ROLE OF WOMEN IN RICE BASED CROPPING SYSTEM OF ODISHA: POTENTIAL CONSTRAINTS AND OPPORTUNITIES

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Abstract: Agriculture is an important sector and a major indicator of the state's economic status. The role of rural women in agriculture and allied operations is highly significant in Odisha. They are actively participating in all range of agricultural activities including pre-harvesting, post-harvesting and storage. Their knowledge, labour and skill produce not only food and income for their families, but contribute to global food stocks. But still their hard work remains unrecognised. Long standing hurdles faced by rural women in terms of limited access to productive resources (Land, Credit, Inputs, New technologies, Transport, Extension Services, Storage, Training and Technical Assistance) prevent them from adopting new technologies and thus they remain confined in their traditional packages of practices in rice-based cropping system. In rice-based cropping systems, except for seedbed and land preparation, fertilizer spraying, pesticide application and irrigating the fields, women dominate rice operations. Despite women's important contributions in farming and livelihoods, women have less access than men to knowledge and skills, decision making, resources, productive assets, including land, credit, agricultural extension services, agricultural inputs like improved seeds, fertilisers and small equipment/light machinery etc. Development of a nation cannot take place without establishing gender equality. Therefore, it is necessary to study the condition of farm women to assess their contribution and the difficulty they face in agricultural sector. Providing due recognition to women's work and providing them access to the resources and equip them with modern technologies will solve many of our problems related to food and nutrition.

Keywords: Rice based cropping system, Rural women, Constraint, Opportunity

Introduction
Odisha is one of the major agricultural state of India. Total geographical area of Odisha is about 155.71 lakh hectares which is around 4.74% of India. Out of the total population of 4.19 crore, 83.32% of the population live in rural areas [1]. Out of the total cropped area which is about 87.46 lakh hectares, only 18.79 lakh hectares(21.48%) are irrigated. Total cultivated land of Odisha is about 61.80 lakh hectares which constitutes about 39.63% of the total geographical area of the state. Out of the total cultivated area about 51% of the area (34% in Kharif and 17% in rabi) is under irrigated condition and 49% of area is under rainfed condition during Kharif [2]. Around 65% of total workforce, constituted by cultivators and agricultural labourers [1]. The contribution of agriculture sector is only about 30% to the Gross State Domestic Product (GSDP) and more than 60% population depend on this which results in low per capita income in the farm sector. Agriculture is an important sector and a major indicator of the state's economic status. Agriculture remains the central component of Odisha's economy and sustenance of the life of the people. Most frequently cultivated crops in the state are rice, pulses, oil seeds, jute, sugarcane, coconut and turmeric. One-tenth of the rice production in India is contributed by the State. Area under Rice is around 4.4 million hectares, which accounts for 91% of the area under cereals and contributes about 94% of total cereal production in the state [3]. The principal crop rice, constituting more than 90 percent of total food grain production, recorded a bumper harvest of 97 lakh MT and productivity of 24 q/ha in 2016-17 [4]. The role of rural women in agriculture and allied operations is highly significant in Odisha. They are actively participating in all range of agricultural activities including pre-harvesting, post-harvesting and storage. Women's work is central to the social and economic aspirations of our country. Women farmers account for more than quarter of the world's population and women agricultural labour consists of 43% of total world agricultural labour force [5].

In Odisha, women cultivator constitute about 20.1% as compared to men i.e., 34.2% whereas women agricultural labourer constitute 53.9% as compared to men i.e., 26.4% [1].They are the active participants in farm activities and processing farm products, in addition to their domestic and reproductive responsibilities. In areas including child health, education and nutrition etc., the investment done by women is as much as 10 times more of their earnings than men invest in their family’s well-being [6][7][8]. Women’s empowerment thus has a direct impact on agricultural productivity and household food security [9][10], and as a result it remains at the central of agricultural research and outreach practices in developing countries [11]. In conserving the basic life support system such as land, water, flora and fauna, women have always played a pivotal role. They worked with indigenous technology for food security like cleaning and winnowing of food grains because they are dragged behind in terms of technological innovations [12]. Their knowledge, labour and skill produce not only food and income for their families, but contribute to global food stocks. But still their hard work remains unrecognised. Long standing hurdles faced by rural women in terms of limited access to productive resources (Land, Credit, Inputs, New technologies, Transport, Extension Services, Storage, Training and Technical Assistance) prevent them from adopting new technologies and thus they remain confined in their traditional packages of practices in rice-based cropping system. Due to these reasons as well as women's lower education level, compel them to remain in subsistence agriculture.

Role of women in rice-based cropping systems
Rural women are involved more in rice cultivation than in any other livelihood activity in Odisha. The contribution of women to rice based agriculture is significantly more than men.
Role of Women in Rice Based Cropping System of Odisha: Potential Constraints and Opportunities

There is a general belief that rice based cropping systems are largely associated with the presence of women workers in agriculture and in particular, of women wage labourer. In Odisha, there is a common perception that the regional concentration of women labourers is based on the extent of rice cultivation relative to other food grains. Growing rice is a labour-intensive undertaking, requiring physically-demanding work throughout the cropping season. The nature and extent of women’s participation in agriculture, no doubt, varies greatly from region to region, even within a region, their involvement varies widely among different farming systems. But irrespective of these discrepancies, there is hardly any activity in agricultural production, except ploughing in which women are not actively involved. Poor rural women play significant roles in rice-based farming systems as unpaid family workers, hired labourers, income earners, savers of expenditures and major caretakers of family health and nutrition [13]. In rice-based cropping systems, except for seedbed and land preparation, fertilizer spraying, pesticide application and irrigating the fields, women dominate rice operations. Some tasks like transplanting, weeding, manual harvesting and post-harvest activities, are shared between men and women. Farm women mainly participated in planting, weeding, harvesting, transportation of produce, processing and marketing [14]. Weeding is one of the most participated works of women agricultural labourers. Women are also storehouse of indigenous knowledge of crop and natural resource management. Post harvest activities such as seed cleaning, winnowing, threshing, selection, storing seeds for the next cropping season, dehusking the grains, cooking rice or preparing rice into products for home consumption or for sale are women’s domain. In some of the farm activities like processing and storage, women predominate so strongly that men workers are numerically insignificant [15]. They add value to rice by converting them into different products for sale and consumption, use rice by-products and biomass for livestock and for other livelihood uses to save on expenditures. In rice-based farming systems, rice is grown during the wet season. However, in rainfed areas farmers grow non-rice crops after rice and women contribute significantly in these activities. After harvest, it is very important to handle the crop with special care so that it does not get damaged. Those are the processes which include threshing, winnowing, cooling, cleaning, sorting and packing of the produce to keep away from getting moisture, other chemical reactions or from further deterioration like cutting, crushing or bruising. The quality of the produce mostly determined by process of post harvest treatment. Therefore, it shows that how women labourers play a crucial role in maintaining the quality of food crops. After cooking, cleaning and sorting the crops it is very important to store them properly in appropriate place so that it does not get damaged. This work is mostly done by women. Farm women share the work load in all agriculture operations without required training and skill [16].

Constraints faced by rural women

Despite women’s important contributions in farming and livelihoods, women have less access than men to knowledge and skills, decision making, resources, productive assets, including land, credit, agricultural extension services, agricultural inputs like improved seeds, fertilisers and small equipment/light machinery etc. Similarly, women continue to be underrepresented and their contributions are not fully tapped in the world of national and international agricultural research. Her role and dignity have yet not been recognized, regardless of such a huge involvement. By all social, economic, and political indicators, women’s status is low. They face lot of socio-economic constraints, gender constraints, and cultural constraints. All these constraints play a crucial part in determining the nature and extent of work they do [17]. The phenomenon of under employment, seasonal unemployment, under development, low socio-economic status, illiteracy and surplus population are simultaneously manifested in the daily lives and living of women agricultural labourers.

Access to land and other assets

They are in fact the largest group of land less labourers, as most of the women do not have land rights due to gender-biased social norms and customs in Odisha. Women’s possibilities in agriculture are hindered by lot of rules and regulations, which restrict their opportunities for more productive employment and income. Still women have no land rights and therefore unlike male workers, women work on small land holdings, have less access to resources and are less educated so less aware with regards to their rights. Control over commercial assets is dominated by men and technological change displaces female labour disproportionately to that of men [18]. Despite growing dependence on agriculture, rural women are unable to access the benefits incurred from land. The exclusion of women from benefits of land ownership and associate resources leads to further loss of society. Similarly, due to lack of land rights, female farmers are unable to utilize the livelihood assets that come from land ownership. They face difficulties in getting credit from banks as they are not the rightful owners of the land. Thus, gender equality in land rights play both a livelihood objective in itself and a powerful means of eradicating poverty. Increasing women’s control over land can positively and significantly affect the welfare of the country’s next generation. Access to land is crucial for poverty mitigation, and so an adequate legal framework for land rights to women, is more than essential. Since it is known that child nutrition status is intimately related to women’s income than men’s, women’s lack of control over independent sources of income has implications not just for their own well-being, but also for their children. To the extent that women’s income is land-based, women’s lack of access to and effective control over land may therefore intimidate the well-being of many household members. One of the biggest limitations in matters of women getting the actual land rights is the lack of strict enforcement of law and strict monitoring of such empowerment process.

Access to and control over credit and other resources

Majority of the women farmers in Odisha have financial crisis and lack financial assistance. Women farmers have very little access to capital or credit facilities as well as other agricultural inputs like seed, fertilisers etc. Access to credit helps to increase total output as well as the farmer to change his or her desires to make expenditure on the use of mechanical equipment, fertilisers, working capital as well as improved seed. So, lack of access to credit and other inputs, hinders these benefits in production. Farm women in Odisha have restricted access to production resources. Access to credit is difficult, since most of the rural women in Odisha are not asset holders and do not own property, which is a prerequisite for lending agencies which make access to credit difficult and ultimately, they remain unprivileged to improve their socio-economic conditions. Women have no ownership rights over either crop or livestock, and income from all activities (except income from small poultry) usually belongs to men [19].

Participation in decision making

Often in a household, the male counterpart dictates decisions over the household and its economy, despite of maximum work done by women in the fields, homes, outside the farm, and at the markets. Pertaining to agricultural sector, women’s suggestions are not given due consideration in the decisions as majority of women are illiterate. They have restricted mobility due to several cultural taboos and also lack of the knowledge about the latest techniques of farming. The National Commission for Women in their report have clearly showed that male members of the family only ask for the consent of female members, however their suggestions or objections are not taken into account. Chowdhry[2004][20] has observed the participation of women and men in decision making in agriculture in Odisha. It is clear from above data that how negligible women’s participation in decision making process. Its only 10.7 per cent of women take decision in crop selling whereas decision to change crop production is taken by 96% men. On an average, a woman spends 14 hours a day working in and outside the home and spends about 16 hours a day during harvesting season. Still it is so unfortunate that their role and contribution are not acknowledged.

Access to extension services and new technologies

In Odisha, agriculture these days suffers from the uncertainties caused by climate change viz. erratic rainfall and disasters like droughts, cyclones, floods, etc. In order to make women play their roles effectively, they should be trained to address the local conditions and use natural resources in a sustainable manner, with a view to achieve economic development without degrading the environment [21]. Most of the development programmes related to agriculture are usually
prepared by men and aimed at men. Most extension officers are men and they do not visit the female farmers although the women are much more active and receptive to new information. They lack access to formal extension services. Hossain and Mishra (2002)\[22\] expressed that the conservative attitude of the family restricted the scopes of farm women to avail training on latest technologies of agriculture. One of the remedial measures that needs to be undertaken, in order that farm women get a fair deal at the hands of change agents is to appoint a sizeable number of well-trained women personnel in training and extension programmes of agricultural development agencies or extension personnel at all levels and more so at the grass-root level. Women are not perceived as 'farmers' even when they do most of the farm work. As a result, agricultural extension and information on new technologies are almost exclusively directed to men, even when women are increasingly responsible for farm work [23]. The training of rural women is very important, especially with the adoption of modern agricultural techniques or methods and selection of proper seeds or inputs that are specified to local conditions. In rice-based cropping system, it is very essential for farm women to be aware of varietal suitability according to their ecological conditions for improved production. This varietal knowledge or access to proper suitable variety for their region can be provided by extension personnel.

Access to education
Among different socio-economic characteristics, educational level is the crucial factor for the understanding of improved technologies provided to farmers. Female literacy rate in Odisha is only 64% (Rural 60.7% and Urban 80.4%) [1]. In Odisha, women workers in agriculture mostly suffer from high illiteracy rate among them as well as drop-out of schools. This illiteracy level in farm women also have serious implications on agricultural productivity, socio economic conditions, as well as their lifestyle. Rural women face relative isolation from public life due to low education level and lack of information about technologies. Thus, they hesitated to come out and interact. Many times, men consider it disgraceful to accept the decision of women so that the suggestions of well-informed rural women are ignored or are not taken seriously.

Low wage
It is the wage, which affects mostly the efficiency of women agricultural labourers so the empowerment should aim at changing the nature and direction of the power structures, which marginalizes the women labourers [24]. Women contribute immensely by working for 15-60 days in the States like West Bengal, Andhra Pradesh and Odisha where mostly paddy is cultivated [24]. Women labourers are getting very low wages than men. Though women are equally working with men in agriculture but still there is wage difference between men and women for the same type of work. Evidence from a number of studies reveal that women, on average, are paid less than men even for equivalent jobs and comparable levels of education and experience [25]. As described in the NSSO 66th Report, the male-female disparity in wages has continued to be significant, with male wages being 1.4 times the female wages.

Marketing System
Purchase of improved machinery or sale of agro-produce requires knowledge of industries dealing in machinery and organized marketing network system for agro-produce. The women workers seldom handle such issues outside their village or local bazaars. Since marketing requires movement away from their villages, it will be appropriate to organize, group societies to look after such issues. Network can be established like ‘Contract farming’, ‘Franchise trading’ supply to organised cooperatives for value added products for assumed marketing.

Drudgery
The daily work schedule of farm women is very challenging and strenuous. As studied by Bhople and Pattai (1998)\[26\], there are certain agricultural operations in which female agricultural workers are considered better than male farmers and also estimated that during peak period women work every day for about 8-9 hours in agriculture and 4 hours in household activities. Women carry out such jobs as weeding, transplanting, harvesting, threshing and storing grains, lending animals and providing fuel and water [27]. Many of these operations are traditionally done in varying postures which if done for long duration cause inconvenience and body pain. These took often have serious consequences for women due to the uncomfortable technologies or technology of performance. The contribution of women is very high in the farm sector as they are involved in majority of operations and are subjected to extra harsh conditions of work that leads to drudgery. Drudgery is generally termed as physical and mental strain, agony, fatigue, monotony and hardship experienced by human being. The plight of women in this regard is alarming as they are constrained by illiteracy, poor health, unemployment, low technical know-how and skills. Drudgery affects adversely their mental and physical well-being. Drudgery in farm operation can be reduced by introducing women friendly improved farm tools and implements.

Other social constraints
In Odisha, most of the jobs done by rural women are physically strenuous and leave no opportunity for the girl child of attending school. In such situation, the dropout rates of girls are higher and their situation remains vulnerable. Increasing food insecurity also has a gender dimension. Social taboos dictate more and therefore in addition to agricultural activities women workers are responsible for cooking, carrying water and fetching firewood, limiting their exposure to economic opportunities. Women have to work longer hours on several unpaid and low paying jobs and also spend considerable time on travel longer distances for foraging free goods like food, fuel, fodder and drinking water. The increased work pressure impacts not only on women’s physical and emotional health but may affect children’s health and educational progress.

Opportunities
Increasing women’s contribution to food production and enterprise or reducing gender-gap in agriculture by providing equal access to resources and opportunities could reduce the number of hungry people in the World by 12-17% or by 100-150 million People [5]. In order to obtain overall sustainable development of agriculture, it is mandatory to recognize the crucial role of women in agriculture and to address the problem faced by them. The role of women should be properly acknowledged and documented. In view of the critical role of women in the agriculture as producers, Sidhu (2011)\[28\] suggested that benefits of training should reach women in proportion to their participation pattern. Participation of women in training programmes will enhance their skills and strengthen faith in them for effective and independent performance of farm operations and help them to make a shift from physically enduring operations to specialized tasks. In order to give preference to widows, unmarried women, victimized women and women living below the poverty line, in 2002, the Government of Odisha decided to allot at least 40% of the Government wasteland kept for agriculture and house site purpose, ceiling surplus land and Bhoodan land. The government also stressed that at least 40% of this land should be allotted to women belonging to the Scheduled Tribes and Scheduled Castes. Along with that for promoting women in agriculture Central, State government and banks has initiated several programmes.

Some of the promising and women centric programmes for encouraging women in agriculture are here under:-

Cooperation Division: The National Co-operative Union of India (NCUI) is implementing a “Cooperative Education and Development programme for Women” through its 45 co-operative education field projects and 4 exclusive co-operative education and development projects for women located at Shimoga (Karnataka), Berhampur (Odisha), Bhopal (MP) and Imphal (Manipur). The focus of these programmes besides promoting literacy; generating awareness and educating women to be organised into cooperatives is to advance loans to members for production and consumer purposes. The NCUI also monitors, guides and supervises the Cooperative Education Programmes being implemented by State Cooperative Unions under which 16 State Cooperatives Union are providing cooperative education to women with the help of 60 cooperative education instructors.
Crop Division: The scheme namely "Technology Mission on Cotton and on Farm Water Management for Increasing Crop Production in Eastern India" are not any gender specific, however to enable women to take full benefits of the scheme, the State/ implementing agencies are being encouraged to give preference to women farmers who head the household or have land holdings in components like distribution of agriculture inputs, training and demonstrations.

Plant Protection Division: Under the scheme "Strengthening and Modernisation of Pest Management Approach in India", there is no separate provision for women. However, under the sub-component 'Integrated Pest Management', the Farmer's Field Schools are organized in collaboration and support of the State Government on different crops in which women farmers actively participate in training activities/programmes.

Seed Division: Specific financial targets have been allocated for women farmers under the central sector scheme titles "Development and Strengthening of Infrastructure Facilities for Production and Distribution of Quality Seeds".

Machinery and Technology Division: A number of agricultural implements and hand tools suitable for farm women have been developed by Research and Development Organisation under ICAR. These gender friendly tools or equipment's are being promoted through Macro Management Scheme. The feedback from the State Government indicated that 20,380 women farmers have been benefitted under this scheme during the year 2004-05.

Integrated Nutrient Management Division (INM): As per the guidelines of "National Project on Organic Farming (NPOF)", there is no gender specific allocation. However, 25% seats for training of farmers on organic farming have been reserved for women farmers.

Natural Resource Management Division (NRM): Under the "Watershed Development Project in Shifting Cultivation Areas (WDPSCA)", there is 17.5% of total allocation is earmarked for rehabilitation components which enable the beneficiary to take up agriculture and allied activities such as production of short duration crops, animal husbandry/ poultry/ piggery, pisciculture, sericulture and other household activities which are mainly carried out by women.

Rainfed Farming System Division: Under the "National Watershed Development Project for Rainfed Areas (NDWPAR)" which has been subsumed with Macro Management schemes for funds, there is an active participation of women in different activities. Each watershed committee has two women members to facilitate active participation of women in the programme. The women-oriented users' groups (UGs) are formed at each watershed. Also, for income generating activities, exclusive women SHGs as well as general SHGs with adequate participation of women are formed.

Extension Division: Support to states for Extension Reports: The centrally sponsored scheme aims at providing decentralised and demand driven extension services through active involvement of farmers/ Women farmers/ Subject Matter Specialists/ NGOs/Krishiki Vigyan Kendra's etc. The gender concerns are being mainstreamed by mandating that 30% of resources on programmes and activities are allocated for women farmers and women extension functionaries.

National Agriculture Technology Project (NATP): Under the Innovations in Technology Dissemination (ITD) Component of NATP, a total of 1.27 lakh of women farmers have been benefitted in seven states, implementing the programme through demonstrations; exposure visits; farm women training, FAC meetings and other such activities.

National Agricultural Innovation Projects (NAIP) and Gender Concern: Gender issues has been adequately addressed under the NAIP component-1 and Component-2: Under this component, one of the objectives is policy analysis including that for gender concerns, visioning and market intelligence analysis for supporting the policy makers on one hand and the farmer on the other.

Component-2: It refers to Research on Sustainable Rural Livelihood Security and the emphasis is on research, on-farm, for improving and developing the most suitable farming systems and allied off-farm activities, in the less favourable environments, regions and groups so that the livelihood of the rural poor improved through assured food, nutrition, employment and income. Special emphasis is given to women farmers who will share their resources and knowledge and own the changes brought in.

UNDP National Food Security Programme: Under this programme the sub-programme included maize based cropping systems; promotion of hybrid rice; sustainable dry-land agriculture, natural resource management along with supplementary programmes for cyclone affected districts and management support for food security. Under the women specific programmes implemented in the States of Odisha, Andhra Pradesh and Uttar Pradesh, 2206 Farm Women Groups (FWGs) have been directly benefitted and 49,976 women farmers have been directly trained.

Extension Support to Central Institutes/ DOE: Under one of its components i.e. "National Gender Resource Centre in Agriculture (NGRCA)", the expenditure is made on women specific activities mainly-undertaking macro/micro level studies; action research on critical thrust areas related to Women in agriculture; developing Gender Sensitization Modules for programme implementers; arranging exposure visits of extension functionaries to women specific programmes and developing a separate portal for this Centre. In remaining components of the scheme, consistent efforts are being made to promote both- Organization of specific training programmes for women in agriculture and also improving their participation in all the training programmes.

Mass Media Support to Agriculture Extension: Under this scheme utilization of existing infrastructures of Doordarshan and All India Radio to produce and transmit latest information and knowledge to the farming community has been carried out. Special programmes are being produced and telecast under the Doordarshan - Narrow Casting Programmes to transfer information and technology in areas in which women farmers are pre-dominantly engaged such as vermicompost, nursery raising, organic farming, eed treatment, floriculture, kitchen gardens, gender friendly tools etc.

National Mission on Agricultural Extension & Technology (NMAET) - Sub Mission on Agricultural Extension (SAME):

a. Agriculture Technology Management Agency (ATMA): Major objective is to provide support to Women Food Security Groups (FSGs).

b. Agric Clinic Agri-Business Centres (ACABC): Main objective is to provide back-ended composite subsidy to women.44% Back-ended composite subsidy is allocated towards cost of project to women.

National Food Security Mission (NFSM): The objective of this scheme is to increase the production of major crops like, rice, wheat, pulses and coarse cereals through expansion of area and enhancement of productivity in a sustainable manner in the identified districts of the State. Under this scheme, 30% of fund is allocated for women farmer. There is also a provision under NFSM providing cropping system-based training to farmers including SC, ST and women farmers to create awareness on improved technology for increasing production and productivity of crops.

National Mission for Sustainable Agriculture (NMSA): Major components of this scheme are, Water use efficiency, Soil water conservation, Soil health management and Rain-fed Area Development. In this scheme there is provision of at least 50% of the allocation is to be utilised for small, marginal farmers of which at least 30% are women beneficiaries/farmers.
Integrated Scheme for Agricultural Marketing (ISAM): Major objectives of this scheme are creation of scientific storage capacity for farm produce with allied facilities in rural areas to meet out various requirements of farmers for storage, processed farm produce, agricultural inputs, etc., and also prevention of distress sale by creating the facility of pledge loan and marketing credit. It provides 33.33% subsidy (on capital cost) for women.


Sub-Mission on Agricultural Mechanisation (SMAM): The main function of this scheme is to promote several drudgery reducing technologies for women in agriculture, developed by ICAR through training, demonstration and financial assistance.

National Mission on Oilsseeds and Oil Palm (NMOOP): Under this scheme there is provision of 30% of budgetary allocation for women beneficiaries/farmers for promoting oilseed cultivation.

Sub-Mission on Seed and Planting Material (SMSP): This scheme covers the entire process of seed production chain, from production of nucleus seed to supply of certified seeds to the farmers.

National Horticulture Mission: The major objective of this scheme is to increase the horticulture crop production (fruits, vegetables, flowers, coco, cashew nut, plantation crops, spices, medicinal aromatic plants) to the maximum potential available in the state. It provides farm inputs, technological and extension supports to women organized into Self Help Groups to make women self-reliant.

Agricultural Insurance: Training Programmes on Gender friendly Equipment for Women farmers to be conducted by Farm Machinery Training & Testing Institutes and as beneficiaries at least 30% allocation of the fund is for women farmers.

The Indian Council of Agricultural Research (ICAR): A network of 690 Krishi Vigyan Kendra’s (KVKs) has been established by ICAR in the country with an objective of assessment and demonstration of technologies/products and its dissemination through a number of extension programmes including training of women farmers to enhance their knowledge and skills.

Biotech-KISAN: This programme was initiated by the Ministry for Science and Technology which empowers farmers, especially women farmers. The objective of this programme is to empower the women farmer and help to improve her concern for production of better seed, storage of seed and protection of the crops from insect, pest and diseases. Under this scheme there is provision of the Mahila Biotech- KISAN fellowships, for training and education in farm practices, for women farmers.

Other such schemes which are encouraging women in agriculture for their upliftment are:

Mahila Kisan Sashaktikaran Pariyojana (MKSP): Ministry of Rural Development has implemented this scheme to empower women in agriculture by making systematic investments to enhance their participation and productivity, and also create and sustain agriculture-based livelihood of rural women.

STEP (Support to Training and Employment Programme for Women): The govt. of India has launched this scheme in 1986-87 with an objective of upgrading skills of women for self and wage employment.

Stand Up India: This scheme has launched on 5th April 2016, ensures that women and SC/ST entrepreneurs have a fair chance at setting up their own businesses. The scheme facilitates loans from Rs.10 lakh to Rs 1 crore for women and SC/ST.

Skill India: This Skill India campaign was launched by Government of India with an objective to train over 40 crore people in India in different skills by 2022. Skill India empowers more than 35 crore women by providing better livelihood security and financial independence.

Pradhan Mantri Krishi Sinchai Yojana (PMKSY): This scheme was launched by the government with an aim to bring various ministries engaged in the use and recycling of water under one platform. Such an initiative will help women farmers in water budgeting based on purpose such as household, agriculture and industries. New perspective to increase women’s involvement in agricultural research are emerging in national and international institutions such as International Rice Research Institute (IRRI), Indian Council of Agricultural Research (ICAR), United Nations Development Program (UNDP), International Institute of Tropical Agriculture (IITA), Food and Agriculture Organization (FAO), and Integrated Tribal Development Agency (ITDA). In the areas of crop production and biodiversity, they not only provide benefit to women farmers but also get benefit from them. There are several banks and cooperative societies offer a scheme which provides a financial boost specially design for women entrepreneurs. There are some of the available schemes like Stree Shakti Scheme, Bharatiya Mahila Bank, Dena Shakti Scheme, Cent Kalyani Scheme, Mahila Udyami Nikhil Scheme, Orient Mahila Bikash Yojana Scheme, Mudra Yojana Scheme etc.

Conclusion

Development of a nation cannot take place without establishing gender equality. Therefore, it is necessary to study the condition of farm women to assess their contribution and the difficulty they face in agricultural sector. Providing due recognition to women’s work and providing them access to the resources and equip them with modern technologies will solve many of our problems related to food and nutrition. Women participation should also be represented in various training programmes conducted for the capacity building of farmers in the field of agriculture and allied activities. Participation of women in training programmes will enhance their skills and strengthen faith in them for effective and independent performance of farm operations and help them to make a shift from physically enduring operations to specialized tasks [29]. Extension agencies should try to involve a greater number of farm women in scientific rice cultivation practices so that majority of farm women will involve in variety selection, insect pest and disease management, threshing, fertilizer application, winnowing, storage and preservation, drying, seed bed preparation, weeding and land preparation were the most priority areas for their training. Therefore, trainings should be designed by the extension agencies in such a way to fulfil their needs and aspirations. Therefore, in order to achieve overall sustainable development of agriculture, it is necessary to recognize the important role of women in agriculture and to address the problem faced by them. The role performed by women should be properly recognized and documented. Women farm workers do not get sufficient attention due to gender discrimination, which results in low socio-economic status of women. In spite of the significant roles played by women workers, they are neglected. There is an urgent need for technological empowerment of farm women because women play a crucial role in and must fully participate in the sustainable development process. It is therefore essential to integrate gender perspectives in policies, projects and programmes that can be achieved by gender analysis. All plans and projects within community programmes should be assessed using ‘Gender lens’ in order to achieve gender justice for women. So, there is a need to look into the problem of women workers in farming sector from the grass root level.

Application of review: Development of a nation cannot take place without establishing gender equality. Therefore, it is necessary to study the condition of farm women to assess their contribution and the difficulty they face in agricultural sector. Providing due recognition to women’s work and providing them access to the resources and equip them with modern technologies will solve many of our problems related to food and nutrition and also can bring gender equity in rice based cropping system.

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Abbreviations:
MT: Million Ton,
nqtl / ha: Quintal per hectare

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Role of Women in Rice Based Cropping System of Odisha: Potential Constraints and Opportunities

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References