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Contribution of women in nutrition sensitive agriculture: A review

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Abstract

Women significantly contribute by performing several tasks in agriculture. In developing countries, women in rural areas are often considered invisible farmers. They constitute almost half of the workforce engaged in agriculture. Women play a key role in the entire food system, starting from selecting seeds through sowing, manuring, weeding, harvesting, threshing, winnowing, drying, stacking, and storing to feed the family. Women in farming work longer hours and contribute more with comparatively lower pay. Their contribution is yet to be recognized and appreciated for their work in agriculture. The participation of women in secondary agriculture should be promoted and their knowledge skill in these areas has to be enhanced through training. Low-cost farm equipment operated by a woman should be introduced in the diversified farming. Opportunities should be provided for farm women for ready access to resources, credit and extension, and training efforts. So, it is high time to explore the prospects of Indian rural women by empowering them through agricultural diversification.

Keywords: Contribution, women, nutrition, sensitive, agriculture

1. Introduction

Every woman is considered an entrepreneur as she manages and organizes various responsibilities in the household and outside. According to a report by the food and agriculture organization of the United Nations, the agricultural labour workforce comprises 43 percent of women in developing countries and globally ^[1]. Out of 1.3 billion people in the world who live under the poverty line, and 70 percent of them constitute women. They contribute to two-third of the world's working hours yet earn only 10 percent of the world's income and only own less than one percent of world property. Women are the primary source of knowledge for agriculture. Some historians believe that it was women who first initiated fanning by domesticating crop plants. While men went out hunting, women started gathering the seeds of plants and began cultivating them to meet their food, fibre, and fuel needs ^[12]. The farm women have accumulated a variety of indigenous technical knowledge.

In developing countries, women perform various agricultural tasks in rural areas yet are often considered "invisible farmers." They constitute almost half of the workforce engaged in agriculture. They play vital roles in the entire food system, starting from selecting seeds through sowing, manuring, weeding, harvesting, threshing, winnowing, drying, stacking, and storing to feed the family from the harvested produce. But many of the farm women did not realize the quantum of work done by them. Garrett and Espinosa stated that "We talk to the woman, and she declares that she does not engage in fieldwork, just a little planting, weeding, harvesting" ^[2]. Prof. Amartya Sen, a noble laureate, once said that "The perceived contribution" of women as perceived by both men and women is often lower than their "actual contribution" ^[3]. Usually, women are treated as a weak sector in agriculture and face many challenges. They work longer and harder than men though they are paid less. They work on more tasks than men. Despite their enormous contributions to farming, the women have remained mainly invisible as farmers. Most people fail to recognize the work of women in agriculture. Nowadays, there are some changes in the scenario, and Women have become a focus area for agricultural researchers and planners. So it is high time to explore the prospects of Indian rural women by empowering them through agricultural diversification. This paper deals with the prospects of women's empowerment through agricultural diversification.

Various agricultural-related tasks are performed by rural women, which contributes significantly. They collect woods from fields and perform numerous labor-intensive tasks like grass cutting, hoeing, weeding, picking, separation of seeds from fiber, and cotton stick collections. The collected wood act as an essential fuel source for cooking.

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Women face difficulties searching for firewood because of the increase in population pressure, overgrazing, and desertification. The people in rural areas of developing countries face another significant problem of clean drinking water. The duty of fetching clean water for drinking and cooking also falls on women. In addition to these duties, women are also responsible for livestock-related activities like milking, milk processing, and preparation of dairy and poultry products.

Women who work together with men have dual roles as agricultural producers and household caregivers while playing a pivotal role in acquiring nutrition and food security. There is a large gap between the division of rights, responsibility, and resources between men and women. This gap results in vulnerability in women and girls and causes under nutrition, poor health, general lack of time, and micronutrient malnutrition. According to the fifth Sustainable Development Goal (SDG5) [4], 11 out of 17 goals include indicators related to gender equality and women's rights. SDG5 indicates that the global community is now more concerned about the social relations between men and women and their implications. Earlier SDG2, which focused on ending world hunger, also addressed women's issues as small-scale food producers and discussed issues related to their nutritional needs. These goals are monitored globally and various commitments have been made to mitigate the gender gap by paying close attention to gender dynamics in strategic research areas by the international food policy research institute [5].

Agricultural diversification in general means the integration of various agricultural enterprises viz., cropping, animal husbandry, fishery, forestry, sericulture, etc., to supplement the income of the farmers, increase family labour employment, maximize the production in the cropping pattern, take care of optimal utilization of resources and to recycle the farm wastes for productive purpose. Agricultural Diversification has enormous opportunities for women's empowerment in terms of self-sufficiency in farmers' requirements of food and cash, increased income, stability of income, increased employment opportunities, recycling of farm wastes and by-products, and increased operational efficiency by efficient use of resources. The yield of a farm may increase upto 20 to 30 percent when the access of resources are open for women. Open access to women will lead to a 2.5 to 4 percent rise in total agricultural production in developing countries and also help in reducing world hunger. According to a report by the food and agriculture organization of the UN, 100 to 150 million hungry people will be benefited from this [6].

2. Various ways of women empowerment through agricultural diversification

2.1 Intensive Cropping and Women Empowerment

In ideal conditions, the cropping system should be sufficient to generate money for domestic and cultivation expenses and provide food for the farmer's family and fodder for the cattle and livestock. These objectives could be achieved through the implementation of intensive cropping, which includes intercropping and multiple cropping. By adopting the scientific method of intercropping, two or more compatible crops can be grown along with the main crop to augment the family income. Farm women could efficiently use their skills to grow more crops per unit time and space. The additional income raised from the sale of produce from intercrops can empower rural women and help them achieve nutritional

security. The crops like pulses and vegetables can be grown as intercrops to improve the nutritional security of the farmer's family.

2.2 Vegetable cultivation and women empowerment

Although vegetable cultivation has become highly commercialized, there exists a large gap between production and potential productivity. Women play a crucial role in vegetable production. Women participation in the family farming system is crucial to the sustenance of rural economy. The farm women need to be involved in floriculture sector to push up considerable increase in production level and area under vegetables. Realizing the importance of rural women in vegetable production on commercial basis. With the view to achieve a high level of production it is not only enough to develop farm innovation but it is also necessary to transfer the latest technology from the research system to ultimate users i.e. farmers and farm women growing vegetables. Women play a significant and crucial role in vegetable production. It is most unfortunate that the role of women and their contribution in farm activities are yet to be recognized. Although they perform almost all the activities in farm buy by and large they have been remained as invisible workers. It was found that farm women are involved in harvesting and storage of grain that in other agricultural activities, Such as fertilizer and pesticide application and crop decision making. Vegetable cultivation in Deoria district has a vast potential of improving the economic status of farming community. It has been observed that in farm family the participation of women during decision making as well as in the implementation and management of farm planning is very poor, although their contribution towards total land and labour is significant. It is realized on the national basis that being an equal stake holder of society women's participation farm planning to execution plays a significant role in sustainable development any enterprise. Therefore study was carried out to determine the extent of women participation in different activities and decision involved in vegetable cultivation, So that suitable intervention can be planned.

2.3 Empowering rural women through Horticulture

Horticulture is considered the fastest growing sector of agriculture, with a growth of 5.5% in the last two decades [7]. The horticultural crops provide more income per unit area than usual field crops and also generate more employment. In addition to employment generation and income enhancement for typical farm families, the horticulture sector also benefits landless farmer families, particularly women. Women contribute to various field operations and horticultural product production, post-harvest operations, and nutritional value addition. Horticultural crops cover 23 million hectares of area out of a total of 142 million hectares of the crop area. Table 1 shows increase in area and production of horticultural crops over the years. The increase in horticultural area and production of its crops improved the involvement of women in cultivation of fruits, vegetables, and flowers [8]. Although women in rural areas have an affinity towards farming (around 75 percent women), their role in horticulture is not highlighted appropriately [9]. According to recent studies, women's participation is maximum in stubble collection, seed sowing, seed cleaning, and weeding of horticultural crops. Women play a major role in field preparation, manure application, collection of produce, and marketing in contrast to participation by men. Various studies also reveal that

factors like the type of family, education level, and the caste they belong to do not affect their level of participation in the cultivation of such crops. The vegetable and fruit requirements can also be completed using kitchen gardening, which utilizes available fresh water and a backyard area. A technical know-who, planned layout with the help of KVK scientist and vegetable seeds were made available to the farm women through the Department of Horticulture.

Table 1: Highlights of 2020-21 horticulture production estimates

Total Horticulture	2018-19	2019-20 (3rd Adv. Est.)	2019-20 (Final Est.)	2020-21 (1st Adv. Est.)
Area	25.74	26.22	26.46	27.17
Production	311.05	319.57	320.77	326.58

*Area in Million Ha, Production in Million Tonnes

2.4 Dairying and women empowerment

Small land holdings, low agricultural productivity and lack of employment opportunities have compelled over 25% of the rural population in India, to live in poverty and livestock is a major source of their livelihood. Dairying as a profession fits well in the framework of rural economic activity. It is compatible with inherent routine chores performed by women. Maximum proportion of cows and buffaloes of the world are seen in India. However, India produces only five percent of the total quantity of milk produced in the world. This amount is too inadequate to meet the country’s demand.

As a result, many dairy cooperatives have been formed to meet local demand and to develop dairy industry. The statistics show that women’s participation in cooperatives is low in South Asian countries, especially in rural cooperatives. Women’s involvement in dairying will not only provide them employment but also bring in social change. Livestock is the primary subsistent activity used to meet household food needs as well as supplement farm incomes. The majority of farms own some livestock. The pattern of livestock strength is mainly influenced by various factors such as farm size, cropping pattern, availability of range-lands including fodder and pasture. It is common practice in the rural areas to give an animal as part of a womens dowry. Studies have revealed rural women earn extra income from the sale of milk and animals. Mostly women are engaged in cleaning of animal, sheds, watering and milking the animals. Rural women are also responsible for collection, preparing dung cakes an activity that also brings additional income to poor families. Evidently, rural women are involved in almost all livestock related activities. Except grazing, all other livestock management activities are predominantly performed by females. Majority of women are involved in shed cleaning and collection of farm yard manure. Males, however, share the responsibility of taking care of sick animals. It is evident that the women are playing a dominant role in the livestock production and management activities.

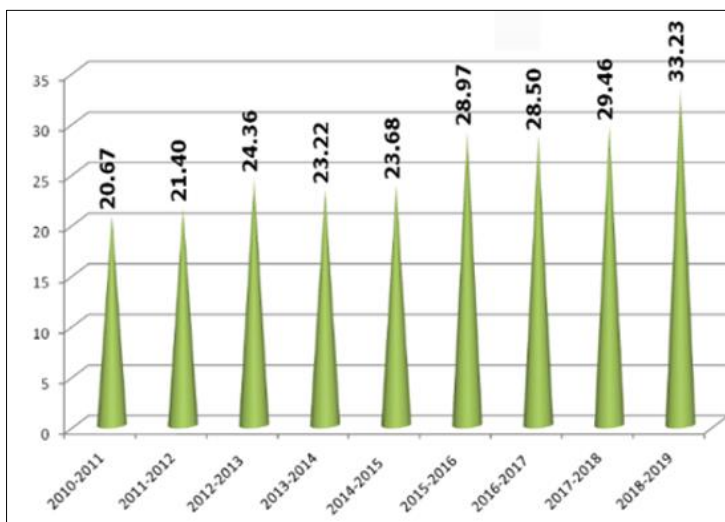


Fig 1: Average milk procurement per day (in lakh litres)

Table 2: Daily Recommendation

Daily Recommendation*	
Toddlers	1½ to 2 cups
Children	2 to 2½ cups
	2½ cups
Girls	3 cups
	3 cups
Boys	3 cups
	3 cups
Women	3 cups
	3 cups
	3 cups
Men	3 cups
	3 cups

2.5 Empowering rural women through goat rearing

India has been facing shortage of mutton and the annual

demand is likely to increase from 0.6 million tons in 2011 to 1.275 million in 2030, causing a shortfall of 0.25 million tons [10]. Fifty percent of the 38.27 million rural households keep goats, 70% of the 154 million goats are maintained by the poor for milk, meat, manure and emergency cash reserve [11]. Women goat keepers could be empowered by scientific goat rearing methods, supply of nutritious green fodder seeds/cuttings, creating network with veterinarians, Disease Investigation Laboratory, traders, meat shop owners, pharmacists, feed suppliers and financial institutions.

2.6 Poultry and women empowerment

Rural Poultry production is being recognized as an important component of socio economic empowerment among the weaker section of society, especially landless labour and marginal farm women. It generates self-employment, provides supplementary income with protein rich food at

relatively low cost. Poultry meat accounts for 27 percent of the total meat consumed worldwide and its consumption is growing at an average of 5 percent annually. Training rural women in backyard poultry rearing with scientific approaches and creation of marketing facility can empower rural women. Poultry farming is one of the major sources of rural economy. The rate of women in poultry farming at household level is the central in poultry industry. Even though rural women are not using modern management techniques, such as vaccination and improved feed, but their poultry enterprise is impressive. Every year, income from poultry farming has been rising. In order to generate more and more income, rural women often sell all eggs and poultry meat and left nothing for personal use.

2.6 Beekeeping and rural women empowerment

Beekeeping is an ideal and economically viable option to generate quick income to the rural family. A few bee colonies (boxes) can be kept at kitchen garden or backyard of the house and bee keeping can be taken up commercially now and the high yielding *Mellifera* bees (Italian bee) are introduced and made available to the commercial bee keepers. Farm women can easily take up this quick income generating low investment adventure as there is good demand for honey in food, cosmetic and pharmaceutical industries.

2.7 Mushroom cultivation and women empowerment

Mushroom growing is one agricultural activity in which women can play a vital role without sacrificing their household responsibilities. Mushroom cultivation can help reduce poverty and strengthen livelihoods through the generation of a fast yielding and nutritious source of food and a reliable source of income. Since it does not require access to land, mushroom cultivation is a viable and attractive activity for rural farm women. Small-scale growing does not include any significant capital investment. Through the provision of income and improved nutrition, successful cultivation and trade in mushrooms can empower the poor rural farm women.

2.8 Rural based low cost nutritional foods and women empowerment

A large number of low cost nutritional products grouped under infant food, health beverages, nutritious snacks to children and diabetic special snacks with millets and pulses could be prepared by rural women at home or as small scale cottage industry in the villages so that rural women could engage themselves in specialty food making with locally available raw materials. The simple machineries/equipments and vessels are purchased by availing credit facility from the nationalized banks. The skill and training should be imparted for hygienic preparation and marketing.

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