

MICRO IRRIGATION IN INDIA – PRESENT STATUS AND FUTURE SCOPE

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ABSTRACT

Agricultural sector is the largest consumer of water. The demand of water has been consistently increasing from various sectors like Municipal use, industry etc. and such uses can often be at the cost of agriculture. The dominant method of irrigation practiced in large parts of the country is surface irrigation under which crop utilize only less than one half of the water released and remaining half gets lost in conveyance, application, runoff and evaporation. Micro irrigation methods like drip and sprinklers need to be employed for efficient distribution and application of water for crop production.

INTRODUCTION

Agricultural sector is the largest consumer of water. We have spent more than Rs. 80,000 crores and claim to have created an irrigation potential of over 90 mha (an increase of 65 mha since independence). Further increase in irrigation potential may be increasingly more difficult and expensive. Rising demand for water for rapid urbanization, large-scale industrialization and environmental demands also necessitate that the available water is efficiently utilized.

MICRO IRRIGATION SYSTEMS

Drip irrigation is defined as the application of water through point or line sources such as emitters on or below the soil surface at a small operating pressure of 20 to 200 kPa (0.2 to 2.0 kg/cm²) and at a low discharge rate of 1 to 30 l/h per emitter, resulting in partial wetting of the soil surface. Drip irrigation is also known as trickle or dribble irrigation and another related and more broadly term micro irrigation is defined as the water is applied not only by emitters on or below the soil surface, but also by sprayers, micro jets or bubblers above the soil, conveying water through the air and not directly to the soil, also resulting in partial wetting of the soil surface. Micro irrigation differs from sprinkler irrigation by the fact that only part of the soil surface is wetted (SD Berg, 1999).

Many studies across the country confirmed the superiority of micro irrigation methods in different aspects of water management including, i. Water saving, ii. Water use efficiency, iii. Saving in labour, iv. Reduction in weeds, v. Use of saline water, vi. Diseases and pest reduction, vii. Water control, viii. Efficiency of fertilizer use, ix. Soil erosion control and x. Increase in crop yield

PRESENT STATUS OF MICRO IRRIGATION IN INDIA

The application of microirrigation at commercial level was encouraged by the formation of a National Committee on the Use of Plastics in Agriculture. The committee established several Precision Farming Development Centres (Fig

1) in different agro climatic conditions of the country for conducting research on micro irrigation and to take the proven technologies to the farmers through demonstrations and training etc

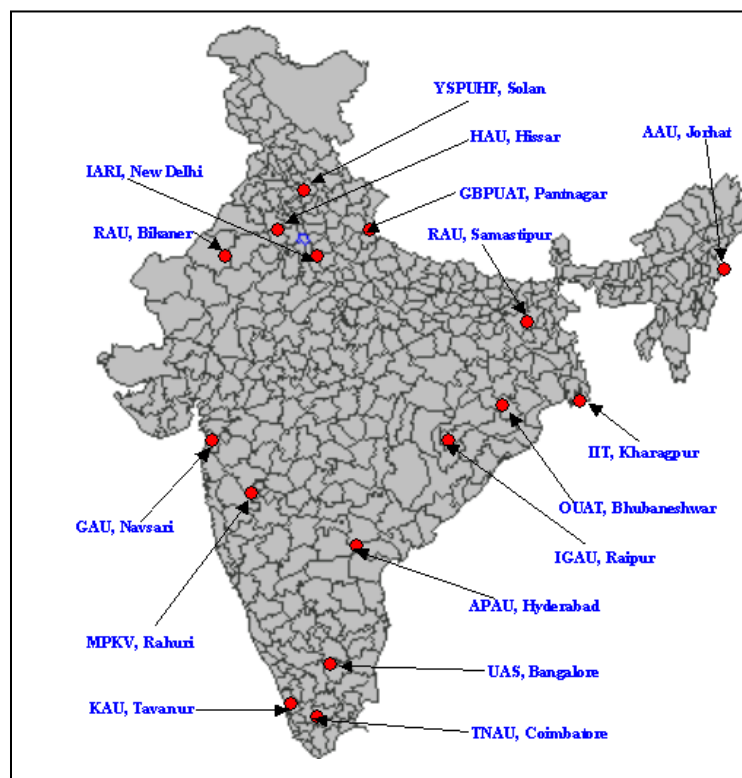


Fig. 1 Location of Precision Farming Development Centres

POTENTIAL OF MICRO IRRIGATION

Adoption of micro irrigation methods could bring a large area under irrigation along with increasing the land and water productivities. The potential for coverage under drip and sprinkler irrigation is estimated to be about 27 and 42.5 million ha respectively as per the following break up given in Table 1 (National Task Force on Micro irrigation, Government of India). The are under tea, coffee and recreational facilities including golf etc. also offer a suitable location for the adoption of micro irrigation systems which have not been considered in the estimates presented in (Table 1)

Table 1 Theoretical potential area for drip and sprinkler in India (Mha)

Crop	Area		
	Drip	Sprinkler	Total
Cereals	-	27.6	27.6
Pulses	-	7.6	7.6

Oil seeds	3.8	1.1	4.9
Cotton	7.0	1.8	8.8
Vegetables	3.6	2.4	6.0
Spices and Condiments	1.4	1.0	2.4
Flowers,Medical and aromatic plants	-	1.0	1.0
Sugarcane	4.3	-	4.3
Fruits	3.9	-	3.9
Coconuts, plantation crops & Oil Palm	3.0	-	3.0
Total	27.0	42.5	69.5

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