



Gendered Participation in Afforestation at the Household Level in Njombe District, Njombe Region, Tanzania

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Abstract: Gender participation in afforestation across Sub-Saharan Africa (SSA), including Tanzania, is increasingly recognized as a key pathway for promoting sustainable tree resource management and enhancing livelihood opportunities. Active involvement of both women and men in tree-related activities can foster equitable benefits and long-term sustainability. However, the extent and impact of gender-based participation remain under-explored and often poorly reflected in national economic accounts. This study investigates the role of gender in afforestation within Njombe District, Tanzania. Specifically, it examines levels of gendered participation, explores the factors influencing involvement, and analyzes the impact of afforestation on household income. A total of 120 households were randomly selected for the study. Data collection methods included household surveys, focus group discussions, key informant interviews, and personal observation. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data were examined through content analysis. Findings reveal that gender significantly shapes afforestation practices. Males, whether in male- or female-headed households, commonly maintain control over resources—dictating ownership, use, and benefit distribution. While women are granted access rights, their participation and influence in decision-making processes remain limited. Male dominance is evident across all stages of afforestation, from nursery management and harvesting to marketing and revenue allocation, particularly regarding high-value products such as timber and poles. The study concludes that afforestation activities are predominantly male-driven. It recommends integrating gender considerations into household-level decision-making to promote more inclusive and effective afforestation systems.

Keywords: Gender, afforestation, Njombe, participation, male-headed/female-headed households

1. Background Information

Afforestation is the process of establishing trees on land that was not previously classified as forest (Xue and Shukla, 1996). It involves the transformation of bare land to a forest with the purpose of producing fuel wood, timber, fodder, fruits and other forest products in both public and private lands in order to make people self-sufficient with forest produce (FAO, 2010). Globally, forests are considered the second most important natural resource after water. It has multiple roles where they provide significant economic and ecological benefits, planting tree provide rural households with wood products for their own consumption as well as for sale and decreases soil degradation (Upendra, 2011).

Gender refers to the social relationship and responsibilities between men and women, the expectations held about the characteristics, attitudes and likely behaviours of both women and men (femininity and masculinity) that are learned, change over time and vary within and between cultures (TGNP, 2004). Gender refers to those different social, cultural and psychological traits linked to men and

women, which influence how communities, households, and institutions are organized, decisions are made, and resources are distributed and utilized.

Gender Participation in development has long been viewed by development scholars and practitioners as a crucial element that allows poor and marginalized groups to exert influence over institutions and decisions that critically affect their lives (Mayoux, 1995). In the forestry sector, gendered participation has been viewed as a pathway towards improving and promoting sustainable use and management of forest resources, while enhancing livelihoods and exploiting economic opportunities (URT, 2011). However, the idea that gendered participation in tree management facilitates sustainable use of forest resources and, at the same time, improves their livelihoods is still a subject of debate. This has been derived from the fact that there is still so much unknown about the factors determining gender participation in the sector. Knowing these factors is critically important because forestry reforms in many developing countries are explicitly aimed at improving the participation of



marginalized groups in decision-making processes (URT, 2011).

Despite the effort made so far in ensuring participation of the marginalized groups in forest management decision making, participation of marginalized groups in afforestation and distribution of benefits is not well articulated in developing countries' economic accounts (TGNP 2004). This situation not only affects marginalized groups economically, but also the planning of developing programs, and this is evident in the forest sector, which supports rural livelihood in many ways (FAO, 2010). In developing countries, in forest management, the issue of gender participation has become very important (Upendra 2011). In these countries, men and women have specific responsibilities and roles to play in the tree production and use of forest products.

Economically, tree production benefits both men and women (Armitage, 1997). Both men and women participate in preparing farms for planting trees, preparing tree nurseries, planting, managing and harvesting forest product (Upendra, 2011). This shows a strong link that exists between men and women in afforestation and following this link it is, therefore, true to say that women have vested interest in forest planting and sustainable utilization for survival just like men (Armitage, 1997).

Worldwide, women have played an important role in preserving forests. For example, in Zimbabwe women from nearly half of the 800 000 households living in communal areas manage forest resource through nursery development, tree planting and woodlot ownership (Armitage, 1997). Men and women often have different roles with regard to forest resource management. They play different roles in planting, protecting or caring for seedlings and small trees, as well as in planting and maintaining home-stead woodlots and plantations on public lands (Agarwal, 2002). Men are more likely to be involved in extracting timber and non-timber forest products for commercial purposes, while women on the other hand typically gather forest products for fuel, fencing, food for the family, fodder for livestock and raw materials to produce natural medicines, all of which help to increase family income (James *et al.*, 2010).

A similar scenario is observed in developing countries, including Tanzania, where both women and men are involved in afforestation, playing different roles in tree planting and management (Chingonikaya *et al.*, 2004). Unfortunately, only the role of men is accounted for in the economy of developing countries (World Bank, 2009). Recent studies indicate that women utilize forest products more than men. For example, a study in Uganda by James *et al* (2010) indicates that women are primary users of forest products than men. Specifically, the study indicates that women collect wild food, herbs, and fuel wood for use than

men. In this setup, women are considered as primary users of the trees than men (Upendra, 2011). This not only threatens their economy but also the effort to reduce poverty and eventually achieve the Millennium Development Goals. It is therefore important to take into account the contribution of both men and women in the forest sector. Njombe District presents a case for analysis of the role of gender in afforestation. Women and men in this district are employed in establishing and managing nurseries for trees, clearing of bush for planting trees, and felling trees. Nevertheless, women are also involved in the harvesting of tree products by supplying labour force and food. However, their contribution is not well articulated in the economic accounts of the districts, and this affects the planning for the development of the sector and efforts to reduce poverty. In light of the facts, the study intended to assess gendered participation in afforestation and its contribution to household wellbeing. Specifically, the study looked at: gender roles, participation and influencing factors in afforestation.

2.0 Methodology

2.1 Description and Location of the Study Area

The study was carried out in Njombe District in Njombe Region in Tanzania. Njombe District is among the four districts of Njombe region. Others are Makete, Ludewa and Wanging'ombe District. The District is in the southern highlands of Tanzania is a located between Latitude 8.80 and 9.80, Southern of the Equator, as well as 34.50 – 35.80 longitude East of Greenwich. Altitude of the District ranges between 1000 and 2000 meters above sea level. The District has a total population of 309 797; where 145 190 were males and 164 607 were females. The population density in the District Council is 4.2 persons per km² and the average of household size is 4.2. The surface area of Njombe District Council is 7680 km² that is equivalent to 768 000 ha. Out of these 189 521 ha is used for cultivation and grazing while 578 479 ha are for other uses like tree plantations (URT, 2016) The mean annual rainfall varies from 900 mm to 1600 mm while Temperatures of the District range from 150 °C to 200 °C (NDC, 2010).

Njombe District forms part of the southern highlands, which is a great area of high ground, which in the central section swings south-eastern following the shore of Lake Nyasa, forming the Livingstone Mountains. Generally, the soils in Njombe District are red and yellow clays which are highly weathered of low inherent fertility and with poor ability to store and release artificial fertilisers. The rainfall pattern in Njombe is largely influenced by the movement of monsoon winds. The pattern is unimodal with a single rainy season from November through May and dry season during the rest of the year. Fog and mist are common in the mountainous areas of Njombe District during early morning and disappear



by midday. There are three broad vegetation zones, which are found throughout the southern highlands which are savannah-wooded grassland, miombo woodlands and upland grasslands interspaced with forest patches. The study area was selected randomly among those areas dealing with afforestation activities in the country.

2.2 Socioeconomic activities

Agriculture is the largest sector in the economy of Njombe District Council. It includes livestock keeping and crop production. These are the leading while tree plantation and fishing are followed. Maize is the major staple food crop. Other food crops includes: round potatoes, sweet potatoes and beans, wheat and maize. Cash crops of significant economic importance are:- tea mainly grown, Matembwe wards in Lupembe Division, Horticultural crops made up of onions, tomatoes, fruits and vegetables are grown commercially mainly in Igongolo, Mahongole, Matembwe and Mfinga wards (NDC, 2010). At the study area, planted trees have multiple roles where they provide significant economic and ecological benefits. Tree planting provides rural households with wood products for own consumption as well as for sale and reducing soil fertility degradation. The rural population of Njombe depends on forests. Planted trees are the main source of energy and provide timber for roofing and building. In Rural Njombe, the extensive benefits derived from forests include grazing, hunting, shade, forest foods in the form of cash to buy food, tree leaves, fruits, and herbs, tree bark for medicinal purposes, and non-wood products such as honey.

2.3 Research Design, Sampling Procedure and Sample Size

A cross-sectional research design as suggested by Cooper and Schindler (2006) and Saunders *et al.* (2007) was employed in this study, in which data were collected at single point in time and at once. Multistage sampling procedure was applied to select area for the study. Lupembe Division has been purposively selected. The main reason for selecting the division was based on the fact that afforestation activities were very high in Lupembe as compared to other area in Njombe District. From this Division, two wards dominated by afforestation activities namely Kidegembye and Matembwe were selected. The two wards were purposively selected because of being the major trees producers in the District. Two villages were randomly selected from each ward to make a total of four villages, these villages are: Matembwe, Iyembela, Image and Kidegembye.

Barley (1998) argues that regardless of the population size, a sample of 30 is the bare minimum for data collection for statistical analysis. Saunders *et al.* (2007) emphasize that, a sampling intensity of 30 households was regarded to be reasonable sample size in social science study and

statistically large enough to draw a scientific conclusion. Therefore, in this study, 30 households from each village were selected randomly.

2.4 Data Collection

The primary data were gathered from the selected households through the following methods.

i. Key Informant Interview

Ten (10) key informants, namely village Executive officers, Community Development Officers, tree growers, District Forest Officers, Land planning Officer were included in discussing issues on gendered participation in afforestation and effects on their livelihood. A well-structured checklist was used as a guide during the interview.

ii. Participant Observation

This method enabled the collection of information by researchers' own observation, without interviewing the respondent, this method helped to obtain information relates to what was currently has been happening and not complicated by either the past behaviour or attitude of respondents. Researcher was a part of respondent household member, researcher observed as household member engaged in afforestation activities taken place at study area.

iii. Focus Group Discussion

Focus group discussions were used to collect data. Groups were purposively recruited among those who participated in questionnaire-based survey. This was necessary in order to ease the convergence of quantitative and qualitative data by avoiding characteristics of different individual to get representative composition of the groups. The participants were selected basing on demographic characteristics such as age, sex education and experience with afforestation activities. With the available time and resource only one focus group was planned for each village. In the exercise group of 5 men and 5 women were selected by 10 participants who had greater knowledge. The discussions were based on afforestation issues.

iv. Household Questionnaire Survey

Data were collected through using a structured questionnaire which composed of close and open-ended questions to capture the respondents' belief and aspirations on unbiased basis, information were collected at household level. The following information was collected: Household characteristics, control over resource, gender roles with respect to major afforestation activities, as well as gender participation in afforestation. The questionnaire was administered to head of households, but in absence of the heads, other members especially wives represented them.

2.5 Data Analysis

Two methods based on the types of data were used as follows: Data collected through a household questionnaire survey were summarized, coded, and entered in SPSS, a



computer data analytical software. During the analysis, descriptive statistics and inferential statistics were applied. The qualitative data that was obtained through key informants, participant observation and focus group discussions methods were analysed using a content analysis method. The components of verbal discussions held with professional foresters, extension officers, village executive officers and farmers were analysed in detail with the help of the content analysis method. In this way, the recorder dialogue with respondents was broken down into smallest meaningful units of information or themes.

3.0 Results and Discussion

3.1 Female members' involvement in afforestation activities

Research findings indicate that in male-headed households, 10.8% of the households, female members were not involved in afforestation activities (Table1). According to focus group discussion in other male-headed households, females were not involved simply because women were mostly involved in family chores and in agricultural activities, while men were involved in afforestation activities. About 89% of male-headed households indicated that both male and female members in their households were involved in afforestation activities. This study is corresponding to Ekisa (2010) who indicated that women participation in tree planting was curtailed by economic factors such as lack of land to plant trees and cultural setting of the community whereby women were confined to domestic activities namely: taking care of children and subsistence and other cash crop farming activities.

Table 1: Male-headed household with female members not involved in afforestation

Female HH members involved in afforestation activity	Frequency	Percentage
No	13	10.8
Yes	107	89.2
Total	120	100

Findings indicate that in many households, males dominated females. This was revealed during focus group discussion that in Njombe District, patriarchal based system dominates. There is a strong degree of control over all aspects of women's lives, including economic, social and emotional. Land ownership rights, social aspects and customs are controlled by men. Men are always controlling and being the guardians of the land.

3.2 Gender roles in afforestation

In most African rural societies, there are clear division of labour between men and women in almost all activities performed within the households. The study assessed gender roles in the study area. In almost all afforestation activities in the study area were noted that all activities were either

performed by husbands, wives, children or all of them, depending on the activity. In some cases, children were not involved because most of their time was spent at school.

It was observed that both females and males have different roles in afforestation activities, particularly seeds transportation, nursery preparation, tree planting, thinning, weeding, pruning and tree harvesting. Results show that there were disparities between males and females in participation in various afforestation activities performed. Disparities also persisted in those activities that were performed by male children and female children in a household. In addition, differences persisted in terms of hours spent among them in each activity performed. In most of these activities performed daily, weekly, monthly or yearly, show that afforestation is a labour-intensive project. However, the research finding shows the assessed disparity in level of labour contribution between men and women, male children and female children.

The finding indicates that males contribute to more proportion of labour and time than females, male children and female children in afforestation activities. This is because females and female children spent more time in domestic responsibilities. Findings from focus group discussion indicated that females were busy, most of their time was used for cooking, feeding, child caring, utensils rinsing, fetching water, cleaning, and animal caring. These were their main responsibilities, which do reduce their chances of going out to attend afforestation activities. Further, during the focus group discussion, it was revealed that women were the one who mostly carrying loads of firewood, small timber, fodder, leaf-litter, and non-timber forest product from the forests. Moreover, females were left at home in most of the villages. However, they were still responsible for the supplement and management of natural resources for domestic use. This often happened when their husbands went to search for markets for their tree products.

3.3 Gender roles in tree seed transportation

Based on the focus group discussion, it was noted that the task of seeds transportation depended on where seeds were to be found. For a case of those families that depended on the seeds transported from the shop, mostly fathers or mothers were responsible to buy them, but for those who depended on seeds from tree products mostly the activity involved husband, wife, children or all members of a family. In some cases, the activities were done by children to assist their parents. Table 2 shows that males accounted for 43.7% in seeds transportation, while all members of the households constituted 18.5%, followed by both male and female who constituted 16% and females only accounted for 11.8% as opposed by few female and male children, which accounted for 0.8%.



However, the research finding shows the disparity in level of labour contribution between male and female, male children and female children. The gender roles differ in terms of hours spent between females and males, male children with female children, in seeds transportation activity in the study area. This is different from Jacob et al. (2010) who indicated that females spent most of their time on preparing, purchased and transporting seeds as 81% of women farmers purchased tree seedlings from the local nursery, while 43% raised their own seedlings and 38% collected wildlings.

Table 2: Participants of Household members in seeds transportation (N=120)

Participants	Frequency	Percent
Old male	52	43.7
All members	22	18.5
Old male and old female	19	16.0
Old female	14	11.8
Old male and male children	3	2.5
Old female and female children	2	1.7
Old female male children and female children	2	1.7
Old female and male children	1	0.8
Old male, old female and male children	1	0.8

3.4 Gender participation in nursery preparation

About 34% of males in the study area was highly involved in nursery preparation compared to other groups (Table 3). Involvements of female children was the lowest of all other groups. The involvement accounted for only 0.8%. This finding also was supported by key informants that females, seldom, had the option of raising their own nursery for planting stocks, but they had to buy their tree seedlings from local nurseries compared to males. One key informant said that *“Less than 45% of the women raise their tree plantings and stocks or gather the wildlings. These activities are highly labour-demanding. Nursery operations or lack of preferred tree seeds can perhaps be held accountable as some of the forces that drive the women to purchase tree seedlings from local nurseries rather than preparing their own nurseries than males.”*

This study presents findings that are contrary to those of Williams (1989), as cited by Jacob et al. (2010), who asserted that women represent a vital segment of the labor force in afforestation and other forest-related activities, including the establishment and management of tree nurseries, plantation development, and maintenance. Williams' perspective reflects a widely held view that women not only contribute significantly to the physical labor involved in these activities but also play essential roles in

decision-making, resource management, and the sustainability of community-based forestry programs. In contrast, the current study reveals limited female participation in such initiatives, suggesting the presence of socio-cultural, institutional, or economic barriers that continue to hinder women's full engagement in forestry interventions in the study area.

Table3: Participation of household members in Nursery preparation

Participant	Frequency	Percent
Male	40	33.6
Male and Female	28	23.5
All member	22	18.5
Female	16	13.4
Male, male children and female children	4	3.4
Male children	2	1.7
Male and male children	2	1.7
Female and male children	2	1.7
Male, female and male children	2	1.7
Female children	1	0.8

3.5 Participation in watering seedlings

The findings reveal that 28.8% of households reported joint participation by both males and females in watering seedlings. This was followed by 17.8% where only males were involved, and another 17.8% where all household members contributed (Table 4). Notably, the participation of female children was minimal, accounting for only about 1%. These results highlight the persistence of gender disparities in nursery care activities within the study area.

This pattern stands in contrast to previous research that highlights the prominent role of women in early-stage forestry activities. For example, Gerhardt and Nemarundwe (2006), in a study conducted in Zimbabwe, reported that over 80% of women were chiefly responsible for watering young seedlings and managing tree species planted on farms. Their findings support the widely held notion that women are key actors in afforestation initiatives, particularly in labor-intensive stages such as seedling care. The divergence between their study and the present findings may reflect underlying socio-cultural dynamics, entrenched gender norms, unequal labor distribution, or possibly a lack of targeted interventions that promote women's participation in forestry activities within the study area. These differences underscore the importance of context-specific analyses when assessing gender roles in environmental conservation efforts.



Table 4: Participation of household members in watering seedlings

Participant	Frequency	Percent
Male and female	34	28.8
Male	21	17.8
All members	21	17.8
Female	19	16.1
Male children and female children	7	5.9
Male children	6	5.1
Male and male children	3	2.5
Female male children and female children	3	2.5
Female and male children	2	1.7
Female children	1	0.8
Male, male children and female children	1	0.8
Total	120	100

3.5 Participation in the trees planting operation

Tree planting activity seemed to be considered as the responsibility of all females and males in households (Table 5). The findings indicated that about 48% of males and females together were mostly involved in tree planting. About 18% of the males were highly involved in tree planting compared to females (9.2%). During one of the focus group discussions, one participant argued that: “*Most of the females participate less than males in tree planting in households simply because most of the females are closely tied to the customary and family responsibilities. This leads to tree planting being traditionally established rights of tenure to land, which hinders the females from tree planting*”.

These findings are supported by Williams (1992), who observed that in many African societies, women are traditionally confined to roles centered around the home due to cultural norms and family responsibilities. According to the author, forestry and tree-growing activities often require travel away from the household, which effectively limits women’s full participation in afforestation initiatives. Similarly, the study aligns with the observations of Mathai (1988), as cited by Williams (1992), who noted that in some rural communities, women were actively discouraged from engaging in tree planting because the act of planting trees traditionally conferred land tenure rights. In such contexts, men perceived women’s involvement in tree planting as a threat to their control over land resources. These socio-cultural barriers continue to influence gender dynamics in natural resource management, particularly in afforestation programs.

Table 5: Participation in tree planting

Respondent	Frequency	Percent
Male and female	45	37.5
All members	29	24.2
Male	22	18.3
Female	11	9.2
Male and male children	3	2.5
Male, female and male children	3	2.5
Female ,male children and female	3	2.5
Female and male children	2	1.7
Male children	1	0.8
Male children and female children	1	0.8
Total	120	100

3.6 Participation in the weeding of seedlings

Table 6 presents that weeding in tree farms was performed by both males and females at highest of other members, which accounted for 37.5%. Males, separately performed highly (24.2%) compared to females who accounted for about 18%. The activity was seen to be performed by all members of the family in other households which constituted 9.2%, followed by male children (2.5%). This is similar to a study by Chingonikaya *et al.* (2004) who indicated that weeding activity was observed to consume most of the labour time. With exception of labour contributed by children in weeding activity, where by most of the adult males and females spent 6 – 12 hours a day.

Table 6: Participation in weeding activity

Participants	Frequency	percent
Male and female	45	37.5
Male	29	24.2
Female	22	18.3
All members	11	9.2
Male children	3	2.5
Male and male children	3	2.5
Male, female and male children	3	3.2
Female, male children and male children	2	1.7
Female and male children	1	0.8
Male children and female children	1	0.8
Total	120	100

I.

3.7 Participation of household members in tree pruning activity

In pruning operations, the participation of adult males in both MHHs and FHHs was the highest of all household’s members’ participation (Table 7). Pruning activities in the



study area was observed to be highly performed by males (36.2%), while both males and females accounted for 24.1% and males and male children constituted about 12%. Males, and female children and male children, as well as hired labour accounted for 0.9%. They was also revealed during one of focus group discussions that pruning activity was seen to be a male's activity. Based to this notion, females were seen to contribute less proportion of their labour and time than males to tree pruning activity. Basing on the nature of the pruning operation, the study is similar to Kajembe and Luoga (1996) who pointed that pruning activities in woodlots are linearly to masculinity.

Table 7: Participation of household member in tree pruning activity

Participants	Frequency	Percent
Male	42	36.2
Male and female	28	24.1
Male and male children	14	12.1
All members	14	12.1
Female	8	6.9
Male children	4	3.4
Female children	2	1.7
Female and male children	4	3.4
Male, female and male children	1	0.9
Hired Labours	1	0.9
Total	120	100

II.

3.8 Participation of household members in tree harvesting

Participation of gender based in tree products harvesting such as fodder, poles, fire wood, timber and fruits were identified. Table 8 shows the participation of household's members in harvesting tree products. In this study, all members in the households participated in harvesting fodder, but adult males had the lead. Further, the study noted that adult females' labour involved much in firewood, fruits/food stuffs harvesting, while adult males performed at highest percent in poles and timber harvesting. With exception of poles and timber harvesting differences were observed in harvesting fodder, firewood and fruits/food stuffs.

The findings show that most tree products harvesting activities were performed daily; implying that tree harvesting is a labour intensive activity. In addition, the findings indicate that adult female contributed less proportion of labour and time than males to tree products harvesting activity. This was also noted during one of the focus group discussions that females, traditionally, carry the major responsibilities for subsistence agriculture, particularly food crop production, children caring and community role. The findings could be explained by the fact that harvesting roles in Njombe District are traditionally carried out by males, especially, in Wabena ethnic society. According to the

information obtained from the focus group discussions, husbands were the main persons to be involved in tree harvesting and in some specific duties such as consulting forest officers' services, sales or purchases of tree product tree and timber. The participation of children in tree harvesting activities was seen to be low and found less than 2% of total labour for most of the harvesting activities. This is attributed to the fact that the low contribution of both female children and male children labour to harvesting tree products was due to most of the week days, they were at schools. Differences in harvesting tree products found in this study hold true observations made by other studies that in many African societies (Nwonwu, 1996) so do Tanzanian societies (Liwenga, 1995; Katani, 1999) males dominate to the trees harvesting activity and own the cash from selling products such as timber and poles. All of the authors pointed further, that females and other household members participate less and at the same time own the subsistence or food crops.

Table 8: Participation household members in tree products harvesting

Participants	Frequency	Percent
Male	81	73
Male and female	15	13.5
Female	8	7.2
All member	4	3.6
Male children	1	0.9
Female and male children	1	0.9
Male, male children and female children	1	0.9
Not harvesting trees	9	7.5
Total	120	100

4.0 Conclusions and Recommendations

In Njombe District is shaped by gendered norms, uneven labor distribution, and disparities in decision-making authority. While women and men are both involved in tree-related activities, their roles and influence differ significantly. In male-headed households, female participation in afforestation is sometimes absent, largely due to women's preoccupation with domestic chores and farming. In contrast, many households demonstrate joint gender involvement, though with marked differences in labor intensity and leadership.

Further analysis reveals afforestation is a labor-intensive undertaking, with notable disparities in how tasks are distributed across gender and age. Activities such as seed transportation, nursery preparation, planting, and harvesting vary by source and household structure. In some cases, the whole family is involved, while in others, individual roles fall along traditional lines. Males, including male children, generally contribute more time and labor than females, due to the latter's heavier burden of domestic responsibilities. Women often manage home-based forest resources, carrying



firewood, fodder, and other non-timber products, while men engage in marketing efforts outside the household. These entrenched patterns of labor division and limited decision-making opportunities for women underscore the need for targeted interventions. Without addressing gender inequalities, afforestation programs may fall short of their potential for inclusive growth and sustainability. Promoting shared decision-making, improving women's access to productive resources and market opportunities, and recognizing the full scope of their contributions are essential steps toward building equitable and resilient afforestation systems in Tanzania.

Based on the findings of this study, the following recommendations are proposed to improve gender equity in afforestation programs within Tanzania and across other regions in Africa:

- i. **Recognize and Value Women's Invisible Labor:** Incorporate domestic and environmental responsibilities—such as firewood collection, childcare, and resource management—into planning and monitoring frameworks. Acknowledging these contributions will ensure a more accurate assessment of women's roles in afforestation.
- ii. **Promote Shared Household Roles Through Awareness Campaigns:** Launch community-level education campaigns to challenge traditional gender norms and encourage more equitable distribution of both domestic and afforestation responsibilities. This can foster collaborative engagement and reduce the burden on women.
- iii. **Support Child Participation with Safeguards:** Where children are involved, provide guidance and protections to ensure their engagement remains age-appropriate and educational. School-based afforestation programs can serve as structured pathways for youth participation.
- iv. **Provide Accessible and Gender-Sensitive Training Platforms:** Design flexible training modules tailored to women's schedules and responsibilities, including mobile training units and village-based workshops. Content should address both technical knowledge and leadership development.
- v. **Introduce Labor-Saving Technologies for Women:** Invest in tools and innovations that reduce the time and energy required for nursery management, planting, and harvesting. This would free up women's time and enhance their productivity and agency.
- vi. **Strengthen Monitoring and Evaluation with Gender Indicators:** Embed gender-sensitive metrics into afforestation program assessments to track participation, labor input, decision-making

roles, and benefits received. This data can guide responsive policy adjustments.

- vii. **Facilitate Women's Access to Markets and Forestry Networks:** Develop cooperative models and market linkages that empower women to sell tree products directly, ensuring they benefit equitably from afforestation outputs and build long-term economic resilience.

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Declaration of Conflict of Interest

I declare that there are no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

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POLICY BRIEF:

PROMOTING GENDER EQUITY IN AFFORESTATION: INSIGHTS FROM NJOMBE DISTRICT, TANZANIA

1) Background

Afforestation has gained prominence in Tanzania and across Sub-Saharan Africa as a strategy for environmental restoration and livelihood enhancement. However, gender disparities—shaped by patriarchal norms and unequal access to resources—continue to limit the effectiveness and inclusivity of afforestation programs. In Njombe District, this study highlights the roles, contributions, and constraints faced by both women and men in afforestation activities.

2) Key Findings

- **Gendered Participation Patterns:** Women contribute heavily to afforestation labor (e.g. nursery maintenance, planting), yet lack representation in key decision-making and benefit-sharing processes.
- **Household Dynamics:** In some male-headed households, female members are excluded from afforestation entirely due to entrenched domestic roles and societal expectations.
- **Labor Disparities:** Men and male children contribute more time and labor to afforestation tasks, while women and female children are overburdened with domestic responsibilities.
- **Task Allocation:** Activities such as seed transportation vary depending on seed source and household structure, with men more frequently involved in sourcing and logistics.
- **Invisible Contributions:** Women play a key role in managing and supplementing household forest resources, including collecting firewood, fodder, and non-timber products—often underrecognized.
- **Market Exclusion:** Men typically engage in external marketing of tree products, leaving women behind in monetizing afforestation outputs.

3) Policy Issues

- Persistent gender imbalance in labor, leadership, and access to productive resources within afforestation initiatives.
- Undervaluation of women's indirect and domestic contributions to environmental stewardship.
- Limited representation of women in extension services, training, and financial support mechanisms.
- Ineffective targeting of interventions, leading to unintended exclusion or reinforcement of existing disparities.

4) Policy Recommendations

1. **Inclusive Participation and Decision-Making**
Actively engage women in all afforestation stages, ensuring representation from household to national levels.

2. Gender-Sensitive Resource Access

Improve access to credit, land, training, and extension services for women to boost autonomy and productivity.

3. **Flexible, Localized Training Models:** Deliver training at village level and at times compatible with women's schedules. Incorporate leadership and technical skills.

4. **Introduce Labor-Saving Technologies:** Invest in tools and innovations that reduce the time burden on women in afforestation tasks.

5. **Promote Equitable Market Participation:** Strengthen women's access to forestry markets through cooperatives, transport support, and local value chains.

6. **Redefine Extension Services:** Build gender-responsive extension departments and equip agents with the skills to serve both men and women equitably.

7. **Monitor with Gender Indicators:** Integrate gender-disaggregated data in afforestation program evaluations to track progress and adjust approaches.

8. **Recognize and Compensate Invisible Labor:** Include women's domestic and environmental roles in program assessments and explore mechanisms for recognition or compensation.

5) Conclusion

Afforestation efforts will fall short of their sustainability and equity goals without deliberate attention to gender dynamics. Recognizing women's contributions, reducing labor inequalities, and empowering female agency are essential to fostering resilient, inclusive afforestation systems in Tanzania and beyond.