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Optimization of Home Yard Utilization for Strengthening Household Economy Through the Mini Garden Program in Ralleanak Utara Village, Aralle District, Mamasa Regency

Optimalisasi Pemanfaatan Lahan Pekarangan Rumah untuk Penguatan Ekonomi Keluarga melalui Program Mini Garden di Desa Ralleanak Utara, Kecamatan Aralle, Kabupaten Mamasa

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Abstract

This community service program aims to optimize the utilization of home yards to enhance food security and strengthen household economy in Ralleanak Utara Village, Aralle District, Mamasa Regency. The program was implemented through a participatory approach involving socialization, technical training, mentoring, and monitoring–evaluation. Underutilized yards were transformed into mini gardens producing vegetables and household food crops. The results indicate improved cultivation skills, increased availability of nutritious household food, and additional income from surplus sales. On average, households harvested 5–7 kg of vegetables weekly, with 40 mini gardens established during the program. Beyond economic benefits, the initiative fostered community solidarity, reduced organic waste through compost use, and created greener environments. The success of this program demonstrates that collective utilization of home yards can promote food self-sufficiency, support sustainable livelihoods, and provide a scalable model for rural development.

Keywords: community service; mini garden; home yard; food security; household economy

Abstrak

Program pengabdian kepada masyarakat ini bertujuan mengoptimalkan pemanfaatan lahan pekarangan rumah untuk meningkatkan ketahanan pangan dan memperkuat ekonomi keluarga di Desa Ralleanak Utara, Kecamatan Aralle, Kabupaten Mamasa. Kegiatan dilaksanakan dengan pendekatan partisipatif melalui sosialisasi, pelatihan teknis, pendampingan, serta monitoring dan evaluasi. Lahan pekarangan yang kurang produktif diubah menjadi mini garden yang menghasilkan sayuran dan tanaman pangan rumah tangga. Hasil kegiatan menunjukkan peningkatan keterampilan budidaya, ketersediaan pangan sehat, serta tambahan pendapatan dari penjualan surplus panen. Rata-rata setiap keluarga memanen 5–7 kg sayuran per minggu, dengan total 40 unit mini garden yang terbangun. Selain manfaat ekonomi, kegiatan ini memperkuat solidaritas sosial, menurunkan limbah organik melalui pemanfaatan kompos, dan menciptakan lingkungan lebih hijau. Keberhasilan program membuktikan bahwa pemanfaatan lahan pekarangan secara kolektif mampu mendukung kemandirian pangan, keberlanjutan ekonomi, dan dapat direplikasi di wilayah pedesaan lainnya.

Keywords: pengabdian masyarakat; mini garden; lahan pekarangan; ketahanan pangan; ekonomi keluarga.

1. Introduction

Ralleanak Utara Village in Aralle District, Mamasa Regency, has considerable potential in natural resources, yet the utilization of home yards remains suboptimal. According to the Badan Pusat Statistik Kabupaten Mamasa (2022), the

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majority of residents rely on agriculture, but household yards are often left idle and underutilized. This condition reduces opportunities for families to access fresh and nutritious food as well as to generate additional income. Globally, food security is considered a key determinant of community welfare (World Health Organization [WHO], 2021). In Indonesia, the Ministry of Agriculture has launched the Kawasan Rumah Pangan Lestari (KRPL) model, which emphasizes yard-based farming as a strategy to support food self-sufficiency and household income (Kementerian Pertanian RI, 2020). Similarly, regional initiatives such as the Pedoman Umum Kawasan Rumah Pangan Lestari developed by the West Sulawesi Provincial Agriculture Office (2021) highlight the importance of empowering households to utilize their yards productively.

Several studies reinforce the benefits of yard optimization. Handayani and Wahyuni (2019) found that household income and expenditure structures improved significantly when yards were managed for food crops. Suryani (2020) also emphasized that urban and rural households with limited land can still achieve food resilience through intensive yard-based agriculture. From a socio-cultural perspective, community empowerment grounded in local wisdom is crucial for sustaining such programs (Mustafa & Saleh, 2018). Based on this context, the mini garden program was introduced in Ralleanak Utara to transform idle home yards into productive areas for vegetables and family medicinal plants. The program is not only a response to the economic challenges of rural households but also part of the university's commitment to the Tri Dharma Perguruan Tinggi, particularly community service through knowledge transfer and skill development.

The objectives of this program are: (1) to optimize the utilization of home yards for productive activities; (2) to provide skills and knowledge in establishing and managing mini gardens; and (3) to strengthen household economy and food security through sustainable cultivation practices. The initiative is expected to foster social transformation by enhancing food self-sufficiency, community solidarity, and environmental sustainability..

2. Methods

The mini garden program was implemented in Ralleanak Utara Village, Aralle District, Mamasa Regency, over a three-month period (June–August 2025). The methodological approach adopted was participatory action involving local households as active partners in every stage of the program. This aligns with the principle that sustainable community empowerment must be grounded in local wisdom and participatory engagement (Mustafa & Saleh, 2018).

The first stage was preparation, which included initial surveys to identify potential household yards suitable for cultivation. Coordination was carried out with village authorities and community leaders to ensure alignment with local development priorities. Socio-economic data from Badan Pusat Statistik Kabupaten Mamasa (2022) was also used to profile household conditions and determine program targets.

The second stage involved socialization, where program objectives, benefits, and implementation strategies were introduced to the community. This session also highlighted national and regional initiatives on yard utilization, particularly the Kawasan Rumah Pangan Lestari (KRPL) model, which serves as a policy framework for strengthening household food security (Kementerian Pertanian RI, 2020; Dinas Pertanian Sulbar, 2021).

The third stage focused on technical training, which aimed to enhance participants' capacity to establish and manage mini gardens. Training topics included plant selection, soil preparation, bed making, composting, organic fertilizer application, and integrated pest control using natural ingredients. Emphasis was placed on simple and low-cost technologies, consistent with best practices for urban and rural farming on limited land (Suryani 2020). The training sessions applied a learning by doing method to build participants' confidence and practical skills.

The fourth stage was implementation, where households, assisted by the facilitation team, established mini gardens in their respective yards. Families were directly involved in designing, planting, and maintaining their gardens, ensuring a sense of ownership and responsibility for sustainability. This participatory approach has been shown to enhance the long-term success of household-based farming programs (Handayani & Wahyuni, 2019).

The fifth stage involved mentoring and assistance, which consisted of regular field visits by the facilitation team. These visits provided technical consultations, addressed cultivation challenges, and encouraged peer-to-peer knowledge sharing among participants. Mentoring also helped to strengthen community solidarity, as households exchanged experiences and innovations in managing their gardens.

The final stage was monitoring and evaluation, conducted to assess the program's effectiveness. Evaluation criteria included improvements in cultivation skills, the availability of nutritious food at the household level, and additional income generated from the sale of surplus harvest. Social and environmental impacts were also documented, such as increased cooperation among community members and reduced household organic waste through compost utilization. Outcomes were then contextualized within broader global perspectives on food security, which emphasize household-level interventions as a cornerstone of sustainable development (WHO, 2021).

Overall, the methodological design combined technical intervention with social empowerment, ensuring that the program was not only technically feasible but also socially acceptable and sustainable. This design allows the initiative to serve as a replicable model for other rural communities facing similar challenges in optimizing yard utilization for food security and household economy.

3. Results

The implementation of the mini garden program in Ralleanak Utara Village, Aralle District, Mamasa Regency was carried out for three months and involved 35 households as direct beneficiaries. The program followed a participatory model, where the community was not merely a recipient but an active subject of the intervention. This aligns with the view that empowerment programs must be rooted in community participation to ensure sustainability (Mustafa & Saleh, 2018).

3.1. Community Involvement and Enthusiasm

The initial stage of the program was marked by a village seminar, attended by community leaders, villagers, and student facilitators from Universitas Muhammadiyah. This seminar introduced the objectives, benefits, and technical aspects of the mini garden program. Attendance reached 92% of the invited households, reflecting strong community interest in utilizing their yards for productive purposes. Participants expressed two primary motivations: reducing household expenses for daily vegetables and ensuring the availability of healthy food for their families. Trust in the implementation team and support from local authorities also contributed to this high level of engagement.

Fig. 1. Village seminar as part of the socialization stage of the mini garden program in Ralleanak Utara.

This finding resonates with Handayani and Wahyuni (2019), who reported that socialization and effective communication are key to mobilizing rural households in yard utilization programs.

3.2. Capacity Building and Technical Training

The second phase involved technical training, which provided participants with hands-on skills in preparing planting beds, selecting seeds, applying organic fertilizers, and practicing integrated pest management. One of the innovations

introduced was the use of natural pesticides made from neem leaves (Azadirachta indica) and citronella (Cymbopogon nardus), which are affordable and environmentally friendly. Post-training evaluations revealed that 85% of participants had mastered the basic skills needed to independently manage their mini gardens. This aligns with Suryani (2020), who highlight that simple and low-cost technologies are effective in supporting household food production, especially in communities with limited access to modern agricultural inputs.

3.3. Implementation and Local Innovation

During the implementation stage, 40 mini gardens were successfully established, each with an average size of 20 m² per household. To reduce costs, households creatively repurposed waste materials such as paint buckets, rice sacks, and plastic bottles as planting containers. This form of innovation reflects the concept of low-cost urban farming strategies recommended by the Ministry of Agriculture (Kementerian Pertanian RI, 2020). The gardens produced leafy vegetables (spinach, water spinach) within 25–30 days and chili and tomatoes after 8 weeks. This relatively short production cycle en sured quick benefits for households in terms of both food supply and income generation.

3.4. Harvest Results and Economic Impact

On average, households harvested 5–7 kg of vegetables per week, with approximately 60% consumed domestically and the remainder sold in local markets. The income generated ranged between IDR 150,000–250,000 per household per month. Although the scale of income was modest, it contributed meaningfully to household economic resilience, particularly in offsetting daily food expenses. This outcome supports findings by Handayani and Wahyuni (2019) that optimizing household yards can have a direct impact on family expenditure patterns, while also aligning with global perspectives on household food security (WHO, 2021).

3.5. Social and Environmental Benefits

Beyond the economic gains, the program also produced social and environmental benefits. Routine meetings to discuss plant growth, share challenges, and exchange innovations fostered community solidarity and strengthened social networks among households. Environmentally, the use of compost derived from household organic waste reduced the volume of kitchen waste by up to 25%. As a result, household surroundings became greener, cleaner, and more aesthetically pleasing, contributing to improved microclimate conditions. These findings are consistent with the KRPL program guidelines (Dinas Pertanian Sulbar, 2021), which emphasize the dual benefits of yard utilization for food supply and environmental sustainability.

3.6. Challenges and Solutions

The program faced two significant challenges: (1) limited water supply during the dry season, and (2) pest attacks, particularly on chili plants. To address these issues, households adopted simple drip irrigation systems using recycled plastic bottles and applied natural pesticides. Ongoing mentoring ensured that families could troubleshoot problems independently, thus reinforcing program sustainability.

3.7. Implications for Sustainability

The early success of the program encouraged the village government to allocate future funding for seeds and irrigation facilities. This policy support demonstrates institutional commitment to integrating yard-based farming into local development planning. As Suryani (2020) note, institutional backing is essential for scaling up household farming programs. With active community participation and government involvement, the mini garden program has strong potential to be replicated in other villages in Aralle District.

4. Discussion

The results of the mini garden program in Ralleanak Utara Village demonstrate that optimizing household yards can provide multiple benefits: strengthening food security, generating additional household income, fostering social cohesion, and promoting environmental sustainability. These findings are consistent with previous studies that highlight

the importance of yard utilization for household welfare (Handayani & Wahyuni, 2019; Suryani, 2020). From a theoretical perspective, the program validates the principle of community empowerment through participatory action. As emphasized by Mustafa and Saleh (2018), community members must be involved not only as beneficiaries but also as active agents of change. The high participation rate (92% attendance at the seminar and 85% mastery of cultivation skills) indicates that the approach adopted was effective in mobilizing and empowering rural households. This also aligns with the global discourse on food security, where local-level participation is recognized as a critical element in achieving sustainable development goals (WHO, 2021). The innovation of using low-cost and recycled materials for mini garden construction reflects the adaptability of local communities in responding to resource constraints. Such practices are in line with the Kawasan Rumah Pangan Lestari (KRPL) model promoted by the Indonesian government (Kementerian Pertanian RI, 2020; Dinas Pertanian Sulbar, 2021). By integrating local knowledge and simple technologies, households were able to establish productive food systems at minimal cost. Economically, the program contributed to an increase in household income, even though the scale was modest. This outcome is important in the context of rural livelihoods where income diversification is a key survival strategy. Suryani (2020) emphasize that urban and peri-urban farming can play a vital role in reducing household vulnerability to food price fluctuations. The same principle applies in rural settings, as evidenced by the additional IDR 150,000–250,000 earned per month by participating households. Socially, the program strengthened community solidarity through routine meetings, collaborative work, and peer-to-peer knowledge exchange. This supports the argument by Handayani and Wahyuni (2019) that yard optimization programs not only improve economic outcomes but also create new social spaces for cooperation and knowledge sharing. Environmentally, the reduction of organic waste through composting represents an important ecological contribution, addressing both waste management and soil fertility. Challenges such as limited water supply and pest attacks underline the need for continuous innovation and technical support. The adoption of drip irrigation and natural pesticides illustrates the community's capacity to develop context-specific solutions. These strategies resonate with the broader concept of sustainable agriculture, which emphasizes resilience and ecological balance (Suryani, 2020). Overall, the mini garden program can be regarded as a replicable model for rural community development. Its success was shaped by three key factors: (1) strong community participation, (2) institutional support from village authorities, and (3) the integration of local knowledge with simple, low-cost technologies. Future scaling of this model will require continued collaboration between universities, local governments, and community organizations to ensure sustainability and broader impact.

5. Conclussion

Refer In conclusion, the results of the mini garden program in Ralleanak Utara Village demonstrate that optimizing household yards is a highly effective and multi-dimensional strategy for rural community development. The program successfully delivered significant positive impacts, not only in strengthening household food security and the local economy through reduced expenses and additional income but also in fostering social cohesion and promoting environmental sustainability via organic farming practices. The program's success was underpinned by several key factors: (1) high community participation, which positioned members as active agents of change; (2) a resource-efficient approach utilizing low-cost and local materials; and (3) the effective integration of local knowledge with institutional support. These findings strongly align with previous studies on community empowerment and sustainable agriculture. Overall, the mini garden program in Ralleanak Utara serves as a replicable model for similar rural contexts. To ensure its long-term sustainability and broader impact, continued collaboration between the community, local government, and supporting organizations is essential, particularly to address ongoing challenges such as water limitations and pest management.

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