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ROLE OF MICRO IRRIGATION IN HARYANA

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Abstract:

The two most important resources for the nation's agriculture and economic development are land and water. The major user of water is the agricultural sector. Water is in increasingly greater demand across a range of sectors, residential uses, and agricultural uses. Even today, most of the farmers adopt the ancient method, due to which there is more wastage of water in agriculture. To prevent wastage of water, farmers need to be made more and more aware that water can be saved for the future. More than 80% of the nation's usable water resources are used by agriculture. And the water scarcity will increase and people will face this situation in the future. By implementing modern irrigation techniques in the agricultural sector, the efficiency of water consumption can be improved. The newest technology that can be used in Indian agriculture is micro irrigation. Therefore, it is time to switch from the flood irrigation approach to the micro irrigation technique. In order to prevent soil erosion and water evaporation, micro irrigation is an effective technique for supplying irrigation water directly to the root zone of the plants. Along with irrigation water, it facilitates the use of fertilizers and pesticides. For effective water use, micro irrigation techniques like drip and sprinkler irrigation need to be used. The future potential and current status of micro irrigation technology in Haryana will be discussed in this research paper.

Keywords: Agriculture, Irrigation, Technology, Water scarcity, Efficiency.

Introduction:

There is an issue in the world's management of water. The supply of usable water and its wildly unequal spatial distribution are key factors in the dilemma. Over the past four to five decades, there has been a significant change in the availability of water. At the worldwide level, irrigation accounts for more than two thirds of blue water withdrawals. Despite accounting for almost a fifth of all cultivated area, irrigated agriculture supplies more than one third of all food produced globally, making it crucial to the survival of the human race. The farming community is threatened by the quickly diminishing ground water resources and is compelled to implement improved water management techniques in order to achieve sustainable production. Although the idea of irrigation has existed for as long as human civilization, irrigation designs have become more effective throughout time. Adoption of better water management techniques is a crucial current necessity. India's crop productivity is negatively impacted by both drought and the careless use of irrigation water.

Water is a precious natural resource, and the agriculture industry uses it most frequently. The major user of water is the agricultural sector. Every drop of water available at the delivery system and its efficient application are crucial for overall farm efficiency because water is a valuable resource for agriculture. Therefore, it is sensible and essential to use the water resources efficiently and micro-irrigation is one such innovative technique. The two most widely utilized micro-irrigation techniques are sprinkler irrigation and drip irrigation.

What is micro irrigation?

It is an irrigation method that involves lower pressure and flow than a traditional sprinkler system.

The low volume irrigation is used in agriculture for row crops, orchards, and vineyards. It is also used in horticulture in wholesale nurseries, in landscaping for civic, commercial, and private landscapes and gardens, and in the science and practice of restoration ecology and environmental remediation.

Types of Micro Irrigation:

- 1. Drip Irrigation:** Drip irrigation system started in the year 1860, in Germany. This technique is known as a highly water saving technique for irrigation. This system allows controlling the use of water and fertilizer through using valves, pipes, tubing etc. Drip irrigation supplies water directly to the root of crops. This technique was firstly experimented in the desert area of NEGAR and AREVA in Israel during the early 1960's. After this, this technique was tested in different countries like Australia, Mexico, New Zealand and South Africa. The results were outstanding. This system uses drip emitters that deliver water at very low rates. By using drip irrigation 45% water has been saved and 25% fertilizers also saved.
- 2. Sprinkler irrigation:** The sprinkler irrigation developed in many countries. In India, sprinkler irrigation is used by many states like Rajasthan, Haryana, Maharashtra and many more states. By this technique, water is carried by using pipes with the pressure of water and 50% water saved more crops and the yield percentage of crops also increased.

Micro Irrigation in Haryana:

Micro irrigation started in Haryana under mission mode in 2006-07. From the year 2016-17, the micro irrigation programme is being implemented under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) as per the operational guidelines of Per Drop More Crop (PDMC) component of PMKSY. The MI programme is being implemented through a web portal online www.cadaharyana.nic.in since 2020-21 in the State. Every process from application submission to release of assistance is being done through www.cadaharyana.nic.in. In current financial year, assistance of micro irrigation system shall directly be credited into the account of beneficiary/farmer and the account shall link with Aadhar Card.

The state government of Haryana is implementing a special project to encourage micro irrigation and recharge ground water in the state. Micro-irrigation is an irrigation method that involves lower pressure and flow than a traditional sprinkler system.

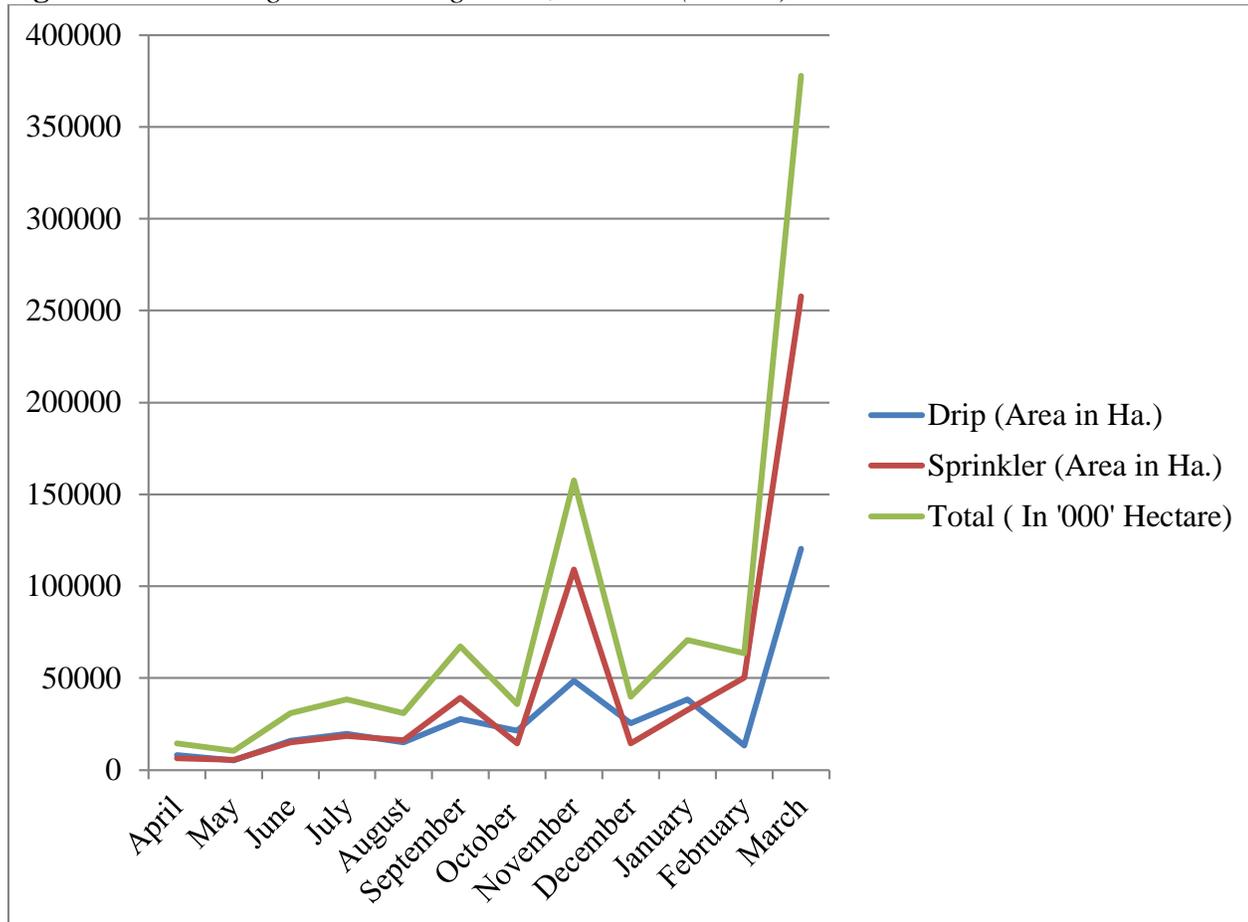
Various activities by different departments such as Agriculture, Horticulture, Irrigation and Water Resources Department, Forest Department and Micro Irrigation & Command Area Development Authority are being implemented under the project.

The subsidies under micro irrigation in these blocks have also been enhanced to 85 per cent and the cap of five hectares of land has been removed. Besides, a special campaign would be organized to reach out to the small and marginal farmers in the uncovered villages of these 36 blocks.

Table 1: Areas Covered Under Micro Irrigation in Haryana, 2020-21.

Sr. No.	Months	Area Covered under Micro Irrigation(In Hectare)		Total('000' Hectare)
		Drip	Sprinkler	
1.	April	18137.60	6445.53	14583.53
2.	May	5134.65	5376.32	10510.97
3.	June	15811.78	15063.98	30875.76
4.	July	19752.52	18523.72	38276.24
5.	August	14916.26	16115.83	31032.09
6.	September	27797.22	39402.24	67199.46
7.	October	21430.34	14503.46	35933.80
8.	November	48498.57	109190.78	157689.35
9.	December	25428.14	14436.16	39864.30
10.	January	38263.16	32611.99	70875.15
11.	February	13307.35	50253.17	63560.52
12.	March	120275.47	257739.36	378014.83
Grand Total		358753.06	579662.54	938416

Source: PMKSY, Department of Agriculture and Farmers Welfare, Govt. of India

Figure 1: Micro Irrigation Coverage Area, 2020-21 (In Ha.)

Source: PMKSY, Department of Agriculture and Farmers Welfare, Govt. of India

Figure 1 shows the area coverage under Micro irrigation during the year 2020-21. The area covered under Drip irrigation increased from the month of April to June. And it slightly decreased in the month of August. The area of Drip was highly increased in the month of November. It further decreased in the month of February and again highly increased in the month of March. Similarly, the area under Sprinkler increased in the month of June from the month of April. It highly increased in the month of September and decreased in the month of December. In the month of February, the area is increased and rapidly increases in the month of March. The total area under Micro irrigation was increased in the month of June starting from the month of April. The area increased continuously in the month of September and it decreased in the month of December. The total area is slightly increased in the month of February and highly increased in the month of March.

Benefits of Micro Irrigation:

- i. Micro irrigation is a low pressure and low volume irrigation system that is suitable for agriculture and horticulture crops with high return.
- ii. It can irrigate irregular land areas that cannot be irrigated by traditional irrigation method.
- iii. Fertilization process can be made easy by adopting this micro irrigation technology.
- iv. Micro irrigation supplies the water directly to the root zone of the plants and it saves water due to high efficiency and high water distribution method.
- v. The evaporation of water can be reduced by using micro irrigation technology.

Conclusion and Suggestion:

As the Government is making regular efforts on promoting Micro irrigation technology through various schemes. So that farmers may adopt this technology in the maximum irrigated area. However, there is a need to promote this scheme through awareness campaigns, media, internet, training, workshops etc. Government should provide subsidies to the heavy installation cost of the Micro irrigation system in an easier manner. The supply of fertilizers, equipment should be provided by the Agencies. It is necessary to provide the quality of emitters of different agencies. After installation of the Micro irrigation system, the technical support should be supplied by the agencies for operating the system. Farmers have a lack of knowledge regarding operation and its maintenance. So it is necessary to provide operational knowledge to the farmer. By providing training facilities, the adoption of Micro irrigation systems can be increased. Hence, the government should promote this water saving technology to the farmers of India by encouraging them on agronomic packages. A special package may be introduced for long facilities for the farmers who are willing to adopt this technology. Arrangement should be made to distribute the subsidy within the limited period of one or two months and there should be provision for at least 3 years free service to the farmers by the agencies.

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