

CASE STUDY ON SOIL MOISTURE MANAGEMENT THROUGH PRECISION IRRIGATION



Ranveer Singh

Lanabanka Village,
Block – Pachhad
State- Himachal Pradesh

Sources of Income:

Majorly Vegetable Cultivation

Economic Impact:

Reduced Labor costs, Time saving, More Yield, More
no. of crops per year.

Area:

7.5 Bigha (1.15 Acres)

Management Practices:

Drip Irrigation System, Fertigation, Soil Moisture Man-
agement

Background

Ranveer Singh is a peasant farmer from Lana Banka village in Sirmour's Pachhad block. He has 7.5 bighas of agricultural land (1.15 acre). On a large portion of his property, he plants wheat and maize, and on the rest, he grows vegetable crops such as tomato, ginger, beans, capsicum, maize, turmeric, colocasia, and garlic, as well as other winter crops such as pulses. His household income is derived from the cultivation of these products, which enables him to support his family of five. Other villagers in the hamlet, like Ranveer, rely on agriculture to make their living. Due to the block's high climatic susceptibility and substantial temperature changes from year to year, inhabitants in this region experience less rainfall and other water resources. Farmers in this community suffer from inefficient use of newly constructed amenities. Water scarcity has exacerbated as a result of improper ground water policies implemented in the region. The geography of this community significantly affects downstream drainage and decreases ground water quality. Because of these challenges, it is difficult to water the crops on a regular basis. To address these water shortage challenges, Ranveer Singh attended a SLADRC training session in 2018 where he learned about effective irrigation methods and how to manage water more efficiently for sustainable agricultural output. As a result of this training programme, Ranveer learned water management techniques for farming, especially drip irrigation, which allowed him to irrigate his whole land in a short period of time and with minimal water use. Ranveer used the training skills from the programme to adopt this strategy in his farm for the majority of his crops. He prepared his field for farming for 8 months before installing the drip irrigation system, which included preparing the base and placing drip pipes above the crop bed. After a few months of drip irrigation, he saw an increase in output and, as a result, an increase in his income. After he used this strategy on the field, the yield of each crop began to rise.

CASE STUDY ON SOIL MOISTURE MANAGEMENT THROUGH PRECISION IRRIGATION

effective irrigation methods and how to manage water more efficiently for sustainable agricultural output. As a result of this training programme, Ranveer learned water management techniques for farming, especially drip irrigation, which allowed him to irrigate his whole land in a short period of time and with minimal water use. Ranveer used the training skills from the programme to adopt this strategy in his farm for the majority of his crops. He prepared his field for farming for 8 months before installing the drip irrigation system, which included preparing the base and placing drip pipes over the crop bed. After a few months of drip irrigation, he saw an increase in output and, as a result, an increase in his income. After he used this strategy on the field, the yield of each crop began to rise.

In addition to the increased production and income, Ranveer learned that by using this strategy, he could conserve a lot of water and that moisture retained in the soil for a longer period. This also saved his time, and now he requires less labour in his fields. Ranveer with excitement expressed that "Previously, I could only cultivate two crops each year, but today I can cultivate three to four crops from the same piece of land." When he utilised water from other sources, such as well, he could only irrigate 2 Bigha of land at a time, but with the drip irrigation system, he can now irrigate 4 Bigha of land at the same time."

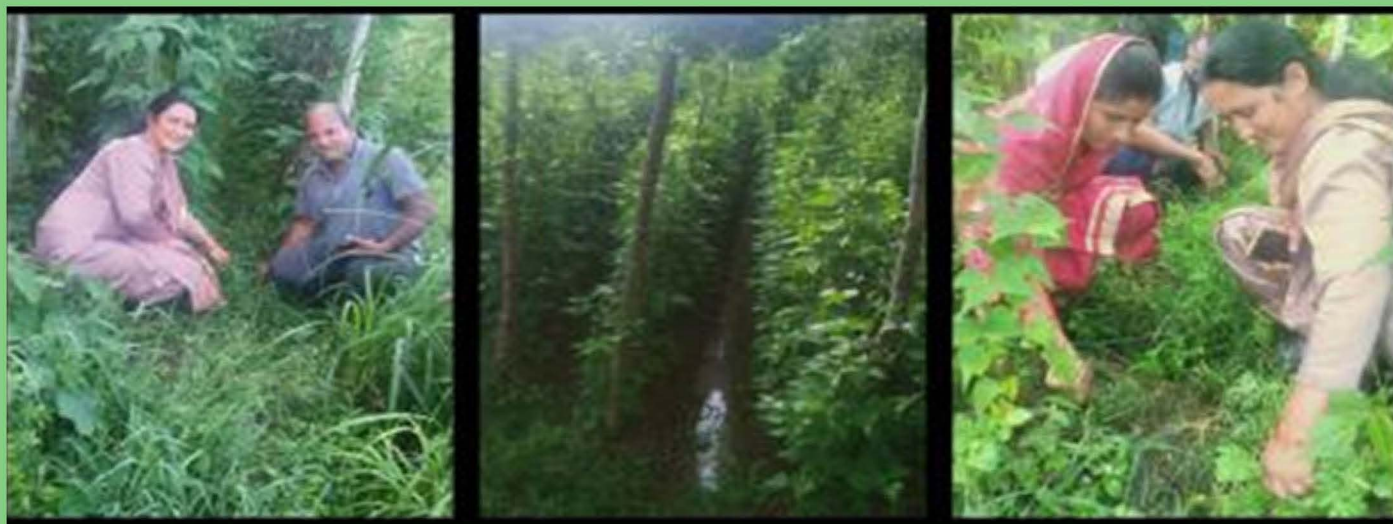
Sl. No.	Crops	Land area under crops (Bigha)	Production	
			Before	After
01.	Tomato	1	200 Kg	500 Kg
02.	Beans	1	600 Kg	900 Kg
03.	Capsicum	½	200 Kg	300 Kg
04.	Garlic	1	600 Kg	800 Kg
05.	Maize	2	500 Kg	900 Kg
06.	Wheat	2	600 Kg	1000 Kg
	TOTAL	7.5 Bigha	2700 Kg	4400 Kg

Crop wise yield in Ranveer's field before and after installation of Drip System

Water use before and after installation of Drip Irrigation System

Water use Before Drip system (2019-20)	Water use after Drip system (2020-21)
40,000 liters per Bigha	10,000 liters per Bigha

Ranveer saves four times the amount of water each year after installing drip irrigation system. Drip irrigation has proved to be one of the most effective methods for irrigating crops since it consumes very little water while maintaining soil moisture levels. Mr. Ranveer explains that the drip system has helped him bringing more area under cultivation. Now he has no fear of crop loss. He is very happy to get more production and have higher income. The adapted technology is time saving and cost effective. As a result of Ranveer's success with the drip irrigation system, other farmers in his village were inspired to use the technology on their own fields. To meet the demands of farmers, government departments and schemes such as the SLADRC collaborate to provide farmers 90% subsidy on the cost price, enough infrastructure and training for new farmers to assist them in adopting this strategy.



Photographs from Ranveer's Field



**Department of Environment, Science Technology & Climate Change
Government of Himachal Pradesh**