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Feminist Perspectives of Agroforestry Management in Rural Odisha: Some Reflections

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Abstract

Agroforestry is the oldest farming practice that many civilizations have used, in which women are always a part of farming and forestry practice and sustainability. The agroforestry economy as a whole has changed and prospered greatly as a result of the combination of science and technology. However, this most recent progress is insufficient to eliminate women's labour as a necessary component of the economy. Farming system continues to absorb and use female labour force in emerging nations such as India, but fails to recognize them as employed/hired labour. Farming system, India's single greatest output effort, accounting for 25% of GDP, is gradually becoming a female activity. The agricultural industry employs almost one-fifth of all economically engaged women in the country. Women account for 48% of self-employed farmers in India. Dairying employs 75 million women vs 15 million men, while animal husbandry employs 20 million women versus 1.5 million males. Women now have an important role in the selection, breeding, growing, processing, and harvesting of food crops. Significant attention is necessary for their capacity building in agroforestry technologies, notably processing, marketing, and activities requiring technical

skills, in order to empower people through this land use system. The difficulties faced by rural women are exacerbated by illiteracy, underdevelopment, unemployment, and poverty. Despite the fact that women constitute the most efficient labour force in agriculture, their needs and challenges are often overlooked by rural development projects. Female labor's multitasking ability brought major benefits to agricultural productivity, rural output, economic vibrancy, home food security, family health, family economic security, and welfare. In the present paper attempt has been made to study the major contribution of women to the agroforestry management system

Introduction

The term 'agroforestry' was coined in the mid-1970s as part of a research study led by the John Bene of Canada's International Development Research Centre. In 1977 the Canadian International Development Research Centre released a report called *Trees, Food and People* (part of the Project for Identification of Tropical Forestry Research Priorities) describing the critical role of trees in sustaining agricultural production in the tropics. Bene et al. (1977) defined agroforestry as a sustainable management system for land that increases overall production and simultaneously combines agricultural crops and animals. Nair (1979) defines agroforestry as a land-use system that integrates trees, crops and animals in a scientifically sound, ecologically desirable, practically feasible and socially acceptable to the farmers. Nair (2013) has mentioned that agroforestry systems are characterized by three basic sets of attributes: productivity (production of preferred commodities as well as productivity of the land's resources), sustainability (conservation of the production potential of the resource base), and adaptability (acceptance of the practice by the farming community or other targeted clientele).

Feminist Perspectives of Agroforestry in Odisha

Until 1970, women were largely absent in farming, animal husbandry, and forestry research. Ester Boserup's (1970) study of women's role in economic development played a landmark role in highlighting women's key but invisible role in agricultural production. Initially, very little attention was paid to 'women' or 'gender in the relationship with forestry, and the term 'gender' is narrowly interpreted as meaning women or differences between women and men; research focuses on the collection of sex-disaggregated data without any attention to the gendered relations of power. Advocates of poor women, such as Vandana Shiva from India and Wangari Maathai from Kenya, interpreted dependence differently contending that rural women were particularly knowledgeable stewards of nature" and especially vulnerable to resources degradation (Maathai 2010, Shiva 1988). Women began to appear as stewards of nature or forest heroines in the development and environment literature, though the view of poor women as forest foes did not entirely disappear (Arora – Jonsson, 2011) Furthermore, women's advocates, gender professionals, and feminists contend that working towards gender equality and addressing gendered power relations and inequities are crucial parts of sustainable development. The overarching definition was drafted in 1997 by ECOSOC (United Nations Economic and Social Council) in recognizing the need to integrate women in forestry. For

example, in 1979, USAID's Women in Development Office produced "Women in forestry for local community development: a programming guide" (Hoskins 1979, 2016).

In Odisha, more than 60 per cent of the total workforce is directly dependent on agriculture. In census 2011, out of 17,541,589 total workers, 4,103,989 are cultivator and another 6,739,993 are agricultural labourers. Thus, 61.8 per cent of the workers are engaged in agricultural activities compared to 64.85 in Census 2001. About one-in –two males and two of every three females are engaged in agricultural activities either as cultivator or an agricultural labourer. Of the remaining workers, 783,080 are in household industries and 5,914, 527 are other workers.

However, in Odisha two important features is reflected, one Odisha is an agro-based economy with a significant proportion of females form a large workforce in agriculture and the second one is 28.8% of the country's Scheduled tribes population is found in the state, which is the third highest in the country.

Women in the tribal population play a significant role in agriculture-cum-forest economics and major earners from NTFPS sales, especially in the livelihood system dependent on forests.

In Odisha, up to 40% of the income of rural people comes from the collection of forest products (Dash, 2001). Ahenkan et al., 2011 has stated that promoting sustainable use of NTFPs could contribute to a win-win situation for poverty reduction and conservation of biodiversity. Enhancing forest interest for local users will contribute to forest protection and poverty reduction. As NTFPs contributing a significant amount of revenue to Odisha, and with the Odisha Government, Odisha Forest Development Corporation (OFDC) procured and traded various NTFPs.

Odisha has a rich depository of Sal seeds accounting for 25% of production in the country. It forms primary ingredient for several products such as oil, soap, animal/ poultry feed, cocoa butter that forms a substitute for manufacturing chocolates, rocket fuel and tanning purposes etc. Odisha is rich in Sal Forest and Sal trees are seen in most parts of the state except the coastal belt. Apart from, kendu, bamboo and sal seeds, women are critically involved in various activities in managing forests, agroforestry and tree genetic resources but their contributions remain underappreciated. Agrawal and Chhatre (2006) have mentioned that overall, women disproportionately bear the costs of tree and forest management, realize only a fraction of the benefits and tend to be enlisted for decision making only when forest and tree resources are degraded.

Bina Agarwal, in addressing woman/nature oppression: social and cultural constructs behind the logic are justifying this kind of oppression cannot be universalized. Even if the presumed inferiority of woman/nature is a "pan-cultural fact" (Sherry B. Ortner,1974), it does not automatically mean that it is similarly expressed worldwide. Still, it varies from culture to culture, according to a complexity of factors such as historical period, cultural inheritance, political structures, and so on. Women have a very unequal place in the rural economy because of insecure land and tenure rights, obstructed access to natural resource assets, limited participation in decision making, limited access to primary education, and lack of access to markets, capital, training, and technologies (Quisumbing et al. 2001; Meinzen-Dick et al. 2010; Bose 2011; Place 1995; German et al. 2008; Bandiaky-Badji 2011; Peach Brown 2011; Crewe & Harrison 1998; Ferrier 2002).

Further, since ages, ideologies prioritize patriarchal power (Brandth 2002a), propagate hegemonic masculinity (Knuttila 2016), the masculinization process and its links to technological developments (Brandth 2002b); and rural customs, such as patrilineal inheritance practices and farm organizational leadership roles, which continue to disempower and make women in agricultural invisible. (Bock and Shortall 2017; Alston 2000). Recent statistics released by the University of Maryland and the National Council of Applied Economic Research (NCAER, 2018) state that women constitute over 42 percent of the agricultural labour force in India but own less than two percent of farmland. Eight hundred fifty million rural poor (83% women) remain reliant on harvesting wood for fuel and collecting medicinal plants and other forest resources for family consumption, as exemplified by FAO (2018). This accentuates the opportunities for women from greater involvement in forest-based programs; they can secure their access to natural resources (Agarwal 2010; FAO 2018), develop their skills and knowledge concerning forest biodiversity and participatory forestry management, and be able to participate in the public policy process. Despite comprising over half of the world's population, women remain under-represented and marginalized in areas of policy development and decision making at the local, national and global levels. Existing social and institutional structures that cause women to predominate in the more vulnerable and insecure social and economic spheres often limit their potential to influence the direction of environmental development. Gender equity in the forestry and agroforestry sectors can contribute to achieving broader social and economic goals, including the post-2015 development goals.

Review of literature:

Women play a vital role in the conservation and management of sustainable ecosystems, was mentioned by Tyagi (2011) in the paper "*Role of Mountain Women in Environment Governance in India*."Women have always been active in maintaining and safeguarding their natural resources in mountain locations from time immemorial. Women have demonstrated how land, water, forests, and other natural resources may be exploited and maintained using their unique abilities and traditional knowledge. They have established their system and methods for sustaining and managing the resources that are the foundation of their families' and communities' survival. In a 2018 research titled *Cornered by Protected Areas, UN Special Rapporteur Victoria Tauli-Corpuz* emphasized the success of community-led conservation: "*Many (indigenous people and local communities) share an ethical link with the environment via their languages, beliefs, and practices, indicating a dedication to preserving and caring for the natural world*." Similar cases are trace out in Odisha, where the tribal women of the Mayurbhanja and Nayagarh region have been voluntarily defending their woods against smugglers for many decades. Women walk into local forests in groups of three to six, armed only with a stick, to drive away timber thieves. If they capture one, they give a warning and seize the smuggled products. When things get out of hand, they either bring the thieves before the village meeting and demand a public apology or a fine, or they enlist the help of an NGO to commence police action. The smuggling of timber has been depressed as a result of tribal women's movements. The technique has also spread to the neighbouring state of Jharkhand, where it has become a case study that is now taught in Hampshire, England, schools.

Women experience a variety of challenges in the agroforestry system. Slathia (2015) mentions unequal property rights as a severe problem in her article "participation of women in agricultural production," and relatively few women have land ownership rights directly in their names. Limited access to agricultural land limits women's livelihood alternatives and exacerbates financial hardship, particularly in female-headed households. According to Catacutan and Naz (2015), women, particularly those from minority groups, face more significant agroforestry constraints than men. However, this is mainly due to a lack of land, labor, and collateral assets for women. In general, interrelated difficulties confronted by women are such as a lack of information, a poor educational level, and restricted access to extension services have impeded adoption. According to Bradshaw[i] (2013), women have limited access to productive resources and perform all un-mechanized agricultural duties, which adds to their burden due to a lack of equipment and sufficient technology. Women have less sway over decision-making, both within and outside the home.

According to Nyasimi and Huyer[ii] (2017), women farmers face several production constraints, including societal and gender norms and insufficient resource availability, exacerbated by climate change. Climate change adaptation technologies disproportionately affect marginal women farmers due to a lack of resources, agricultural services, awareness, and a high illiteracy rate (Srivastava and Srivastava 2017). Furthermore, climatic stress exacerbates poverty and exacerbates existing gender inequities in access to climate change resources (Demetriades and Esplen 2008).

According to Reddy, Kumar, and Springate Baginsky (2011) in the paper ". *Issues Related to Implementation of the Forest Rights Act in Andhra Pradesh*," tribal people were dispossessed of their land in various ways had their traditional subsistence methods criminalized. The enormous land area was asserted to be forest, and tribal dwellers' rights to land wages were not acknowledged. People's traditional livelihood forest usage rights were lost as private forest holdings were purchased. Shifting cultivation, which is tailored to a particular agro-ecological situation, was also made illegal. Many villages were uprooted as a result of the large-scale development project and were not compensated. The mechanism observed in Andhra Pradesh is identical to the process followed in other regions of the nation, as evidenced by Kumar's research on tribal exploitation in Orissa (UNDP, 2011).

According to ICRW 2018, a woman is economically empowered when she can achieve and progress economically and the ability to make and act on economic decisions. In terms of financial empowerment, several variables describe women's empowerment. For example, asset ownership is a critical method in which access to employment empowers women in underdeveloped nations (Agarwal, 2001).Today, many community development practitioners are concerned about measuring whether or not they have achieved their goals and 'empowered' women (Khadka,2019).

Objectives of the study:

- To study the contribution of women to agroforestry production, household income and food security.

Methods to be Adopted:

The present study has been carried out in Raj Khariar Road block and Nuapada block of Nuapada district of Odisha and in the study 306 middle aged (45years to 60 Above) and elderly women (above 60 year) respondent were taken into account, those who are involved in the different types of agroforestry activities in Nuapada District. The study has purposively chosen the age criteria to understand the role and sustainable engagement of women in management of agroforestry for a long period of time. The Multi-stage sampling design is adopted for the study. After identification of households the women are selected on purposive basis. The elected women representatives of panchayats are taken into the framework of the respondent's structure to understand the cultural and political dynamics along with women activism for the women in agro forestry to make agro forestry a source sustainable livelihood and means of empowerment.

Result and Discussion

The following results have been derived from the present study which has been carried out in Nuapada district of Odisha.Women in rural areas not only contribute socially to family survival and well-being, but they also account for the most significant portion of agricultural productivity globally. The gender dynamic in society is so widespread that women's involvement has always been subjugated. Gender inequities and biases have constantly strengthened social hierarchies throughout communities, colliding with a more significant comeback of patriarchal domination and family ideology. It has historically glorified male success that arises from men's kinship, even though substantial participation and successes of women in agroforestry go unacknowledged. As a result, one of the critical goals of the study is to explore women's awareness, practice, management, and contribution to agroforestry.

Livelihood opportunities:

The quest for substantial livelihood prospects is one of the most critical difficulties for tribal women in today's era. Women and men working in rural areas are frequently involved in several activities and contractual agreements simultaneously. Depending on the season, they may need to shift occupations or stay unemployed or underemployed for extended periods. In the present study, all respondents are engaged in seasonal agricultural activities and other natural resource-related activities like NTFP collection, household gardening, mixed gardening etc. And they also migrate to neighbouring and far-flung states for livelihood. The endeavour to engage with natural resource activities has become much more intricate because of globalization, migration, displacement, vicious poverty, illiteracy background, manipulation of the labour market, social abuse, and much more unjustness distress. And, in terms of development indicators, tribal women are found to be lagging adrift, as they are engaged in primarily agricultural occupations, have a poor

interdependency with forest-related economic activities, and have manufacturing firms that need to be upgraded in terms of contemporary standards. However, despite various odds, in the present study in Nuapada district, the tribal women are involved across multiple livelihood opportunities.

In the present study,(table No-1.1) indicates that the majority (95.8%) of the respondents are involved in agricultural activities and are farm labourers (92.8%) in the agricultural field for their livelihood. The respondents are engaged in agricultural activities, particularly from June to December. Wheat cultivation is a significant agricultural activity in addition to it, Paddy, Maize, Moong, Biri, Arhar, Groundnut, Vegetables etc. are also cultivated. Special crops like cotton and groundnut are also produced. Crop replacement with more profitable crops in the highlands and using rice fallows by growing pulses and oilseeds with additional irrigation. The study finds most women work in agriculture as informal hired labour or on family farms and consider them part of their gender-related activities. This masculinised organisation is a dynamic and disputed workplace wherein gender conceptions are reinforced and challenged in everyday work through synchrotron connections, and McDowell also has stated this. Aside from that, 86.3 per cent of respondents are active in fruit- and crop-based agriculture, 49.8 per cent of tribal women are involved in livestock farming, and 25.8 per cent are involved in NTFP goods. More specifically, the respondent stated that they collect woods, Mahula, fruits, spices, amla, honey, maula, chahra, fuelwood, neem seed, karanja, bamboo kadhi, kendu leaf and seed. While tribal women pursue other livelihood opportunities, 26.8 per cent are engaged in house gardening, 10.8 per cent are involved in mixed gardening, 5.2% are involved in timber forest cultivation, 5.2% are engaged in coconut farming, 4.2 per cent are involved in shifting cultivation, 2.6 per cent are involved in non-agriculture activities (Rope making, petty business, vending shop like vegetables, Bengals, fancy items, Grocery shop etc.), and 3.3 per cent are involved in handicraft from NTFP products. Previously, several study findings demonstrated that tribal women are more actively engaged in shifting agriculture, particularly in the state of Odisha. Still, the study discovered that they are engaged in shifting cultivation as well as producing a range of crops that demand labour-intensive duties in the present.

ManagementofLivestockFarming:

Table no-1.2.indicates that women are intensively involved in livestock management equally with their male partners. Most of the livestock management activities such as the experience of dairy farming (20.6%), keeping animals in the shed (26.5%), feeding animals (23.9%), cleaning animal shed (21.2%), taking care of sick animals(13.7%), cultivation/collecting green fodder for animals (18.3%), milking of animals (13.7%), preparing milk products(23.5%) and silage or haymaking (22.9%) are performed by women. Purchase of animals (23.5 per cent), determining the selling of milk (14.1 per cent), selling rate of milk (14.4 per cent), purchasing of feed/ fodder (18.6 per cent), calling veterinary (13.4 per cent), and decision regarding animal immunisation (14.7 per cent) are all tasks handled primarily by males. It suggests that males make the majority of financial choices in livestock management while women take care of the animals. Where there is a financial investment, gender differences are always expected. However, the survey found that the majority of livestock management tasks are shared by both husband and wife. Despite their considerable involvement and contribution, significant gender inequalities also exist in

access to technologies, credit, information, inputs, and services, probably because of inequities in ownership of productive assets, including land and livestock. The study discovered a need to rectify gender bias in the livestock sector, veterinary education, research, and service delivery systems to maximize the efficiency of women-oriented livestock development programmes, which can help women empowerment and prevent women migration in the long term.

Role of women in agro forestry activities:

Women play an essential part in the agricultural labour force and agricultural activities to varying degrees. As a result, their impact on agricultural production is certainly significant yet challenging to measure accurately. Their obligations differ considerably based on kinship, age, origin, culture, education, status, and marriage within and between regions. Rural women typically manage complex households while pursuing many sources of income. Everyday activities include producing agricultural goods, managing animals, processing and preparing food, labouring for pay in farming or other rural enterprises, gathering fuel and water, engaging in trade and marketing, caring for family members, and preserving their homes. These activities are not included as "economically active work" in national accounts, even though they are essential to the wellbeing of rural households.

According to the table, no-1.3 is evident that the majority of women are equally efficient in agriculture and livestock-related activities as their male counterparts. According to the data in the table above, women and men are equally involved in land clearing (59.2percentt), seed preparation (78.8 percent), sowing/planting (84.0 percent), weeding (73.2percentt), spraying (68.3percentt), crop protection (79.1), harvesting (69.3 percent), drying (52.6 percent), collection of by-products (54.9 percent), storage of produce (54.9 percent), cleaning the animals shed (34.6 percent), and livestock treatment (44.8 percent) (41.8 percent).

On the other hand, women occupy no or minor role in purchasing agricultural inputs and selling agricultural goods. Because patriarchal social structures are firmly ingrained in rural areas, even when women are equally active in all types of labor-intensive jobs, male dominance is more visible in terms of financial expenditure and generation. On the other hand, care giving is always a societal obligation on women, with 78.7 percent of women gathering fuel and dry wood for household use.

Time spent in agro forestry activities and domestic work:

In the context of gender norms and patriarchy, women's participation in domestic duties has long been ignored. Aside from gendered roles shaped by biological differences between men and women, the power dimension is more prevalent. Even though women perform comparable productive roles and are more financially reliant than men at home owing to a lack of resources, opportunity, training, and bargaining power, women's contributions are undervalued. And, most of the time spent in unpaid labor performed by women for the benefit of the entire family is not taken into consideration. This uneven allocation of obligations is connected to discriminating social structures and gender stereotypes. Hence, the study made an effort to know the time spent mechanism in agroforestry activities and domestic work, which is reflected

in Table no-1.4.That table indicates that 77.8 per cent of women respondents in the study spend 5 hours to 10 hours in agroforestry activities, and 66.7 per cent of respondents mentioned that they spend 1 hour to 5 hours in household work. Grum (2013) made a similar study, stating that women spend an average of five hours in developed countries while males spend 2.5 hours, and the discrepancy is considerably wider in underdeveloped countries. Moreover, respondents in the study stated that they had to devote more than 10 hours to agricultural land during the peak season of agricultural activities since it is related to wages.

Further, in the study, an attempt was made to know how the respondent manages the domestic work, which is reflected in Table No- 1.4.In the study, the respondent mentioned that, as they have a joint family structure, family members (58.2 per cent) help each other in domestic activities. at the same time, 27.1 per cent manage domestic work alone.

Selling of agroforestry resources:

In the study, a comprehensive investigation was conducted to understand forest resources collected by women, where they sell the goods, who controls the money from sales, and who make choices in many areas.

- **Agroforestry resources collected by women:** Women in the study are active in various agro-based farming and also harvest forest resources for subsistence. Women mainly harvest Maula, Chahra, Neem seed, Karanja, Bamboo kadhi, Kendu leaf, Fuelwood, Berries, Herbs, nuts, and seeds. And in the farming system, they are cultivated with wheat (June-January), kolatha (house gram), green gram, black gram, suam, Mandia, raisins, haldhi, groundnut, maize, channe, etc.
- **Where they sell the goods:** Respondents in the study stated that they sell their agroforestry resources or agricultural goods to the local market. And agroforestry products like amla, honey, Maula, chahra, neem seed, Karanja, bamboo kadhi, kendu leaf and seed collected directly by middlemen from the respondent in the study. In addition to that in the study, few respondents mentioned that they experience a lot of privileges, including more money from the sale of agroforestry commodities, which allows them to make loans between themselves as well as be able to support themselves without always borrowing money from their husbands, as was previously the norm.
- **Who sell resources and control the money from sales:**

  An investigation was conducted to know about the women and men involved in the sale of agroforestry items such as agricultural resources, livestock products, wood, NTFP, fruits, wild berries, herbs, and honey.

It was discovered from Table no-1.5 that autonomy of men's participation in sales and management of money from sales in areas such as agricultural resources (57.5%), NTFP (50.3%), wild berries (17.9%), and honey (13.3 percent).

The study discovered that while women are equally involved in farming, livestock management, and forest produce collecting, males have control and a more significant proportion of the agroforestry operations. In the study, it can be traced that women are systematically excluded from financial investment or gain in the society, although being actively involved in every layer of agroforestry resource production/cultivation. Shackleton et al. (2011) made a similar conclusion, stating that while FTA value chains in South Africa incorporate both men and women, either separately at various levels or simultaneously for particular tasks, women are frequently subservient to males or do occupations with minimal visibility.

Type of engagement in the agroforestry system:

In the study, an attempt was made to investigate the type of engagement of women in agroforestry where the indicators include women as a labourer in their agricultural land, working as a labourer in other farmland, has patta in her name, still working in other farmland and has permitted to access the forest and also labourer in the agricultural field, which is reflected in the Table no: 1.6.In the present study, it was found that women are active in all aspects of family life. Aside from that, they are both individual labourers working alone on their household farm (83.0%) and household members working together. For extra income, the responder also works as a hired labourer in other fields (88.2%). As a result, women in agriculture suffer recognised challenges, especially in the absence of land rights; female agricultural labourers, farm widows, and tenant farmers are forbidden identity as farmers and the associated advantages. Numerous reports have also corroborated this, such as recent data issued by the University of Maryland and the National Council of Applied Economic Research (NCAER, 2018) stating that women make up more than 42% of the agricultural labour force in India, yet own fewer than 2% of farmland. Similarly,according to Oxfam (2013), women do around 80% of agriculture labour in India. However, they only possess 13% of the land.

CONCLUSION:

Sustainable agriculture necessitates the consideration of forms of power and privilege within the agroforestry system, as well as the inclusion of more varied human voices and the resolution of structural challenges. Gendered forms of social organization, in particular, which are deeply established across a range of gendered dimensions that perpetuate the invisibility of women, have been overlooked in debates about agroforestry sustainability, and gender inequality continues to be a substantial impediment to the development of inclusive.Because un-nuanced gendered approaches to development initiatives might increase inequities, re-entrench forms of difference, or marginalize women in new ways, gender efforts' assumptions and outcomes must be constantly evaluated. Such monitoring is essential if meaningful women empowerment in agroforestry activities and livelihood strategies transformation is to be realized from a gender viewpoint.

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TABLE-1.1

DISTRIBUTION OF RESPONDENTS BASED ON LIVELIHOOD OPPORTUNITY:

LIVELIHOOD OPPORTUNITY:	FREQUENCY	PERCENTAGE
Ntfp products	79	25.8%
Agricultural activities:	293	95.8%
Handicraft	10	3.3%
Timber forest	16	5.2%
Fruit and crops	264	86.3%
Spices	28	9.2%
Non -agricultural activities	8	2.6%
Livestock	137	49.8%
Mixed garden	33	10.8%
Coconut farming	16	5.2%
Farm labour	284	92.8%
Household garden	82	26.8%
Shifting cultivation	13	4.2%
(multiple responses from the respondent, thus total per cent is not 100)		

TABLE NO- 1.2

DISTRIBUTION OF THE RESPONDENT BASED ON THE MANAGEMENT OF LIVESTOCK

MANAGEMENT OF LIVESTOCK	HUSBAND	WIFE	BOTH SPOUSE	NOT MENTIONED
Experience in Dairy Farming	7(2.3%)	63(20.6%)	77(25.2%)	159(52%)
Purchasing of milch animals	72(23.5%)	18(5.9%)	55(18.0)	161(52.6%)
Feeding dairy animals	20 (6.3%)	73(23.9%)	50(16.3%)	163(53%)
Taking care of animals	33 (10.8%)	59(19.3%)	51(16.7%)	163(53.3%)
Cultivation and feeding of green fodder crops for animals	18(5.9%)	56(18.3%)	74(24.2%)	158(51.6%)
Silage or haymaking	31(10.1%)	70(22.9%)	45(14.7%)	160(52.3%)
Animal to be kept in the open or in a shed who decide	17(5.6%)	81(26.5%)	42(13.7%)	166(54.2%)
Cleaning of animal shed	23(7.5%)	65(21.2%)	54(17.6%)	164(53.6%)
Miking of animal	8(2.6%)	42(13.7%)	92(30.1%)	161(52.6%)
Selling of Milk	43(14.1%)	8(2.6%)	87(28.4%)	168(54.9%)
Decide the selling rate of milk	44(14.4%)	26(8.5%)	83(27.1%)	153(50.6%)
Preparing milk products	27(8.8%)	72(23.5%)	56(16.3%)	157 (51.3%)
Purchasing of feed &fodder	55(18.6%)	17(5.6%)	66(21.6%)	168(54.9%)
Taking care of newborn	32(10.5%)	34(12.7%)	72(23.5%)	163(53.3%)
Breeding method to be used	28(9.2%)	15(4.9%)	93(30.4%	
Calling veterinary	41(13.4%)	16(3.3%)	83(27.1%)	172(60%)
Decision about animal immunisation	45(14.7%)	14(4.6%)	83(27.1%)	164(53.6%)
Taking care of sick	4(1.3%)	42(13.7%)	94(30.7%)	166(54.2%)

animals				
(Multiple responses from the respondent, thus total per cent is not 100)				

TABLE NO- 1.3

DISTRIBUTION OF THE RESPONDENT BASED ONTHE ROLE OF WOMENIN AGROFORESTRY ACTIVITIES

	Women> Men (per cent)	Women= Men (percent)	Women< Men (percent)	No Female Participation	Not Mentioned (percent)	Percentage
Land Clearing	29.7	59.2	9.8	.7	.7	100.0
Seed Preparation	13.4	78.8	7.2	.3	.3	100.0
Sowing/Planting	11.1	84.0	4.6	.3	-	100.0
Weeding	16.3	73.2	9.8	.7	-	100.0
Spraying	15.0	68.3	16.3	.3	-	100.0
Crop Protection	10.8	79.1	9.2	1.0	-	100.0
Harvesting	16.0	69.3	10.1	4.2	.3	100.0
Drying	24.5	52.6	18.6	4.2	-	100.0
Collection Of By-product	18.6	60.5	14.4	4.2	2.3	100.0
Storage Of Produce	13.1	54.9	21.6	4.9	5.6	100.0

Buying the Agri inputs	-	4.5	95.4	-		
Selling of Agri output	-	17	94.4	-		
Grazing Livestock	9.8	25.1	32.0	23.2	9.8	100.0
Cleaning The Animals Shed	34.6	24.8	25.5	9.2	5.9	100.0
Treatment Of Livestock	2.6	44.8	27.8	-	74.6	100.0
Milking And Hatching	16.7	41.8	18.3	3.3	30.7	100.0
Fule and Dry Woods	78.7	-	16.3	-	-	100.0

TABLE NO-1.4

DISTRIBUTION OF THE RESPONDENT BASED ON TIME SPENT IN AGROFORESTRY ACTIVITIES AND DOMESTIC WORK

Time spent	IN AGROFORESTRY ACTIVITIES		IN DOMESTIC WORK	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LESS THAN 1 HOUR	14	4.6	0	0
1HOUR-5HOUR	42	13.7	204	66.7
5HOUR-10 HOURS	238	77.8	96	31.4
MORE THAN 10 HOURS	9	2.9	5	1.6
NOT MENTIONED	3	1.0	1	.3
Total	306	100.0	306	100.0

TABLE NO-1.5

DISTRIBUTION OF THE RESPONDENT BASED ON AGROFORESTRY PRODUCT SALES AND CONTROL OF MONEY FROM SALES

Agroforestry Resources	Agroforestry product sales and control of money from sales			
	Men	Women	Both	Not mentioned
Agricultural resources	176 (57.5%)	27 (8.8%)	59 (19.3%)	44 (14.4%)
Livestock products	43(14.1%)	7(2.2%)	87(28.4%)	169
Timber	100 (32.7%)	77 (25.2%)	104(34.0 %)	25 (8.1%)
NTFP	154 (50.3%)	15(4.9%)	97 (31.7%)	40 (13%)
Fruits	89 (32.6%)	21(6.8%)	154 (50.3%)	42(13.7%)
Wild berries	55(17.9%)	14(4.5%)	44(14.3%)	193(63%)
Herbs	-	8 (2.6%)	17(5.5%)	281 (91.8%)
Honey	41(13.3%)	-	-	265(86.6%)

TABLE NO:1.6

DISTRIBUTION OF THE RESPONDENT BASED ON TYPE OF ENGAGEMENT IN THE AGROFORESTRY ACTIVITIES

Type of engagement in the agroforestry Activities	Frequency	Percent
As a labourer in own agricultural land	254	83.0 %
Work as a labourer in other farmland	270	88.2 %
Has patta in her name, still work in other Farmland	30	9.8 %
As permitted to access the forest and also labourer in the agricultural field	22	7.2 %
(Multiple responses from the respondent, thus total per cent is not 100)		