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Pricing of Irrigation Water

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Introduction

Irrigation water supplied to farmers has to be charged or priced at some specified rate to match, at least, reasonable part of the investment to avoid diversion of budget meant for other developmental programs of the country to meet the losses incurred in irrigation sector. Irrigation sector should not become a limiting factor for overall progress of the country. Water pricing is a good policy measure for the optimum use of water resource. Water pricing might influence the quantity of consumption of both surface and groundwater. Pricing of water allows the farmers to extract the quantity of water and power necessary to irrigate their land area. Surface water pricing provide the sufficient fund for the proper maintenance of tanks and percolation ponds. These practices facilitate Rain Water Harvesting (RWH) and the conservation of water. The pricing of water selects the suitable crop for the particular type of land and availability of water.

How is the price of irrigation water fixed in India?

- It is one of the sensitive issue in irrigation sector
- No systematic and uniform rules are followed in setting price for irrigation water
- Prices are fixed by a mix of social, economic and political factors

Main Criteria followed for Fixing Water Price

- Farmers ability to pay (determined by output)
- Volume of water used (area irrigated)
- Quality of irrigation (dependability, season)
- Recovery (at least to cover OM cost)

Ideally, irrigation water pricing should be keyed to:

1. Type of crops (Food *vs.* Cash), season and crop water requirement)
2. Type of irrigation method (gravity, lift and drip/sprinkler)
3. Land character (Wet *vs.* Dry) and varies with state

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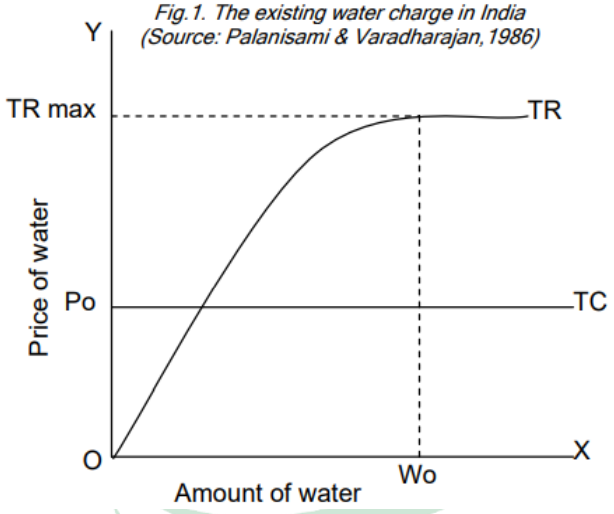
4. Financial capacity of farmers
5. Scale of irrigation project (large, medium, small) and
6. Water resources vulnerability
7. Rate is fixed based on area irrigated

Existing Water Pricing Method in India:

- Water pricing policy in India is such that it does not even cover the cost of operation and maintenance (O&M) of the irrigation systems, let alone the full capital cost including O&M.
- This leads to severe financial pressure on the state since it has to absorb the subsidy. Water charge in India is based on per acre basis and does not vary with the volume of water actually used. This is indicated by P_o.
- Since the total cost (TC) of water to the farmer is fixed per unit area, the TC curve is drawn as a horizontal line.

Fig.1. The existing water charge in India (Source: Palanisami & Varadharajan, 1986)



- The curve TR represents the total revenue realised from successive inputs of water, net of the variable costs of production (fertiliser, plant protection etc.,).
- A rational farmer maximising his net return from water uses water as long as MVP > MC = 0.
- Since the maximum cost (MC) of water to the farmer is zero, he will apply water until he attains the maximum TR, where MVP is zero.
- This condition holds if he uses W_o of water per unit area for which he pays the price P_o, which ultimately results in wastage of water.

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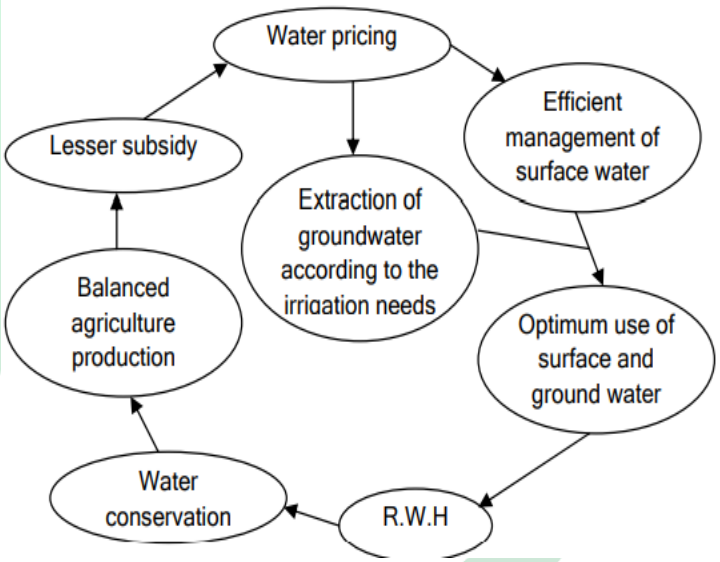
Committee on Pricing of Irrigation Water

Over use of irrigation water leading to its inefficient use is most common as payment for water used is based on area-cum-crop basis irrigation and not on the quantity of water used. In 1991, Planning Commission appointed an Expert Committee to consider different aspects of pricing irrigation water. The Committee submitted its report in 1992.

- Two-Part Tariff
- Assessment on Group Basis
- Water Rates
- Warametric System

Benefits of Water Pricing



Conclusion:

- Water pricing is a good policy measure for the optimum use of water resource. Water pricing might influence the quantity of consumption of both surface and groundwater.
- Pricing of water allows the farmers to extract the quantity of water and power necessary to irrigate their land area. Surface water pricing provide the sufficient fund for the proper maintenance of tanks and percolation ponds.
- These practices facilitate Rain Water Harvesting (RWH) and the conservation of water. The pricing of water selects the suitable crop for the particular type of land and availability of water.

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- This will strengthen the attitude of farmers towards water pricing because of the fact that the optimum use of water will benefit the farmers by economizing the extraction cost and reliability in supply. This will change the negative attitude of the farmers towards water pricing.