

Theme	Climate Smart Agriculture
Title	Assessment of Sustainable Agriculture Practices in Bihar and Eastern Uttar Pradesh
State (s)	Bihar and Eastern Uttar Pradesh
District (s)	Lakhisarai, Munger, Begusarai, Chandauli and Ghazipur
Evaluation Agency	ThinkThrough Consulting (TTC)
Period of Study	June, 2018 – January, 2019

Executive Summary

Objective(s):

Assess the impact of sustainable agricultural practices on farm economics, assess the efficiency of ITC's eco-system approach and of the capacity building activities in the Paddy-Wheat-Summer crop cycle in 5 districts of Bihar and Eastern Uttar Pradesh (UP).

Key Findings:

- Crop yield of paddy using MPT and DSR is almost twice the yield of conventional transplantation. Most farmers adopted DSR method of sowing as the cost of cultivation for DSR is 32% lower than the conventional method, crop yield is 21.75 qtl/acre as against 11.71 qtl/acre in conventional transplanting. Therefore, the profit per acre for DSR method of sowing paddy is 5.25 times higher than conventional transplantation.
- The average yield of wheat using Zero Tillage (ZT) method of sowing is 23.85 and 22.70 qt/acre in Eastern UP & Bihar as against broadcasting method of sowing of 15.71 and 13.90 qt/acre, respectively. Comparative analysis highlights that cost of cultivation for ZT method of wheat sowing is 17% lesser than conventional method and net profit per acre is 2.4 times more than conventional method.
- On an average, a farmer saves Rs. 2,277 per acre by adopting ZT method of wheat sowing, Fwhich is equivalent to extra production of 1.42 quintals per acre. Farmers adopting ZT for wheat sowing earned an extra net return of Rs. 15,202 per acre over those practicing broadcasting of seed.
- Post the intervention, farmers adopting mechanization farming techniques are able to cultivate a 3rd crop i.e. summer crop (Moong, Green Gram, etc.). The summer crop generated an average yield of 5.1 quintal/acre leading to an average profit of Rs. 12,349. This ensures round the year engagement for smallholder farmers.
- Speaking collectively, the profit earned while employing DSR, ZT & Summer crop is 311% more than conventional techniques, whereas profit from deploying MPT, ZT & Summer crop is 287% more that of conventional techniques.
- The ecosystem approach of the programme has been both efficient and sustainable as over 90% of the respondents reported improvement in their technical knowledge with regard to agricultural

practices and machines. The cascading effect of the intervention has triggered other farmers to adopt sustainable agricultural practices and procure machines.

Areas for Improvement

- Convergence with government should be strengthened to help more and more of farmers avail the subsidies for procuring their own machines as it will be difficult for ABCs to cater to the consistently rising demand. Another avenue that can be considered to ensure timely availability of machines is to create local entrepreneurs or farmer groups.
- Entrepreneurial and financial training of ABC members can further strengthen the institution thereby making it more sustainable.
- Formal structure in terms of standard curriculum, delivery model, trainers, and communication collaterals is missing within Farmer Field Schools (FFS). FFS can operate closely with district administration or KVKs so that they can become more formal, uniform and scale-up.
- There is limited ownership towards the machine maintenance within the community, which can be mitigated by helping communities to identify key practices while storing and running the machines. A common maintenance and trouble-shooting guide can be distributed through the ABC/FFS or communication collaterals can be developed around the same.
- Another option that could be explored is identifying local youth (men and women) in the districts who are willing and able to undergo technical training and recruiting them to serve as roving "mechanic mitras" who could provide maintenance support to the machines in ABCs within a certain geographical area for a fee borne by the ABCs.

In case you would like to know more on the study please write to us at: itcmsk@itc.in