

## Integrating gender in rice research

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Received : 23 May 2019

Accepted: 27 May 2019

Published : 29 May 2019

### ABSTRACT

*Gender mainstreaming in agriculture is new trend to address the inequalities of resources and work participation between men and women for ensuring equity in gender. Though women constitute about half of the total agricultural labour, their access to resources as well as decision making power is limited. Particularly, women in rice-based farming system though undertake hard work, own or share very limited resources and benefits in comparison to other systems. Various needs of women, while undertake research and technologies developed should be addressed appropriately through gender focussed planning, project implementation, monitoring as well as impact assessment. A systematic understanding and capacity building of the planners, researchers, development and extension machineries on innovative mechanism and gender sensitive perspectives would bring socioeconomic upliftment of not only women but the whole society.*

**Key words:** Gender mainstreaming, drudgery, rice farming

### INTRODUCTION

Agrarian Development in India is heading towards a crisis due to complex situation arising out of changing goals, biotic and abiotic stresses, labour constraints, market glut, poor growth of agro industries and lack of interest among the youth towards agriculture. The scenario has impacted both Central and State Governments to implement pro-farmer agricultural policies and programmes to mitigate their sufferings and boost agricultural development. Socioeconomic development in rural areas is a challenging task for more than 50% population who are dependent solely on agriculture and contributing only 17% to GDP (GoI, 2018). Gender mainstreaming in agriculture has come up as a new trend worldwide to address the inequalities between men and women for inclusive development and upliftment of rural masses. In this context, the World Conference on Women, Beijing Platform Action (1995) and United Nation's Millennium Development Goals (MDGs) have developed objectives and guidelines for all the participating countries and suggested action plans for empowerment of women and mitigate their problems. India's position with respect to gender inequality is 130<sup>th</sup>

among 189 countries of world as reported in Human Development Report (UNDP, 2018). The roles and status of women in agriculture and rural areas vary extensively and changing rapidly and the recent development in gender equity put the question whether rice farming can be taken up in a gender sensitive perspective and bring socioeconomic changes in their lives. This paper reviews and discussed the issues related to the gaps exist and how various needs of women farmers can be addressed in research and technology development process to attain gender equality.

### DISCUSSION

#### The gender gap/inequality

#### *Inequality in work participation and drudgery*

The Food and Agriculture Organization of the United Nations estimates that globally, women provide 43% of the agricultural labour and in some countries in Africa, this can often go to as high as 60% in addition to the roles played by them in household chores (FAO, 2011). The International Rice Research Institute (IRRI) has

found out the intensive participation of women in the areas like transplanting (89-93%), harvesting of the crop (70-89%), storage of grains (70-83%), threshing (37-42%), transportation of harvested crop (29-38%), nursery preparation (10-20%), irrigation of crops (10-15%), land preparation (10-15%), seed selection for sowing operations (5-15%) and fertilizer management (2-10%) (Paris et al., 2006). Women's participation in rice farming in Odisha revealed that women participate in almost all the activities of rice cultivation starting from sowing and transplanting operations to weeding, gap filling, harvesting, threshing, drying, storing and parboiling (Sadangi, 2004). In the international year of rice by United Nation (2004), a national seminar on "Drudgery reduction of women in rice farming" brought out to the fore the various aspects and degree of drudgery faced by women in rice farming (NRCWA, 2004). It was reported that women perceived heavy drudgery in the activities namely transplanting, threshing and parboiling and moderately heavy drudgery in weeding, harvesting and transportation of paddy. A detailed quantitative assessment of components of drudgery in transplanting operation in rice was made by Arya (2012). Women belonging to the small farm households and economically backward families work more hours in rice field as unpaid family labour, manager and paid labourers. A very recent study also reported that almost all farm-women suffer from physical drudgery in various farm operations (Patil and Babu, 2018).

### ***Inequality of resources owned and benefits shared***

In spite of enormous contribution of women to rice farming, they remain invisible and do not derive the benefits from the farming due to them. The gender equity in the household allocation of resources as well as research and development (R&D) is the missing link which affected the sustainable development of rice and empowerment of women in rice farming. Studies and experiences in the rainfed situation have shown that women have less access than men to critical productive resources and services including credit, farm inputs (e.g., seeds, fertilisers and pesticides), marketing facilities, extension and information (Ajadi et al., 2015). Lack of land titles in the name of women make them ineligible to take institutional credit for agriculture (Meinzen-Dick et al., 2019). Further, small holder households particularly women may have specific needs

and priorities which are not given due attention by the community and development agencies. Careful comparisons between the rice based farming system with other systems brought out that woman in rice undertake hard work but share very limited benefits than any other systems. According to FAO (2011), if women had provided the same access to productive resources as men, it would boost yield by 20-30%, raise overall agricultural output by 2.5-4% and reduce hunger by 12-17%. In 2000, IRRI initiated micro level studies on the incidence, patterns and impact of labour out-migration on rice productivity and gender roles in Eastern India. Synthesis of findings also revealed that out-migration of male is higher in rainfed areas than in irrigated rice ecologies. Men migrate on a short term (seasonal) or long term basis and women in migrant families have shown greater capability and decision making power than women without migrants (Paris et al., 2006).

### ***Addressing the needs of women in technologies development***

'Gender' is a social construct used to explain the differences between women and men in their role relationships, whereas, 'sex' identifies the biological differences between women and men. Confusions are there at all levels when implications for gender mainstreaming are spelt out. Individuals from top to bottom levels should have gender awareness, so that gender roles, responsibilities, opportunities and needs are correctly understood and applied. Gender role is dynamic, which changes depending on age, caste, class, ethnicity, religion, regions, and relative position of women in the family. Gender analysis of rice farming must be undertaken to understand properly and adequately the role, needs, aspirations, constraints, and perception of women in comparison to men so that the production system become gender sensitive. So far as rice research is concerned, it is imperative that the scientists should be sensitive on various gender issues in rice cultivation. It is strongly presumed that technologies are gender neutral, but in reality most of the farm technologies are gender biased. Sensitising the researchers and technology developers would definitely lead to generation of gender sensitive research and technologies for meeting the needs and responsibility of women. Women's participation in rice production systems is also affected by their perception

on rice development environment. Studies need to be undertaken to understand the differential perceptions of men and women about the issues, agencies and technologies. Technology development in rice is not only required to solve their constraints but on how the technology can be integrated with the multiple role/chores assigned to women by the society. The rural women have responsibility to feed the family, take care of the children and elders, arrange fuel and feed and care for animals. So, strategies need to be developed and implemented how rice technologies can better address the practical needs of women. In 21<sup>st</sup> century, women aspire for economic independence and influence the community by taking leadership positions. They may need new avocations, enterprises and business ventures for higher economic returns. So, rice research should develop approaches and methodologies that can be women friendly and provide autonomy to them besides providing higher returns and social status. Facilities, policies and programme support must commensurate with generation of such technology. Farm women engaged in rice farming take up labour intensive activities and make limited use of production technologies. Agricultural implements are not extensively used by women except paddy thresher. In tribal areas, women form the backbone of rice farming and do rice farming even without the help of men. Rural women are much interested to work in groups to gain power and counter the atrocities faced by them. Women leadership in farming is not encouraged by the community and family, so strategy to develop their human resource components in agriculture is need of the hour.

### **Gender considerations in the research design and process**

Many rice researchers might have aspiration to incorporate gender in their research by merely putting some gender related concepts with unclear objectives and outcome. A systematic understanding and capacity building on the part of the research organizations must be adopted for gender integration in the line of following five steps.

#### ***1. Planning gender focused research***

A good understanding of the needs, aspirations and problems of men and women in rice and other related farm enterprises namely pisciculture, livestock,

mushroom etc. can very well help to identify the focus of research in a particular situation. Scientists and technical staff must undergo gender sensitization training and workshops to change their attitude and perception and accept gender equity for all action plans. Gender analysis skills can help them to identify the roles and needs of rural women to reduce drudgery, increase productivity and share greater benefits. Usually scientists ask them (men and women) who do what, how, when, to what extent, and with what result expectation in rice, rice+ livestock, rice + fisheries and rice + agro forestry enterprises. Presently there are many gender analysis tools which have covered the development context, livelihood analysis and stakeholders priorities based on many participatory rural appraisal exercises. A gender disaggregated data (GDD) can be created in the beginning of the research planning process and scientists can generate data on various aspects of rice farmings through survey, consultations and focused group discussion.

#### ***2. Gender sensitive research design***

In order to address gender equality throughout the research cycle, the gender dimensions i.e. equal opportunities/emphasis should be incorporated in the process. Research objectives, hypothesis, and research questions should be clear to address women needs and priorities. Following are the examples of gender sensitive research topics in case of rice research:

- ◆ Crop improvement: Major emphasis generally paid to maximize yield, disease and pest resistance and suitable ecology for rice cultivation but the quality aspect of rice which is women's prerogatives is often overlooked. It was reported that women mostly concerned with rice quality suitable for parboiling, flaking, puffing and traditional cake/pitha preparation. Even women's demand for rice suitable for dosa and other commercial cake is also not used to meet. Women and children in rural areas suffer from malnutrition and rice grain with high nutrient like protein, iron and zinc may attract the women for adoption decision making. Quality of paddy straw has great potential for its use as feed and medium for mushroom cultivation which can enhance the income of women.

- ◆ Crop production: Analysis of drudgery of women in different activities of rice farming and

designing suitable farm machineries and tools to reduce drudgery is a core area. Suitable methods for production of blue green algae, farm yard manure, compost, bio-char, and vermicompost can be absorbed by women as a cost cutting technology. Effective energy management of households by women through use of paddy straw and chaff, minimum water use techniques for rice production, etc. are other areas of research interest.

◆ Crop protection: Production of bio-pesticides and integrated pest and disease management can be of attractive field.

◆ Food science: Development of value added products from rice (rice atta, suji, cakes and biscuits), food processing for nutritional blending can be important field of investigation.

◆ Social science: Gender sensitive transfer of technology in rice including capacity building models, rice supply and value chain, women rice seed producer group, opportunity for women self-help group in rice cultivation and marketing, etc. are the researchable areas.

### **3. Project implementation**

While implementing the project, the treatments decided by the scientists to address the gender sensitive needs or problems must be carefully planned. It is very essential that the treatments should be very well relevant to women's skills, interest, resource base and workability. If any one of the treatment is found to be effective while testing the experiment in the laboratory or on-station, then it should be tested and validated through participatory on-farm trials. It is desirable to have a gender balance in the research team preferably women researchers as team leader. Data collection on different research/trial units should be from respondents comprising both men and women. Participating men and women in the on-farm trials may give their perceptions and experiences with the treatments/approaches/models. The men and women during field trials should get equal opportunity and conditions as per the objectives of the research. The sampling methods, methods for collecting sex and analysing sex disaggregated data should form important part of research method. The language and responses for recording and interaction should also be gender sensitive. Responses from both the gender for different

interventions must be analysed and compared for fruitful inferences.

### **4. Monitoring and evaluation**

Research projects should clearly state the steps to be completed with a time line and gender related activities/events should get special attention to monitor the progress of research. Gender disaggregated data on labour, income, saving, sharing of benefit, incremental gain, perception etc. may be gathered for concurrent evaluation.

### **5. Impact assessment**

The gender impact of the technology/model/approaches that emerged from the research should be assessed. The men and women from different socioeconomic groups exposed to the intervention should be studied with respect to some selected gender sensitive indicators. It is desirable that women should get the desired variety, labour productivity, capacity to manage the enterprise, enhance the quality of life, status and earnings from rice based farming system. Differences between men and women on benchmark data as well as on-farm research and on-farm trial should be conducted to draw implications for gender mainstreaming.

### **CONCLUSION**

A strong logic is brewing that gender sensitive research and development (R&D) can usher prosperity to agriculture in terms of sustainability and profitability of the rice farms. It is desirable to have a change in the mind set of the scientists, extension professionals and farmers and give the farm women their due share in agriculture development. Capacity building of the researchers on innovative mechanism for participation of farm women in different stages of project planning and implementation, engaging gender experts for consultations and undertaking gender analysis in different broad areas of technology development and application can provide a strong footing for gender sensitive rice research. Besides in-house experimentation on the objectives, elaborate participatory on-farm research should be conducted to assess exactly the contribution of research outcomes towards achieving gender equity. The extension system should take the research accomplishments to the end-

users through large scale demonstrations, farmer field school and other extension methods.

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