

**IMPACT ASSESSMENT OF ITC'S  
PARTNERSHIP PROGRAMME WITH  
NITI AAYOG FOR AGRICULTURE  
AND ALLIED SECTOR  
DEVELOPMENT  
ASSAM AND BIHAR**



**Sutra**  
Consulting

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## Chapter 1: Introduction and Project Background

### 1.1. Overview of the Aspirational Districts Programme

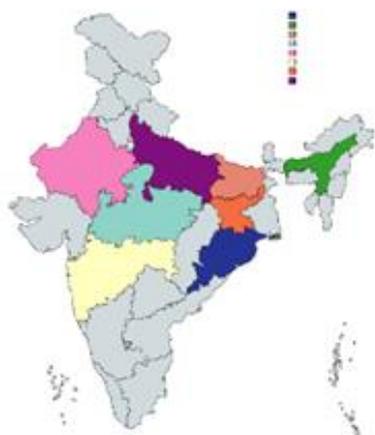
With a focus to intervene in the backward districts which rank poorly on important social indicators, NITI Aayog identified 112 Aspirational Districts in 28 States for intervention by respective Ministries and formulated a Scheme known as "Transformation of Backward Districts in India". The Government of India launched the Aspirational Districts Programme (ADP) in January 2018 to accelerate improvement in the socio-economic indicators of the 112 most underdeveloped districts of the country.



The ADP comprises three pillars namely, Convergence (of Central and State Schemes), Collaboration (of Central, State level 'Prabhari' Officers and District Collectors), and Competition among districts through monthly delta ranking driven by a mass movement.

States act as the main programme drivers and focus on strengthening districts, identifying low-hanging fruits for immediate improvement, and measuring progress by ranking districts on a monthly basis. The ranking is based on the incremental progress made across 49 Key Performance Indicators (KPIs) under five broad socio-economic themes - Health and Nutrition, Education, Agriculture and Water Resources, Financial Inclusion and Skill Development and Infrastructure. The delta ranking of Aspirational Districts and the performance of all districts is available on the Champions of Change Dashboard.

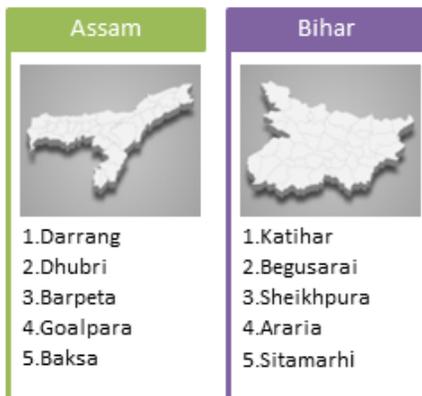
### 1.2. ITC's Partnership with NITI Aayog



ITC is one of India's foremost private sector companies and a diversified conglomerate with businesses spanning fast-moving consumer goods, hotels, paperboards, packaging, agri-business, and information technology sectors. NITI Aayog has partnered with ITC Ltd. to improve indicators in agriculture and allied services in 27 aspirational districts of India spread over eight states. The partnership was for a period of four years from 2018 to 2022 with the prime objective of increasing net returns from farming through a reduction in costs of production and increasing productivity of major crops in each of the identified districts.

Of all the projects covering 27 districts and 8 states under the partnership, only two projects in Assam and Bihar qualified for impact assessment study as they had an expenditure of over

Rs. 1 crore during FY 2020-21. The 2 states with the 10 districts covered under this impact assessment study are indicated in the following exhibit.



ITC engaged us for conducting this impact assessment aimed at assessing the nature and extent of the effect that the partnership has led to as well as studying the effectiveness and efficiency of approaches adopted. Our assessment and analysis is presented below.

Interventions were undertaken as part of three key strategic components which are summarised in the following table and discussed in the subsequent paragraphs.

<b>Cascade trainings</b>	<ul style="list-style-type: none"> <li>Farmers' training in a cascade approach by training Master Trainers (MTs) and Village Resource Persons (VRPs)</li> <li>MTs and VRPs further training farmers</li> <li>Cascade trainings provided in different modes, establishing Farmer Field Schools (FFS) in model villages, and conducting digital modes of trainings through WhatsApp groups</li> </ul>
<b>Strengthening districts' performance in agriculture and allied sectors</b>	<ul style="list-style-type: none"> <li>Creating awareness and facilitating linkage of farmers with relevant Agriculture, Water Resources, Horticulture and Allied Sector Schemes</li> </ul>
<b>Develop and demonstrate a template of model village for the holistic development of agriculture and allied livelihoods</b>	<ul style="list-style-type: none"> <li>ITC worked in 50 villages per district with the aim of developing a replicable model to improve farm-based livelihoods by creating an Agriculture Development Framework</li> <li>Focus was on maximizing access to critical components of the model for every household by generating awareness and adoption of standard Packages of Practices (PoP) for selected rabi and kharif crops, providing access to irrigation sources to farmers, helping farmers to diversify livelihoods, helping farmers access government schemes, and providing institutional support through farmer groups</li> </ul>

### 1.2.1. Cascade Training

The cascade training component is aimed at training farmers/livestock rearers by strengthening the extension delivery mechanism through capacity building of relevant Government Officials/ITC Staff in relevant PoP. In the cascade training process, MTs train VRPs who then train farmers who further provide peer training.

The training adopted a combination of modes namely, digital, physical and Farmer Field School (FFS). The major objective of training was to increase crop productivity and reduce the cost of cultivation thereby increasing farmers' income.



### 1.2.2. Strengthening Districts' Performance in Agriculture and Allied Sectors

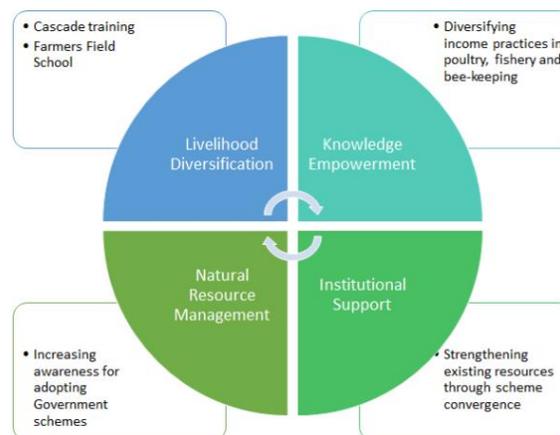
This partnership programme was implemented with a view of improving the district's performance in agriculture and allied sectors. As per the impact assessment in the 10 programme districts of Bihar and Assam states, there has been notable improvement in awareness and adoption of standard package of practices, awareness and adoption of various government schemes and income improvement. The impacts were more significant in the model villages where ITC has directly worked with farmers as compared to the cascade villages where farmers were trained through Government machinery.

### 1.2.3. Develop and Demonstrate Model Village Template

ITC has developed a holistic development template referred to as model village. In such 'model' villages, interventions take place through a saturation approach covering all households with a view to improving knowledge levels, crop productivity, irrigation access, livelihood diversification and Government scheme linkage. The objective of implementing this approach is to demonstrate to the farmers and stakeholders that the model village template is viable and can be scaled up across other regions as well. An Agriculture Development Framework (ADF) was adopted and implemented in the model villages.

The ADF comprises four key components as indicated in the adjoining exhibit.

- The first component, knowledge improvement, was operationalized through cascade trainings and organizing FFS. Cascade trainings were conducted through physical and digital modes for demonstration of area specific PoPs in agriculture like seed treatment, livestock, and fisheries sectors.
- The second component, institutional support, focused on increasing awareness and adoption of Government schemes by farmers. Principles of maximization and saturation were adopted to increase adoption levels.



- The third component, Natural Resource Management (NRM), aimed to strengthen and supplement existing water resources available through scheme convergence. For instance, convergence was promoted with schemes such as the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and other water conservation schemes for construction of structures such as farm ponds, etc. Other schemes such as Soil Health Card, NADEP and vermicompost pits and solar pumps etc. were also included in the NRM component.
- The fourth component, livelihood diversification, focused on demonstrating the need for diversification of household income sources and the avenues for the same. This was done for de-risking of incomes through the adoption of other livelihood sources such as plantations, poultry, fisheries, intercropping, honey beekeeping, goat rearing etc.

### **1.3. Stakeholders and their Roles**

The following table provides an overview of the key stakeholders involved in the implementation of the ITC - Niti Aayog partnership and their key roles.

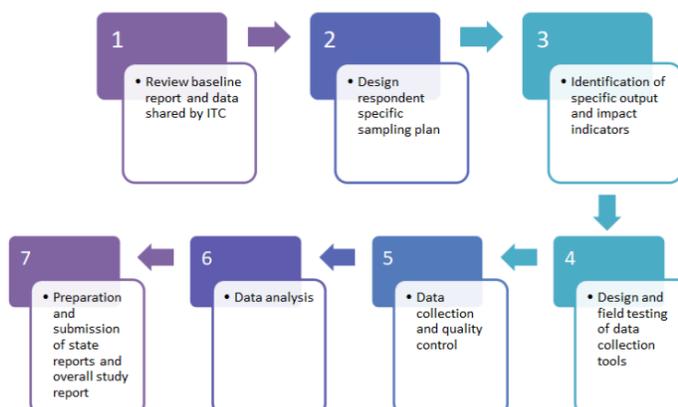
<b>Role of Stakeholders in Bihar and Assam</b>
Project Monitoring Cell (PMC) comprising of district collector and head of respective departments: Monitors Aspirational District performance
Department of Agriculture (DoA): Extends support for cascade training of farmers through its resources
Krishi Vigyan Kendra (KVK): Provides technical advice to ITC for preparing crop wise training manuals
Master Trainers (MT)- Block level Assistant Agriculture Officers (AAO) of the Dept. of Agriculture (DoA): Train their village level resources in cascading trainings to farmers
Village Resource Persons (VRPs)- Village Supervisors from the Dept. of Agriculture: Train farmers directly in villages

### **1.4. Overview of the Impact assessment**

The impact assessment threw light on the changes observed in key indicators vis-à-vis baseline conditions. These included indicators related to practices in agriculture and allied sectors starting from seed treatment and germination test onwards, productivity and crop economics, awareness, and adoption of relevant government schemes as well as training and technology integration. The impact assessment specifically studied the impact of cascade training and the model village initiatives implemented by ITC as part of the collaboration. The aspects that were reviewed included the effectiveness of model villages in serving as resource centres and in ensuring cascading of information from FFS members to other farmers, identification of practices that could be replicated and amplified, and finally assessing the scalability of the template across other districts and states.

### 1.5. Methodology for Impact assessment

A robust methodology using mixed methods of data collection (quantitative and qualitative) was adopted for the impact assessment and was finalized in consultation with ITC. An overview of the major methodological steps that were adopted are depicted in the adjoining exhibit.



#### Development of Sampling Strategy and Plan

In keeping with the specification in the ToRs, a statistically significant sample size was estimated for the quantitative survey based on the total number of agricultural and/or livestock owning households in the district<sup>1</sup> at a confidence level of 95% and margin of error of 8%. A total of 30 sample households in model villages and 150 sample households in cascade villages were estimated to be covered under the study. Thus, a total of 300 households in model villages and 1,504 in cascade villages was planned to be covered across the ten districts of Assam and Bihar under the study. The sample size covered under the study is presented in the following table.

State	District	Block	Sample in Model Villages	Sample in Cascade Villages	Total Sample
Assam	Barpeta	Barpeta	12	50	62
		Rupshi	20	101	121
	Baksa	Baska	10	50	60
		Dhamdhama	20	101	121
	Darrang	Paschim Mangaldoi	20	100	120
		Sipajhar	10	50	60
	Dhubri	Agomoni	20	100	120
		Chapur	10	50	60
	Goalpara	Kusdhowa	20	100	120
		Rangjuli	10	50	60
<b>Total</b>		<b>152</b>	<b>752</b>	<b>904</b>	
Bihar	Araria	Narpatganj	10	50	60
		Raniganj	20	101	121
	Begusarai	Cheriyabariyapur	20	50	70
		Matihani	10	101	111
	Katihar	Barari	10	49	59
		Dandkhora	20	102	122
	Sheikhpura	Sheikhpura	30	150	180
	Sitamarhi	Pupri	20	101	121
		Riga	10	50	60
	<b>Total</b>		<b>150</b>	<b>754</b>	<b>904</b>
<b>Total</b>		<b>302</b>	<b>1506</b>	<b>1,808</b>	

<sup>1</sup> Figures for estimation have been sourced from respective Census Handbooks keeping in mind the number of households in the districts and the proportion of persons engaged in agriculture related activities.

A total sample of 1,808 farmers was covered as part of the quantitative survey in model and cascade villages. In addition to this, one Focus Group Discussion was held in each district (i.e., 10 FGDs) in randomly selected villages. The participants in FGDs included farmers who were part of the project.

## Chapter 2: Findings & Discussion

### 2.1. Assam

#### A. Impact of work done by ITC directly in 250 model villages (50/district)

##### 1. Impact on awareness and adoption of standard package of practices and Government agricultural schemes

- 2.4 times increase in awareness (27% at baseline to 65% post intervention) and 3 times increase in adoption (14% in baseline to 42% post intervention) of seed treatment practices.
- 2.1 times increase in awareness (27% at baseline to 57% post intervention) regarding recommendations on seed germination and 3 times increase in adoption of the same (14% at baseline to 43% post intervention).

##### 2. Awareness and Adoption of Govt. Schemes

- Significant proportion of farmers are aware of Soil Health Cards.
- Farmers in model villages of Darrang, Dhubri, Barpeta and Baksa have shown increase in levels of awareness of Micro Irrigation scheme.
- Awareness of PMFBY is highest among all schemes as all the sampled farmers in Assam are now aware compared to only 36% during baseline.

##### 3. Impact on yields and net income of principal crops

- Crop productivity (changes vis a vis baseline):
  - Paddy: 186% increase
  - Mustard: 38% increase
- Net Income (changes vis a vis baseline)\*:
  - Paddy: 534.8% increase
  - Mustard: 154.8% increase

#### B. Impact of cascade model farmer training done through Government department (cascade training villages)

##### 1. Impact on awareness and adoption of standard package of practices and Government agricultural schemes

- 1.7 times increase in awareness (27% at baseline to 46% post intervention) and 2.6 times increase in adoption (14% at baseline to 39% post intervention) of seed treatment practices.
- 1.4 times increase in awareness (27% at baseline to 38% post intervention) regarding recommendations on seed germination and 2.5 times increase in adoption of the same (14% from baseline to 35% post intervention)

##### 2. Awareness and Adoption of Govt. Schemes

- Significant proportion of farmers were now aware of Soil Health Card (SHC) in Darrang, Dhubri and Baksa.

- Awareness of PM Fasal Bima Yojana (PMFBY) highest among all schemes.

### **3. Impact on yields and net income of principal crops**

- Crop productivity (changes vis a vis baseline):
  - Paddy: 145% increase
  - Mustard: 0.18% increase
- Net Income (changes vis a vis baseline)\*:
  - Paddy: 227.6% increase
  - Mustard: 72.8% increase

### **4. Efficacy of cascade training model in building farmer capabilities**

There has been a healthy increase in impact indicators and awareness of recommended package of practices among cascade village farmers also, which demonstrates the efficacy of cascade training model in building farmer capabilities.

## **2.2. Bihar**

### **A. Impact of work done by ITC directly in 250 model villages (50/district)**

#### **1. Impact on awareness and adoption of standard package of practices and Government agricultural schemes**

- 5.3 times increase in awareness (17% in baseline to 90% post intervention) and 2.3 times increase in adoption (41% in baseline to 95% post intervention) of seed treatment practices.
- Significant rise in awareness for recommended planting time, seed rate and seed germination test among model village farmers.

#### **2. Awareness and Adoption of Govt. Schemes**

- 22% farmers aware of Mission for Integrated Development of Horticulture (MIDH) scheme as against 4% at baseline. 37% of model village farmers adopted MIDH scheme compared to 7% at baseline.

#### **3. Impact on yields and net income of principal crops**

- Crop productivity (changes vis a vis baseline):
  - Paddy: 25.3% increase
  - Soyabean: 126% increase
  - Wheat: 24.7% increase
- Net Income (changes vis a vis baseline)\*:
  - Paddy: 50.1% increase
  - Soyabean: 207.3% increase
  - Wheat: 86.1% increase

## **B. Impact on awareness and adoption of standard package of practices and Government agricultural schemes in Cascade Villages**

### **1. Impact on awareness and adoption of standard package of practices and Government agricultural schemes**

- 5.4 times increase in awareness (16% at baseline to 86% post intervention) and 2.2 times increase in adoption (41% at baseline to 90% post intervention) of seed treatment practices.

### **2. Awareness and Adoption of Govt. Schemes**

- 10% farmers now reported awareness regarding Mission for Integrated Development of Horticulture (MIDH) scheme compared to 4% at baseline.
- All farmers reported awareness on PMFBY scheme against 63% at baseline.

### **3. Impact on yields and net income of principal crops**

- Crop productivity (changes vis a vis baseline):
  - Paddy: 4.8% increase
  - Soyabean: 108.7% increase
  - Wheat: 0.9% increase

The comparative lower increase in crop productivity in case of paddy and wheat imply that more intensive extension work is required in districts of Bihar as compared to districts in Assam.

- Net Income (changes vis a vis baseline)\*:
  - Paddy: 0.7% increase
  - Soyabean: 1.5% increase
  - Wheat: 0.7% increase

### **4. Efficacy of cascade training model in building farmer capabilities**

There was a lower increase in crop productivity and income parameters in spite of moderate growth in adoption of recommended package of practices over baseline in cascade villages as compared to that in model villages, This suggests that more focus is required on improving the efficacy of cascade training model in building farmer capabilities in Bihar after understanding the reasons for lower impact.

*\*Note: From 2018 to 2022, MSP of paddy increased by 16% (Rs. 1,770/qt in 2018 to Rs.2,060/qt in 2022) and average price of mustard increased by 20% (Rs. 4,200/qt in 2018 to Rs.5,050/qt in 2022)<sup>2</sup> and MSP of wheat increased by 16% (Rs. 1,735/qt in 2018 to Rs.2,015/qt in 2022)<sup>3</sup>*

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<sup>2</sup> 2018 rates- <https://farmer.gov.in/mspstatements.aspx> ; 2022 rate- <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1868760>

<sup>3</sup> <https://dfpd.gov.in/MSPforWheatandpaddy.htm>

## Chapter 3: Key Recommendations

Some of the key recommendations based on the findings of the study are presented as follows, in addition to the recommendation of strengthening cascade in Bihar made earlier.

- Along with providing training, greater convergence needs to be encouraged with other departments such as fisheries and animal husbandry, as well as private and government lending institutions for farmers to avail loans and obtain financial support for livelihood activities such as dairy, fisheries, poultry, mushroom cultivation, etc.
- Other important crops like maize and vegetables grown by large proportion of farmers in the region should also be included in the Package of Practices (PoP) trainings. The PoP for these crops will help increase productivity and enhance farmers' incomes.
- The assessment of awareness and adoption of govt schemes shows that awareness regarding schemes has increased significantly, but levels of adoption need further improvement. Greater support should be extended to farmers in activities such as applying for schemes, documentation, etc. Currently, ITC is extending such support in model villages, but this needs to be scaled up diligently so that a larger number of farmers can avail of these benefits.