



Mains Practice Question

Q. Identify the challenges involved in the implementation of micro-irrigation technology to promote water use efficiency in agriculture. (250 words)

04 Feb, 2019 GS Paper 3 Economy

Approach:

- Introduce by giving emphasis on water scarcity situations in India.
- Give the type and advantages of micro-irrigation technology.
- Identify challenges and give steps taken to resolve in way forward.

Introduction

- Water is a scarce natural resource and the major requirement of water is in agricultural sector. The water availability depends on various hydro-meteorological factors and therefore the efficient use of available water for irrigation is vital but a major challenge. Hence, technological innovations and interventions are essential for water development and management for sustainable agriculture and micro-irrigation is one such innovative technology.
- According to the study, the average penetration level of micro-irrigation in the country is 5.5 % which is much less compared to other countries

Body

- Sprinkler irrigation and drip irrigation are the commonly used micro-irrigation methods.

Benefits:

- Micro-irrigation technology ensures water use efficiency as much as 50- 90%. This can be achieved due to the fact that micro-irrigation helps to reduce conveyance losses, runoff, evaporation losses, seepage and deep percolation losses significantly.
- Since low flow rate is required, small wells can also be used as a source and it helps for energy savings upto 30.5%.
- The crop yield is increased and it was stated that the productivity for crops & fruits is increased up to 42.4 % and the increase in productivity for vegetables up to 52.7%.
- More focussed and judicious use of water has resulted in the increase in farmer's income.
- Reduction in energy consumption and in the use of chemical fertilizers & pesticides.
- **Challenges involved** in the implementation of micro-irrigation technology:
 - **Lack of awareness** on farmer's part: Inadequate focus on nationwide spreading of micro-irrigation technology.
 - **Inefficiency in implementation** as the implementation agency was changed from a dedicated mission to a component part of NMSA under PMKSY. In many States, the released funds were not utilised properly due to the lack of implementation strategies;
 - **Lack of reliable guidelines** and delay in Government orders
 - **Government fund:** Unavailability of subsidy funds for installation as subsidy reduced from 50% to 35% and allocation of funds under various schemes is declined;
 - **Financial:** Difficulty in getting necessary supports from financial services. It was reported

- that a lower adoption rate due to the reduction in budget during the period (2013-16).
- **Energy:** the main input for an irrigation system is energy, and for large scale projects, only electricity is a viable source which is still beyond the reach of every farmer.

Way forward

- National Mission for Sustainable Agriculture (NMSA) had On-farm water management component which focuses on promotion of efficient technologies and water use efficiency.
- “Per Drop More Crop” - Improving Water Use Efficiency. This scheme focuses on all aspects of water development and management with micro-irrigation as an integral component.
- Various steps taken by Government for promotion of micro irrigation include
 - Training and awareness programmes
 - Awareness through print media and radio & TV talks
 - Organization of workshops, seminars and interactive meetings
 - Publicity creation through Exhibitions, Fairs and Kisan Melas
 - Publication of literature and
 - Short duration films.
- All such programmes should be implemented with a strong will to achieve water use efficiency.

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