and Islampur villages the presence of increasing population and practice of dividing land equally among the heirs has caused excessive sub divisions of farm holdings. Consequently, the holdings are small fragmented. The small size of holdings makes farming activity uneconomical and leads to social tension, violence and discontentment.

(ii) In Adityapur and Supur villages most of the shallow tube wells have been installed on the low and plain lands along the river Kopai and Ajoy, respectively. These tube wells are owned by the farmers belonging to the high and middle caste Hindu groups of population, who first irrigate their own land and then sell water to the poor farmers at high cost. But very few poor farmers can afford it. So government has provided some tube wells to facilitate these weaker sections of the community but a large number of government owned tube wells at present have become unworkable due to the negligence of the farmers to supervise their operations.

(iii) Although these shallow tube wells are operated within the village yet very low proportion of command area are actually irrigated.

In Adityapur and Supur villages the double cropped land stretches along the rivers. Irrigation is provided here by river lifting devices. The farmers construct either embankment across the bed of the rivers and reservoirs during Rabi and Pre-Kharif seasons and then harness water with the help of the above mentioned machineries. In case of multiple cropping, the method of extraction of water not only derelict the river bed but also invite social conflict and dispute between farmers of the villages alike other schemes but low proportion of command area are actually irrigated by the schemes.

(iv) Another aspect needs to be mentioned that in all the five sample villages the machineries used for irrigation from ponds or rivers like pump sets etc. are size
biased, income biased and capital intensive that are mainly owned and used by the affluent farmers of the society. On the other hand the traditional and indigenous water lifting devices are size neutral, income neutral and labour intensive which are owned and used by the farmers of all classes of the villages.

(v) Mainly in Binuria village and partly in Islampur, adityapur and Supur villages the agricultural office supply different types of seeds, fertilizers, pesticides, etc. But this facility is available only to those farmers who are politically and financially influential in the society. So they give maximum facility to the big farmers and small farmers are deprived.

(vi) On a global basis and also on all sample villages the irrigated area began decreasing after 1975 due to increased concentration costs, falling real price for wheat and rice, growing awareness of environmental and social costs and poor irrigation performances at the farm and project levels. This slower expansion in irrigated area is regulating in an unprecedented decline in the per capita amount of irrigated area.

14.5 Economic and Administrative Problems

(i) In Supur, Binuria, Adityapur, Bahaudrpur and Islampur villages irrigation is supplied from tank and very few places by shallow tube wells. But irrigation from shallow tube wells is very expensive due to high power cost. Pumping cost is very high because diesel cost and electricity cost is increasing. Apart from this electricity is not available at all the time and the current voltage is not enough in the rural areas. So the farmers face many difficulties.

(ii) In Supur, Binuria, Adityapur and Islampur villages the socio-economic hierarchy of the farmers of the villages received assured irrigation from the schemes where the possibility to bear risk is minimum. In this context it is necessary to point out that these farmers control and influence the existing power structure of the administration of the society in such a manner that, the above irrigation schemes are often located closer to their plots. So a high proportion of the plots of the affluent farmers of the villages receive irrigation from the low risk bearing irrigation schemes.
14.6 Policy Measures

(i) In Supur, Binuria, Adityapur, Bahaudrpur and Islampur villages canal water is decreasing during summer season due to high rate of evaporation. To prevent or reduce this problem solar cell can be installed.

(ii) Seepage loss can be checked by making the field channel concrete or pipe line irrigation can be introduced. Drip irrigation may also be introduced for proper water management.

(iii) To reduce the water logging during heavy monsoon showers at Supur and Bahadurpur villages proper drainage channel should be maintained.

(iv) To reduce the production loss due to uncertainty of monsoon. Irrigational network should be developed in all the study area, so that the farmers do not depend on completely on monsoon.

(v) In Supur, Binuria, Adityapur, villages where main source of irrigation is canal and high water scarcity during summer there irrigational facility should be developed. Capacity of canal should be increased. Another step may be taken for the irrigational development of these villages as there is no cultivation in four villages which are included in Bolpur. It is drained by water of these villages which can be stored in rainy season and that can be supplied in Rabi and Pre-Kharif season in the other villages. Thus, the farmers can get benefited and inspired. In all these sample villages and neglected tanks should be renovated so that more rain water can be stored in rainy season and that can be used during the period when there is scarcity of water.

(vi) Actual irrigated area in the study villages should be increased so that cropping pattern land use, productivity and employment potentials of the study area can be improved.

(vii) The farmers of these villages should be aware of the quality of irrigation water upon soil. That might increase the production under prevailing condition.

(viii) The quality of water supplied for irrigation should be of good quality, so that the agricultural production should be increased.

(ix) The farmers of all the villages, particularly the farmers of Islampur and Adityapur village should be given some knowledge about good irrigation practices. Apart from this some training programme can be arranged so that the farmers get some knowledge about agricultural infrastructure and machinery.
(x) If the farmers of these villages are trained in irrigation, market infrastructure and transport then it will reduce the cost of production. so, the cost of production of agricultural crops decreases which increases the profit of the farmers.

(xi) In all these sample villages irrigation network should be developed that all the lands can get canal water uniformly and the drainage network should be improved to reduce the damages of crops at the time of heavy monsoon shower.

(xii) In all these sample villages fragmentation of land should be avoided by interchanging one piece of land from another.

(xiii) In Adityapur and supur villages the farmers of weaker section should be conscious about operation of the government owned tube wells so that the tube wells do not become unworkable. The social conflict should be avoided among the farmers.

(xv) In all of these sample villages traditional and indigenous water lifting devices which are used by all classes of the farms of the villages should be replaced by modern machineries used for irrigation from pond like pump set etc. to increase the agricultural benefits.

(xvi) In Islampur, Adityapur and Supur villages particularly in Binuria village the agricultural office should distribute all the facilities to all classes of farmers so that the poor farmers are not deprived.

(xvii) The irrigational area should be increased to increase the agricultural production.

(xvii) In all the sample villages to reduce the power cost some irrigational schemes should be implemented so that all the farmers can get the facilities at low price.

(xix) In Islampur, Adityapur and Supur and Binuria villages assured irrigation from different schemes which are less risk bearing is supplied equally to all classes of farmers. These schemes should not be located closed to the plots of the rich and influential farmers. By taking these measures the above problems can be reduced and the water can be properly utilized so that the farmers can get the benefit.