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## Role of women in agriculture

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### Abstract

Today, there is a growing realization and commitment of the global community to achieve more sustainable and broad-based agricultural growth by addressing gender related issues in agriculture through national, regional and global initiatives and partnerships. There is need for reorientation of the agricultural research agenda to overcome the existing gaps and to face the emerging challenges of sustainable development and livelihood of resource poor smallholders, especially women farmers. We are quite aware of the problems which women face at home and at farm. However, at this juncture, we require in-depth analysis of the problems followed by the appropriate actions for their solutions. Suitable technologies have to be delivered to the farm women for raising farm productivity and empowerment. Other practical steps should also be taken-up to help and support farm women. This paper mainly emphasize on the role of women in different sectors of agriculture along with drudgery activities carried out by women in agricultural activities.

**Keywords:** Role, women, agriculture

### Introduction

Agriculture is underperforming in many developing countries for a number of reasons. Among these is the fact that women lack the resources and opportunities they need to make the most productive use of their time. Women are farmers, workers and entrepreneurs, but almost everywhere they face more severe constraints than men in accessing productive resources, markets and services. This “gender gap” hinders their productivity and reduces their contributions to the agriculture sector and to the achievement of broader economic and social development goals. Closing the gender gap in agriculture would produce significant gains for society by increasing agricultural productivity, reducing poverty and hunger and promoting economic growth.

Women, like men, can be considered “productive resources”, but they are also citizens who have an equal claim with men on the protections, opportunities and services provided by their governments and the international community. Gender equality is a Millennium Development Goal (MDG) in its own right, and it is directly related to the achievement of the MDG targets on reducing extreme poverty and hunger. Agricultural policy-makers and development practitioners have an obligation to ensure that women are able to participate fully in, and benefit from, the process of agricultural development. At the same time, promoting gender equality in agriculture can help reduce extreme poverty and hunger. Equality for women would be good for agricultural development, and agricultural development.

The roles and status of women in agriculture and rural areas vary widely by region, age, ethnicity and social class and are changing rapidly in some parts of the world. Policy-makers, donors and development practitioners need information and analysis that reflect the diversity of the contributions women make and the specific challenges they are confronted with in order to make gender-aware decisions about the sector.

### Work participation scenario

Women farmers represent more than a quarter of the world’s population. Women comprise, on an average, 43 per cent of the agricultural work force in developing countries, ranging from 20 per cent in Latin America to 50 per cent in Eastern Asia and Sub-Saharan Africa. Yet, women have less access than men to agriculture related assets, inputs and services. Had they enjoyed the same access to productive resources as men, women could boost yield by

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20-30 percent; raising the overall agricultural output in developing countries by two and a half to four per cent. This gain in production could lessen the number of hungry people in the world by 12-17 per cent, besides increasing women's income (FAO, 2011)<sup>[7]</sup>.

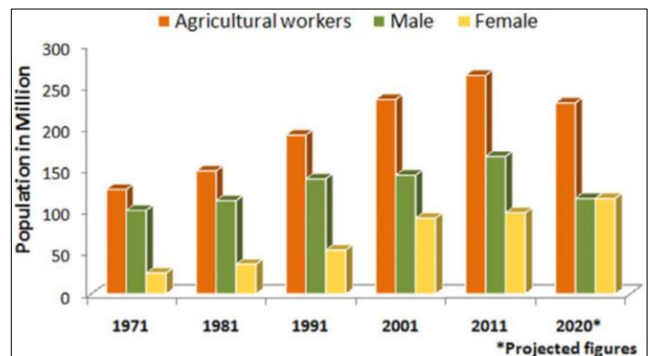
**Table 1:** Gender Statistics on Work Participation in India (ICAR-CIWA)

Parameters	2001 (%)	2011 (%)
Overall work participation rate in India	39.2	39.8
Work Participation Rate amongst women	25.6	25.5
Work participation Rate amongst men	51.9	53.2
Cultivators to total workers	31.7	24.6
Agril. Labourers (AL) to total workers	26.7	30.0
Women cultivators amongst total cultivators	32.3	30.3
Women AL amongst total AL	46.6	42.7
(Men)Cultivators amongst men workers	31.3	24.9
(Women) cultivators amongst women workers	32.5	24.0
(Men)AL amongst total men workers	20.8	24.9
(Women)AL amongst total men workers	39.4	41.1

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 and India, over 60 % of women workers are in agriculture. (FAO, 2010-11)<sup>[6]</sup>. In India, as per Census India data, the female work participation rate (WPR), the proportion of workers in total female population, increased from just 12 % in 1971 to 25.6 % in 2001, while the male WPR remained just over 51 %. But as per Census 2011 data, there has been no improvement in the female WPR which stands at 25.5 %, while the male WPR improved to 53.21 %. Share of agriculture in total women workers that was 71.8 % in 2001 came down to about 65 %, which is a quite normal in the process of development. On the other hand, the share of women in total agricultural workers that continuously increased during last 50 years to 39 % in 2001 declined to about 37 % in 2011.

**Women in agriculture:** Women make essential contributions to agriculture and rural economic activities in all developing country regions. Their roles vary considerably among and within regions and are changing rapidly in many parts of the world where economic and social forces are transforming the agriculture sector. The emergence of contract farming and modern supply chains for high-value agricultural products, for example, present different opportunities and challenges for women than they do for men. These differences derive from the different roles and responsibilities of women and the constraints that they face.

Women work in agriculture as farmers on their own account, as unpaid workers on family farms and as paid or unpaid labourers on other farms and agricultural enterprises. They are involved in both crop and livestock production at subsistence and commercial levels. They produce food and cash crops and manage mixed agricultural operations often involving crops, livestock and fish farming. All of these women are considered part of the agricultural labour force (FAO, 2010)<sup>[6]</sup>. The Southern Asian average is dominated by India, where the share of women in the agricultural labour force has remained steady at just over 30 percent. This masks changes in other countries where the female share of the agricultural labour force appears to have increased dramatically, such as Pakistan where it has almost tripled since 1980, to 30 percent, and Bangladesh where women now exceed 50 percent of the agricultural labour force.



**Fig 1:** Population dynamics of women in Indian agriculture (Vision 2050, CIAE Bhopal.)

**Table 2:** Gender gaps in agriculture

Assets or resources	The gender gap	How to close the gap
<b>Land</b>	For those developing countries for which data are available, between 10 percent and 20 percent of all land holders are women, although this masks significant differences among countries even within the same region. The developing countries having both the lowest and highest shares of female land holders are in Africa.	Closing the gap in access to land and other agricultural assets requires, among other things, reforming laws to guarantee equal rights, educating government officials and community leaders and holding them accountable for upholding the law. It also involves empowering women to ensure that they are aware of their rights and able to claim them.
<b>Labour Markets</b>	Farms run by female-headed households tend to have less labour available for farm work because these households are typically smaller and have fewer working-age adult members. Furthermore, women have heavy and unpaid household duties that take them away from more productive activities.	Women's participation in and access to rural labour markets requires freeing women's time through labour-saving technologies and the provision of public services. It also entails raising women's human capital through education, eliminating discriminatory employment practices and capitalizing on public work programmes.
<b>Financial Services</b>	Access to credit and insurance are important for accumulating and retaining other assets.	Closing the gap in financial services requires legal and institutional reforms to meet the needs and constraints of

	Smallholders everywhere face constraints in accessing credit and other financial services, but in general, female smallholders have less access to loans, for example, as they generally have less control over the types of fixed assets necessary as collateral for loans.	women and efforts to enhance their financial capacity. Innovative delivery channels and social networks can reduce costs and make financial services more readily available to rural women.
<b>Education</b>	Education has seen improvements in gender parity at the national level, with females even exceeding male attainment levels in some countries, but in most regions women and girls still lag behind. The gender gap in education is particularly acute in rural areas, where female household heads sometimes have less than half the years of education of their male counterparts.	Women's groups and other forms of collective action can be an effective means of building relations and networks and addressing gender gaps in other areas as well, through reducing transactions costs, pooling risks, developing skills and building confidence. Women's groups can be a stepping stone to closing the gender gap in participation in other civil society.
<b>Technology</b>	Women are much less likely to use purchased inputs and improved seeds or to make use of mechanical tools and equipment. In many countries women are only half as likely as men to use chemical fertilizers. One of the underlying reasons being the obstacles of access to credit.	Improving women's access to agricultural technologies can be facilitated through participatory gender-inclusive research and technology development programmes, the provision of gender-sensitive extension services

(FAO, 2011)<sup>[9]</sup> (Training Guide - Gender and Climate Change Research In Agriculture And Food Security For Rural Development, CCAFS & FAO, 2013)

**Women in livestock management:** Within pastoralist and mixed farming systems, livestock play an important role in supporting women and in improving their financial situation, and women are heavily engaged in the sector. An estimated two thirds of poor livestock keepers, totalling approximately 400 million people, are women (Thornton *et al.*, 2002)<sup>[22]</sup>. They share responsibility with men and children for the care of animals, and particular species and types of activity are more associated with women than men. For example, women often have a prominent role in managing poultry (Guèye, 2000)<sup>[10]</sup> and dairy animals (Tangka, *et al.*, 2000)<sup>[21]</sup> and in caring for other animals that are housed and fed within the homestead. When tasks are divided, men are more likely to be involved in constructing housing and the herding of grazing animals, and in marketing products if women's mobility is constrained. The influence of women is strong in the use of eggs, milk and poultry meat for home consumption and they often have control over marketing these products and the income derived from them. Perhaps for this reason, poultry and small-scale dairy projects have been popular investments for development projects that aim to improve the lot of rural women. Female-headed households are as successful as male-headed households in generating income from their animals, although they tend to own smaller numbers of animals, probably because of labour constraints (Bravo-Baumann, 2000)<sup>[3]</sup>.

Role of women in small-scale livestock production is well recognized and much less has been documented about women's engagement in intensive production and the market chains associated with large commercial enterprises. Demand for livestock products, fuelled by rising incomes, has grown much faster than the demand for crop staples during the past 40 years – particularly in Asia and Latin America – and this trend is expected to continue. While pastoralist and small-scale mixed-farming systems continue to be important in meeting the needs of rural consumers, the demands of growing urban populations are increasingly supplied with meat, milk and eggs from intensive commercial systems. This has implications for the engagement of women in the livestock sector because of the different roles, responsibilities and access to resources that

are evident within different scales of production system and at different points on the production and marketing chain.

The available evidence suggests that the role of women in meeting these changing demands may diminish, for two reasons. The first is that when livestock enterprises scale up, the control over decisions and income, and sometimes the entire enterprise, often shifts to men. The second important factor is that all smallholders face challenges when the livestock sector intensifies and concentrates and many go out of business. This is particularly evident for pig and poultry owners (Rola *et al.*, 2006)<sup>[19]</sup> but is not confined to those species. Given the more limited ability of women to start their own businesses, this implies that they will tend to become employees rather than self-employed. In specialized activities such as the production of day-old chicks, and in slaughtering, processing and retail, women are visible wherever painstaking semi-skilled work is to be done, but very little research data are available about the extent of their involvement compared with that of men, or their control over resources.

**Women in fisheries and aquaculture:** In 2008, nearly 45 million people worldwide were directly engaged, full time or part time, in the fishery primary sector. In addition, an estimated 135 million people are employed in the secondary sector, including postharvest activities. While comprehensive data are not available on a sex-disaggregated basis, case studies suggest that women may comprise up to 30 percent of the total employment in fisheries, including primary and secondary activities.

Information provided to FAO from 86 countries indicates that in 2008, 5.4 million women worked as fishers and fish farmers in the primary sector. This represents 12 percent of the total. In two major producing countries, China and India, women represented a share of 21 percent and 24 percent, respectively, of all fishers and fish farmers.

Women have rarely engaged in commercial offshore and long-distance capture fisheries because of the vigorous work involved but also because of their domestic responsibilities and/or social norms. They are more commonly occupied in subsistence and commercial fishing from small boats and canoes in coastal or inland waters. Women also contribute as entrepreneurs and provide labour before, during and after

the catch in both artisanal and commercial fisheries. For example, in West Africa, the so called “Fish Mamas” play a major role: they usually own capital and are directly and vigorously involved in the coordination of the fisheries chain, from production to the sale of fish.

Studies of women in aquaculture, especially in Asia where aquaculture has a long tradition, indicate that the contribution of women in labour is often greater than men’s, although macro-level sex-disaggregated data on this topic is almost non-existent. Women are reported to constitute 33 percent of the rural aquaculture workforce in China, 42 percent in Indonesia and 80 percent in Vietnam (Kusabe and Kelker, 2001)<sup>[15]</sup>.

The most significant role played by women in both artisanal and industrial fisheries is at the processing and marketing stages, where they are very active in all regions. In some countries, women have become significant entrepreneurs in fish processing; in fact, most fish processing is performed by women, either in their own household-level industries or as wage labourers in the large scale processing industry.

**Women in forestry:** Women contribute to both the formal and informal forestry sectors in many significant ways. They play roles in agroforestry, watershed management, tree improvement, and forest protection and conservation. Forests also often represent an important source of employment for women, especially in rural areas. From nurseries to plantations, and from logging to wood processing, women make up a notable proportion of the labour force in forest industries throughout the world. However, although women contribute substantially to the forestry sector, their roles are not fully recognized and documented, their wages are not equal to those of men and their working conditions tend to be poor (World Bank, FAO and IFAD, 2009).

The Global Forest Resources Assessment 2010 reports that the forestry sector worldwide employed approximately 11 million people in 2005; however, sex disaggregated data on the number of women employed by the sector are not available on a comprehensive basis (FAO, 2010)<sup>[6]</sup>. Evidence from developing countries suggests that women are often employed in menial jobs in sawmills, plantation nurseries and logging camps (World Bank, FAO and IFAD, 2009). Studies conducted by FAO in Africa and Europe indicate that women do not hold senior or policy-making positions in the sector. Rather, they are primarily employed in administrative and support roles, with professional women foresters tending to have specialist roles (e.g. research) or first-line junior management positions. The studies indicate that even though women are still underrepresented in the industry, examples of good practices are emerging, especially in Europe (FAO, 2006)<sup>[5]</sup>. This shows that concerted and sustained commitment and planning at senior organizational levels can result in quantifiable improvements in the number of professional

women foresters employed and the level of seniority they can attain.

**Women in rural labour markets:** In Asia and in sub-Saharan Africa, women who are employed are more likely to be employed in agriculture than in other sectors. Almost 70 percent of employed women in Southern Asia and more than 60 percent of employed women in sub-Saharan Africa work in agriculture. Furthermore, in most developing country regions, women who are employed are just as likely, or even more likely, than men to be in agriculture. The major exception is Latin America, where agriculture provides a relatively small source of female employment and women are less likely than men to work in the sector.

In most of the developing countries, a relatively small share of the population works for a wage, and women are less likely to do so than men (World Bank, 2007). Data collected by the Rural Income Generating Activities (RIGA) project show that the gender gap in formal and informal wage employment is large in rural areas.

Presently women have important role in income generating activities of agriculture, but have little control over income. They are largely engaged in small scale activities and have better access to local market, often at a price discount. The challenge is to aggregate their small-scale production and improve the access to markets. This needs capacity development for access of women to technology, financial services and markets.

**Environment for farm women:** The socio-cultural and technological environment in which farm women operate is a dynamic one. Despite enormous changes in this arena in our country, rural women face strong socio-cultural barriers which curtail their freedom of making social and economic choices. This happens within the family and also in the community. As small families become the norm of the day, women might face obstacles in terms of limited mobility due to family responsibility, and socio-cultural restrictions in their quest for socio-economic development. Creating a balance among the multiple roles- reproductive, community management and productive roles, may become a daunting task.

The resource environment of farm women is also undergoing a change. Access to resources such as land, water, fuel and fire wood is going to be more restricted in coming days. As a result of which women will be under more pressure to manage their gender roles. Similarly, cost of certain services like health and education may go up, creating undue financial burden on women despite increased allocation by government to these sectors. On the other hand, technological environment of women is also changing. Today, women have relatively greater access to information and communication technologies and time and energy saving devices, which might help them in better decision making.

**Table 3:** States/UTs with some distinction on gender work participation (Source: Census 2001 and 2011, Govt. of India)

Statements	State/UT	2001 (%)	State/UT	2011 (%)
Highest Overall Work Participation Rate	Mizoram	52.7	H.P	51.9
Highest male Work Participation Rate	D&D	65.5	D&D	71.5
Highest female Work Participation Rate	Mizoram	47.6	H.P	44.8
Highest % of cultivators amongst workers	H.P	65.5	H.P	57.9
Highest % of AL amongst workers	Bihar	48.0	Bihar	52.8

Highest % of male cultivators amongst male workers	Nagaland	55.7	Nagaland	47.4
Highest % of female cultivators amongst female workers	H.P.	86.2	H.P.	76.2
Highest % of female AL amongst female workers	Bihar	63.2	Bihar	60.8
Highest % of male Ag. Laborers amongst male workers	Bihar	42.7	Bihar	49.8

### Drudgery in farm activities

Drudgery is generally conceived as physical and mental strain, agony, monotony and hardship experienced by human beings (Momin, 2009) [16]. However, women report more fatigue than men (Pugliesi, 1999; Macintyre *et al.* 1996). So, the plight of the Indian farm woman in this regard is alarming as they work for long hours without leisure, perform multiple roles in family and continue to be constrained by illiteracy, malnutrition and unemployment (Samanta, 1995). This fatigue concerns mental and physical fatigue, sleepiness, feeling tired or emotional exhaustion (Bakker *et al.* 2002; Akerstedt *et al.* 2004) [2, 1]. Almost all farmwomen suffer from physical drudgery in various operations.

### Drudgery in crop production

Farmwomen perform hard physical work in plantation of crops, care and management, harvesting, threshing/processing, marketing, bartering of produce, child bearing and rearing simultaneously (Samanta, 1995). The farmwomen undergo hard physical drudgery (Table 4 and 5)

especially while transplanting rice in mud with bending position for a long time in rains and scorching sun, harvesting by bending with traditional sickle, weeding by hand in sun, rain and cold for a long hours, drying of produce, standing in scorching sun, winnowing in dust and sun for a long time, parboiling of rice by traditional arduous methods with hard physical labour, dehusking/ shelling, pounding, grinding of cereals, pulses by hand as well as hand operated chakki.

### Drudgery in animal husbandry

Women perform multifarious tasks such as milking of cattle, fodder cutting, collecting and bringing fodder from the field and chaffing of fodder, bathing and cleaning cattle, cleaning cattle shed, collection of dung, preparation and storage of dung cakes, preparation, storage and marketing of dairying products (Samanta, 1995). In addition, they also perform various unspecified and miscellaneous tasks related to home management such as collecting and carrying fuel over long distance, fetching water for cooking and drinking from distance place.

**Table 4:** Drudgery prone activities performed by farmwomen

Farm activities	Percentage of performers	Performance frequency score	Time spent (hrs/yr)
Weeding	54	1.55	234
Cutting	55	1.02	218
Transplanting	57	1.01	186
Cleaning	51	1.27	52
Sowing	49	1.03	49
Bundling	46	0.96	66
Removing stalks	39	0.97	72
Picking	33	1.02	83
Winnowing	34	0.97	40
Collecting & bringing fodder	39	4.45	481
Cleaning shed	43	4.81	137
Milking	44	4.47	335
Collecting dung	39	4.78	144
Feeding animals	43	4.82	166
Professing milk	45	4.43	168

Annual Report, 2000-2001, Department of Agricultural Research and Education, Ministry of Agriculture, Government of India)

**Table 5:** Drudgery level of agricultural activities as perceived by the agrarian women in paddy /jhum cultivation

Activities	Overall drudgery status	Reasons
Transplanting /Planting	Heavy	a. Bending posture. b. Long hour of standing in deep puddle soil. c. Discomfort on moving forward and backward in wet field. Care and skill required for uniformity in transplanting/planting
Threshing	Heavy	a. Bending posture. b. High energy required for threshing
Weeding	Moderately heavy	a. Long hours of sitting in wet fields. b. Requiring difficult posture in handling traditional implements c. Selection of weed plants from cultivated rice variety d. Use of blunt and old implements
Cutting	Moderately heavy	a. Bending or sitting on toes. b. High energy required for cutting. c. Injuries while cutting by traditional sickle d. Setting the lodge plants
Carrying	Moderately heavy	a. Difficulties in preparing bundles and carrying b. Carrying head load of bundles causing stress and strain on eyes and neck

Proceedings of National Seminar on Drudgery reduction for Women in Rice Cultivation, 2004. NRCWA

Drudgery in farming operations is an important gender issue and efforts are under way by R&D and development agencies to develop and popularize such tools and equipment among farming community. However, studies indicate that certain gaps exist in the adoption of drudgery reducing technologies. As a whole farmwomen undergo drudgery and health hazards while carrying out these farm and household activities, which affects their work efficiency and physical wellbeing. According to Mrunalini and Snehalatha (2010) <sup>[17]</sup> although six variables such as work demand per rime, feeling of exhaustion, postures, manual loads operative, difficulty perceptions, work load perception were considered to be highly sensitive to drudgery of women, women and men agreed to the factor viz. work load on rime as principle contributing factor to drudgery at work. These are the areas that require modification/improvement of the existing technology/machineries and in some cases generation of new technology. Improved productivity and health are expected benefits out of drudgery reduction programmes that are conducted through technology interventions (DRWA, 2010) <sup>[13]</sup>. Therefore, there is a need to select suitable technologies guided by identified drudgery experiences and need for focusing on improved tools and equipment for sustaining tempo of agricultural development with women's participation.

### Conclusion

Women have been contributing enormously to agricultural growth and development through their involvement in crop production, horticulture, animal husbandry, fisheries, natural resource management etc. Though the proportion of women workers in agriculture has declined, yet they constitute a significant workforce in agriculture. Globally, they constitute large percent of economically active population in agriculture. Region-wise figures show that agriculture supports a very high proportion of economically active women, particularly in Asia and Africa and in India. Women's contribution varies across regions, socio-cultural and agro-production systems. On the other hand, the persisting gender gap in access to and control of resources remains an important concern which has not only kept women in a vicious circle of low productivity but also has thrown up questions about inclusive and sustainable growth of the sector. The need of the hour is on how to bridge the gender gap and empower women with new knowledge and technology is a great challenge, particularly in the context of socio-economic and climate related changes.

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