FEMINISATION OF AGRICULTURE IN NEO-LIBERAL ECONOMICSTRUCTURE IN BIHAR : A MICRO STUDY

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ABSTRCT

Agriculture plays a vital role in the Indian economy. Over 70% of the rural households depend on agriculture. Agriculture is an important sector of Indian Economy as it contributes significantly to GDP and provides employment to more than 60% of our population. Agriculture extension services have a long tradition of working predominantly with men. However, due o tradition of improved awareness in the last two decades on the role women play in agriculture, special programmes have been initiated targeting women in agriculture. It has been observed that if women are targeted with resources rather than men, the end result is that welfare benefits will accrue directly to them and their children. Special programmes for farm women implemented so far proved that women, when given access to improved agricultural technology development and resources could increase agricultural production significantly. However, to make sustainable improvements in their livelihoods, women's access to employment and income generation opportunities, sources of credit, skills for establishing enterprises, etc., should have to be improved. Working through women group and in partnership with other organization having wider skills related to empowerment of women are important. Moreover, the lessons learnt from the implementation of earlier programmes should not be ignored and these lessons should shape the course of planning and implementation of future programme opportunities to share this learning needs to be created and this should be implemented with wider consultation with various stakeholders.

Keywords : Farm women, Agriculture, Agriculture Extension services, Land use, Socio-economic status.

INTRODUCTION

Today, women contribute massively towards the national economy especially in the development of agriculture and other allied activities. In India, the Central Ministry of Agriculture and the State departments of agriculture have been implementing women in agriculture programmes. These programmes have proved that women, when gives access to improved information and resources could increase agricultural production significantly. Howerver, to make sustainable improvements in the livelihood of rural women, their access to credit and opportunities for employment, enterprise development and income generation opportunities also have to be imporved. The need for extension to lay a wider role to achieve these needs is presently accepted at the policy level, though in practice there is little evidence of such a change. The need for expanding and improving

the implementation of women in agricultural programmes is an important policy goal for Indian agriculture. The Indian National policy for the empowerment of women (2001) has stressed the need to maninstream "gender perspectives" in the process of development and

envisages women specific interventions, where there are currently gaps in policies and programmes. The National Agricultural Policy of India (2000) has highlighted the need for incorporating gender issues into the agricultural development agenda to provide recognition of women's role as farmers and producers of crops and livestock, users of technology, active agents in marketing, processing and storage of food and agricultural labourers. Since 1980s, special programmes to address the information and technological needs for woman farmers have been initiated in several states by the department of agriculture. These programmes were restricted to only a few villages in selected blocks and women extension personnel were exclusively recruited (and trained) to implement these programmes mainly because the number of women extension personnel in the state department of agriculture is limited. The possibility of recruiting more number of women extension functionaries at present, is limited due to difficult financial situation in many states. Efforts are currently being made to mainstream gender in agricultural extension, whereby the general extension services is drawn into providing services specifically to women farmers. This paper reviews the experiences with women in agriculture programmes implementedin India during the last three decades.

Women in agriculture communities work for longer hours compared to men and due to their heavy work load, women often find it difficult to attend training and other extension programmes offered by projects and programmes. Releasing time from these heavy workloads is essential in order to get meaningful participation of women in SHGs or classes on agricultural technologies. There is a need to understand the daily and seasonal workloads of women farmers prior to the implementation of empowerment programmes (Khot, 1999). Interventions that reduce the work of women both at home and in the farm were developed and promoted (including paddy threshers, winnowers, sprayers, harvesting tools maize shellers, dal making machines)(Seth and Bilgi, 2002) but much more work remains to be done in this area.

Women spend a considerable amount of time fetching water and collecting fuelwood and fodder. Digging a well in the centre of the village, improving manual transport aids (handcarts), improving cooking stoves, increasing bio-mass production to meet fuel needs, plantation of fast growing fodder (especially in common lands) and developing mechanisms for its sharing all helps in saving or releasing a lot of time that can be devoted to their income generating activities. In order to make some of these interventions, the line department such as DoA needs the co-operation of other departments and Panchayati Raj Institutions and NGOs who have experience in this area. Capacity building in this area should be a priority for DoA staff training.

WOMEN AND MARKETING

Most women farmers who are engaged in small business or micro-enterprises are either subsistence entrepreneurs or pre-entrepreneurs. The enterprises developed by women are usually seasonal, requires low production skills and their resultant products are poor in quality. These women entrepreneurs, being both producers and sellers of the produce are also usually isolated from markets and their limited mobility makes marketing a major constraint in promoting their enterprises. Furthermore, most of the small business and micro enterprises identified and developed are done on the basis of the skills and raw material available rather than consideration of the markets, market needs and market dynamics (Jain, 2002). The choice of enterprise depends primarily on the time available with women, their risk taking capacity, cost of inputs, cash flow,

markets, etc. The capacity of the women groups to understand the likely outcomes of different enterprises and to help them take a decisions on what enterprise would be suitable for them, could be developed through appropriate training on micro-enterprise development. Care should be taken not to enforce enterprises, which the organization considers as appropriate but which women are not comfortable to do. High labour requirements of certain micro-enterprises can exclude the poorer and most over-worked women, even if the potential profits are attractive. Poorer women, in particular, are more likely to have excessive workloads than wealthier women. If a new enterprise has high labour requirements, poor women are unlikely to become involved, even if it has an attractive profit potential. The project design should provide for flexibility in implementation and the programmes need to be based on the needs, preferences and capabilities of local people and communities. The knowledge base and experiences of women also needs to be considered in identifying suitable enterprises.

Agricultural equipment and machinery that is suitable for use by women in farming operations (production, post harvest and food processing) have been developed by ICAR institutes, SAUs and CSIR institutes (especially the central food technology research institute). These technologies are considered to be drudgery reducing and time saving. However, the levels of adoption of many of them have been low. Reasons for this include :

i. Modifications are required to the tools to make them more suited to the agro-climaticconditions of different regions.
ii. Manufacturers are sceptical about the demand for improved tools and so do not want toinvest in marketing them.
iii. Small artisans and small entrepreneurs are not aware of the new designs, how tomanufacture them and how to repair them.
iv. Lack of technical backup to support local commercial production of improved tools.
v. Lack of financial resources among farmers (and women farmers) to purchase them.
vi. Lack of training on use of improved tools.

Some KVKs are offering training programmers to rural youth and women on repair and maintenance of agricultural equipment and also on value addition activities such as making jams, squashes, jellies, ketchup etc. The directorates of extension of SAUs have also organized similar training programmes.

FEMINISATION OF AGRICULTRUE IN BIHAR

Agriculture in Bihar is the home of small and marginal farmers. As per Agriculture Census (2010-11), it was noted that more than 90% farmers are small and marginal farmers. The agriculture and allied sectors of Bihar is facing the challenges of biotic and abiotic constraints, stagnation in agriculture diversification under changing climatic conditions, migration of male members to non- agricultural sectors, reluctance of youth in agriculture, volatile agricultural market, limited processing industries, some specific caste association with agriculture etc. However, involvement of women in agriculture is gradually increasing i.e. feminization of agriculture in Bihar state is fact. There are emergent needs to work with farm women by all the agricultural institutions, [State department of Agriculture and allied dept. ATMA, KVKs, Farmers Group (viz. Farmers Club, Self Help Group, Farmers Producer organization, Farmers producer companies, farmers organization, Farmers Co-Operative and Non-government organization]. Again, constraints and opportunities that women face in agriculture today vary across regions and countries, depending on the socio- cultural and agro-ecological contexts. Despite many policy reforms both at the macro and micro

level, gender issues have not received the attention they deserve. Some of the issues need indepthanalysis and research:-

A. Trend analysis on following areas

- Women farmers growth over the years.
- Driving forces in the feminisation of small holder agriculture in Bihar.
- Caste distribution change in feminization of agriculture and factors associated with this
- Activities of women in agriculture.
- Drudgery faced by farm women in agriculture.
- Role conflict in house hold activities and agriculture.
- Factors thwart exercising leadership role by farm women in their operational holding.
- Migration trend of male members of farm families in non-agriculture sectors.
- Womens wages in the farm sector.

B. Institutional role analysis

- Role performance by agricultural institutions for farm women.
- Role expectation from agricultural institutions by farm women.
- Role gap of agricultural institutions and its effect on social inequality and food insecurityunder the backdrop of feminisation of agriculture.
- Training and extension exposure of farm women.
- Role of women farmers in neo-liberal economic structure.
- Role of women SHGs under backdrop of feminisation of agriculture.
- Group approaches to accrue benefit to farm women.
- Farm women involvement in Farmers Producers Organisations (FPOs)
- Farm women access to micro credit institutions.

Sampling and Data Collection

The three stage stratified sampling technique was used for the selection of the sample. The Rajaun Block of Banka District was purposively selected. Six villages were

selected as a secondary unit of the sample where sub surface structures had been constructed. A complete list of 246 households was prepared from all the six villages alongwith their land size and operational holdings. In all, 58 farm households from six villages comprising marginal (22), small (22) and medium (14) were selected using probability proportion to the size method. The data from farm households regarding crop or enterprise pattern, technical requirement of input and output were collected through a well structured and pre-tested questionnaire for the two consecutive agricultural years 2011-2012 and 2012-2013. Analysis is based on two years data.

Results and Discussion

The number of enterprises on marginal farm was 11 whereas on small and medium farms it was 9 and 10 respectively, indicating that marginal farms were more diversified than small and medium. The index of maximum proportion in gross income was 22% on marginal farm, while it was 29 and 25% on small and medium farms, respectively. Income from mulching cattle contributed maximum proportion to gross income on marginal farm whereas it was rise on smalland marginal farms.

Table :1

Crop diversification indices across different farm categories

Categories of farms	Average no. of Enterprises	Diversification Indices MPI	HI	EI
Index in terms of acreage				
Marginal	11	0.31	0.2049	0.7880
Small	9	0.33	0.2208	0.8634
Medium	10	0.35	0.1930	0.8895
Index in terms of gross income				
Marginal	11	0.22	0.1490	0.9674
Small	9	0.29	0.1967	0.8948
Medium	10	0.25	0.1725	0.9360

The index of maximum proportion does not take into account the share of individual enterprises except that of the dominant one. In order to improve upon this limitation, Herfindhal and Entropy indices were calculated both for acreage and income. The Herfindhal index of acreage was maximum on small farms indicating higher concentration or less diversification than other farms. The difference, however, among marginal, small and medium farms was small indicating no significant difference in crop diversification. Medium farms with average size of land holding 2.17 hectares indicated greater diversification.

The Entropy index for marginal farms was significantly lower than small and medium category of farms. This was perhaps due to the fact that average size of holding of marginal farmers in this case was so low that it cannot diversify beyond a certain extent. These are mainly guided by sustenance criterion as their major concern is food security. Under such circumstances, diversification plans of such farms should invariably include

adequate development of non-farm activities. Thus, vertical diversification of such farms is all the more important.

Table : 2 Determinants of crop diversification

Variables	Regression coefficient	Standard error	Significance level
Constant term	25.96	5.76	
Gross cropped area (acres)	0.38	3.14	NS
Family size (no.)	3.67*	2.43	0.10
Bullocks (no.)	2.82**	1.70	0.05
Proximity to market (m.)	-4.69***	0.012	0.01
Non-farm income (Rs.)	-0.64***	0.99	0.01
Number of fragments in the holdings	-0.52	6.90	NS
Education of the head of the family (years)	7.30	9.96	NS
Irrigation intensity (%)	5.63***	0.25	0.01
Extension visit (no.)	7.09**	3.87	0.05
Membership of co-operative society	-4.64	3.78	NS
Adjusted coefficient multiple determination(R^2)	0.73		

Note : *,**,*** indicate significance at 10,5 and 1% levels, respectively.NS-Non-Significant

In the table : 2, from the analysis it can be concluded that 73% of the variation in the number of crops grown was explained by variables included in the model. Six out of ten determinants were found significant. The important dimensions of farms household resource base include, irrigation facilities, availability of draught power and family labour. There has been a positive correlation between availability of family labour and draught power (Jha, 1994). It is hypothesized that with an increase in irrigation, draught power and family labour, the opportunities of diversifying agriculture increase for an average farmer. The results suggested that households with higher family size tended to have allocated more labour to crop production activities. Hence, more will be the diversification on such farms (Joshi et al, 2003; Ibrahim et al., 2009). Households having more access to power are able to diversify more as a result of the reduced drudgery of land preparation. This variable was found to be significant in both the case. Distance from local market was significantly related to crop diversitfication in case of completely irrigated farms. The negative sign implied that larger the distance, the lesser the tendency of households to diversify and vice versa. It is expected that households with poor market access to be more specialized in crop production. The positive and significant relationship between educational status of the head of the family and crop diversification on rainfed farms showed that higher the educational status of the head of the family, higher would be the level of crop diversification. Increase in the frequency of extension visits implied that the more the household head has contacts with the extension agents, the more is the tendency to diversify into crop production. Non-farm income was found to have negative but significant impact on diversification indicating that higher the non-farm income, higher will be the specialization.

Table : 3 Determinants of income diversity

Variables	Regression coefficient	Standard error	Significance level
Constant term	25.59	7.78	
Gross cropped area (acres)	2.89***	1.85	0.01
Proportion of working population	1.98*	0.74	0.10
Bullocks (nos.)	4.28	5.65	NS
Proximity to market (km.)	-340*	1.07	0.10
Farm net worth (Rs.)	2.90*	0.71	0.10
Number of fragments in the holding	0.91	0.67	NS
Education of the head of the family (years)	6.84**	5.70	0.05
Irrigation intensity (%)	4.10**	2.80	0.05
Adult livestock units (ALU) (milching)	9.80*	2.46	0.10
Adjusted coefficient multiple determination(R^2)	0.84		

Note : *,**,*** indicate significance at 10,5 and 1% levels, respectively.NS-Non-Significant

In table : 3, the regression results in terms of income diversity revealed that 84% of the variation in income was explained by the variables included in the study. Proportion of working population and farm net worth were found to be positively and significantly related with income diversification. It implies that more the working population and net farm worth, more will be the income generation activities. The other two variables. i.e. adult milching livestock units and proportion of area under irrigation had significant positive effect on income diversification.CONCLUSION

The present study has shown that diversification into a number of income sources and crops grown are very high in the study area. The statistical evidence in relation to the determination of crop diversification has revealed that both economic factors (like gross cropped area, bullock density, non-farm income) and social factors (such as family size, age and education of the head of the household), distance from the market are the significant determinants of crop or income diversification. This suggests that a proper mix of both economic and non-economic factors are essential to promote agricultural production (Girish, 2004). The results very clearly depicts that the prospets of small farm diversification in rural areas are very high, provided necessary technological, infrastructural, institutional and administrative changes are brought about through effective government policies and creation of socio-economic environment. Policies and programmes to raise income of the marginal and small farmers must focus on increasing the income from crop production. This can be achieved by improving education and extension delivery at the doorstep of farmers. State government can play a greater role through extending network of adequate and trained extension workers and enhancing use of ICT. Vertical diversification of small farms is also very important. But the investment and organizational requirements of such vertical diversification in the form of agro-industry, agri-business, agro-processing and services would be even greater for which the role of government, private sector, co-operative and NGOs need to be properly defined.

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