



Promoting Home Yard Utilisation to Strengthen Food Security in Bira Lhok Village, Montasik Subdistrict, Aceh Besar Regency

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Abstract

Home gardens play a vital role in supporting household food security by transforming unused yard spaces into productive areas for cultivating vegetables, fruits, spices, and medicinal plants. In Bira Lhok Village, Montasik Subdistrict, Aceh Besar Regency, awareness of the importance of utilising home gardens has been limited, prompting the implementation of a community service program aimed at empowering housewives through training and socialisation. The primary objective of this initiative was to provide comprehensive knowledge and practical skills that enable participants to manage their home gardens effectively, thereby enhancing household welfare. The program was conducted from August 23 to 26, 2025, involving 30 homemakers and several village officials. Activities included preparation (material development and coordination), implementation (lectures, demonstrations, and interactive discussions), and evaluation (feedback and Q&A). Participants learned about soil preparation, planting techniques, integrated land use, and the recycling of organic waste. Visual documentation demonstrated their active engagement, collaborative learning, and application of sustainable agricultural practices. The results indicated that participants successfully cultivated mustard greens and water spinach, turning previously underutilised yards into productive plots. This contributed not only to household nutrition but also to potential income generation from surplus produce. The program's novelty lies in its integrated and participatory approach, combining knowledge transfer, skill development, and practical application, while positioning homemakers as central agents of change in household food management. In conclusion, the program effectively raised awareness, improved skills, and fostered sustainable practices in home garden utilisation. It is expected that the initiative will be continued and replicated in other rural areas to strengthen local food systems and community resilience.

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1. Introduction

A home garden can be defined as an open plot of land surrounding a residence, located in the front yard, backyard, or sides of the house, with clearly defined boundaries. When properly managed, a home garden not only creates an aesthetically pleasing, comfortable, and healthy environment but also provides a sense of satisfaction and well-being for household members. By cultivating productive plants such as ornamentals, fruits, vegetables, spices, and medicinal plants, home gardens can generate both physical and psychological benefits [1]–[4]. When managed effectively, home gardens serve multiple functions for families, including providing a space for recreation, a playground for children, a source of nutrition, and even a potential source of household income. In both rural and urban areas, the

integration of home gardens into daily life can significantly support national food security by utilising and empowering local food resources [5]–[8].

The utilisation of home gardens is most beneficial when managed through an integrated approach, combining a variety of crops, livestock, and fish. This integrated farming system ensures the continuous availability of diverse food sources, which directly contributes to improved household nutrition [9]–[12]. Beyond food production, the practice of combining flowering plants with food crops is effective in controlling pests naturally, reducing dependency on chemical pesticides. Organic waste produced from both plants and livestock can also be recycled into compost, creating a sustainable cycle of food production within the household [13]–[16]. However, challenges remain in certain regions. For example, in Bila Lhok Village, Montasik Subdistrict, Aceh Besar Regency, community members still lack awareness and understanding of the importance of utilising home gardens for food security. Therefore, a community service program was conducted to provide socialisation and training on the effective utilisation of home gardens. The program covered fundamental aspects, including the functions of home gardens, their benefits to households, and the role of home gardens in achieving household-level food self-sufficiency.

The purpose of this initiative was not only to conduct training but also to provide comprehensive knowledge and practical skills for the villagers. As a result, participants gained a deeper understanding of how home gardens can serve as a foundation for achieving food security at the household level. The training enhanced their capacity to integrate productive activities such as cultivating vegetables, raising small livestock, and processing organic waste into their home gardens. This knowledge equips them with a competitive advantage in utilising local resources to strengthen food self-sufficiency, at least within the scope of their households, and contributes to the broader goal of building sustainable food systems in rural communities [5], [17]–[20].

2. Methodology

The community service program was conducted in Bira Lhok Village, Montasik Subdistrict, Aceh Besar Regency, from August 23 to August 26, 2025. The participants of this socialisation activity were primarily housewives, with the event held at the Meunasah of Bira Lhok Village and the Village PKK Hall. A total of 30 homemakers attended the program, along with several village officials who also participated. The stages of the activity were as follows:

a. Preparation Stage

The preparation stage was conducted to determine the mechanism by which the socialisation process would be implemented. Activities at this stage included:

- a) Appointing a program coordinator.
- b) Coordinating with the Bira Lhok village authorities regarding the implementation of the activities.
- c) Preparing the learning materials on the utilisation of home gardens for building food security in Bira Lhok Village. The materials were designed using PowerPoint and supported with an LCD projector.

b. Implementation Stage

The implementation stage took place at the Meunasah of Bira Lhok Village and was attended by lecturers, students, homemakers, and village officials. The activities included:

- a) Village officials encouraged the homemakers to gather at the Meunasah from 2:00 PM to 6:00 PM.
- b) Lecturers and students delivered the presentation using prepared materials and multimedia equipment (LCD projector) to support the dissemination of information on home garden utilisation for household food security.
- c) Lecturers, assisted by students, explained the materials on the importance of utilising home gardens for food security in Bira Lhok Village (see **Figure 1**).

- d) The methods used in this socialisation session were lectures and interactive discussions (Q&A).

c. Evaluation Stage

The evaluation stage involved an interactive process where lecturers provided additional explanations and engaged participants in a question-and-answer session on how to maximise the utilisation of home gardens to support household food security in Bira Lhok Village. The interactive discussions provided more profound insights into practical applications of home garden management (see **Figure 2**).

3. Result & Discussion

The results of this community service activity are expected to help homemakers in Bira Lhok Village, Montasik Subdistrict, Aceh Besar Regency gain a deeper understanding of the importance of utilising their home yards in building food security. The participants were taught the importance of employing home gardens as a means of enhancing household resilience and food security. The materials delivered during the socialisation included five key topics: (1) the definition of home yard utilisation, (2) the objectives of home garden management, (3) the functions of home gardens, (4) the concept of food security, and (5) the importance of food security for households and communities.

A home garden is defined as a plot of land surrounding a house, whether in the front, back, or side yard, with clear boundaries. Because of its location around the house, a home garden is easily accessible and can be managed by all family members during their available time. Properly managed, a home garden integrates different types of crops, livestock, and even fish, ensuring the continuous availability of diverse food sources to meet family nutritional needs. Engaging in home gardening also encourages families to spend their time productively. Moreover, a well-utilised yard can serve multiple roles, such as a living store (*warung hidup*), a living pharmacy (*apoteke hidup*), a living granary (*lumbung hidup*), and a source of household income.

The objectives of home yard utilisation include: (a) improving the skills of families and communities in land management; (b) sustainably meeting food and nutritional needs; (c) developing productive household economic activities; and (d) creating a clean, healthy, and green environment. In line with these objectives, the functions of home gardens are diverse, ranging from providing food sources (vegetables, tubers, fruits, livestock, and fish) to medicinal plants, spices and seasonings, organic fertilisers, and aesthetic value that enhances the environment.

Meanwhile, food security refers to a condition where every person has physical and economic access to sufficient, safe, nutritious, and affordable food to live a healthy and productive life, both in the short and long term. Food security encompasses four main pillars: (1) food availability (sufficient and stable), (2) food access (physical and economic), (3) food utilisation (safe, nutritious, and healthy), and (4) food stability (resilience against fluctuations). The importance of food security lies in three aspects: first, ensuring public health by guaranteeing access to adequate and nutritious food; second, strengthening national resilience, since food security is an indicator of independence and sovereignty; and third, supporting sustainable development, as food security directly influences health, education, and economic growth.

Figure 1 illustrates the initial stage of the community service activity, which focused on introducing the use of home yards to homemakers in Bira Lhok Village, Montasik Subdistrict, Aceh Besar Regency. This introduction served as a crucial foundation, providing participants with a basic understanding of the concept and potential of home gardens in enhancing both household welfare and food security. By gathering the homemakers as the main participants, the program emphasised their central role in managing household resources effectively. The selection of homemakers as the primary audience was highly strategic, considering that they are usually the key decision-makers in daily household food management. Through this session, they were introduced to various ways in which home yards could be transformed into productive spaces, such as cultivating vegetables, medicinal plants, and fruits, as well as integrating small-scale livestock. This not only raises awareness but also motivates participants to see their yards as valuable resources rather than unused or neglected land.



Figure 1: Introduction to the topic of Utilising Home Yards with Housewives

The atmosphere of the meeting, as depicted in the figure, shows active engagement among the participants and facilitators. The group setting created a sense of togetherness and collaboration, fostering the idea that food security is not only an individual responsibility but also a collective effort within the community. Such participatory approaches are proven effective in community empowerment programs because they enhance local ownership of the initiative and encourage sustainable practices that align with local values and capacities. Moreover, this stage of introduction was not merely about knowledge transfer but also about building confidence among the homemakers. By providing accessible explanations and interactive discussions, participants were encouraged to ask questions and share their own experiences. This strengthened their readiness to adopt practical skills in home yard utilisation, which would later be expanded through hands-on training and practice. Therefore, Figure 1 highlights the essential role of community-based learning as a stepping stone towards sustainable household food security.

Figure 2 illustrates the practical introduction to land utilisation for homemakers, marking the transition from theoretical knowledge to hands-on activities. This stage was essential for ensuring that participants could apply the concepts discussed earlier in a real-life setting. By directly engaging with the land, the homemakers gained firsthand experience in soil preparation, which is the first step in cultivating a productive home garden. Such experiential learning methods are widely acknowledged as effective in enhancing skills and building confidence among participants. The involvement of homemakers in this activity also reflected the program's participatory approach. Instead of being passive recipients of knowledge, they became active learners who could observe, practice, and refine their techniques. Activities such as loosening the soil, creating planting rows, and assessing soil quality helped participants understand the importance of proper land preparation for successful crop growth. This approach bridged the gap between knowledge and practice, making the training more impactful. Another significant aspect highlighted in this figure is the collaborative spirit fostered among the participants. Working together in groups not only created a sense of solidarity but also encouraged peer-to-peer learning. Participants who were more experienced in gardening could share their knowledge with others, while those less familiar with farming practices could learn by observing and imitating. This kind of collaborative learning environment helps to build community resilience and ensures that knowledge is shared widely within the group. Furthermore, this stage introduced the participants to the idea that home gardens can be developed in small and manageable plots, making them highly adaptable to different household conditions. Even with limited space, families can still optimise their yards for food production. Therefore, **Figure 2** highlights how practical land preparation activities empower homemakers to transform their available land into productive spaces, contributing not only to household food security but also to the broader goal of community self-reliance.



Figure 2: Introduction to Land for Housewives

Figure 3 illustrates the stage of vegetable cultivation in home gardens, which represents the practical outcome of the training process. At this stage, the homemakers applied the knowledge and skills they had acquired during the socialisation and land preparation sessions. The cultivation of vegetables, such as mustard greens and water spinach, demonstrates the potential of home gardens to become a consistent source of nutritious food for households. This practical implementation highlights the importance of utilising available land resources effectively to contribute to food self-sufficiency. The structured planting rows shown in the figure indicate that participants were able to adopt proper agricultural techniques, including spacing and systematic layout. These practices are essential for ensuring optimal plant growth, minimising competition for nutrients, and facilitating easier maintenance. The neat arrangement also reflects the successful transfer of knowledge from facilitators to participants, emphasising that even small-scale household cultivation can benefit from the application of scientific and organised farming methods.



Figure 3: Vegetable Cultivation in Home Gardens

Another key aspect reflected in this figure is the sustainability of home gardens. By cultivating vegetables close to their homes, families can reduce dependence on external markets and gain direct access to fresh produce. This not only improves food quality and nutrition but also lowers household expenditures. In addition, the practice contributes to environmental sustainability by promoting green

spaces around the home, which can improve air quality, enhance biodiversity, and provide a more pleasant living environment. Furthermore, this stage reinforces the notion that home gardens can play a crucial role in promoting community-level food security. When multiple households practice vegetable cultivation, the cumulative effect can create a significant contribution to local food availability. It also opens opportunities for surplus produce to be sold in local markets, thereby generating additional household income. Thus, **Figure 3** highlights the long-term benefits of vegetable cultivation in home gardens, encompassing household nutrition, community resilience, and economic empowerment.



Figure 4: Mustard Greens and Water Spinach in Residents' Home Gardens

Figure 4 presents the results of mustard greens and water spinach cultivation in residents' home gardens, showcasing the successful implementation of the community service program. The image highlights how previously underutilised yard spaces were transformed into productive agricultural plots. By cultivating these vegetables, households can secure a steady supply of nutritious food, which plays an essential role in supporting family health and well-being. This stage illustrates the program's tangible outcomes and the participants' commitment to applying the knowledge gained during training. The neat arrangement of mustard greens and water spinach reflects the effective adoption of proper planting techniques. Appropriate spacing, row organisation, and land management are evident in the garden layout, which is crucial for ensuring optimal plant growth and reducing the risk of pests and diseases. This practice demonstrates that households are not only capable of utilising their yards for food production but can also adopt sustainable farming practices that increase efficiency and yield.

In addition to meeting household consumption needs, the cultivation of mustard greens and water spinach also offers economic opportunities. When households produce a surplus of vegetables, they can sell them in local markets or to neighbours, thereby generating additional income. The dual function of home gardens, improving household nutrition and contributing to household income, further strengthens their role in achieving food self-sufficiency. Such practices align with broader community empowerment strategies, where local food production reduces dependency on external markets and enhances community resilience. Furthermore, this initiative highlights the wider impact of home gardening at the community level. When many households engage in similar cultivation practices, the cumulative effect significantly contributes to local food availability, reduces vulnerability to food shortages, and fosters a culture of self-reliance. Thus, Figure 4 not only depicts a well-managed home

garden but also symbolises the success of collective efforts in building household and community-based food security through sustainable vegetable cultivation.

4. Novelty of the Research and Community Service

The novelty of this research and community service program lies in its integration of knowledge transfer, skill development, and practical implementation, empowering homemakers to utilise their home yards for food security. Unlike previous studies that often focused solely on the theoretical potential of home gardens, this program combined socialisation, hands-on training, and continuous mentoring, ensuring that participants were not only informed but also actively engaged in cultivating vegetables such as mustard greens and water spinach in their own yards. Another key contribution of this study is its community-centred approach. By targeting homemakers as the main agents of change, the program acknowledged their strategic role in household food management. This approach provided them with both technical skills and confidence to manage productive home gardens, transforming them into active contributors to household and community-level food security. The participatory and collaborative nature of the activities also fostered knowledge sharing among participants, a characteristic that is rarely emphasised in previous community service models.

In addition, the study introduced an integrated and sustainable model of home yard utilisation, where land management, crop cultivation, and the potential use of organic waste as compost were presented as interconnected activities. This model ensures not only the availability of diverse food sources but also promotes environmentally friendly practices within the household setting. Such integration makes the initiative distinct from earlier research, which often focused on single-aspect interventions such as crop planting without incorporating waste management or ecosystem sustainability. Finally, this program provides context-specific innovation by addressing the challenges of Bira Lhok Village, where awareness of the importance of home garden utilisation was previously low. Through structured socialisation and practical demonstrations, the program successfully transformed unused or underutilised yards into productive gardens. This outcome not only strengthens household-level food security but also demonstrates a scalable model that can be replicated in other rural communities in Aceh and beyond.

5. Conclusion

Based on the results of the community service program conducted with homemakers who are members of the WCG group in Bira Lhok Village, Montasik Subdistrict, Aceh Besar Regency, it can be concluded that the socialisation of home yard utilisation for food security has been successfully implemented. The program demonstrated that the introduced practices are easy to adopt, both through direct field activities and through information dissemination via social media platforms, which are widely accessed today. The participation of 30 homemakers in this program proved highly effective in supporting the socialisation process. The training materials and practical demonstrations provided during the activities enabled participants to gain a better understanding of the importance of managing home yards for food production. The program also encouraged participants to see home gardens not only as a means of fulfilling household food needs but also as a potential source of additional household income. This initiative has contributed to raising awareness and equipping homemakers with practical skills to cultivate vegetables and other productive plants, thereby enhancing household food security. Furthermore, the program strengthens the role of women in improving family welfare and aligns with broader efforts to promote sustainable community development. It is therefore expected that this community service program will be continued regularly to ensure its sustainability and to expand its benefits. With continuous implementation, the program has the potential to support other community empowerment initiatives and strengthen local food systems in rural areas such as Bira Lhok Village.

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