

## **Women, Forest Management and REDD+ : Gender Inequality reinforced?**

Padmaja Mishra

Utkal University, Odisha, INDIA.

### **1. Introduction**

Moving towards gender equality in the challenging times of climate change is a matter of grave concern. Climate change is the 'new great threat' to civilization and the most significant challenge of our times. The problem is: neither the impacts nor the policies are gender neutral. There are plethora of international goals, policies and agreements to baste and mitigate the climate change impacts. While vulnerability to climate change is shaped by gender roles, the climate change policies are not gender sensitive. The complex interaction between gender, poverty and climate change vulnerability is yet to be properly recognised in policy statements and less so in implementation. It is even said that 'climate change experts may experience a level of process exhaustion when they hear the term gender mainstreaming' ( Otzelberger; 2011). Therefore, there is every possibility that policies may exacerbate gender inequalities and intensify women's experience of poverty and marginalization( Demetriades and Esplen,2008,2010). The mitigation and adaptation strategies followed in different countries to achieve a climate change resilient economy in a sustainable development path need to be met with gender equitable governance. In this context, this paper discusses women in forest governance - with special reference to REDD+.

Forest ecosystems are intricately related to climate physiology and simultaneously importantly connected to rural livelihoods. There has been considerable literature on the interface between gender and forestry in developing countries. Reducing Emissions from Deforestation and forest Degradation (REDD) along with afforestation, poverty alleviation, bio-diversity conservation and improved forest governance (REDD+) have taken an important place in climate change policies by bringing in forests into international carbon market or Clean Development Market (CDM). Under this policy, deforestation and degradation of forests are to be checked along with simultaneous conservation and regeneration to increase carbon sequestration and the carbon money is to be reaped by a country in the CDM. Therefore, REDD+ is an effort create financial value for the carbon stored in forests and offers incentives to the developing countries to invest in low carbon paths to sustainable development. It combines climate change and development objectives. But, what is questioned is the balance between

the two and the risk involved in marginalizing the vulnerable forest dependent population where women constitute the majority.

With a concern over the gender inequality and injustice in this dynamic world, the paper is arranged in the following five sections. Section 2 gives a brief introduction to REDD+ and role of community in that context. Section 3 gives an overview of gender issues in forest management. Section 4 gives the empirical study and its findings with regard to actual role of women in forest management in the sample area. Section 5 gives the conclusion and policy suggestions with regard to REDD+ and forest management in particular and climate change policies in general.

## **2. REDD+ and forest governance**

Expanding world's forests provide an opportunity to increase terrestrial carbon sink and slow down the global warming. In November 2002, the 7<sup>th</sup> session of the Conference of Parties (COP 7) agreed on the inclusion of afforestation and reforestation in the Carbon Development Market (CDM). Reducing Emissions from Deforestation and Degradation of Forests (REDD+) is one of the key strategies for combating climate change by bringing forests regeneration and conservation into the international carbon market. International funding support is arranged to provide incentives for forest conservation, management and development of existing forests. Once the deforestation is stopped and forest stock grows, the 'owner' of such forest is supposed to be eligible for selling the carbon-absorbing capacity of the forest in the carbon credit market. REDD+ is different from other forest policies as it creates financial incentives for result based action- measured, reported and verified. The question is who is the 'owner' and who benefits? Do the women have a stand?

Tropical forests play a crucial role in global climate change (Candell et.al. 2008). Though participatory forest management and community forest management are much discussed in forestry literature, REDD+ is different and differs in risks and opportunities involved. REDD+ is an effort to create a financial value for the carbon stored in forests and it offers incentives for developing countries to reduce emissions from forest land. This flow of funds from North to the South is supposed to contribute to pro-poor development. The challenges of its implementation is multiplied given its potential positive and negative implications on forest based livelihood. Women have been the worst victims of climate change and should not be the victims of climate change policies again!

Forest governance in context of REDD+ is a complex issue as it involves participation of multiple stakeholders with community operating at the lowest level. Here, carbon benefit is the main objective

and livelihood benefits are the co-benefits. While governance of the whole system is critical to the success of REDD+ , implementation is only possible if community participates. At the COP16 in Cancun , women's concerns and demands were voiced and Cancun agreement in Article 7 states that " gender equality and the effective participation of women and indigenous people are important for effective action on all actions of climate change". A regional analysis regarding women's participation in REDD+ in Asia says that" REDD+ has the potential to positively affect women's role and status in relation to land ownership and management (USAID,2011).However, it also concludes that" the REDD+ programs currently being implemented reinforce gender inequality by failing to ensure that women are equal partners in decision making,consultations, design and benefit sharing mechanisms". REDD+ is executed at national level guided by national level plans, policies, rules and regulations and actual implementation will be at the ground level where forests and people are.

While gender equitable governance of REDD+ is not seriously formalized, potential risks for women due to REDD+ are there . The whole mechanism may widen the existing gender disparity. It is very likely that women may land up with more workload for forest conservation and less benefits- even may lose their livelihood options!

REDD+ provides an opportunity to recognize women's role so far in forest conservation and management, their knowledge base and their commitment to nature. Since REDD+ can potentially increase the value of the forests , the gender issues should be seriously considered with clarity on rights issues-traditional usufruct rights, tenurial rights and substantive rights ( right to land and forest) to procedural rights( right to be consulted and engaged in decision making).

The major benefit of REDD+ is carbon benefit. Other benefits are discussed as co-benefits. Countries have agreed to 'promote and support' a set of 'safeguards' for REDD+ under the UNFCCC negotiations. Social and environmental risks and benefits are important to be recognised explicitly. These discussion of safeguard are general and countries will need to work out situation specific applications. In this context, gender equitable safeguards are to be worked out by engendering the whole process which has not been done. Evidence from REDD+ experienced countries like Nepal, Indonesia and Phillipines show that there has been not much concern for gender equality. Unfortunately, it is rather contested and hotly debated that REDD+ should or should not consider/divert to pro-poor or pro-women approach!

Collective action related to forest management centres around two issues- the use of forests and its conservation and preservation. These can be viewed at two levels- the macro level involving the global and national framework and the micro level, involving the dynamics of interaction within a local social framework.

Rehabilitation and restoration of degraded tropical forests to augment productivity and carbon sink, to conserve and enhance bio-diversity as well as to meet the community livelihood needs has been the core of forest policy in the world and also in India. Reducing Emission from Deforestation and Degradation (REDD+) under UNFCCC has assumed significant global importance as a cost effective mitigation strategy in context of climate change with potential livelihood and conservation benefits. REDD+ readiness of individual countries require detailed policy framework and implementation strategies to have the carbon benefits and the co-benefits.

CDM framework has been very active in India. Ever since the discussion on REDD started in the UNFCCC, India reiterated its position by acknowledging the seriousness of threat of deforestation as a major contributor of GHG emissions and participated in relevant activities. It has initiated a number of initiatives related to its preparedness for REDD+. National Climate Change Action Plan and Green India Mission are worth mentioning. In the detailing of the plans, objectives and the procedures, gender issues are not mainstreamed, though role of community forest management (CFM) has been emphasized.

India has a long and strong history of scientific forest management. It is one of the few tropical countries where forest cover has stabilized over the years. The Forest Rights Act (FRA,2006) has been significant for the tribal and local forest dependent people's rights. The Forest Survey of India has been carrying out national forest carbon stock accounting for the country. The broad institutional framework for REDD+ implementation in India is already in place. At the national level the National REDD+ cell set up at the Ministry of Environment and Forests is playing a key role in the design and implementation of the REDD+ strategies at the national and sub-national level. They also get engaged with state Forest Departments for all collecting information, processing and managing. JFM, after long sustenance has been evolving into JFM+ by incorporating the livelihood concerns of the forest dependent communities along with protection and management of forests. At the moment, fund based mechanism for supporting REDD+ activities have been accepted with possibilities of market based mechanism to be explored in future. Financial assistance for the communities are also to be provided for preparing baseline and for their efforts in conservation in due course in the form of compensation on the basis of assessment of carbon

stocking and implementation of SMF. These whole idea, issues and mechanism are not the same as we have experienced so far in community based forest managements in tropical developing countries. The implications and impacts on local livelihood will be different and the benefits received will be different at different levels. Benefit sharing, both vertically and horizontally, is a crucial issue. On top of this, intra community decision and distribution mechanism will also be different and their implication on women will be very different and crucial. Therefore, serious consideration of gender issues in this challenging times of forest conservation under REDD+ , mostly for carbon stocking, is extremely crucial. The possibility of trade-off between the benefits (carbon stock) and the co-benefits (livelihood and empowerment) can not be ruled out! Moreover, since monetary reward is involved at the end , the power game may lead to further marginalization of women and the voiceless.

### 3. **Gender and Community based forest management**

What happens in forests” will be largely determined by “what happens outside forests” (FAO;2007). We add that ‘what happens in forests’ will determine ‘what happens to women’- the large number of forest dependent women in developing countries.

Women and men will have different capacities to adapt to changing situations. Sustainable forest management has three dimensions: ecological, economic and social. While women bring distinctive interests and values to forest management issues, their quality of engagement is restricted by a gender order that marginalizes their potential contributions and their interests too. The prevailing masculine gender order restricts opportunities for effective inclusion of women. Different models of inclusiveness , be it expert- based, stakeholder based and civic engagement based ( Verghese and Reed;2011), have shown that women are marginalized due to socially determined gender division of labour and rules of entry typically restrict their effective higher order participation.

The gendered nature of resource use,access,control and responsibility with respect to trees and forests is highly complex (Rocheleau and Edmunds;1997). Women’s rights are often based in negotiable customary laws and practices . Though there have been many discourses on gender issues and women’s rights in national and international policies, they are hardly translated into ground realities. The problem lies with policy formulation and implementation thereafter. Lack of gender sensitive disaggregated data,information and methodology are the main constraints(World Bank;2002).

Too often, community has been viewed as homogeneous units in terms of status, influence, wealth,gender, and access to resources (Muckarjee et al.;2006). Even if these differences are

recognised, the issue of power and the capacity of individuals/groups to negotiate have not been adequately considered. As a result, many women issues remain unaddressed and even if they participate, but remain marginalized. Gender disparity in community forest management is of growing concern as biases ingrained in community norms and expectations exclude women in effective participation at all levels. Mainstream development agencies adopt an instrumentalist line of argument commonly known as the women, environment and development (WED) approach ( Jackson;1993, Leach and Green;1995, Manion;2002). Women depend more on nature by virtue of division of labour and on natural resources for survival while men grow cash crops for market and profit ( Shah and Shah;1995). Therefore, women are considered by WED approach as most appropriate participants in commons management and principal managers of the environment at the local level ( Green, Jacks and Leach;1998). In contrast, ecofeminism emphasizes the natural and spiritual content of women's closeness with nature ( Agarwal;1992, Leach and Green;1995). Again, gender and development school of thought see women's relation with environmental resources merely as a part of gender entitlements and capabilities ascribed to them by social relations of gender, class and so on ( Joekes et al.;1994). All these point at women's special relationship with natural resources and therefore, have special involvement in community resource management. This has to be a major policy concern to reduce women's marginalization in forest management policies. Also, important on efficiency ground, as women are more altruistic( Folbre;1994) , strict rule makers ( Agarwal;2009) and their participation makes the management successful( Molinas;1998, Westerman et.al;2005 and Agarwal;2010).

Social identity is gender based. Brewer and Silver (2000) treat social identity as a group resource that is critical to the ability of the group to mobilize collective action among its members. Also, Akerlof and Kranton (2000). The resilience of environmental collective action (2012) also discussed in this context. Gender acts as an important social identity for women than men as women are marginalized. In other words, individual's self identity is based on social categories, group membership, or roles. Women because of their low status hold collective identity and cooperate more to minimize conflict and discrimination in public good situations. Hence, because women hold collective identity and that leads to cooperation, it has significant implications for resource management. In other words, women's participation improves collective action for governing forest commons.

Literature on Collective action in co-management has recognised women's cooperativeness depending on their social identity, but whether this common social identity for cooperation and decision making helps improving gender equity is not very clear! High status actors such as men are less likely to

cooperate , where as women as low status actors hold collective identity and cooperate to minimize conflict and discrimination in public good situations. They often abstain from free riding and avoid conflicting situations (Kramer;2006).

Women's role has always been appreciated as important stakeholders in context of forest protection and rule compliance. But, decision making is distinct from stakeholder engagement. Women do comply with the JFM/CFM rules to fulfill their practical needs. But, may not be aware of their strategic needs and even if aware- have no capacity to pursue that.

About 1/3<sup>rd</sup> of poor women are directly involved in forestry or forest related works in unorganized sector ( Nanavati;1996). Most of them spend their time in collecting fuel, fodder and other NTFPs .While men are interested in commercial forestry , women are more concerned with bio diversity conservation and multiple product based management which ensures them fuel, food, fodder, water and other minor NTFPs ( Singh;2001). In India, women have remained at the forefront of conservation movements like Chipko , Khejri and recently at Niyamgiri in Odisha.

However, many studies have highlighted women's low level of involvement in decision making related to forests and climate change ( Hemmati and Rohr;2009, Bandiak and Tiani;2010, Mwangi et al. 2011). Though gender considerations have been a part in climate change policies, it remains a technical fix and the overall influence of women in such negotiations appear to be almost non existent ( Hemmati and Rohr;2009, Demetriades and Esplen;2010, R. Mc Cracken;2011). It is important to increase the number of women participating in forest management institutions, but their voice remains inaudible and the process remains to go beyond just increasing the number of women at the table, but to enhance their agency by taking into account the ground level power relations and cultural norms. Time has come to distinguish between presence, participation and decision making !

Given women's heavy reliance on forest for food , fodder and other household needs and minor NTFP harvesting for their market needs, REDD+ could reduce their effective access to the forest resources! Provision of alternative livelihoods is also a part of co-benefits of REDD+ to be created for them. Therefore, their serious involvement at all steps and agency is fostered.

Social norms , perceptions and rules of practice reinforce gender roles and therefore, division of labour and rules of entry. In such a situation it is possible that when there is a possibility of a change involving monetary benefits, there will exist deliberate resistance to women's involvement on the basis of the likelihood that women may learn to challenge the dominant narratives in the sector and demand a

higher share than they are having till date. While gender has been a criteria of exclusion, it will be reinforced in REDD+ scenario.

#### **4. Community Forest Management (CFM) in Odisha and Gender Concerns**

Odisha is an eastern state of India which is rich in forest cover ( 37.34% of its total geographical area) Per capita forest availability is 0.14 ha ag against the national average of 0.064 ha. One of the salient features of the National forest Policy of India (1988) is to associate people in forest management and Odisha is the first state to issue a resolution on Joint Forest Management (JFM) in 1988 itself to protect its forests. The state has a long history of having a large number of communities engaged in managing common pool resources and CFM institutions have emerged spontaneously by the forest dwellers in response to large scale forest degradation much before the Joint Forest Management (JFM) institutions commenced. The success of Forest Protection Committees(FPCs) and the Vana Sanakhya Samitis(VSSs) is also assigned to the CFM culture in the state. But, the state is currently losing very dense and moderately dense forest cover and increase in conservation measures has only added open forests.

Though women have strong links with forest resources, often they do not have land rights and less access to resources. When they have less access to decision making and control over resources, their capacity is undermined ( Mwangi et.al. 2011).Though women have been the major agents in protecting the forests and helping regeneration , their presence and potentials are not given due recognition. Despite the JFM resolution of 2011 clearly stating that the Executive Committee should have 50% women membership, it has not made much difference. This extension of institutional space for women becomes futile unless they participate in decision making-especially in formulation of rules, regulations, choice of species and fixing prices for NTFPs and other minor forest products and sharing the benefits too. It needs to be mentioned in this context that Forest Rights Act (FRA,2006) in India (implemented in 2008 in Odisha) is a landmark to provide rights by way of correcting historical injustice to the forest dwelling communities, particularly the tribals. But, has not been pursued so far!

In this scenario, if REDD+ is applied in a situation where gender inequality already exists and sustained endogeneously, then preserving forests for carbon benefits will have a big question mark on women's livelihood and the distribution of such monetary benefits in their favour. At the same time, REDD+ offers an opportunity to reduce gender inequality by forming new institutional arrangements for distribution of benefits in due favour of women.

#### 4.1 Empirical study

Odisha is a state with 37% forest coverage and 22 % of its population are tribal who depend directly on forests. As far as the status of forests is concerned it has gained forest area over the decades due to successful Joint Forest Management since 1988 and Community Forest Management practices from historical times and afforestation programmes of the state government. Though recorded forest area has shown an increase, dense and moderately dense forest have declined which is the real matter of concern! Decline in density of forests actually indicate that forests are being destroyed for economic reasons. Since the present discussion is in context of REDD+ policy, it is no doubt that increasing the density of forests is required for effective carbon storage which may conflict with existing forest based livelihood scenario.

The present study is based on field work carried out in Keonjhar district in Odisha. The district has 37.3% of its geographical area covered with forests. Densely forested hills separate the district from the adjacent districts of Sundergarh, Anugul and Dhenkanal. 86.36% of the population are rural. The scheduled tribe population consist of a total 44.5% of the total and the scheduled caste population is 11.62%. The study is based on a study of 250 sample respondents selected from five different villages in the district. The respondents are randomly selected (50 from each village with 25 female and 25 male respondents) from the JFM/CFM groups .Their socio -economic profile is given in table 1.

**Table 1: Distribution of Sample respondents according to select socio-economic attributes**

1. Income group		2. Caste		3. HH size		4. Education	
High (> Rs.10,000 per month)	45	SC	85	Large (>8)	66	High	22
Medium(Rs 5000-Rs.10,000)	128	ST	92	Medium(5-8)	102	Medium	106
Low (< Rs. 5000 )	77	Others	73	Low (<5)	82	Low	122
	250		250		250		250

Decentralisation of conservation related decision making process empowers the JFM participants. In India, the Forest Rights Act (2006) has shifted towards community right on forest land and supposed to have encouraged people to be more conservationists ( Ramnath,2008). This study at first tried to have a reality check and to understand the conservation attitude among the community members.

**Conservation attitude** is not equal or uniform among the people. It varies. It is hypothesized that conservation attitude depends on the socio-economic characteristics of an individual. Based on this hypothesis, an econometric exercise is undertaken to understand the factors leading to conservation attitude with special focus on gender. Along with gender, income, education, age, caste and forest dependence have been taken as possible determinant variables. On the other hand, a composite index has been constructed to understand and measure conservation attitude. To construct the index, a set of questions were administered to the respondents who were asked to scale their conservation attitude (methodology detailed in Appendix 1). The respondents were asked to rank the suggested opinions/situations on a five point Likert scale and the total score for an individual has been calculated by combining the scores on each question. Then the scores were normalized to be used as dependent variable for a logit regression. The result is given in the following table 1.

**Table 2: Logit Regression results on Determinants of Conservation Attitude**

<b>Explanatory variables</b>	<b>Coefficients and standard errors in brackets</b>
Income (in Rs.)	0.278 (0.116)***
Education ( Years of formal education)	0.102 (0.301)*
Age	0.302 (0.287)
Gender (Dummy F=1.M=0)	0.285 (0.108)**
Caste/social class(Dummy Higher =1, Lower =0)*	0.132 (0.017)
Amount of land holding	1.005(0.457)
% of forest income	1.171 (0.389)*
R square(Pseudo) and chi sq.	0.27 (118.734)**

Note: the significance levels of 1%, 5% and 10% are indicated by \*, \*\* and \*\*\* respectively.

Source: Field level data analysis

The results show that variables like income, gender, education and degree of forest dependence have come out as significant factors in shaping conservation attitude among the respondents. Women, increased number of years in formal education and higher degree of forest dependence has come out as being favourable for higher conservation.

**Conservative action** undertaken by the participants in community forest management are of various types. We have grouped those activities in two groups. One group of activities are considered lower level activities which include patrolling local forest area, information collection and sharing, participation in other resource based activity such as gathering forest products and above all, attendance in the general meetings. The other group of activities are actually done at a higher level such as Executive committee membership and attending, decision making and implementation for conservation, benefit sharing and conflict resolution.

**Inequalities in participation** in these activities has been quite visible our study. The gender difference is noticed with regard to the quality of participation in forest management. Quality of participation depends on the type of activities carried out and that is associated with the degree of control and power enjoyed by them. The following is the list of activities arranged in descending order of the degree of power attached to the nature of participation( office bearing being the most powerful ).

1. Office bearing(Executive committee )
2. Decision making
3. Monitoring
4. Conflict resolution
5. Attendance in the meeting
6. Forest patrolling
7. No participation

**(Graph 1 in the appendix shows the concentration of men and women in different activities (a to g in the graph stand for 1 to 7 activities listed above.)**

The graph shows the concentration of men and women in different types of activities. Men dominate in prime order activities while women do the reverse. While maximum men are attending the meetings, maximum no. of women are in forest patrolling. Another important observation is that less women are in decision making and monitoring and many are not actually participating. The women in the executive

committee are there only because of the 1/3<sup>rd</sup> reservation rule but not into decision making and very often not even attending the meeting. Given the skewed distribution of men and women in different activities undertaken, it is understood that the nature of activity carried out is related to the individual's social and economic status and it is hypothesized that status leads to the power enjoyed by individuals. In any group activity, individual status matters a lot, both in degree/quality of power, prestige enjoyed and in benefit sharing too. Status can be naturally attained by gender and caste, for example or acquired by attributes like education, income, social and political connections. And, both kinds of status are not actually very independent but intertwined. Whatever be the basis, status matters ultimately in power over resource use. Men and women are clearly different with regard to the status and power enjoyed by them. Therefore, assuming homogeneous communities in context of forest management may prove detrimental when conservation and improved forest governance is planned. Ultimate benefit enjoyed and empowerment of people (particularly women) is going to be affected.

**Unequal access to forest benefits** actually provokes the local users to form negative attitudes that may aggravate unsustainable and illegal extraction ( Dutta et al,2004; Ray and Bhattacharya;2013).Local institutional arrangements are instrumental in rule formation and implementation for equitable allocation of the resources between the users (Jodha;1986,Ostrom;1990 and Balland and Platteau;1996).It is found in our study that such arrangements are mostly informal and accepted, but definitely not gender equitable. The institutions are created by males and women are often excluded from decision making ( Sarin;1995, Agarwal;2001). It is established in the literature that transaction costs for co-operation are vital for co-management and distributive equity (Mundaca et al;2013). Major transaction costs are in the form of costs related to monitoring and implementation, participation and attendance in committee meetings and conflict resolution, all measured in labour days spent.

Therefore, to understand the determinants of forest benefits received in the existing framework, a similar econometric exercise as before has been undertaken. The value of forest products collected,harvested and received by the household has been quantified. Gross benefit has been calculated by multiplying the price of the products with the quantity harvested. Where as net benefit is calculated by deducting the the labour cost (imputed) and other costs involved. Then, the following equation is estimated.

Forest net benefit (FNB) = F ( gender, age, caste, HH size, land holding, share of non-forest income )

It is quite interesting and crucial to have observed that benefit sharing has a very strong correlation with gender, caste and land owned. The primary survey using (PRA and snowballing method) indicated that high status and power are invariably associated with land ownership and education.

**Table 2: OLS Regression results on the determinants of forest benefits**

Annual HH income	1.341**
Gender (female=1)	-1.024*
Education	-.0982
Age	-1.011
Caste ( Upper caste=1)	-0.978*
	R sq.= 0.67, F-stat.= 11.52

Note: the significance levels of 1%, 5% and 10% are indicated by \*, \*\* and \*\* respectively.

Source: Field level data analysis

The results show that among all the variables, gender, land holding and caste have been significant determinants of forest benefits. While gender and caste are negatively significant, amount of land holding is positively significant. This may be interpreted as women and low caste people have lower endowments and lower status, the amount of benefits received are low. Whereas higher income people with higher land holdings (also with higher livestock) reap more benefits quantitatively. These results are in conformity with other findings in the literature (Adhikari;2005).

Therefore, it is a fact that personal endowments and attributes can shape the benefits received. The serious implication is that women face multiple exclusion in reaping the benefits if they are poor, land less and belong to lower caste.

Though it is well recognized that women do have deeper knowledge on the tree and plant species and agroforestry, in context of REDD+ mechanism, there need to be relevant capacity building among women with required information, skill and knowledge. Time has arrived to move from nominal participation to effective participation. The local power relations that sustain inequity are to be understood before a gender equitable REDD+ is implemented. (Cornwall ;2007). Women are not a homogeneous group. Besides gender, there are other forms of disadvantages and exclusion based on

power, caste, class, age and education which are cross cutting issues and need to be considered in totality.

Below is given a small case study which depicts the feeling of a typical tribal women. Participation in JFM /CFM is voluntary now as the women have the right to use the forest. If that right or alternative livelihood rights are not guaranteed then they will not co-operate in forest conservation. They don't trust that if the government gives cash benefit to the community for conservation, their share might be zero! Though REDD+ is not tried yet, this study has serious implications for REDD+ preparation and gender justice!

### **CASE STUDY**

Subhadra is a tribal widow woman with three children. She has no agricultural land. She depends on forest products and works as labourer in other's field depending on the season. Part of her food needs and whole of fuel needs are derived from the adjacent forest. She gets cash income of around 500 INR per month on average by selling forest products gathered and an odd amount of 500-600 INR from her labour. She is a member of the CFM group and helps in watching and happy in her work. She feels a strong belongingness to the community and to the forest!

She says that if the forest is to be further protected by the government and she is not allowed to enter then she and her children will not survive. If the community is going to be paid for that she is not sure if she will get any share in that in terms of cash. At the moment she is watching the forest because she is allowed to collect the items of her need. Therefore, she will protest if cash income or land or other sources of income are not guaranteed. However, she has an open mind for new policies and to learn new skills.

### **5. Concluding Remarks**

There is no dearth of literature on gender issues and role of women in CFM. Differential dependence of women and men on forests and differential impacts of forest degradation on them are going to matter seriously in distribution of the benefits of REDD+ implementation. Differential roles played by women and men in existing community forest management gives a clear direction in this context. The gender parity deficits in the policy arena and mere presence of women in JFMs has already resulted in women's marginalization. Since women do not have land rights, there are more chances that marginalization will be more if forest policies are changes. Therefore, it is feared that if REDD+ is geared in full scale and

these issues are not addressed before that then existing gender inequalities will simply be reinforced. Gender issue poses a huge challenge in building an effective, efficient and equitable REDD+ scheme.

Gender sensitivity in climate change policies are a must as women and men are affected differently both by climate change itself and by the following adaptation and mitigation policies thereafter. Deprivation and marginalization may be intensified if proper safeguards are not considered at every stage. Such sensitivity in REDD+ in particular could lead to a paradigm shift in all climate change initiatives as it is forest centric and women's relation with forests in tropical countries are crucial in context of rural poverty and women's empowerment. In addition to the mechanism of REDD+ as negotiated at international level, implementation at the ground level should be backed by strong institutional base. Women's secured land rights as well as capacity building to face REDD+ like policy is a sure pre requisite for effective REDD+. While the existing system in forest management is not based on a gender equitable governance and women are marginalized when issues of power and control are concerned, the benefits of REDD+ are bound to be inequitable leading to intense marginalization of women involved in forestry and forest based livelihood. Therefore, it is strongly concluded that gender considerations in climate change policies and especially relating to forests should be made gender equitable. Otherwise, "add and stir" approach will continue and when it settles their voice is not heard as usual!

### **Selected References**

1. Adhikary, B. (2005):" Poverty,PropertyRights, and Natural Resource: Understanding distributional implications of Common property Resource management", Environment and Development Economics,10.
2. Agarwal, A(2001):" Common Property Institutions and Sustainable Governance of resources", World Development, 29(10).
3. Agarwal, B. (2001):" Paricipatory Exclusions, Community Forestry and Gender", World Development, 29(10).
4. Akerlof,G. and Kranton, R. (2000):" Economics and Identity", Quarterly Jou. Of Economics, 115 (3).
5. Brewer,M. and Silver.M.D. (2000):" Group Dinstinctiveness, Social identification and Collective Mobilisation", University of Minnesota Press.
6. Chhatre,A. and A. Agarwal,A.(2009);" trade offs and synergies between carbon storage and livelihood benefits for Forest Commons",FNAS 106(42).
7. Demetriades,J. and Esplen.E. (2008):" The gender Dimensions of Poverty and Climate Change Adaptation", JDS Bulletin, 39(4).
8. Demetriades,J.(2010):" The Gender Dimensions of Poverty and Climate Change adaptaion", Social dimensions of Climate Change: Equity and Vulnerability in a warming World, The World Bank.

9. Green,C. , Jokes,S. and Leach,M. (1998):" Questionable Links: Approaches to gender in Environmental Research and Policy", in Feminist Vision of Development,Routledge,London.
10. Jackson,C. (1998):" Gender, Irrigation and Environment; Arguing for Agency", Agriculture and Human Values",15.
11. Jeji. Vergese and Maureen G Reed (2012): Theorizing the Implications of Gender Order for Sustainable Forest Management ", International Journal of Forestry Research ,Vol. 2012.
12. Molinas,J. (1998):" The Impact of Inequality, gendr, External Assistance and Social capital on Local Level Cooperation, World Development,26(3).
13. Mwangi et.al. (2011):" gender and sustainable forest management in east Africa and latin America ", Ecology and Society , 16(1).
14. Otzelberger,A. (2011):" gender Responsive Strategies on Climate Change: Recent Progress and Ways Forward for Donors", Institute of Development Studies.
15. Robinson,B. et.al(2013): Does secure land tenure save forests?" Global environmental Change , June.
16. Pagdee,A. et.al.(2006): ' A meta-study from Community Forests throughout the World", Society and Natural Resources: An International Journal 19(1):33-52.
17. Reed,M.G. (2003):"Taking stands: Gender and the Sustainability in Rural Communities", UBC Press, Canada.
18. Saxena,N.C. (2000):" Research Issues in Forestry in India", Indian Jou. Of Agricultural Economics, uly-Oct. 2000.
19. Shiva, V. and Bandyopadhyaya, J. (1986):" The Evolution, Structure and Impact of Chipko movement", Mountain Research and Development, 6 (2).
20. Singh, R.V. (2001):" Contribution of Participatory Forest management in the Livelihoods of Rural Communities in India", Forest Trees and Livelihoods, vol. 11.
21. Verghese,J. (2005):" Impacts of and Challenges for Local ownership in the Forest Sector", University of Alberta.

## **Appendix-1**

### **(A) Estimating Determinants of Conservation Attitude**

Conservation Attitude Scaling (with five possible suggested answers )

1. It is better to conserve and regenerate the forests.
2. Strict rules are to be made for conservation
3. I take pride in being a member of JFM/CFM
4. All forests should be a part of governments conservation program
5. If alternative livelihood and income are assured, I'll not depend on forests.

The scores for five suggested answers are as follows:

Strongly agree – 4

Agree - 3

Don't know-2

Disagree- 1

Strongly Disagree-0

Individual respondent's total score point: Sum of (Opinion i \* score point) where i=1 to 4

If total score point (Y) is more than average among the 235 respondents, then it is considered 'favourable=1', otherwise considered 'unfavourable=0' for Logit regression dependent variable.

After getting the scores of individual respondents, the scores are normalized for a Logit Regression by using the following formula:

$$Y_i = (\text{Actual } Y_i - \text{Minimum } Y_j) / (\text{Maximum } Y_j - \text{Minimum } Y_j)$$

The equation estimated is :

$$\text{Log } (Y_i) = a + b_1X_{1i} + \dots + b_mX_{mi}, \quad i = 1, \dots, n, \quad j = 1, \dots, m$$

n= No. of respondents and m = No. of explanatory variables used.

Where X<sub>j</sub>s are possible explanatory variables.

(B) **Graph 1: Gendered pattern of Participation**



