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Home Garden and Women Participation: A Mini Review

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ABSTRACT

Home gardens aid to improve food availability, ecology, job opportunities, social conditions for outstanding production, contributing to the conservation of diversity and maintenance of plant genetic resources and ecosystem. The objective of this review is to know about the major crops, vegetables, fruits, medicinal plants, and cash plants materials and women's participation in home garden agroforestry practices in Bangladesh. The various species of home gardens are nutritionally and economically valued as they fulfill a demand. Women are more engaged than men in home garden activities. Common vegetables, fruits contain significant amounts of protein, sugars, salts, calcium, iron, vitamins, minerals, thiamin, riboflavin, niacin, potassium, calcium, zinc, magnesium, and iron. The common medicinal plants are using plant parts such as fruit, leaf, bark as treatment of dysentery, cough, fever, and other diseases. The flower plants improve beautification in the home and also contain the aesthetic value. The profit plant helped in the economic sector. The responsible bodies should undertake positive actions like promoting specific study plans in the home garden to ensure biological balance to improve the capacity of women communities to manage and maintain home garden diversity.

Keywords: *Home garden, women, vegetable, fruit, medicinal plants, animal.*

INTRODUCTION

Home garden is usually outlined as a land use system involving thoughtful management of multipurpose trees and shrubs in intimate association with annual and chronic crops and invariably livestock within the compounds of individual homes, the full tree-crop, and the animal unit is being intensively managed. A home garden can also be outlined as a farming system that is associated with physical, social, and economic functions in the world of land around the family home. The world is employed as an area of work, storage, and process of farm produce; it is additionally an area where individuals live and eliminate wastes. The definition, structural and purposeful of a home garden varies from place to place according to the local physical surroundings, ecological characteristics, socioeconomic and cultural factors (Kumar & Nair, 2004).

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Home garden agroforestry may be a special class of agroforestry that deals with the cultivation of multipurpose and multi-storied trees, crops, and animal husbandry around homestead (Kabir & Webb, 2008; & Galhena et al., 2013). The home garden helps to attach the livelihood financial gain and conserved natural ecosystems by linking marketable cultivated species with protective species diversity and genetic diversity (Galluzzi et al., 2010).

The women play a key role in the management of the home garden for livelihoods and getting ready food. In the home garden, most of the work is done by women but men help in that work. An ideal garden has all the necessary elements and the ingredients are vegetables, medicinal plants, fruit trees are grown throughout the year for a household's consumption, possibly integrated with animal production (Keatinge et al., 2012; & Khan et al., 2020). Those elements improved the quantity and quality of foods. The fruits of jackfruit, mango, banana, bel, jam, and also the vegetables of the bean, cabbage, cucurbit, spinach, okra, brinjal are extremely nutritive fruit (Khan et al., 2021; Choudhury et al., 2021; Khan et al., 2020; & Khan et al., 2021). Home-based food production systems have filled the lack of nutrition of the women and children of the village (Jaenicke & Virchow, 2013; & Weinberger, 2013) and additionally earn more money by selling it in the native market. Therefore, the mixture of nutrition education and counsel with the promotion of home gardens is significantly effective (Berti et al., 2004). By considering the above points, the present study was undertaken to collect information about the significance of women's participation in the home garden in rural areas of Bangladesh.

Men Versus Women Participation in Home Garden

The country Bangladesh has different regions which have varied customs and cultures that result mainly from religious differences. Hence, usually, women are relegated to inferior positions and men to superior roles. In the home garden, women are frequently engaged in cultivation, while men need to farm the land used for cash crop production. Gender is an important character to develop a home garden in rural area. The home garden normally practices personal labor such as (Sthapit et al., 2004) women, children, and elders are of particular importance in their management (Galhena et al., 2012; & Maroyi, 2009) but, depending on the economic capacity and affordability, households may hire wage laborers to cultivate and maintain the home garden that in turn affect the composition and intensity of home garden activities (Maroyi, 2009). Most of the males planned to create and develop home gardens around the house but the females have grown the vegetables, flowers, or cattle in the garden. Women usually take care of all their needs (Howard, 2006; & Akhter et al., 2010). However, men also do it but only feeding cattle, buffalo, and other activities for the cattle, etc. In the garden, the men take care of them like gardening, weeding, watering every day/two days interval and fertilizing in the garden, etc. Generally, the women have grown 5-6 green chilies and eggplants near the house which is enough for 2-4 family members. Although the eggplants are picked at weekly intervals, the green chilies are picked almost every day which changes the aroma of the curry. Again, no vorta (special food in Bangladesh) is made but chilies are used. There are various vegetables such as papaya, banana, lemon, etc. grown a little away from home. Lemons are extracted from the lemon trees every day which eliminates their vitamin-C deficiency. On the other hand, in the Indonesian context women take part during planting and harvesting (Christanty et al., 1986), and, in Sri Lanka, they provide labor during peak times (Wanasundera, 2006). Regardless, particularly for women and disadvantaged groups, home gardening is an avenue for social and economic enrichment. In India, most of the rural women were independently participating (60%) in home garden vegetable cultivation while 40% of women participated jointly with men (Bargali

& Shahi, 2015). In Bangladesh, 75% of the respondent had medium participation in homestead vegetable cultivation as compared to 21% low participation and 4% high participation in Moulvibazar district, Bangladesh (Ferdousy et al., 2018). Talukder et al., 2000 also reported that most of the tasks in home gardens were carried out by women in rural Bangladesh. Except for plowing, women carry out almost all crop production tasks to help their menfolk.

Common Vegetables, Plants, and Animals

The homestead resources, desires, and selection assessments were performed with the active participation members of the family of the chosen households. The activities of the program were prioritized supported farmer's desires, problems, biological process demand, and financial gain. A work plan was then developed with the participation of the farmers. The traditional home garden contains mainly vegetables, medicinal plants, cash plants, and animals. From those practices, home garden agroforestry practices are the ones that farmers are mistreatment using to sustain their livelihoods. The area of the home garden was divided into beds and then select suitable crops and vegetables. They have also chosen sites for planting medicinal plants, cash plants, and fruit plants.

Vegetables: The common vegetables are brinjal (*Solanum melongena*), tomato (*Solanum lycopersicum*), okra (*Abelmoschus esculentus*), radish (*Raphanus sativus*), cabbage (*Brassica oleracea* var. capitata), spinach (*Spinacia oleracea*), Indian spinach (*Basella alba*), water spinach (*Ipomoea aquatica*), Joseph' scoat (*Amaranthus tricolor*), stem amaranth (*Amaranthus lividus*) and Tossa jute (*Corchorus olitorius*) were selected for year-round vegetable cultivation in the beds in the home garden. The vines vegetables such as bottle gourd (*Lagenaria siceraria*), and ash gourd (*Benincasa hispida*) were grown on the rooftop. The fence was provided in the vegetables such as bean (*Lablab purpureus*), cucumber (*Cucumis sativus*), snake gourd (*Trichosanthes anguina*), bitter gourd (*Momordica charantia*), and ribbed gourd (*Luffa acutangula*). Five to six papaya (*Carica papaya*) seedlings were planted on the boundary of the vegetable garden. A partially shady place was utilized by garlic (*Allium sativum*), ginger (*Zingiber officinale*), and turmeric (*Curcuma longa*). The vegetables contain significant amounts of protein, calcium, iron, vitamins, minerals, thiamin, riboflavin, niacin, and iron.

Fruits: The common fruit plants are jackfruit (*Artocarpus heterophyllus*), banana (*Musa acuminata*), mango (*Mangifera indica*), bel (*Aegle marmelos*), ata fol (*Annona squamosa*), coconut (Cocos nucifera), jam (Syzygium cumini), litchi (*Litchi chinensis*), jalpai (*Elaocarpus floribundus*), guava (*Psidium guajava*), papaya (*Carica papaya*), jambora (*Citrus limetta*), amra (*Spondias pinnata*) and kamranga (*Averrhoa carambola*). The common citrus fruits are lemon (*Citrus pennivesiculata*), jambora (*Citrus limetta*), amra (*Spondias pinnata*) and kamranga (*Averrhoa carambola*). The common animals are hen (*Gallus gallus*), duck (*Anas platyrhynchos*), pigeon (Columba livia), cow (*Bos tarus*), goat (*Capra aegagrus*), sheep (*Ovis aries*), cat (*Felis catus*), dog (*Canis lupus*). The fruits are rich in sugars, protein, salts, vitamins, minerals and also contain iron, potassium, calcium, zinc, magnesium, and so on which is an effect on rural human life.

Medicinal Plants: The common medicinal plants are planting the home garden and common plants are amloki (*Emblica officinalis*), arjun (*Terminalia arjuna*), bashok (*Adhatoda vasica*), bel (*Aegle marmelos*), bohera (*Terminalia belerica*), horitoki (*Terminalia chebula*), mehendi (*Lawsonia alba*), neem (*Azadirachta indica*), pathorkuchi (*Kalanchoe pinnata*), thankuni (*Centella asiatica*), and tulsi (*Ocimum sanctum*). The medicinal plants are using against dysentery, cough, fever, and other diseases (Talucder et al., 2020; & Khan et al., 2020).

Cash plants: Cash plants are grown to sell for a profit in the financial sector. The very common cash plants are mehogony (*Swietenia mahogany*), neem (*Azadirachta indica*), raintree (*Samania saman*), shimul (*Gossypium harbacium*), kadam (*Anthocephallus chinensis*), tarul (*Albizia chinensis*), and Sisso

(*Dalbergia sissoo*). It is typically obtained by parties near away from the home garden.

Flower plants: Many flowers are grown in the home garden to improve beautification in the home and aesthetic value (Khan et al., 2021, Ehsanullah et al., 2021; & Ehsanullah et al., 2021). The common flower plants are sondamaloti (*Mirabilis jalapa*), gada (*Tagetes erecta*), joba (*Chinese hibiscus*), chrysanthemum (*Chrysanthemum indicum*), rongon (*Chinese ixora*), and beli (*Jasminum sambac*).

Insects, Pests and Diseases and Possible Solution

Locally flexible and culturally acceptable vegetables, medicinal plant and fruit tree was chosen supported year-round production potential with higher biological price and market demand. Farmers were inspired to use organic fertilizers such as cow dung, poultry manure, compost, kitchen ash, vegetable refuse, crop residues, and tree wash from their sources. Application of kitchen waste, animal manure, and alternative organic residues has been observed amongst home gardeners and this exercise has helped to significantly increase the productivity and fertility of those gardens (Galhena et al., 2012). Irrigation was provided as and once needed. Irrational applications of insecticides on vegetable crops are very common in Bangladesh, leading to harmful consequences for the surrounding and human health (Ferdous et al., 2016). But in the home garden, the women applied homemade pesticides to manage the insects, pests, diseases, and weeds. In vegetable common pests are aphid, borer, beetle, etc. (Khan et al., 2018; Khan et al., 2019; Tanni et al., 2019; Haque et al., 2019; Khan et al., 2020; & Khan & Choudhury, 2019). The pests can be managed mainly by using neem products like neem oil (neem leaf, bark), ash and used mechanical ways in which with no chemical application unless severe infestations were discovered.

CONCLUSION

Home gardens play a major important role in reducing vulnerability, guaranteeing food security and improved ecological, job opportunities, social conditions for outstanding production, a tributary to the conservation of diversity and maintenance of plant genetic resources and ecosystem. The women are more engaged than men in home garden activities. There are prospects of home gardens in the areas of gender participation, marketable product development, and food availability and accessibility for the protection of the community. It has an impact on the socio-economic, cultural importance, and environmental role through conserving biodiversity. Furthermore, the women have native knowledge to manage gardens which is very useful for sustainable production of the home garden. I would like to recommend that the specific study plans in the home garden ensure biological balance to improve the capacity of women communities to manage and maintain home garden diversity.

Author contributions: This work was conducted in collaboration with all authors. Author AUK[1] was planned, structured, wrote, revised, and rechecked the manuscript thoroughly. IJE, ASA, and AUK[5] contributed to revise, improve the reference part, and develop this manuscript. All authors reviewed carefully and approved the final version of the manuscript.

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