

## DOUBLING FARMERS INCOME THROUGH GENDER SPECIFIC STRATEGIES

ICAR - CIWA has been undertaking research on issues affecting women and their opportunities in agriculture. It is focussing on participatory action research in different technology based thematic areas involving farm women to test suitability of farm technologies for them and suggest refinement. The Institute is also working to catalyze and facilitate research and development institutions to bring farm women perspectives in their research and development programmes. It serves as a unique Institute to address issues related to women in agriculture in the areas of integrated farming system, drudgery, livestock, fisheries, extension methodologies and entrepreneurship development. Empowerment of the women in agriculture is one of the key themes in the mandate of the Institute right from its inception.

A project was taken up at ICAR-CIWA with the objectives of profiling of income generating activities of farm families and identifying points of interventions; conducting micro level studies to identify gender concerns and technological gaps in doubling farm income; implementing technological modules for enhancing productivity and doubling income with emphasis on integrating gender roles and to study the impact of the interventions and develop a gender-sensitive model for doubling farmers' income. The technological interventions using the model and the consequences were analyzed to draw useful inferences for the policy makers.

Hope the findings of this study will be useful to all the stakeholders engaged in agricultural development and empowerment of women in agriculture. This kind of study and the outputs in the form of policy briefs will be useful for agricultural planning and development. Looking forward to your suggestions.

### Introduction

Aiming to boost Indian agriculture, the Government has set a goal to double the farmers' income level by the year 2022. It is possible by formulating suitable action plan for development of location specific technologies, and timely transfer of such technologies to the farmers' fields. To fulfil the aim, a range of approaches and strategies need to be adopted starting from transformation of production-driven as well as market-driven factors and an enabling environment, which support farmers in all their endeavours. Current level of average income of an Indian farmer is about Rs. 6,430 per month (NSSO, 2012-13) with huge disparity among different regions, like farmers of Punjab earned highest income (Rs. 18,060) followed by those in Haryana (Rs. 14,440), Jammu & Kashmir (Rs. 12,685) and Kerala (Rs. 11,890), whereas farmers of Bihar earn the least (Rs. 3,560) per month. Hence, instead of 'one solution fit for all', a mix of strategies will need to be embraced which not only enhance the income to double or nearly double but discourage the level of disparity among different regions of India.

### Disparity in Farmers' Income among the States in India

There is large disparity existing in annual farm household income of different states (Fig. 1). To analyse the disparity, the states have been divided into four Farmers' Income Zones (FIZ) as per their annual farm household income. The national average annual farm household income is Rs. 1,07,780/-. If the income of the farmers of various states is doubled from their present income, the disparity and gap of income will also be doubled in absolute terms. To address the problem, instead of doubling the farmers' income of every farmer's Income Zone equally, the focus should be increasing the farmers' income by different factors in different FIZs so that overall the country's

average farmers' household income would be doubled but the disparity will be narrowed down. It is proposed that the income of farmers in FIZ1 may be increased by 1.5 times, whereas for FIZs 2, 3 and 4 the incomes may be increased by 2.0, 2.5 and 3.5 times, respectively to achieve overall doubling of famers' income at all India level without widening the gap in the annual farm household income among the Income Zones (Courtesy: Odisha State Document on DFI, 2022, ICAR-NRRI).

### Options for Improving Farmers' Income

Farmers' income can be improved when productivity goes up, cost of production comes down, risk is reduced, post-harvest loss is minimized and commodities produced get a remunerative price. It should also improve income from allied activities to agriculture. The strategy should integrate these all. The following options are available for increasing farmers' income in rice-based systems (Pasupalak et al, 2018).

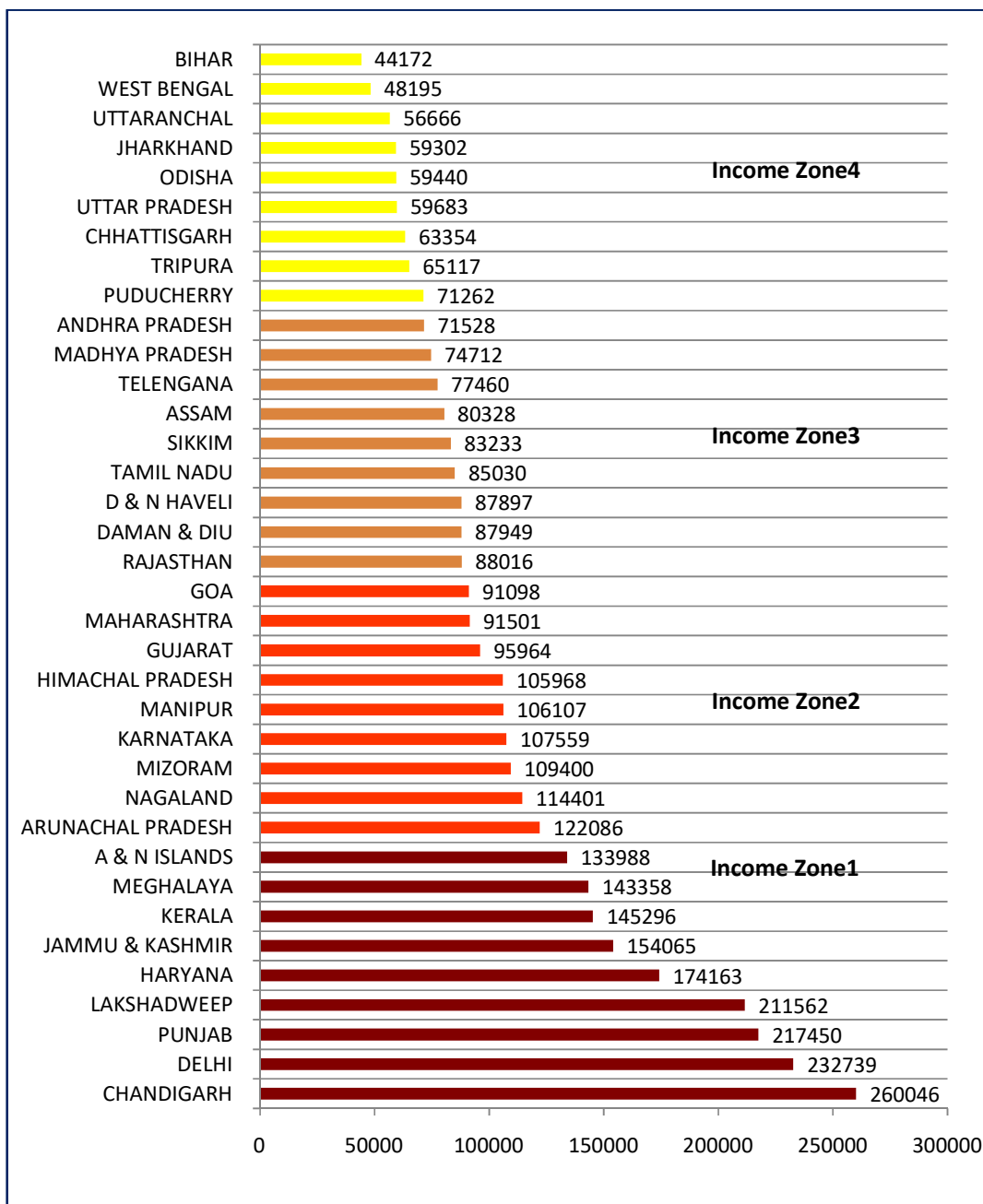


Fig. 1. Annual farm household income in different states of India (Courtesy: Odisha State Document on DFI, 2022, ICAR-NRRI).

**A. Improving productivity and quality**

1. Providing quality seed and enhancing seed replacement ratio
2. Promoting high-yielding varieties and hybrids
3. Growing nutrient rich (CR Dhan 310 and 311) and aromatic rice (Basmati)
4. Increasing cropping intensity in rice-fallow areas

**B. Increasing input use efficiency**

1. Crop planning to identify areas where the crop can be grown with least input
2. Promoting water harvesting and micro-irrigation to achieve per drop-more crop
3. Using soil health card and site-specific crop management
4. Promoting farm mechanization and solar energy

**C. Reducing crop loss**

1. Adopting plant protection measures
2. Promoting resistant varieties and e-surveillance
3. Crop insurance to mitigate risks at affordable cost
4. Weather services and forecasting system

**D. Diversification**

1. Dairy husbandry for small farmers
2. Promotion of intensive vegetable production
3. Promotion of ancillary activities like poultry, beekeeping and fisheries
4. Strengthening Organic Food Program

**E. Market price realization and value addition**

1. Community/co-operative farming with crop-value chain
2. Use of the crop biomass to make products through small industry
3. Creation of a national farm market with information system for export and online selling
4. Agribusiness Incubation Centres to promote agripreneurship

**Women in Agriculture in India**

Women's involvement in agriculture is complex and diverse. Unlike their male counterpart, women are involved in a wide range of activities in agriculture as well as at home. However, the spectrum of women's participation in agriculture is changing with

the changing profile of agriculture and development of non-farm sector. World over, about 42% of women workers were engaged in agriculture in 2010, down from 53.5% in 1980. In the developing countries, agriculture supported about 52.7% of women workers in 2010. There is considerable difference in the extent of women's participation across regions of the world. In South Asia, over 60% of women workers are in agriculture. In India, as per Census India data (2011), 16.6 percent female population work in agriculture against 26.6% male population. Sixty five percent of female workers are involved in agriculture (24% cultivators + 41% agricultural labourers) as against 50% of male workers (25% cultivators + 25% agricultural labourers). Thirty seven percent of agricultural workers are female (13.7% Cultivators + 23.4% Agricultural labourers). Thirty percent of cultivators (36M) and 43% agricultural labourers (62M) are females.

**Gender Issues in Agriculture**

Despite the contributions of women in agriculture, there are many concerns that bother farmers, researchers and policy makers. One such concern is gender issues that have serious socio-economic implications.

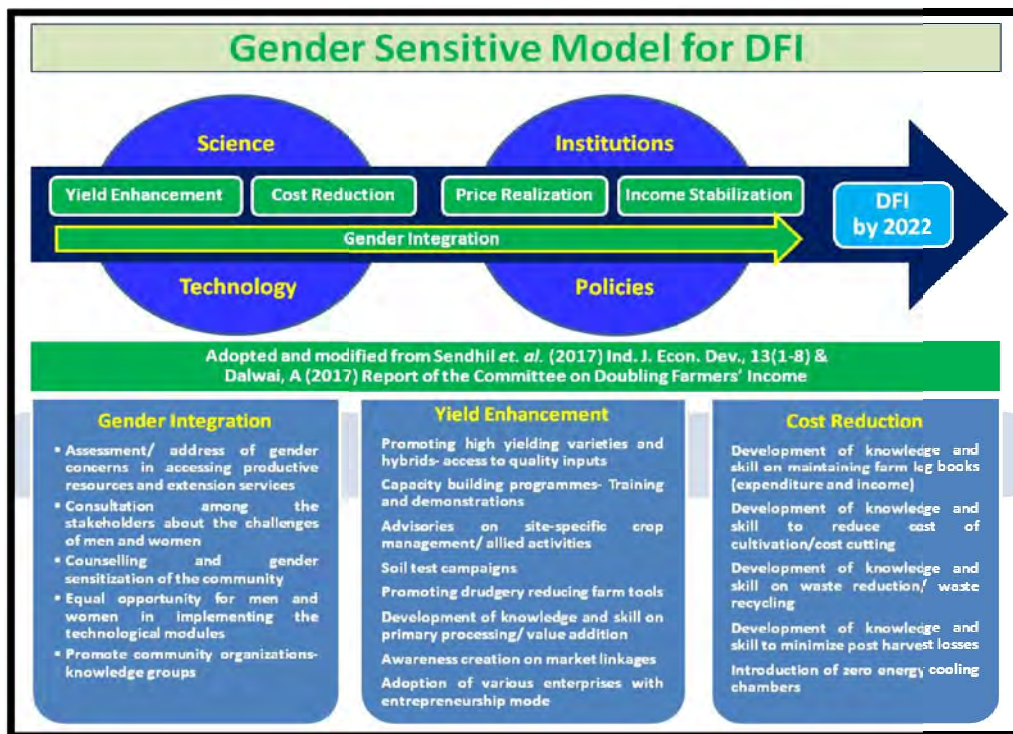
The results of gender researches reveal that despite the important role women play in agricultural production, they remain disadvantaged in numerous respects. On one hand, women have limited access to a wide range of agricultural inputs including seeds and fertilizers, technological resources, equipments, land and so forth. In addition, women often lack the capacity needed to deploy these resources. For example, women may have access to land but lack the capacity needed to deploy the resources as mentioned above. Illiteracy, neo-literacy and lack of scientific knowledge are the major impediments in their growth. Furthermore, many non-tangible assets, such as social capital, human capital, rights and decision-making power, are more difficult for women to access and exercise due to cultural barriers and gender discrimination.

In a nutshell, the gender issues in agriculture can be summarized as;

- Gender stereotypes
- Lack of access to assets, resources & services including extension advisory services
- Male migration & increasing women headed households
- Women's triple role - time constraint
- Poor participation and decision-making power
- Unable to exercise non-tangible assets
- Drudgery, occupational health and safety
- Women agricultural labourers- wage disparity
- Lack of gender sensitive extension models/approaches

**Gender Sensitive Model for Doubling Farmers' Income by Addressing Gender Concerns and Technological Gaps**

This project taken up at ICAR-CIWA fulfilled the objectives of profiling of income generating activities of farm families and identifying points of interventions; conducting micro level studies to identify gender concerns and technological gaps in doubling farm income; implementing technological modules for enhancing productivity and doubling income with emphasis on integrating gender roles and to study the impact of the interventions to develop a gender-sensitive model for doubling farmers' income. The gender-sensitive model for doubling farmers' income was evolved as shown in Fig. 2.



(Fig.2. Gender-sensitive model for doubling farmers' income)

**Technological Interventions for DFI**

- Promoting high yielding varieties and hybrids
- Capacity building programmes- Training and demonstrations
- Advisories and information bulletins on site-specific crop management/ allied activities
- Soil test campaigns
- Promoting drudgery reducing farm tools

- Animal health camps
- Development of knowledge and skill on maintaining farm log books (expenditure and income)
- Development of knowledge and skill to reduce cost of cultivation/cost cutting
- Development of knowledge and skill on waste reduction/ waste recycling
- Development of knowledge and skill to minimize post harvest losses



- Introduction of zero energy cooling chambers
- Development of knowledge and skill on primary processing/ value addition
- Awareness creation on market linkages
- Regular interfaces and monitoring
- Convergence of developmental agencies

### Integrating Gender

- Assessment of gender concerns in accessing productive resources and extension services among the farm families

- Consultation among the stakeholders about the challenges of men and women
- Equal opportunity for men and women in implementing the technological modules
- To promote community organizations-knowledge groups of men and women
- Motivation of rural youth to involve in agriculture sector/ adoption of various vocations with entrepreneurship mode
- Mode of technology transfer - through implementation of gender sensitive extension models
- Counselling and gender sensitization of the community
- Gender sensitization of developmental agencies

The gender perspectives were integrated by way of assessment of gender concerns in accessing productive resources and extension services among the farm families, counselling and gender sensitization of the community, and promoting community organizations (knowledge groups of women). Team of experts analyzed the technological and developmental gaps and designed logical technological modules. Demonstrated the need based modules through training, demonstrations, capacity building programmes, input support and advisory services, promoting high yielding varieties and hybrids. Modules were allotted to different farm families as per their resources and interests. Concurrent monitoring and impact assessment were also done. It could be inferred that the technological interventions could result in the enhancement of annual farm income (69% enhancement), and cash in hand among farmwomen (mean annual savings-133% enhancement) for a farm family with 1 acre of land holding with multiple resources of agriculture and allied sectors.

### Extension Strategies for Gender Mainstreaming and Improving Livelihood

The productivity of women farmers are constrained because they do not have enough access to technical information, credit facilities, extension services, inputs and markets. This less productiveness occurs despite their working longer hours than men. Hence, it is pertinent to build their capacity and ability to shoulder new challenges and increase their efficiency. Important extension strategies to improve women's access to productive resources, learned from the experiences of this project and also from the review of various studies are summarized below;

- a) **Gender balanced extension system:** Agricultural knowledge is transferred inefficiently from men to women and vice-versa. Hence, there is need to increase number of women extension

workers thus leading to a gender balance in extension system. Thus, women farmers will have easy access to agricultural information and technologies.

- b) **Mass media support:** The access of farm women to mass media is limited due to number of reasons. But it has potential to carry messages to a large number of farm women. However, we should examine how different media support and extension model can contribute to the dissemination of farm information and technologies to the women.

- c) **Women friendly technologies:** The scope of agricultural knowledge & technologies for women farmers is increasing gradually. There are many

technologies developed and standardized for agriculture by the National Agricultural Research and Extension System, but their potential for women and agriculture has not been adequately demonstrated. There is dire need to harness the potential of science and technology by demonstrating their benefits thus empowering women. Extending the women friendly tools and technological innovations will reduce the burden, and save time and energy of women.

d) **Credit and technical support:** Technical support should be provided to farm women which facilitates their multiple tasks. Credit facility should be given to women SHGs to increase income by way of developing micro-enterprises.

e) **Capacity building of women:** Different agricultural training programmes in different areas will largely improve the access to agricultural knowledge and information among farm women. Therefore, gender sensitive extension training materials should be developed.

f) **Reorientation of extension and research system:** Extension and research system should be reoriented and priorities should be given to women farmers.

g) **Women farmer groups:** There is need to organize the women farmers into groups in order to strengthen their way from subsistence cultivator to commercial cultivator. Extension workers can be trained to work more closely with women and organize them into groups.

h) **Women friendly IFS models:** Involvement of women in crop and livestock production varies according to the type of crop grown and livestock reared, and socio-economic conditions. There is need to develop scientifically designed, economically profitable and socially acceptable integrated farming systems models especially for women farmers having integration of women friendly farm enterprises.

## Policy Pathways

- ✓ The cost of cultivation has increased manifold for many crops. In order to optimise the net income, the input delivery mechanism needs to be strengthened, especially with regard to critical inputs and access to extension services for women in agriculture.
- ✓ Huge data gaps exist in assessment of the changes in farmers' income, savings and investments over time, and also lack of gender disaggregated data. There is a need to measure these components on a regular basis to formulate evidence-based appropriate policy interventions.
- ✓ The Central and State machineries need to reform the agricultural marketing systems for enabling better price realisation by the farming communities, especially farmwomen. Online marketing may be facilitated for the produce of farmwomen and SHGs by providing suitable platforms and handholding support.
- ✓ Policy interventions are also needed to simplify the procedural formalities of establishing Farmer Producer Organisations (FPOs), in which farmwomen are partners is crucial for scaling up post-harvest operations and directly linking them with markets beyond the local *mandi*/market. This would enable aggregation and pooling of the output from farms and in organising the market linkages, reducing post-harvest losses as well as help farmers realise higher prices for their produce.

## Focus should be on;

- ❖ Recognising women's role as farmer/agripreneur
- ❖ Promoting agricultural education among farm women
- ❖ Creation of well structured gender sensitive modules for effective transfer of technologies

- ❖ Gender mainstreaming in govt. Programmes & Policies
- ❖ Building resilience among farm women to cope with natural calamities and climate change
- ❖ Create database on women's participation in agriculture
- ❖ Linking them with "Atmanirbhar Bharat" and New Initiatives of Govt. of India during the pandemic.

### Way Forward

This study can be replicated in multi-locations to collect reliable gender disaggregated data on expenditure, income, savings and indebtedness of farm households. It will also throw light on potential areas of interventions, especially for increasing access to resources by women in agriculture.

To increase income of farmers, a range of strategies (Economic, Technological, Infrastructural/Information, Political/Policy and Social) need to be adopted to transform the current production-driven to income-driven farming system and reduce the disparity among farmers of different regions of India. A region and state-specific action plan is required to address the constraints of increasing farmers' income.

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