



A Way Forward towards Sustainable Youth Development and Empowerment by Contemplating the Impediments

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HIGHLIGHTS

- Advocates youth-centric and location-specific policy interventions to strengthen sustainable livelihood development and agricultural entrepreneurship.
- Identifies essential physical, technical, social, and institutional constraints that impede youth participation in sustainable agriculture.
- Suggests strengthening training infrastructure, market-oriented skill development, and institutional support systems to enhance youth empowerment.

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ABSTRACT

Success in achieving food security, environmental sustainability and rural development depends on the active involvement of young people from rural areas in sustainable agriculture. This research examines the problems of sustainable farming and livelihood improvement among young people in the Terai region of West Bengal. Two blocks from Cooch Behar and Malda districts were selected using purposive and random sampling method and 200 respondents were selected. A structured interview schedule supplemented by field observations and open-ended youth suggestions was used to elicit perceived constraints. Constraints were classified under physical, technical, social and institutional dimensions and severity of the constraints were analysed using the Rank Based Quotient (RBQ) technique. The results showed that the biggest obstacle to youth involvement in sustainable agriculture were technical constraints. The main problem areas identified were lack of training institutions in the area, non-location specific training programs, poor connectivity between training agencies and rural youth and lack of infrastructure facilities. These are interrelated problem areas which hamper the interest and participation of youth in agricultural innovation. The study calls for region-specific Skill Development Programme and institutional support system for improving the sustainable livelihoods of the youth in the rural areas.

INTRODUCTION

In the changing agricultural scenario sustainability of agriculture and development of youth are intricately depending upon each other

to contribute the livelihood of small holders in third world countries like India (Mohanty et al., 2025). The importance of youth participation in sustainable agriculture is well documented but still the limited involvement of youth in agriculture is raising the concern

for the future of farming and livelihood (Rana et al., 2025). Sustainability is the ability to sustain oneself for a long enough period of time. Sustainable is a state of preservation or improvement of the resource productivity on a long-term basis to enable a family or communities to survive through chronic situation (Sajid et al., 2019). The term is referred to as livelihood as opposed to job or even source of income. To begin with, the majority of rural population are employed in farming either as farmers or farm workers or receive non-farm employment opportunities only seasonally and in most cases part time (Singh et al., 2023). Secondly, people and families derive their source of livelihood from various sources which constitutes the rural people of the world's livelihood basis (Joshi & Kashyap, 2020). Sustainable livelihood development has emerged as a crucial component of the global poverty eradication and improving economic development (Sati & Vangchhia, 2016; Kumar et al., 2023). To realize long-term economic stability and environmental health, sustainable livelihood development is critical (Pradhan et al., 2021). It puts into focus the latent potential of individuals in regard to their ability, social networks, physical and financial resources and the capacity to shape fundamental institutions (Dagar & Upadhyay, 2022). The aim of this paper is thus to explore these constraints (physical, technical, social and institutional) in greater depth and propose ideas on how to overcome them in order to achieve the overall goal of sustainable development.

METHODOLOGY

The study was conducted in two blocks of Cooch Behar district and two blocks of Malda district in 2022. The selection of such districts was based on the concept that the young people in the events were playing a very important role in making the farming business more profitable so that income and livelihood in the rural situation became better. In the case of the respondents of the present study, the respondents were selected by following multi stage sampling and simple random sampling method. The sampling procedure followed to select the district was purposive sampling and blocks from each district was simple random sampling. Eight villages were selected from the chosen blocks with the help of simple random sampling method. A detailed list of all the youth engaged in the farm was prepared in selected villages. Two hundred farm youth (including twenty-five youth from each village) were randomly selected as respondents of the current study from this exhaustive list. The data collected were then analysed, tabulated and summarised using the "Rank Based Quotient" (RBQ) technique developed by Sabarathnam (1988) which involves ranking of constraints and converting the ranks into one common index of perceived constraints. The procedure used was: (1) an extensive list of constraints under each of the 4 dimensions (physical, technical, social and institutional) was first formulated with the assistance of subject matter experts and literature review, and with some preliminary discussions with the farm youth; (2) each respondent was then asked to independently rank all constraints within a given dimension, from most serious (rank 1) to least serious (rank 4); (3) for each constraint, the number of respondents assigning a rank (fi) was tabulated and converted into an RBQ score using the formula given below; and (4) constraints were ordered within each dimension

according to their RBQ score; with highest score as the most seriously perceived constraint. The formula used was:

$$RBQ (\%) = \frac{\sum_{i=1}^n fi(n+1-ri)}{N \times n} \times 100$$

Where, fi = the frequency of respondents assigning the ith rank to the constraint, ri = the rank position (1, 2, 3...n) assigned to the constraint, N = the total number of respondents, n = the number of ranks.

RESULTS

Physical impediments

Table 1 shows the skill development of rural youth in case of sustainable agricultural development is mostly impacted by the physical infrastructural facilities available at the grassroot level. The analysis inferred that absence of nearby training institutes is the foremost perceived constraint related to skill development of rural youth for sustainable agriculture development (83.30). Due to lack of good infrastructure for skill training (82.90) contributed many fold for enhancing the problematic ecosystem. Followed by the perceived problem of inadequate infrastructure facility nearby (71.70) for the rural youth. Further, scarcity of facilities for input procurement (35.30) and lack of transportation facilities (26.70) were found to be relatively less severe constraints.

Technical impediments

As seen in Table 1, non-location-specific and unrelated to rural youth needs of imparted trainings (94.88) was considered the worst technical constraint. Limited opportunities for updated agricultural knowledge and skills were next (63.25) followed by repetition of similar skill development programmes from different agencies (56.75). Difficulty in accessing land information, was the least severe constraint (35.00). The results showed that the current training programs do not meet the needs and demands of the local community and the new technologies in the farming sector, which limits their effectiveness for rural youth.

Social impediments

Table 1 shows that lack of relationship between training institutes and rural youth (96.49) was perceived as the most severe social constraint. Second, was the inability to accept changes in traditional and cultural practices (77.00), showing the role of social norms in the acquisition of new skills and technologies. Fraud, dishonesty and corruption in society (53.08), lack of supportive social services (52.33) constituted other constraints. Lack of motivation to learn new skills (43.59) and the presence of competition and envy (37.34) were lower ranked.

Institutional impediments

As shown in Table 1, the institutional constraint that was found to be the most problematic in skill development among the rural youth was limited infrastructure (91.64). Following this, a lack of monitoring following training (81.21) and challenge in accessing resources like funding and market information (77.07). The lack of market relevant short courses (64.00) was also identified as a key

Table 1. Impediments associated with skill development of farm youth

S.No. Impediments	RBQ	Rank
Physical Impediments		
1. Absence of nearby training institute	83.30	1 st
2. Inadequate infrastructure facility nearby	71.70	3 rd
3. Lack of transportation facility	26.70	5 th
4. Scarcity of facility for input procurement	35.30	4 th
5. Lack of good infrastructure for skill training	82.90	2 nd
Technical Impediments		
1. Limited opportunity for getting up-to-date agricultural knowledge and skill	63.25	2 nd
2. Imparted trainings are not location specific and not related to the young generation	94.88	1 st
3. Similar type of skill development programmes from different agencies	56.75	3 rd
4. Difficulty in accessing land information	35.00	4 th
Social Impediments		
1. Inability to accept change in traditional and cultural practices	77.00	2 nd
2. Lack of supportive social services	52.33	4 th
3. Fraud, dishonesty, and corruption in the society	53.08	3 rd
4. Absence of motivation and willingness to acquire new skills	43.59	5 th
5. Lack of relation between training institute and rural youth	96.49	1 st
6. Presence of competition & envy	37.34	6 th
Institutional Impediments		
1. Difficulty in accessing resources such as finance and market information	77.07	3 rd
2. Limited youth groups and associations/cooperatives	40.22	6 th
3. Inadequate and non-technical staff in the institute	40.36	5 th
4. Lack of market-relevant short courses offered	64.00	4 th
5. Lack of monitoring after training	81.21	2 nd
6. Focused on passive participation	25.58	7 th
7. Limited infrastructure	91.64	1 st

concern. The other constraints such as poor technical staff (40.36), small size of youth groups and cooperatives (40.22) and passive participation (25.58) were seen as less serious.

Suggestions

Rural youths' recommendations for supporting the adoption of innovations in agriculture, including precision farming, reflected

a visionary approach and problem-solving skills among young people. They recommended regular training sessions, model farms and field demonstrations, which indicates their preference for experiential and peer learning methods, as found by (Prajapati et al., 2025) that participatory learning platforms have a significant impact on smallholder's uptake. Another strong suggestion was on livelihood diversification, incorporating allied activities such as

Figure 1. Word Cloud of suggestion perceived by rural youth during the study for the sustainable livelihood development



hydroponics, aeroponics, mushroom cultivation, poultry farming, and other micro-enterprises along with traditional crop cultivation were to overcome economic vulnerability and seasonal migration by young people. The combination proved most successful when the less complex traditional strategies (such as organic composting) were supplemented with scientific tools. These types of combinations ensure that farming was more productive and that they retain the cultural identity and ecological sustainability (Malapane et al., 2024) assert that the knowledge systems of indigenous people could turn farming innovations more ecologically and culturally sustainable. Youth recognise that the challenges of non-coherent support networks and market access were barriers to scaled-up sustainable practices. This view corroborates arguments made by (Ezeudu & Obimbua, 2024) which highlighted the need for better market linkage and a coordinated institutional support in the development of sustainable agriculture particularly in developing countries.

DISCUSSION

The have multidimensional and interconnected nature and is most severe in the technical constraint. The prevalence of non-location-specific training programmes indicates that current training programmes in the study area might not adequately address their local farming context, resources and the livelihood goals of rural youth. This mismatch will most likely result in a diminished value for training which will limit the application of training in sustainable farming practices. The same findings were reported by Ramjiyani et al. (2015) and Kwenye and Sichone (2018) who observed that lack of technical guidance may dissuade the youth from taking part in the agricultural sector. Additional constraints were seen as physical such as lack of training institutions and poor infrastructure. The findings indicate that access to training facilities, particularly in rural areas where infrastructure and transportation are less developed, may lead to a greater amount of time and effort spent in participating in training. This means opportunities for ongoing training and access to new ideas in agriculture could be decreased. The result is similar to the one reported by Venkatesan et al. (2018).

The lack of linkages with training institutions and the rural youth was the most critical social constraint. The result could be due to poor communication and interaction between the extension agencies and rural youth in the study areas, which may make them less aware of the training opportunities and also make it difficult to gain continuous technical support. Similarly, the reluctant attitude towards change in the traditional farming methods suggests that the social norms could affect the adoption of better farming technologies. Similar results were obtained by Girish et al. (2019); Kobba et al. (2020); Rohila et al. (2021) and Subham et al. (2024).

The institutional set-up such as inadequate access to market information, finance, and support after the training has been delivered, and limited infrastructure, indicate that there are still obstacles to implementing acquired skills. The results suggest that training alone may not be enough to achieve the required results unless there is on-going technical guidance and increased coordination among extension, financial and market-support institutions. Kumar et al. (2023); Das et al. (2025); Sulistyowati et al. (2026) reported similar observations. As a result of the selected districts, the findings

have shown the importance of extending the practice of strengthening location-specific trainings, coordination between institutions and improving the quality of rural training facilities for sustainable livelihood development of the youth in the rural areas.

There are some limitations of this study that need to be taken into account when interpreting the results. The two districts were purposively selected, and blocks and villages within the districts were randomly selected, therefore the results were drawn from a purposive geographic base, and are more representative of similar agro-socioeconomic settings in the Terai than of rural youth in general. In the RBQ technique, the ranking of constraints reflects respondents' perceived severity of each constraint relative to the others, rather than testing statistical relationships between the constraints, causal explanations as to why some constraints may be more severe, or the possibility of comparing across sub-groups of youth. No inferential statistics were used and the results should therefore be regarded as a constraint analysis based on current perceptions and for use with extension programming at the region level, not as a test of theoretical relationships. These findings can be extended to further studies employing inferential and comparative or longitudinal design that will explore the factors underlying constraint severity.

CONCLUSION

This study looked at the limitations which impede the sustainable livelihoods of rural youth in agriculture in Cooch Behar and Malda districts in West Bengal. The results showed that technical constraints were the most important obstacles; thus, there was a significant mismatch between the innovations available for agriculture and the ability of the rural youth to apply them successfully. Fewer young people are involved in agriculture due to poor access to relevant training, extension and modern technologies. Social and institutional factors are the constraints that further demoralize the farmers' investment in the long run because they make farmers less accessible to support systems, resources and opportunities. The findings reveal the importance of an all-encompassing approach that brings together technologies and innovations of precision agriculture, ongoing training and education, improved extension services, and local governance. An enabling environment for the participation of youth in agriculture is fundamental to sustainable rural development. As the districts were selected purposively, the findings should not be generalized beyond similar agro-ecological and socio-economic settings.

DECLARATIONS

Ethics approval and informed consent: This research was carried out in accordance with the principles of social science research, with the observance of ethical norms. The committee of Department of Agricultural Extension, Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch Behar, West Bengal waived the ethical approval. The procedure of the research was the personal interview method which all participants consented to and gave their informed consent before the research was conducted.

Consent for publication: The authors give their consent for publication of the manuscript in the journal, if accepted.

Authors' contribution: Biman Maity conducted the field investigation, data collection, statistical analysis. Kausik Pradhan led the study and participated in research design and results interpretation. Chigilipalli Mounika, Marimuthu Praveenkumar, Swapnamay Ghosh, and Ajay Kumar Prusty helped in literature review, data interpretation, manuscript preparation and editing. Each author read and approved the last manuscript.

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