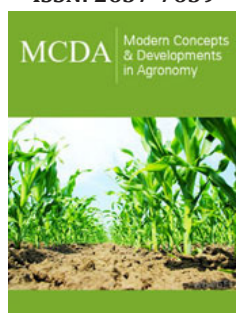


Improved Agricultural Innovations and Women's Empowerment: Multi-dimensionality of Empowerment and Program Evaluation Approach

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Abstract

Improved agriculture technologies are key factors to better increase welfare, especially in agricultural sector, where most of the population in developing countries suffer from high workload and little returns. On the other hands, the role of Women in agriculture is significant. Several empirical literatures indicate that adoption of agricultural technologies can affect welfare positively in general, but because of its complex and multidimensional nature women's empowerment was not brought to the agenda in program evaluation context in many cases. The current review provides a general overview of connection between improved agricultural technologies and women's role in agriculture. It also explores how the measurement of women's empowerment is one of the challenges in women's study.

Keywords: Agricultural technologies; Women's empowerment; Welfare; Program evaluation; Multidimensional

Introduction

Growing concerns indicate that women's empowerment is increasingly being viewed as one of the key constituent elements of poverty reduction strategy. It is not only seen as a development objective in itself but as a means of promoting growth, reducing poverty and promoting better governance [1]. The role of women's empowerment and its analysis has received a growing amount of attention in research [2]. The MDG#3 is not only goals in itself but has also contribution in improving productivity and increasing efficiency of women and it is also a priority embedded in the Sustainable Development Goals (SDGs) in 2012 [3] as "Achieve gender equality and empower all women and girls" (SDG#5).

Evidence also indicates that the role of Women in agriculture is significant, such that they produce over 50% of the world's food [4] and comprise about 43% of the agricultural labor force, both globally and in developing countries [5]. Women invest as much as ten times more of their earnings than men do in their family's well-being, in areas including child health, education and nutrition [6-11]. Women's empowerment thus has a direct impact on agricultural productivity and household food security [12-15], and as a result it remains at the core of agricultural research and outreach practices in developing countries [16].

Concepts and Measurement of Women's Empowerment

The very notion and concept of empowerment is related to issues like agency, autonomy, self-direction, self-determination, liberation, participation, mobilization and self-confidence [17,18]. There exist large growing documentation and literature on the concepts and measurements of empowerment, see [17] and [19-22]; and most of these recent studies

attempt to develop multiple indicators as empowerment is a multidimensional issue and complex process by its very nature that can be conceived and interpreted differently by different people, for example [23,24].

There are many different definitions of empowerment, but majority of these literatures emphasize on agency and gaining the ability to make meaningful choices [20]. Many of the definitions are drawn on [25] concept of an agent. Kabeer's study "resources, agency, and achievements" framework also provides a practical intuition for measuring empowerment, which involves three interrelated dimensions; namely resources (pre-conditions), agency (process) and achievements (outcomes) [19] and in this regard Kabeer conceived empowerment as a process that enables individuals/groups to exercise range of available choice. In the study of empowerment literature three definitions that are commonly cited are found in [17,20,26].

[20] defines empowerment as expanding people's ability to make strategic life choices, particularly in conditions where this ability had been denied to them. [21] describes empowerment as "a groups or individual's capacity to make effective choices, that is, to make choices and then to transform those choices into desired actions and outcomes, [21]." [26] defines empowerment as "the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives".

In the context of agriculture, very little is known about the connection between women's empowerment and impacts of improved agricultural innovations in rural society. Women who are empowered tend to be more educated and have a greater level of decision-making power within their household. Some studies have found that women are more likely than men to invest in goods that will benefit their children and households, especially in health and education of their family [10,11]. Closing the access and availability of technology gap between women and men requires that the necessary technologies exist to satisfy the priority needs of female farmers, given that women are aware of their usefulness and have the means to acquire them [4]. A paperwork by [27] in their study a qualitative assessment of gender and irrigation technology in Kenya and Tanzania have found that women can benefit from adoption of a technology even if they do not have recognized ownership in their household, while [28] argues that labor or time saving improved agricultural technologies can improve working method in the agriculture sector for women and increase women's earnings.

Women make essential contributions to economic and social development, but in many countries, they benefit less from what is produced. Closing gender gaps and empowering women should be a key target for policy makers aiming to alleviate poverty and make growth more inclusive. Highlighting the current constraints faced by many African countries, for example a study by [29] showed that while women in rural Ethiopia are more likely to spend their income on their families' wellbeing compared to men, they have limited access to land and tenure security, and are less likely to receive education, training, and access to credit.

Observed Gaps in Women's Study in Agriculture and Solutions

In contrast to the large literature in measuring women's empowerment, its association with factors like food security [30-32], child nutrition [33-35], or overall nutrition [36], research on how agricultural innovations influence women's empowerment is very sparse. A deep literature search in the field indicates that only a single study by [37] explored the effects of seed improvement and seed governance on women's empowerment in Syria and found that participation in seed breeding programme enhanced the empowerment of the respondent women. The study also indicated that gender-blind improved seed management system nationally significantly limited the empowerment of these women eventually affecting the different components of food security.

It is also important to develop indicators for measuring women's empowerment, to examine its relationship to various welfare outcomes or indicators, and to effectively monitor the impact of interventions in the agricultural related sectors to empower girls and women.

Conclusion

The complex and multidimensional nature of empowerment makes its measurement more difficult [2], and especially this is true in the context of agriculture, where the concept is relatively new. Again, the nature and extent of gender disparity and means of empowering women vary across countries, communities and regions in general. As the majority of indexes and indicators used in monitoring programs on gender equity have little coverage of the agricultural sector, whereas many agriculture-related indicators are gender-blind [37], there is a clear need for a tool to measure and monitor the impact of agricultural interventions on empowerment of women within the agricultural sector [29].

Overall, the vast literature in the area shows that there exists methodological gaps and limitations in measurement of women empowerment in the agricultural sector. There are also gaps in literature on which dimensions of women's empowerment in agriculture drives the process of empowerment due to the adoption of improved agricultural innovations which calls for further studies in the area.

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