International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Feasibility of Rural Tech Innovations to Reduce Drudgery of Women Farmers Through Unnat Bharat Abhiyan

Muhammed Ahsan Kottangodan[1], Dr. Anwara Hashmi[2]

[1]PhD Research Scholar, Department of Adult and Continuing Education and Extension, Jamia Millia Islamia.
[2]Assistant Professor, Department of Adult and Continuing Education and Extension, Jamia Millia Islamia.

Abstract
Unnat Bharat Abhiyan is a flagship program by the Ministry of Education launched in 2014. It envisions for transformational change in rural development processes by leveraging knowledge institutions to help build the architecture of an inclusive India. Women farmers in rural India are in drudgery due to various manual works, household chores and agricultural activities, they do in the daily course of action. Mitigating this drudgery can result in their empowerment and hence in overall development and prosperity of the nation. This chapter is trying to explore the feasibility of rural technological innovations to overcome the drudgery of women farmers in rural India through Unnat Bharat Abhiyan.

Keywords: Women farmers, drudgery of women farmers, rural technology, Unnat Bharat Abhiyan

Introduction

A large majority of the women population, approximately 74.8 percent, (Periodic Labour Force Survey 2017-18) in rural India are agriculture workers. Empowering women farmers in rural India has the utmost importance not only for the prosperity of individuals, families, and rural communities, but also for the country's overall economic output. But it's not a cakewalk considering the viscous scenario of women farmers' present situation in rural India. They face various challenges due to; (i) social and cultural practices (ii) unequal access to resources (iii) Climate change and natural disasters (iv) lack of appropriate technology. In a fact sheet titled 'Factsheet on Women Farmers in the Agriculture Sector' published in 2022 by Mahila Kisan Adhikaar Manch (MAKAAM) highlights that 60 percentage of all agricultural operations are handled exclusively by women farmers, but research or development of gender friendly tools and technologies to ease women farmers' workload and drudgery in farming as well as enabling their access to affordable and usable tools/devices are very little.

Unnat Bharat Abhiyan is a flagship program by the Ministry of Education launched in 2014. It envisions for transformational change in rural development processes by leveraging knowledge institutions to help build the architecture of an inclusive India. The Mission of Unnat Bharat Abhiyan is to enable higher

[1] PhD Research Scholar, Department of Adult and Continuing Education and Extension, Jamia Millia Islamia.
[2] Assistant Professor, Department of Adult and Continuing Education and Extension, Jamia Millia Islamia.

educational institutions to work with the people of rural India in identifying development challenges and evolving appropriate solutions for accelerating sustainable growth. It also aims to create a virtuous cycle between society and an inclusive academic system by providing knowledge and practices for emerging professions and to upgrade the capabilities of both the public and the private sectors in responding to the development needs of rural India.

Unnat Bharat Abhiyan, a nationwide program, can facilitate vast opportunities for the development of this nation. This paper is trying to explore the feasibility of rural technological innovations to overcome the drudgery of women farmers in rural India through Unnat Bharat Abhiyan.

Drudgery on women farmers in rural Indian context.

Suma Haslkar et al., (2005) estimated that during peak periods, women work every day for about 8-9 hours in agriculture and 4 hours in household activities and their daily work schedule is very demanding and arduous. Suma Haslkar et al., (2005) opined that rural women farmers play a significant role in agriculture and other agro-based activities. There are certain agricultural operations in which women farmers are considered better than male workers. At all-India level, male population of age 6 years and above spent 67 minutes in unpaid activities, 240 minutes in paid activities and 1133 minutes in residual other activities (self-development/ self-care/ self-maintenance etc.) while female population spent 305 minutes in unpaid activities, 56 minutes in paid activities and 1079 minutes in residual other activities. Situation of women farmers is also like this only.

Disproportionate distribution of daily chores between men and women creates drudgery on women farmers in the rural areas. Along with household chores - such as fetching water, collecting firewood, cooking, cleaning, and taking care of children and elderly members - women farmers engage in works related to agriculture and livestock. The distribution of tasks in agriculture is also uneven and most of the tasks such as transplanting, weeding, sowing, and storing have traditionally been constituted with most of the women farmers' labour. These jobs are physically demanding, often last for several shifts, and force women farmers into uncomfortable positions that might have an impact on their fertility. In addition, these physically demanding tasks will result in physical and mental strain, agony, monotony, and experiences of hardship on day-to-day life of women farmers in rural India.

Technological demand for drudgery reduction of women farmers.

Unnat Bharat Abhiyan envisions a transformational change in rural development processes by leveraging knowledge institutions to help, build the architecture of an inclusive India through technological innovations. The advancement of science, technology, and innovation (STI) is considered very crucial to both the nation's prosperity and individual progress. As India moves forward on a sustainable development path that includes economic development, social inclusion, and environmental sustainability towards achieving an "Atmanirbhar Bharat" there will be a greater emphasis on promoting traditional knowledge systems, developing indigenous technologies, and encouraging grassroots innovations. Science, Technology, and Innovation Policy 2020 is the torch bearer to meet the high demand of technological innovation for nation's prosperity. In the light of policy's suggestions to facilitate an inclusive culture through equal opportunity for women along with candidates from rural remote areas, marginalised communities, differently abled individuals including Divyangjans, irrespective of their socio-economic backgrounds strategies, programs and collaboration must be developed to mitigate the drudgery of women farmers in rural India. Dipti Chintamani Patgaonkar et. al (2020) have identified through a study that

mitigation of drudgery, in terms of physical and mental stress, on women farmers can lead to their empowerment and hence to the overall development of the nation. Based on the above propositions investing on technological innovations to reduce women's drudgery can result in overall prosperity of the nation.

Most agricultural technologies are known for their ability to aid in; (a) increasing productivity, (b) decreasing cultivation costs, (c) increasing sales realisation and market value, (d) reducing drudgery of labour and (e) limiting agriculture's carbon footprint. However, adoption of agriculture technologies among women farmers is found to be very limited in rural Indian context due to various reasons. To actualise adoption of technology among marginalised women farmers, service providers must include women farmers at different stages of technological innovation by channelising potential support from the above-mentioned policies and programs. Otherwise, the existing gender disparity will further get fuelled, and the dream of inclusion will remain unaddressed. On the identified backdrop, here are some suggestions which can be adopted by policy makers and service providers to overcome the drudgery of women farmers in rural India through Unnat Bharat Abhiyan.

1. Inclusion of women farmers at various stages of technology development process.

At all the stages of the technological development process, the service providers need to keep a gender lens and women farmers' perspective, otherwise, the need of mitigating drudgery of women farmers can't be achieved through rural technological innovation. For operating the technology, a detailed mapping and minute observations about the repetitive manual actions from the women farmer's point of view is very important, it includes body posture, body movement, weight of the machine and on which body part the weight of the machine will be felt. Moreover, in rural areas women farmers wear some specific outfits such as saree, lugda due to traditional and cultural reasons. Thus, feasibility of operating the machines in such outfits is necessary to ensure adoption of the technology by women farmers in rural areas.

Unnat Bharat Abhiyan highlights the possibility of formal collaborations with community-based institutions. Thus, to facilitate the adoption of the technology by women farmers in rural areas, formal collaborations must be established with registered women farmers-centric institutions that are working at the grassroot level. Some of them are Cluster Level Federations (CLFs), Village Organisations (VOs), Self Help Groups (SHGs), and Farmer Producer Organisation (FPOs).

2. Bottom-Up Approach in Planning.

Bottom-Up planning is an approach, in development action planning, that allows the local community and local players to express their views and to help define the development course for their area in line with their own views, expectations and plans. Using this method in rural technology development will help in effective understanding of the contextualised problem and demand for the technology. 'Necessity is the mother of inventions.' This famous quote by Plato effectively represents the scope of the bottom-up planning process.

The basic objective of RuTAG, an initiative of the Office of the Principal Scientific Adviser to the Government of India through Unnat Bharat Abhiyan, is to rejuvenate the rural economy of our country through demand-driven technology intervention for rural India, to improve the productivity of and reduce drudgery in the traditional methods of production. The modus operandi of RuTAG is to create small-scale appropriate technological solutions for the rural community (Bhattacharjya, BR et. Al, 2019). These kinds of efforts are very crucial because they are attempting to design a technology mission for rural India that is built from the grassroots. This mission will value the interaction between the community and academic

institutions in the process of developing and delivering technology. These kinds of initiatives are potential factors for service providers to advocate for a bottom-up planning process.

3. Reduce cost of the technology.

One of the major constraints of transfer of technology at the rural areas of a developing country is lack of financial resources. Rural people fail to meet the cost for technology in the limited financial resources they have. In the case of women farmers, many studies have highlighted that they lack resources and decision-making power while deciding about the high investment required to buy machinery. The drudgery associated with agriculture engagement is less acknowledged by their male counterparts. In such a case, women farmers will not be able to invest a high amount of money for technology.

It is observed that, overall cost of technology increases significantly due to expenditure in transportation to the rural locations from far away industrial areas. Cost of production can be reduced by i) capacitating local manufacturers ii) exploring the scope of availability of inputs locally iii) developing the technology using locally available materials. This will further facilitate employment opportunities other than agriculture in rural areas.

Convergence of Unnat Bharat Abhiyan with Government, Non-Government Organisations and Community based organizations of women farmers can be channelised to facilitate subsidy-based credit options for adoption of rural technology by establishing its significance in women farmers' empowerment. Idea of inclusion of women in Unnat Bharat Abhiyan and women development strategies of these institutions can be a potential factor in establishing this convergence mechanism.

4. Capacity building of women farmers on technology use.

Due to limited opportunities, women farmers in rural India are not much educated and won't be able to follow the user manuals of machines in written format. To mitigate this gap, customised and contextualised capacity building events must be conducted regularly about the operation, functioning and maintenance. Contents in video formats, pictorial representations and field demonstration must be the part of such events. This will be highly effective if the women farmers are represented in the contents of technological usage. At present, in almost all the agri-technology items images of men are being used, this develops an inferior complex in women farmers, resulting in widening the gap in technology usage of both men and women. Women farmers may end up doing things in a traditional way and will remain in drudgery.

Facilitators must adopt a gender sensitive approach in the capacity building events. Gender auditing of organisation, gender sensitisation of extension workers etc. are effective strategies that may be adopted by different organisation to ensure this. These strategies can be adopted at a larger level through programmatic interventions under Unnat Bharat Abhiyan.

Conclusion

Women farmers in rural India are engaged in a whole-some of daily household chores, agriculture activities and drudgery which affects their health and mental well-being. Even though there has been technical advancement in different sectors of agriculture there is a significant gap in women farmer sensitive rural technology. Mitigation of drudgery on women farmers can lead to their empowerment and to the nation's prosperity. There is ample scope for rural technology innovation through Unnat Bharat Abhiyan to meet the demand of drudgery reduction. Technology developers, service providers must ensure the following key strategies to achieve agenda of Unnat Bharat Abhiyan and for reducing the drudgery of women through rural technological interventions; (i) Inclusion of women farmers at various stages of

technology development process, (ii) Bottom-Up Approach in Planning (iii) Reduce cost of the technology (iv) Capacity building of women farmers on technology use.

References

1. Anitha, R., Singh, B. K., & Jahan, A. (2019). An evaluation of drudgery reducing agricultural technologies developed for farm women. International Journal of Agricultural Science and Research (IJASR), 9(2), 35-42.
2. Bhattacharjya, B. R., Kakoty, S. K., & Singha, S. (2019). A feedback mechanism for appropriate technology development and dissemination: Case study approach. Technology in Society, 57, 104–114.
3. Government of India. (2020). Science, Technology, and Innovation Policy. Ministry of Science & Technology, Department of Science & Technology. https://dst.gov.in/sites/default/files/STIP_Doc_1.4_Dec2020.pdf
4. Roy, K. C., & Tisdell, C. A. (1993). Technological change, environment and poor women, especially tribal women, in India. Savings and Development, 17(4), 423-439.
5. Srinivasan, C. S., Zanello, G., Nkegbe, P., Cherukuri, R., Picchioni, F., Gowdru, N., & Webb, P. (2020). Drudgery reduction, physical activity, and energy requirements in rural livelihoods. Economics and Human Biology, 37, 100846.
6. Srivastava, N., & Srivastava, R. (2010). Women, Work, and Employment Outcomes in Rural India. Economic and Political Weekly, 45(28), 49-63.
7. Thukral, C., & Borthakur, S. (2021, January 13). Giving women farmers access to technology. https://idronline.org/giving-women-farmers-access-to-technology-agriculture/