IMPACT ASSESSMENT OF PROJECTS UNDERTAKEN BY ITC'S SOCIAL INVESTMENTS PROGRAMME IN TELANGANA

SUBMITTED BY: INGRAIN TECHNOLOGIES

Introduction

During the year 2023-24, ITC Limited implemented the following projects in Medak and Bhadradri Kothagudem districts of Telangana state under its Social Investments Programme (SIP).

- Natural Resource Management – Water stewardship, soil health and Biodiversity
- Climate Smart Agriculture (CSA)
- On-farm Livelihood Diversification: Tree plantation - Social Forestry
- Off-farm Livelihood Diversification: Integrated Animal Husbandry Practices (IAHP)

Ingrain Technologies conducted the impact assessment of the above during January - March 2026. The purpose of the impact assessment is to evaluate the projects in specific and the programme as a whole, in terms of direct and indirect impacts resulting from each of the above mentioned projects and the impact on communities.

Purview of the impact assessment study in Telangana state

Projects	District	Implementation partner (NGO)
Water Stewardship (WS)	Medak	MYRADA
Climate Smart Agriculture (CSA)	Medak	MYRADA
Social Forestry (SF)	Bhadradri Kothagudem	SSGS & MYRADA
Climate Smart Agriculture (WS)	Bhadradri Kothagudem	SSGS & MYRADA
Water Stewardship (WS)	Bhadradri Kothagudem	MYRADA
Off-farm Livelihood Diversification: Integrated Animal Husbandry Practices (IAHP)	Bhadradri Kothagudem	MYRADA

The 'Projects Undertaken by ITC's Social Investments Programme in Telangana (year 2023-24)' were found to be 'inclusive' in its approach (based on the study sample size of 702). Among the overall beneficiaries of the projects of WS, CSA and SF and IAHP, 80% were marginal and small farmers (land holding up to 2 Ha) and 16% medium farmers (land holding above 2 Ha and up to 4 Ha) and 4% large farmers (land holding above 4 Ha). Overall, 61% of the beneficiaries were men and 39% were women across all the projects covered in the study.

- The 'community-wise segmentation' of the overall beneficiaries of the three categories of the projects is given in the following table.

Projects	ST	SC	OBC	General
Water Stewardship (WS)	45%	4%	33%	18%
Climate Smart Agriculture (CSA)	81%	2%	14%	3%
SF - Agroforestry	86%	1%	12%	1%
SF - Bund plantations	86%	1%	5%	7%
Off-farm Livelihood Diversification: Integrated Animal Husbandry Practices (IAHP)	69%	3%	28%	-
Overall	**78%**	**2%**	**15%**	**5%**

Approach and methodology of the study

The impact assessment focussed on measuring the impacts of the project population as compared to the baseline (pre-programme) and also compared with control population (who are not covered under the intervention and were chosen from non-intervention areas). The study analysed both *quantitative and qualitative data* to provide a holistic understanding of the outcomes. Possible explanation of the variation was also included in the analysis of the data. The following were considered and included to conduct the impact assessment study

- Use of survey format / questionnaire to capture primary data from sample beneficiaries covered across multiple initiatives (paper questionnaire/CAPI)
- Focus Group Discussions (FGD)
- Interviews with key stakeholders were conducted to elicit overall information regarding the impact of the projects/programme.
- Case studies

For impact evaluation, *"* before and after" and "with and without" methods were followed.

A) Selection of reference periods for the study by "before and after" method
- **Pre intervention period:** Collecting data regarding pre-intervention period through questionnaire during the survey or any baseline records if available
- **Post intervention period:** Collection of data pertaining to post intervention stage through survey

B) Selection of control sample size for the study by *"* with and without*"* method
- 20% of the project sample size was taken as control sample size and the project sample was compared with the control sample

C) Data collection and analysis
- For project samples – pre intervention and post intervention.
- Comparison of project samples with control samples.

Sampling design

"Random sampling design*"* was followed to select villages and farmer beneficiaries. The sampling methodology duly considered the number of respondents to make the observations statistically significant by considering "95% confidence level". The sample size of 10% of project beneficiaries is highly representative and the sample size considered for the impact assessment qualifies for a national level study.

Sample for the impact assessment study for Telangana state

Sample for field study in Telangana state

Projects	Total no. of beneficiaries	Project sample	Control sample	FGDS	Case studies	Stake-holders
		10% of the total beneficiaries	20% of the project sample			
Water Stewardship (WS)	597	60	12	2	1	1
Climate Smart Agriculture (CSA)	4,324	432	86	2	1	1
SF - Agroforestry	152	15	3	1	1	1
SF - Bund plantations	470	47	9			
Off-farm Livelihood Diversification: Integrated Animal Husbandry Practices (IAHP)	308	31	6			1
Total	**5,851**	**585**	**117**	**5**	**3**	**4**

1.Water Stewardship

The interventions related to Water Stewardship were found to be meticulously planned based on context, characteristics and requirements of the targeted areas in Telangana state. Depleting ground water resources due to over exploitation, high soil erosion, undulating terrain and low ground water retention, rain-fed agriculture and lack of knowledge on water use efficiency among farmers were the challenges in the target geographies of the project.

Key interventions under Water Stewardship projects

S.no.	Initiatives in Water Stewardship (WS)	Structures in Medak district	Structures in Bhadradri Kothagudem district	Total no. of structures	Area benefited in Ha.
1	Tank renovation & bund strengthening	2	3	5	133
2	Tank renovation & tank de-siltation	2		2	45
3	Tank de-siltation & silt application to fields	1		1	25
4	Farm ponds	9	207	216	286
5	Loose boulder structures	107		107	236
6	Rock fill dams	12		12	70
7	Stone gully plugs	63	143	206	836
	Total	**196**	**353**	**549**	**1,631**

1.1 Farm ponds

The total number of beneficiaries is 216 and the farm ponds effectively provided critical irrigation for a total of 286 Ha. in Medak and Bhadradri Kothagudem districts. Farm ponds provided water for the last two irrigations in paddy, cotton crops in the rain-fed areas. Farmers could achieve significant difference in yield levels (as shown in the following table) where they could irrigate with the available water from the farm ponds.

The following table indicates the yield and income parameters for farmers in the rain-fed areas of Medak and Bhadradri Kothagudem districts.

Benefits of farm pond - paddy and cotton (average values)

Crop	Beneficiaries -before vs. after				Beneficiaries vs. control		
	Yield/ Ha in Qt. (Before farm pond)	Yield/ Ha in Qt. (After farm pond)	Increase in yield/ Ha in Qt.	Increase in net income Rs./Ha	Control plots - Yield/Ha in Qt.	Difference Yield/Ha in Qt.	Difference in net income Rs./Ha
Paddy	44.25	61.50	17.25	33,750	46.50	15.00	32,400
Cotton	16.05	23.18	7.13	52,510	16.46	6.72	54,173

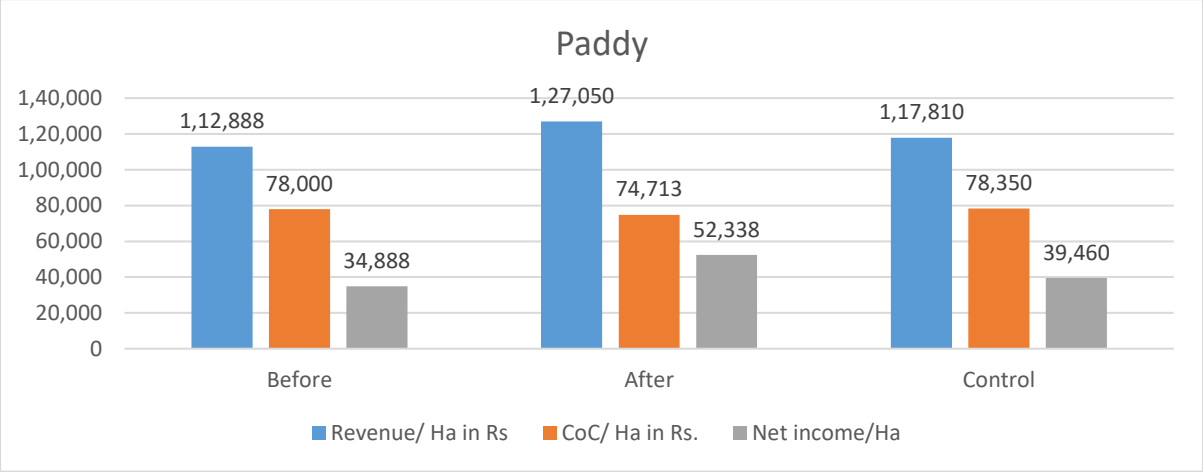
Fish culture in farm ponds: Approximately 20% of the beneficiaries of farm ponds have taken up fish culture by using the species like Rohu, Kalta, carps etc. The estimated average net income through fish culture from a 365 CuM farm pond was Rs.10,283/- in a span of 6 to 8 months. Farmers harvested about 139 kg of fish on an average which has provided an additional income to the farmers. With an estimated average investment of Rs.6,380/- towards fish fingerlings, feed, labour etc., The average estimated ROI for fish culture is at 1.6 which farmers found as a lucrative opportunity.

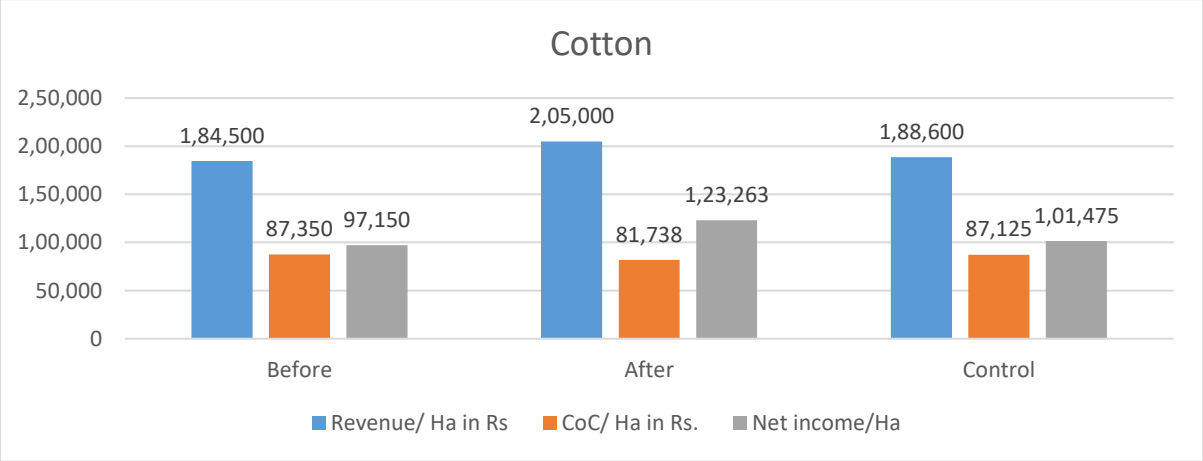
The study conducted in Telangana revealed that access to irrigation resulted in increase in gross cropped area by up to 6.2% over the baseline and improved yields because of application of tank silt in field. Due to increased availability of water, around 20% of programme farmers also engaged in fish cultivation, resulting in additional income by 17% from fish with reference to baseline.

1.2 Tanks de-silting, renovation and bund strengthening

- Tank renovation & bund strengthening was done for 5 tanks (2 in Medak + 3 in Bhadradri Kothagudem district), tank renovation & tank de-siltation was done for 2 tanks in Medak, tank de-siltation & silt application to fields was done for 1 tank in Bhadradri Kothagudem district. The total area of 203 Ha. and total 96 beneficiaries were catered.
- Tank silt application was effectively organised in 25 Ha. of farm fields. For 5 tanks, de-silting and bund strengthening was done.
- Post application of tank silt, one-time impact observed was an average increase in yield by 8.2% in paddy and 11 % in cotton in comparison with before tank silt application
- Post application of tank silt, the impact observed was an average increase in yield by 7.8% in paddy and 9% in cotton in comparison with control
- Post tank silt application, the average estimated saving in cost of cultivation (CoC)/Ha. in paddy crop was 4.2% in comparison with before tank silt application because of reduction in application of chemical fertilisers (after reducing quantities of urea, DAP and complex fertilisers to the tune of 40%) and the average estimated saving in cost of cultivation (CoC) / Ha. in paddy crop was 4.6% compared to control.

- The estimated average saving in CoC/Ha. in cotton crop was 6.2% in comparison with before tank silt application because of reduction in application of chemical fertilisers (after reducing quantities of urea, DAP and complex fertilisers to the tune of 35% to 40%).
- The estimated average saving in CoC/Ha. in cotton crop was 6.4% compared to control





Tank silt application–paddy (top) and cotton (bottom) fields - revenue, CoC and net income (Rs.)

Influence of tank silt application on productivity of crops

Crop	Beneficiaries before vs. after			
	Yield/ Ha in Qt. Before	***Yield/ Ha in Qt. After***	***Increase in yield/Ha in Qts***	***% improvement in yield***
Paddy	53.4	57.8	4.4	8.2
Cotton	22.5	25.0	2.5	11.1
	Beneficiary vs. control			
	Yield/ Ha in Qt. After	***Yield/Ha in Qts- Control plots***	***Difference in yield /Ha in Qts***	***% improvement in yield***
Paddy	57.8	53.6	4.2	7.3
Cotton	25.0	23.0	2.0	8.0

The beneficiary farmers expressed that de-silting and restoration of tanks' storage capacity through renovation resulted in enhancing the soil moisture recharge in the fields adjacent to the tanks which resulted in improving yields. The following table indicates the improvement in average yield levels of crops because of enhanced soil moisture availability to crops.

Influence of improved soil moisture content (because of de-silting on productivity of crops)

Crop	Beneficiaries - before vs. after				Beneficiaries vs. control	
	Yield/ Ha in Qt. (Before)	Yield/ Ha in Qt. (After)	Increase in yield/Ha. in - Qt.	% improvement	Yield/Ha in Qt. in control plots	% difference
Paddy	54.3	59.0	4.7	8.71%	55.1	7%
Cotton	21.5	25.3	3.8	17.44%	22.0	15%

The yield improvement captured for the intervention of tanks and check dam desilting are based on the attribution specifically made by farmers, either to tank silt or soil moisture improvement and respondent farmers did not report any compounding effect of both as it was not perceived by them.

1.3 Soil and water conservation structures

Details soil and water conservation structures

S.no.	Type of structure	No. of structures	Number of beneficiaries	Area benefited in Ha.
1	Loose boulder structures (LBS)	107	89	236
2	Rock fill dams (RFD)	12	12	70
3	Stone gully plugs (SGP)	206	185	836
	Total	**325**	**286**	**1,142**

- SGP and LBS were instrumental in reduced soil erosion and improved farm production in 1,072 Ha. covering 274 farmers. Estimated average prevention of loss because of SGP/LBS per Ha. in paddy crop was 11.3 Qts/Ha. and the coverage of 1,072 Ha. facilitated the loss prevention in paddy crop to the tune of 12,156 Qts on aggregate basis.
- Rock-fill dams found to instrumental in prevention of gully formation reduced soil erosion in 70 Ha. covering 12 farmers. Estimated average prevention of loss because of SGP/LBS per Ha. in paddy crop was 17.3 Qts/Ha. and the coverage of 70 Ha. facilitated the loss prevention in paddy crop to the tune of 1,211 Qts on aggregate basis
- In total, 1,142 Ha. of area was covered in 2023-24 covering a total of 286 beneficiaries through soil and water harvesting structures (LBS, RFD and SGP).
- About 112 farmers could take up vegetable/green leafy vegetables cultivation to the tune of 0.2 Ha. per farmer in summer months. The intervention of vegetables/ green leafy vegetables cultivation during summer resulted in a decent earning ranging from Rs.25,000 to Rs.28,000 as additional farm income.

Enhancement of area under cultivation:

- The villages in the project area witnessed increase in gross cropped area and cropping intensity after the water stewardship interventions.
- The study conducted in Telangana revealed that access to irrigation resulted in increase in gross cropped area by up to 6.2% over the baseline.

Net cropped area, gross cropped area and crop intensity in project areas

Details	Before Water stewardship	After Water stewardship	Difference
Net sown/cropped area in Ha. in project area villages	18,446	18,446	0
Gross cropped area in Ha. in project area villages	24,606	26,147	1,541
Cropping intensity	**133%**	**142%**	**9%**

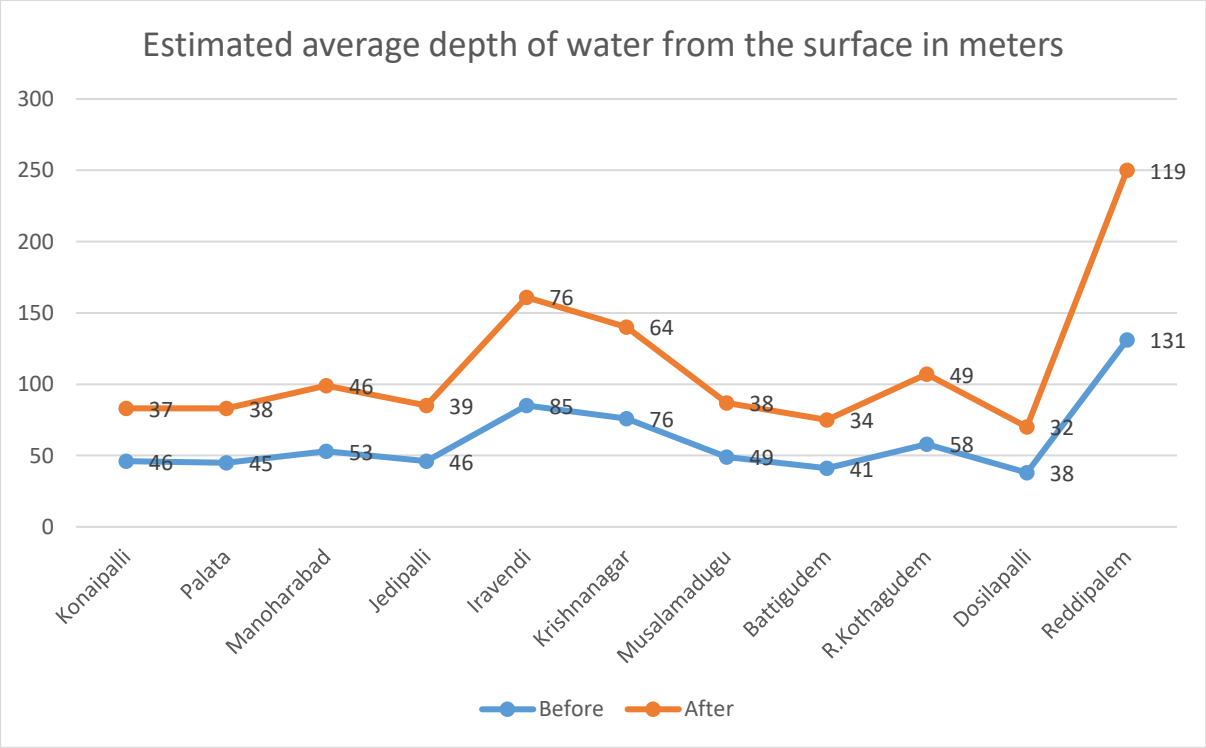
Increase in area under cultivation of second crop (which is totally dependent on residual soil moisture) was observed in the project area, which resulted increase in gross cropped area and cropping intensity.

Establishment of Water User Groups (WUG):

Water user groups (WUGs) were established at ground level to facilitate maintenance and upkeep of structures in water stewardship, ensuring equitable distribution of water for shared water resources. 8 Water User Associations (WUAs) were established covering 137 water users (98 men and 39 women). The WUAs are actively functioning and women's participation is found to be satisfactory in this regard.

Depth of ground water in meters from surface:

It was observed that the depth of ground water from the surface level decreased in the areas where water stewardship measures were implemented by ITC. The following graphs depict the improvement in depth of ground water (Oct/Nov).



Depth of ground water in meters from surface – Telangana

(Source: Farmers and officials of Irrigation Department)

1.4 Biodiversity

Improvement in green cover

- In Bhadradri Kothagudem district, a total of area of 106 Ha., which are common lands from 25 villages were brought under biodiversity promotion activity in 2023-24. Green cover was enhanced by planting native species like neem, Pongamia (karanza) gulmohar etc. which could also contribute to enhance the diversity of birds. Fruit trees like mango, almond, custard apple, tamarind, guava, amla were also planted for community purpose, and it could support the food supply to monkeys (commonly found in Bhadrari Kothagudem district).

- The green cover developed would be useful in providing fruits and place to stay for birds, monkeys etc. but not utilized for fuel wood collection or grazing for small ruminants.

- In the common lands, fruit trees and other horticultural species planted (which are not used as fodder for goats or sheep or for wood fuel) and they are still in growth stage and would yield fruits after 2 years (2027-28). Fruits may be collected and utilized by community at village level after the fruit trees attain active fruit bearing stage. (expected by 2027-28).

2. Climate Smart Agriculture

Direct Seeded Rice (DSR):

In the year 2023-24, 'Direct Seeded Rice (DSR)' was promoted by ITC Limited in Medak and Bhadradri Kothagudem districts of Telangana state. DSR was implemented in 3,700 Ha. covering 1,874 beneficiary farmers. 100% of project beneficiaries were satisfied with the benefits (saving in cost and irrigation water) of 'Direct Seeded Rice' in the year 2023-24.

Key benefits and outlook of DSR

1. In Telangana, study revealed that compared to control, Direct Seeded Rice (DSR) method in paddy resulted in 21% reduction of cultivation costs and 22% higher net income. 82% of programme farmers continued DSR in the subsequent years and 72% increased the area under DSR on their own. The gap in continuation of DSR (18%) was because of issues pertaining to land lease, weeds etc.
2. The DSR farmers could witness an average estimated irrigation water saving of 4,000 cubic meters/ha which was 20% saving compared to conventional method of paddy cultivation (approximately 20,000 cubic meters of water per hectare in conventional method vs.16,000 cubic meters in DSR method). It was estimated that in the year 2023-24, approximately 148 lakh cubic meters of water was saved through DSR practice from 3,700 Ha.
3. The estimated average improvement in yield in DSR fields is 2.75 Qt/Ha compared to before DSR and 2.2 Qt/Ha, compared to control**.**
4. DSR was very effective from 'climate resilience' perspective and in reducing cost of cultivation for farmers as they save in the cost of seed, seed sowing and irrigation application (to some extent).

Alternate wetting and drying (AWD in Paddy)

The project farmers who practiced AWD witnessed a reduction of volume of irrigation water ranging from 20% to 33%. The overall number of irrigations were reduced by one third on an average where AWD was implemented. In Telangana state, 299 Ha. were covered by AWD. The average estimated

saving of irrigation water in volume terms was to the tune of 27% in AWD implemented farms in 2023-24. Considering the volume of irrigation water for paddy/Ha. as 20,000 cubic meters per hectare per season approximately (w.r.t.- International Rice Research Institute (IRRI) papers), the estimated average saving in volume of irrigation water is 5,400 cubic meters/Ha because of AWD. By adoption of AWD, the estimated aggregate saving in the volume of irrigation water for 299 Ha. of paddy crop was 16.14 lakh cubic meters.

Integrated Pest & Nutrient Management (IPNM)

About 1,413 farmer beneficiaries were given training in Good agricultural practices and sustainability measures in cotton cultivation. The cotton farmers were sensitised regarding environmental hazards of excess usage of agro-chemicals in cotton, water management in cotton for water conservation. Periodical inputs regarding agricultural extension were facilitated and Farmer Field Schools (FFS) were conducted effectively in 2023-24. Farmers were trained in integrated pest and nutrient management (IPNM) and they were facilitated with pheromone traps and sticky traps for pest monitoring so that the application of pesticides could be planned only when warranted.

The respondent farmers (82%) reported a decrease in average number of sprays of pesticide application in cotton from 10 to 7 per crop season because of IPNM practices suggested by ITC Ltd.

1. Average saving of cost cultivation in IPNM fields by Rs.9,600/Ha compared to before IPNM scenario and Rs.10,310 per Ha. compared to control
2. The average cost of cultivation (CoC) – Rs. 75,500/Ha. before BCI vs. Rs.65,900/Ha. after BCI (project farmers) the CoC was Rs.76,210/Ha for control).
3. Average improvement of net income/Ha in IPNM fields by 10.1% compared to before IPNM scenario and 5% compared to control
4. Effective creation of awareness among cotton farmers regarding IPNM practices and soil health.
5. Reduction in exposure to agro-chemicals for cotton farmers because of reduction of approximately 3 sprays of agro-chemicals.

Overall, in IPNM for cotton by ITC Ltd, a total of 1,783 Ha. were covered and 1,413 farmers were included. It contributed to a significant environmental impact by reducing 5,349 sprays of agro-chemicals.

Linkages facilitation with Government Scheme for farmers

• Agri Business Centers (**ABCs)**- The projects implemented in 2023-24 also established Agri Business Centers (ABCs) which are grassroot institutions to support Climate Smart Agriculture (CSA) based interventions and also to facilitate custom hiring of farm equipment to farmers. In 2023-24, the number of ABCs established were 90 in number in Telangana state and a total of 32 drum seeders, 10 power sprayers and 44 cono-weeders were facilitated to ABCs from ITC Ltd. The members of ABC expressed that they are satisfied with the benefits through ABCs (100%).
• **Linkages with Government schemes** – 1,015 farmers were linked to PM Kisan scheme in Telangana state and the beneficiary farmers expressed happiness and gratitude for this service in the year 2023-24. The beneficiary farmers received Rs.6,000/- each in this regard.
• **Farmer Field Schools (FFS)** - About 110 FFS (covering 2,140 beneficiaries) were conducted in Telangana state. FFS served as effective extension centers for imparting knowledge to farmers about Climate Smart Agriculture and other agronomic and sustainable crop cultivation methods.
• **Soil Health cards** - A total of 1,100 soil health cards were organized through Government's soil testing labs for zero cost to the farmers. Majority of the farmers (78%) could save approximately 75 Kg. of DAP/complex fertilisers and 75 kg of urea per Ha. by following the recommendation

about usage of chemical fertilisers and could save an estimated average of Rs.2,550 /Ha per season with reference to cost of the chemical fertilisers.

Cascading impacts of the CSA programme - other benefits CSA practices have apart from cost, yields and incomes

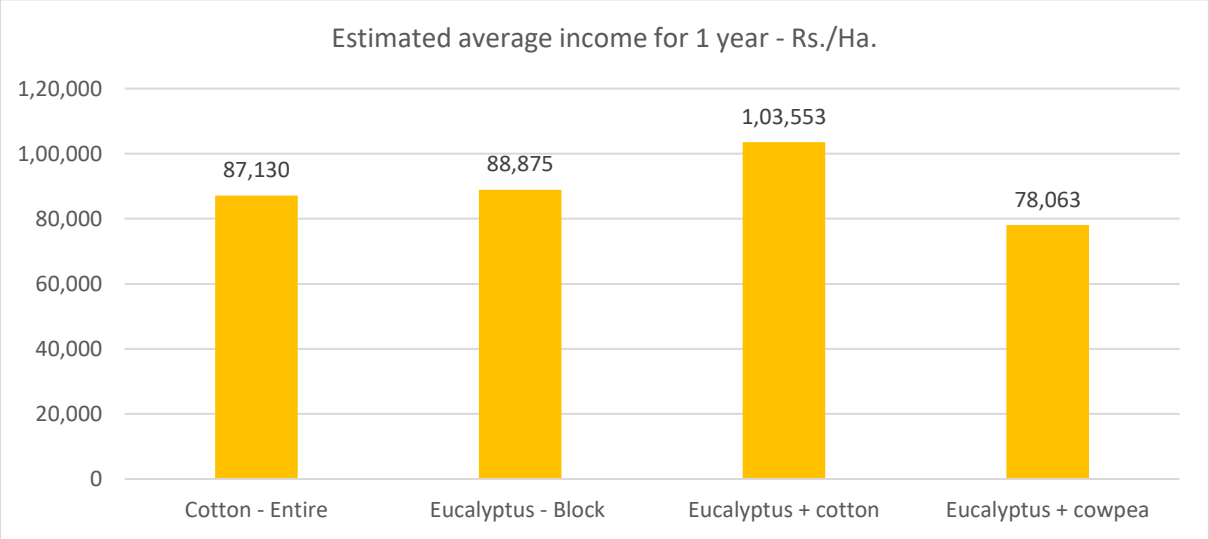
- *Creation of consciousness regarding usage of excess agrochemicals in cotton*
- *Ease in sowing operations in paddy because of DSR*
- *Minimal dependency on agricultural labour and farmers need not wait for agricultural labour for sowing operations*
- *Freedom from the task of nursery maintenance through DSR*
- *Reduction in overall crop duration of paddy by 10 days approximately in DSR method*
- *AWD in paddy contributes to reduction of emission of methane to the tune of 50 to 60%*

3. Social forestry

3.1 Social forestry with intercrop:

About 221 Ha. was covered under social forestry in 2023-24 covering 299 beneficiary farmers. ITC Limited introduced a novel "social forestry with intercrop" method in Eucalyptus plantation by way of modifying crop geometry.

In Telangana, small farmer friendly agro-forestry model plantations (both trees and crops cultivated together) led to 17% higher income for programme farmers (Rs. 1,03,553 per Ha. per annum) over control (Rs. 88,875 per Ha. per annum) who only grew trees. All the respondent farmers were very satisfied with their incomes from the alternative source of livelihood, 'social forestry with intercrop'. They also informed that they got into surplus status of money with the remunerative incomes from social forestry and intercrop.



Comparison of net incomes - scenario of Eucalyptus plantations harvested in 2023-24

The beneficiary farmers of social forestry informed that they could spend the surplus money obtained for purchase of farm bases assets or personal assets or a combination of both. The indicated average spent at aggregate level (based on number of beneficiaries) on personal assets was 34%, on farm-based assets was 42% and on combination of both was about 24%.

Predominant part of the social forestry beneficiaries belongs to ST, SC communities. The beneficiary farmers have health care/health insurance schemes from Government, and the education of their children is being taken care through Government support. Hence the beneficiary farmers did not spend their incomes from social forestry on health and education.

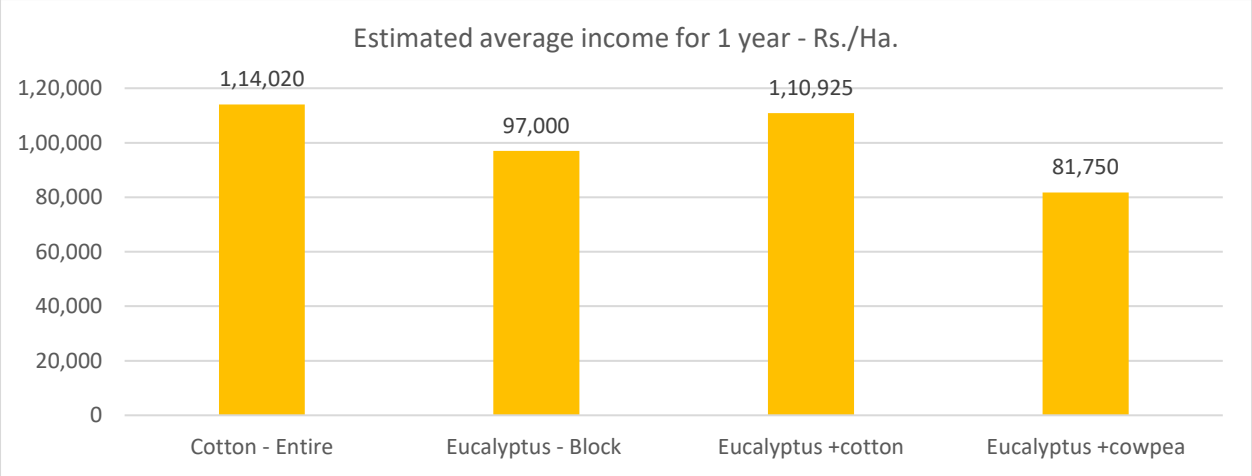
The following table indicates the avenues of spending for the farmers' incomes (percentage based on number of farmer beneficiaries**)** which were earned through social forestry with intercrop.

Details of spending farmers' income from social forestry and intercrop

S.no.	Avenues of income spending for farmers	Percentage
1	**Farming based assets**	**42%**
A	Borewell	10%
B	Tractor	8%
C	Payment towards lease to take up block/Agroforestry in leased lands	24%
2	**Personal assets/needs**	**34%**
A	House extension	10%
B	Motor cycle	20%
C	Marriage of daughter	4%
3	**Combination of farming-based assets and personal assets**	**24%**
A	Payment towards lease to take up block/Agroforestry in leased lands & Motor cycle	4%
B	Borewell & motor cycle	10%
C	Fencing the farms & house repairs	8%
D	Borewell & cattle	2%
	Total	**100%**

In Bhadradri Kothagudem, Cotton was the predominant intercrop opted by farmers of social forestry followed by cowpea.

The following chart depicts the estimated average incomes for the social forestry and stand-alone crops for comparison.



Comparison of net incomes - scenario of Eucalyptus plantations to be harvested in 2027-28

3.2 Bund plantation:

- ITC Limited promoted bund plantations with Eucalyptus trees. Farmers planted 500 saplings of Eucalyptus with ITC's support in a Ha. to take up bund plantation. Farmers could get an average additional income of Rs. 15,625 by opting for 500 plants in Bund plantation method in 2023-24(harvested in 2023-24). It was well appreciated by all the farmer beneficiaries.
- The estimated average income for the farmers who have taken up bund plantation (planted) in 2023-24 is Rs.17,175 /-per Ha/annum (based on prevailing prices).
- SF - Bund plantations were taken by about 470 farmers covering an area of 174 Ha.in 2023-24.

4. Off-farm Livelihood Diversification: Integrated Animal Husbandry Practices (IAHP)

Impact on income to farmers because of IAHP programme:

ITC Ltd. organized various interventions pertaining to improved animal husbandry practices for large and small ruminants and off-farm livelihoods in 2023-24.

IAHP Interventions and details

Year 2023-24		Beneficiaries -before vs. after			Beneficiaries vs. control	
S.no.	Details	Conventional Practice (before IAHP/Pashu Sakhi intervention) -(A)	With IAHP/ Pashu Sakhi intervention - (B)	Diff. (B-A)	Control (Non IAHP/Pashu Sakhi intervention) - (C)	Diff. (C-B)
A	Milk productivity/day in litres for large ruminants (cross-breed buffalos)	10	11	1	10	-1
B	Herd size - Average improvement in herd size for 6 months for herd with base number of 100 small ruminants	177	188	11	175	-13
C	Average weight per animal (goat) in Kg	17	20.5	3.5	17.5	-3.00
D	Average % mortality among the small ruminant	23%	12%	48% reduction before intervention	25%	52% reduction compared to control
E	**Impact on income to farmers as a result of IAHP programme**					
E 1	Net income in Rs./ 1 cross breed buffalo	59,375	65,313	5,938	60,055	-5,257
E 2	Net income per household in Rs. (with an average ownership of 1.6 cross breed buffalos)	95,000	1,04,500	9,500	96,089	-8,411
E 3	Income from sale of calves Rs. (approximately)	Female calves are not sold as a practice from culture point of view. Male calves are sold after an year of birth for Rs.8,000 approximately				

The observed impacts are

- Improvement in milk productivity/day for large ruminants (cross-bred buffalos) by 10%
- Improvement in herd size (average improvement in herd size for 6 months for herd with base number of 100 small ruminants) – by 11 in number in project sample and by 13 in number in comparison with control
- Improvement in average weight per animal (goat) in Kg by 3.5 kg in project sample and 3 kg in comparison with control
- Because of interventions, mortality rate of small ruminants have reduced by 50% in case of project beneficiaries, as compared to control
- In Telangana, because of improved Off-farm diversification through Animal Husbandry Practices, animal owners gained an additional income of Rs. 9,500/- per annum due to increase in milk yield compared to baseline.
- Market linkages facilitated and awareness creation was done regarding profitable markets and points of sale.
- Recommendation of preferred breeds based on market demand
- Linkages were established with bulk buyers and goat/sheep farmers were encouraged to sell direct purchasers of small ruminants rather than selling to local shops or village level intermediaries
- Increase in price realization for 1-month yearling (goat) was approximately Rs. 3,000 after IAHP compared to approximately Rs.2,000 – Rs. 2,600 before IAHP.
- Increase in price realization for 2-to-3-month yearling (goat) was approximately Rs. 5000 after IAHP compared to approximately Rs. 3,800 – Rs. 4,200 before IAHP
- Discouraging sale of 2-to-3-month yearlings and encouraging to sell after 6 months for better price realization
- Facilitating market linkages to sell goat manure/goat droppings (approximate price of 1 tractor goat droppings/ goat manure is Rs.3,000) to facilitate additional income to goat farmers

Pashu Sakhis:

ITC Ltd. successfully introduced the intervention of Pashu Sakhis (trained women cadre service providers to attend the treatment of small ruminants) at village level in Bhadradri Kothagudem district in the year 2023-24.

- 36 Pashu Sakhis were deployed in 36 villages across 3 mandals covering 308 livestock farmers in Bhadradri Kothagudem district.
- Pashu Sakhi's are earning approximately Rs. 1,600 to Rs. 2,000 per month from small ruminants related activities.

Conclusion:

Approach, processes and outlook:

The farmers (beneficiaries and non-beneficiaries) and stakeholders informed that 'Projects undertaken by ITC's Social Investments Programme in Telangana (Year 2023-24)' were implemented with adherence to the principles of fairness, equity and transparency. No unintended side effects were observed because of 'Projects undertaken by ITC's Social Investments Programme in Telangana (year 2023-24)'.

Outcomes and benefits from the projects (2023-24):

The following points indicate the nature and range of benefits witnessed from the Projects implemented by ITC Ltd. in 2023-24.

Improvement	Reduction
• Soil moisture content, soil fertility, crop productivity, net returns to farmer, water use efficiency, volume and access to water, cropping intensity *(Water stewardship)* • Enhancement of green cover and biodiversity • Last-mile connectivity with owners of small and large ruminants for cure of diseases and animal husbandry related improvements *(IAHP)* • Farmers knowledge in crop cultivation by Farmer Field Schools *(FFS)* • Enhancing access to Government schemes for farmers	• Soil erosion and runoff through *(Water stewardship)* • Cost of cultivation, volume of irrigated water – DSR and AWD • Reduction of agronomic and market risks by intercrops – *SF (Agroforestry)* • Mortality in small ruminants
Creation	**Elimination**
• Additional capacity for water storage, provision for irrigation in critical sages of crop growth, structures for soil and water conservation. *(Water stewardship)* • Provision for low-cost mechanization in agricultural operations by Agri-Business Centres (ABCs) at village level • Additional avenues of incomes for farmers *(SF-Agroforestry)* • Creation of livelihood opportunities for Pashu Sakhis (rural women trained in animal husbandry and treatment) • Facilitating doorstep treatment for small ruminants and amenities for large ruminants	• Risk from short term dry spells & inundation, high velocity water & runoff, crop loss etc. *(Water stewardship)*

Collaborations and stakeholders:

ITC Limited actively worked with various stakeholders in the implementation of Projects under Social Investments Programme (SIP) in Telangana (year 2023-24). Non-profit organisations, MYRADA and Society for Sampurna Grama Swaraj (SSGS) were the implementation partners of the above-mentioned projects. Collaborations were actively pursued with Government Departments, Agricultural Research and Development Institutes, Institutions dealing with agricultural extension and farmers groups for effective implementation of the projects. The model of working with stakeholders was proven to be effective for achieving results through harnessing the synergy.

Purview of coverage by projects in 2023-24:

In the year 2023-24, 'Projects by ITC's Social Investments Programme in Telangana' were successfully implemented in 2 districts covering 5,851 direct beneficiaries. The estimated indirect beneficiaries who got the awareness regarding the interventions and their benefits was about 23,404. For each direct beneficiary, the estimated indirect beneficiaries pertaining to awareness regarding the interventions are 4 in number.

Among the themes, Social Forestry has a direct bearing on improvement of farmers' incomes at significant level. The water stewardship interventions effectively catered to 1,631 Ha, climate smart agriculture catered to 6,846 Ha and SF-Agroforestry catered to 395 Ha.

Other notable points regarding the projects implemented in 2023-24:

- The projects have inherent strengths like proven technical merits of the interventions selected for Water Stewardship, CSA, Social Forestry and IAHP.

- Other strengths are relevance and timeliness of the selected interventions regarding soil and water conservation and simultaneous focus on conservation of natural resources and improving farmer economics. However, the challenges like Minimum Support Price (MSP) driven pricing system in paddy and availability of free power for irrigation water withdrawal existed in the context of the projects in 2023-24.

- The projects effectively covered the themes of WS, CSA, IAHP and SF in 2023-24 with the involvement of stakeholders. The project could focus on conservation and improvement of natural resources and improving farmers' incomes simultaneously. The design and operational models of the projects in Telangana in 2023-24 were found to be result oriented, inclusive and holistic.

- Soil and water conservation structures (LBS, RFD, SGP etc.) and social forestry with intercrop were found to be highly sought post interventions, by the farmers from the projects implemented in 2023-24.

- The local Water User Groups (WUGs) were empowered and supported to take care of the structures pertaining to soil and water conservation (tanks, LBS, etc.) for sustainability of the project initiatives.

- Overall, ITC successfully implemented the projects pertaining to WS, CSA, SF and IAHP and built processes and village level institutions (WUAs, ABCs etc.) for efficient operations and sustainability.

100% of the respondent farmers appreciated the adequacy, timeliness of the services and commitment of the field staff involved in the implementation of the projects in 2023-24 and did not mention any discrepancy during the project implementation.

The following outcomes were observed in the in the geographic areas where projects were implemented by ITC Ltd in 2023-24:

- Reduction in soil erosion and increase in soil moisture content and soil fertility
- Rise in ground water levels
- Soil and water conservation structures helped in mitigation of the effect of runoff in the event of heavy rainfall, proved to be instrumental in minimizing crop loss
- Improving crop economics for the farmers
- Increase in gross cropped area under agriculture
- Adoption of Direct Seeded Rice (DSR), AWD by farmers and consequent water saving and

improvement of farmers' incomes

- Training farmers though Farmer Field Schools (FFS) regarding DSR
- Development of biodiversity, enhancing productivity of crops and farmers' incomes
- Creating provision for doorstep treatment for small ruminants and services like artificial insemination for large ruminants through IAHP
- Enhancing rural livelihoods and women empowerment through Pashu Sakhi project

Project interventions and Matrix of Relevance, Effectiveness and Efficiency

S.no.	Themes/interventions	Relevance	Effectiveness	Efficiency	Scope for scale up in future
A	**WATER STEWARDSHIP**				
1	Tank renovation & bund strengthening	Relevant	Effective	Efficient	Yes
2	Tank renovation & tank de-siltation	Highly relevant	Effective	Efficient	Yes
3	Tank de-siltation & silt application to fields	Highly relevant	Effective	Efficient	Yes
4	Farm pond	Highly relevant	Effective	Efficient	Yes
5	Loose boulder structure (LBS)	Highly relevant	Very effective	Efficient	Yes
6	Rock Fill Dam (RFD)	Highly relevant	Effective	Efficient	Yes
7	Stone Gully Plug (SGP)	Highly relevant	Very effective	Efficient	Yes
B	**BIODIVERSITY IMPROVEMENT**	Relevant	Effective in long term	Efficient	Yes
C	**CLIMATE SMART AGRICULTURE**				
1	Direct Seeding of Rice (DSR)	Highly relevant	Effective	Efficient	Yes
2	Alternate Wetting and drying (AWD)	Relevant	Effective	Satisfactory	Yes
3	IPNM in cotton	Relevant	Effective	Efficient	Yes
4	Establishment of ABCs	Relevant	Effective	Efficient	Yes
5	Linkages with Government Schemes	Highly relevant	Effective	Efficient	Yes
6	Soil-Health Cards	Relevant	Effective	Efficient	Yes
7	Farmer Field School (FFS)	Relevant	Effective	Efficient	Yes
D	**SOCIAL FORESTRY**				
1	Social Forestry & intercrop	Relevant	Very effective	Very efficient	Yes
2	Bund Plantation	Relevant	Effective	Efficient	Yes
E	**IAHP**				
1	Pashu Sakhi	Relevant	Effective	Efficient	Yes
2	Services to large and small ruminants	Relevant	Effective	Efficient	Yes

Interventions liked by the farmers

S.no.	Themes/interventions	High	Medium	Low
A	**WATER STEWARDSHIP**			
1	Tank renovation & bund strengthening			
2	Tank renovation & tank de-siltation			
3	Tank de-siltation & silt application to fields			
4	Farm pond			
5	Loose boulder structure (LBS)			
6	Rock Fill Dam (RFD)			
7	Stone Gully Plug (SGP)			
B	**BIODIVERSITY IMPROVEMENT**			
C	**CLIMATE SMART AGRICULTURE**			
1	Direct Seeding of Rice (DSR)			
2	Alternate Wetting and drying (AWD)			
3	IPNM in cotton			
4	Establishment of ABCs			
5	Linkages with Government Schemes			
6	Soil-Health Cards			
7	Farmer Field School (FFS)			
D	**SOCIAL FORESTRY**			
1	Social Forestry & intercrop			
2	Bund Plantation			
E	**IAHP**			
1	Pashu Sakhi			
2	Services to large and small ruminants			

Considering the above achievements and other inferences of the impact assessment study, it can be concluded that 'Projects Undertaken by ITC's Social Investments Programme in Telangana (year 2023-24)' were *highly relevant, effective and efficiently implemented*.

Recommendations

Water Stewardship:

1. A rural entrepreneurship-based model may be introduced in the villages to facilitate supply of fish fingerlings, feed for fish to farmers with farm ponds. Developing a farm pond-based fish supply chain is also a possibility

Direct Seeded Rice:

1. To enhance the adoption of DSR by farmers, mechanized farm operations need to be enhanced, like using drum seeders, seed drills etc.
2. To use drum seeders for DSR, the farm field should be even without undulations. Facilitation of land levelling may be looked up as an option that paves the way for large scale adoption of DSR. Large scale land levelling may be considered in future to help farmers adopt DSR in technical way. Most number of farm fields in Bhadradri Kothagudem have "slight to significant" undulated terrain.

IAHP:

1. The Pashu Sakhi theme may be further streamlined to gain wider acceptability in the rural areas. In some villages, the ability and authenticity of Pashu Sakhis is being questioned by veterinary department officials. Measures are required to address this issue.

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