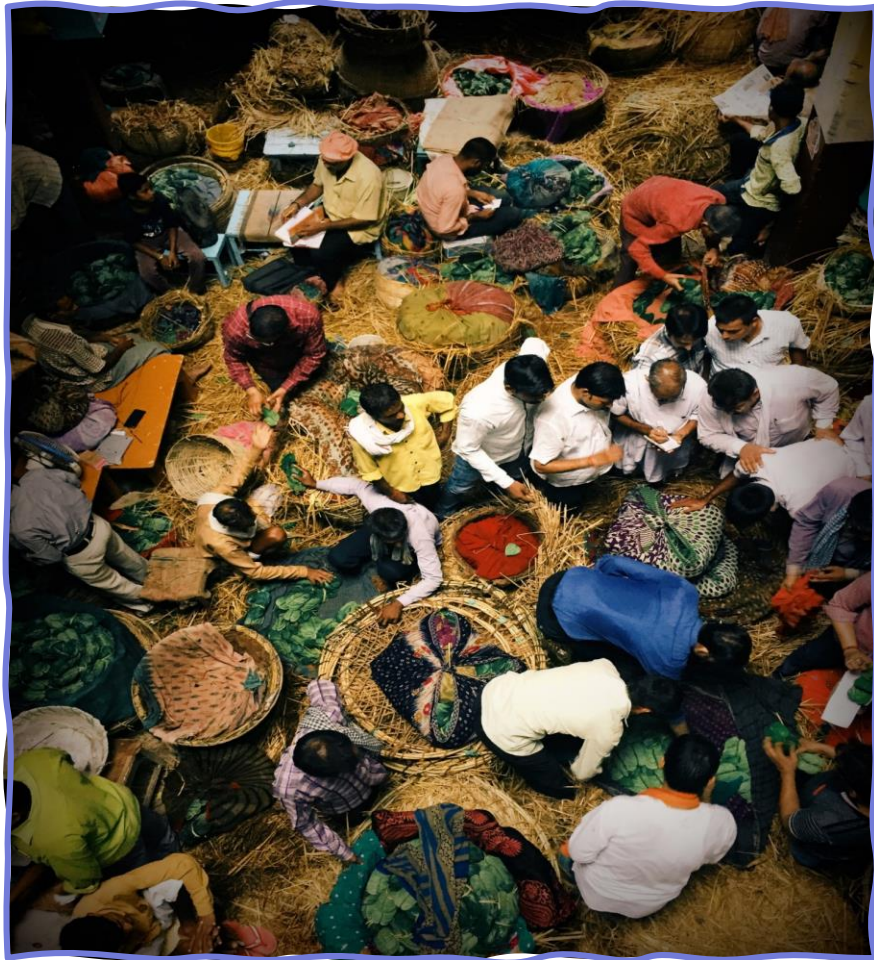


# Assessing the Impact of Smart Agri Program



March 2023

# Table of Content



## Contents

- 01** Introduction
- 02** Approach & Methodology
- 03** Sampling
- 04** Respondent Profile
- 05** Outcomes
- 06** Way Forward

# Introduction

## Technology innovation to help farmers improve productivity and livelihood

*The program focusses on transforming current agricultural practices into more “intelligent” ones by using IoT solutions and enabling farmers with smart informative decision making, leading to increase of production, better crops quality, reduction in water consumption, reduction in operational costs, better utilization of resources etc.*

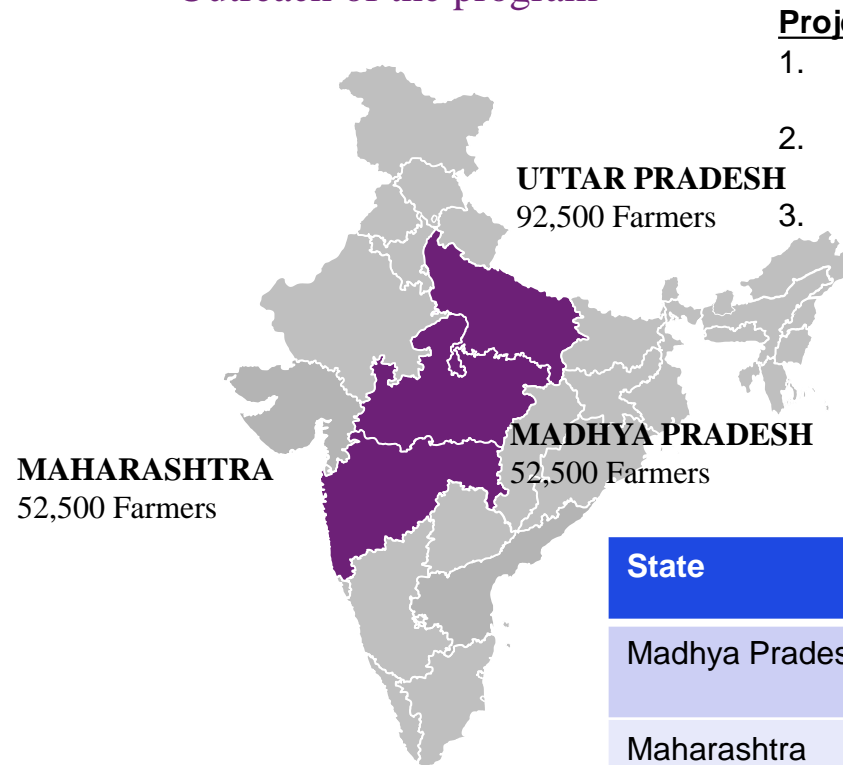
### ACTIVITIES:

#### 1. Real-time and Localized Agri inputs to farmers

- Weekly advisory to farmers on their cell phone
- Dissemination of farm advisories at important public places
- Creation on Agri-entrepreneurs for on-field support to farmers
- Creation of FPOs/SHGs

#### 2. Regular Handhold Support and Capacity building of Farmers

### Outreach of the program



### Project locations:

1. Madhya Pradesh –Bhopal, Sehore, Devas, Ujjain, Agar.
2. Maharashtra –Nagpur, Wardha, Amravati, Yavatmal and Nanded districts
3. Uttar Pradesh – Hardoi and Lakhimpur districts

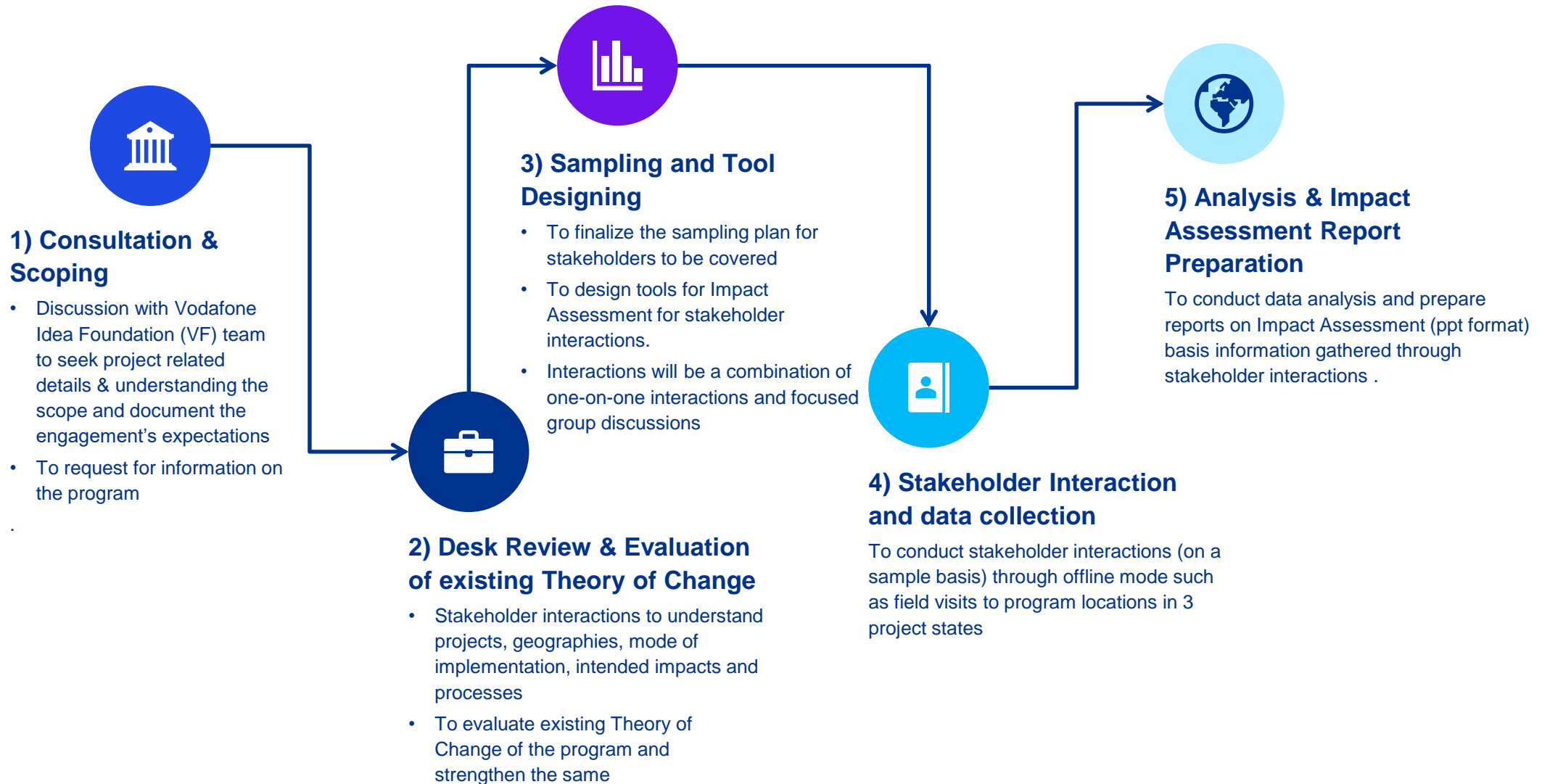
State	Project Locations
Madhya Pradesh	Bhopal, Sehore, Devas, Ujjain, Agar
Maharashtra	Nagpur, Wardha, Amravati, Yavatmal, Nanded
Uttar Pradesh	Hardoi, Lakhimpur

**Primary Stakeholders:** Farmers

**Secondary Stakeholders:** Agripreneurs, Lead Farmers

**Institutional Stakeholders:** FPOs/SHGs, Agri Institutes

# Methodology



# Sampling

- A primary research was conducted through a quantitative survey on-field with target beneficiaries and institutional stakeholders to select program locations.
- The study undertaken by KPMG has adopted a structured and multi-staged methodology which consists of qualitative and quantitative data. Data Collection tools like in-depth individual interviews (IDIs) and focus group discussions (FGDs) were administered for this study. The following key research components are considered while developing the questionnaires for the data collection:
  - Assessment of advisory and training offered as a part of the programme
  - Assessment of change in yield, input usage, input cost and income

- 752 farmers were covered through one-to-one interactions and FGDs at project locations.
- Three FGDs (one in each state) were conducted with FPO members covering 15 members.
- A mix of one-to-one interactions and FGDs were conducted with Agri-entrepreneurs and Lead Farmers covering 55 in total.
- FGDs were conducted with Solidaridad team (CSR team and Centre) in each state covering 12 members.
- Thus, the coverage was more than required for a confidence level of 99% and margin of error of 5% (663)

## Stakeholders

### Farmers

750

## Achieved

752 (737+15)  
UP: 350  
MP: 201  
Mh: 201

### Agri-entrepreneurs & Lead farmers

50

55

### FPO / SHG members

5

15 members  
(3 FGDs)

### Project team (CSR team, Training Centre)

4

12

### Agri Institutes

5

5

# Respondents Profile

## SURVEY FINDINGS



### STAKEHOLDER PROFILE

71%

Have annual family income below INR 2,00,000

#### Economic status

43% of the respondents had an annual family income below INR 1,00,000, 28% between INR 1,00,000 to INR 2,00,000 and 29% above INR 2,00,000. This indicates the target audience of the project are farmers belonging to the from lower economic strata.

83%

Are Marginal or Small Farmers

#### Land holding

52% of the respondents are Marginal farmers having land holding less than 1 Ha and 31% of respondents are Small farmers having land holding between 1-2 Ha. This is clear indication that program is intending towards income increase of marginal and small farmers.



### PROJECT SUPPORT

95%

Increased capacity of Farmers on Good Agricultural Practices (GAPs)

#### Training and Capacity building on GAPs

100% of the farmers from UP, MP and Maharashtra mentioned receiving training and 95% of them indicated that the training on GAPs have increased their knowledge and capacitated them.

Face to face training was reported to be received from the program staff by 91% of farmers in MP, 90% in Maharashtra and 93% in UP.

97%

Farmers received Advisory Support

#### Advisory Support

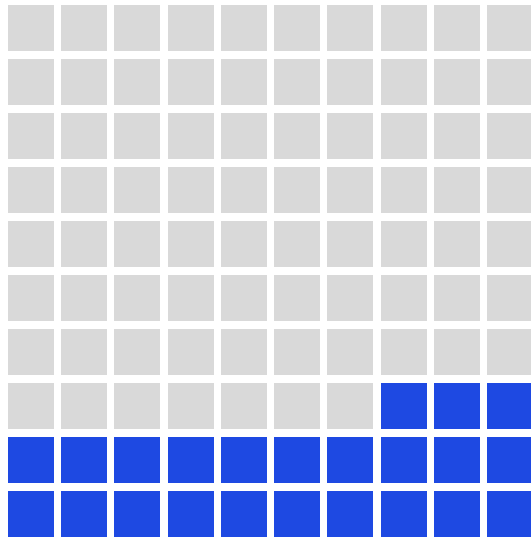
100% of farmers from MP & Maharashtra, and 94% from UP mentioned receiving advisory services and also reported increased access to information through the usage of technology.

It has helped to improve their digital literacy as well.

# Outcomes

The primary objective of Smart Agri is to improve the ecosystem of rural India through improving agricultural productivity, reducing the input cost and thereby increasing the income of farmers

## 27% YIELD ↑

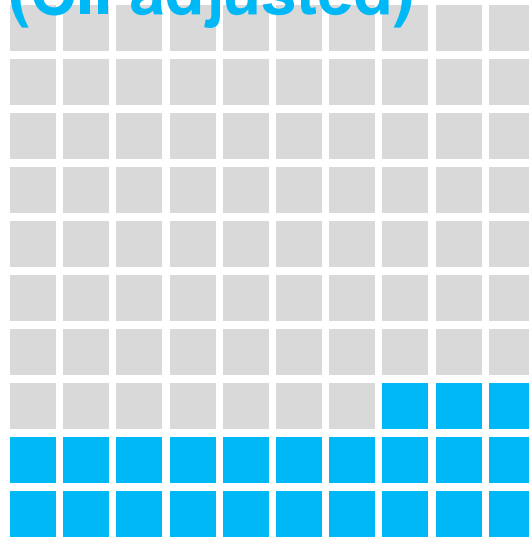


97% of Farmers reported increase in their Yield due to program`s interventions

Avg. yield/hectare BEFORE = 47.1

Avg. yield/hectare AFTER = 59.8

## 23% INPUT COST (CII adjusted) ↓

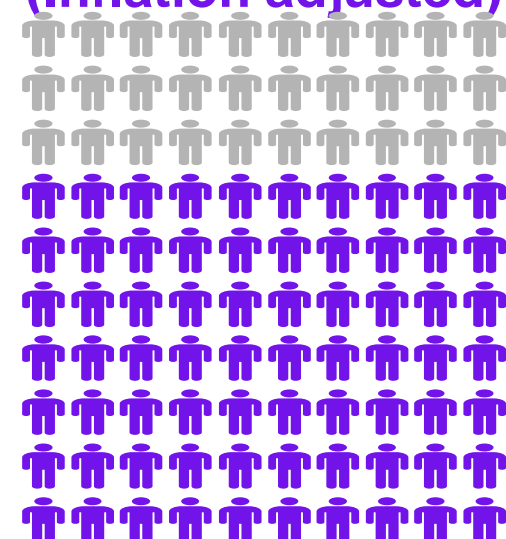


95% farmers reported reduction in input cost (due to pesticide, fertilisers and irrigation advisory)

Avg. Input cost/month BEFORE = INR 5827 (CII adjusted)

Avg. Input cost/month AFTER = INR 4515

## 70% Farmer's Income (Inflation adjusted) ↑



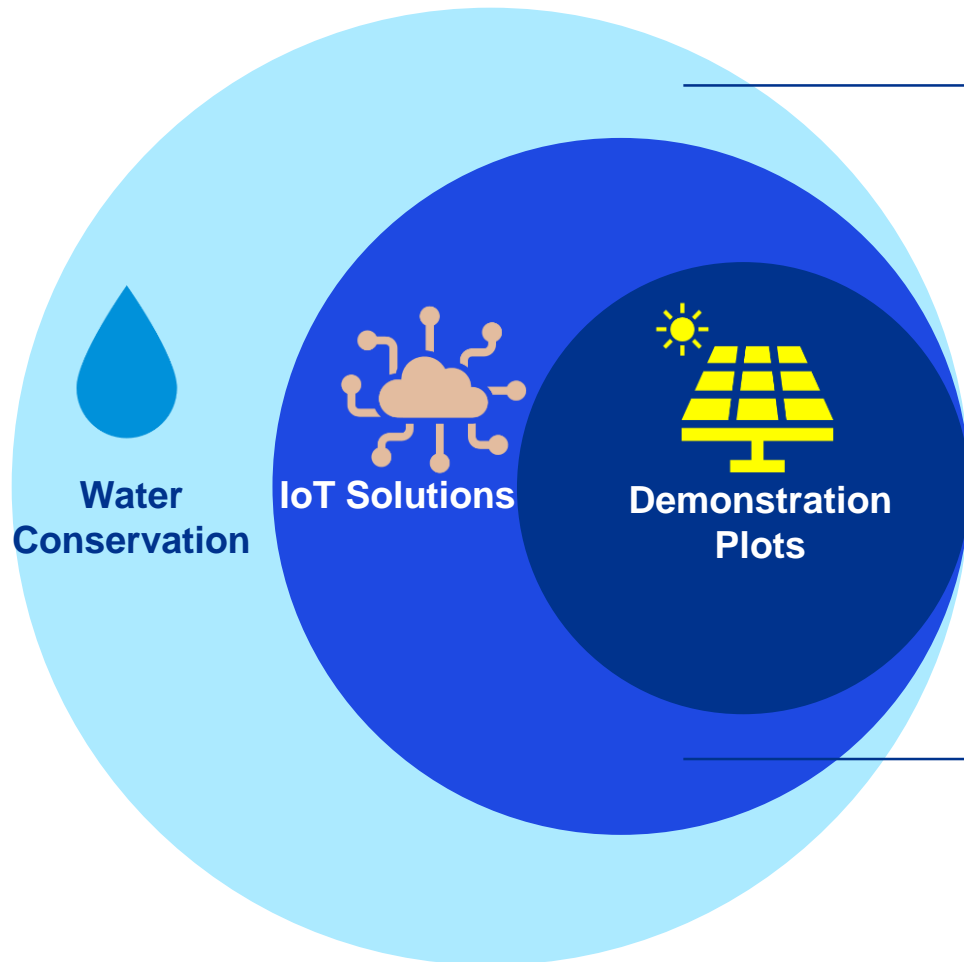
98% Farmers reported Increase in Income in the range of INR 50k to 200k

Mean/Average Increase in Income = INR 63,604

Median Increase in Income = INR 40,000

# Beyond Program

*Beyond the primary objective, the program aims towards reduction in water consumption, better utilization of resources and smart informative decision making.*



## Water Conservation

92% of the farmers mentioned adopting efficient water management practices in MP and Maharashtra, while 70% of the farmers in UP reported the same

## Demonstration Plots

More than 95% of the farmers who received demo plots in MP, Maharashtra and UP mentioned benefiting from demo plots or farm field schools

## IoT Solutions

100% of farmers who have IoT installed in their fields are exclusively reaping benefits of IoT solutions by being involved in hi-tech technology usage



# Way Forward

## Way Forward for Smart Agri

This includes suggestions from various stakeholders and industry best practices



### Program Components

Both qualitative & quantitative data suggest that there is a need for stronger marketing support for fetching fair price for the produce.

Farmers would appreciate more support in selecting seed varieties as it is a one-time investment and a decision which impacts the entire crop cycle

### Enablers

Water usage reduction is of prime importance paving the way for a need to switch to drip and sprinklers-based irrigation.

Farmers are interested in pursuing solar and drip irrigation. Particularly with respect to drip irrigation, they feel the need for labour would reduce. Currently, labour shortage and high cost of labour is a major issue. They would appreciate support in promoting the same in their area

### Sustainability

Strengthening multi-cropping and inter-cropping to reduce the risks for farmers in case of crop failure and enhance resilience.

Encourage community-based adaptation: Climate change impacts are not limited to individual farmers but also affect entire communities. Therefore, community-based adaptation strategies should be encouraged. This could include the development of community-based water management systems, collective farming practices, and local seed banks.