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COMMUNITY-BASED DEVELOPMENT OF A FAMILY MEDICINAL PLANT GARDEN IN ARONGAN VILLAGE, WEST ACEH REGENCY

PEMBERDAYAAN MASYARAKAT MELALUI PEMBUATAN TAMAN TANAMAN OBAT KELUARGA (TOGA) DI GAMPONG ARONGAN, KECAMATAN ARONGAN LAMBALEK, KABUPATEN ACEH BARAT

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ABSTRACT

This community service program aimed to transform an unused plot in the yard of the Arongan Village Head's Office into a Family Medicinal Plant (TOGA) garden, while providing a shared space for greening and basic learning about medicinal plants. The activity was conducted on 16–23 August 2026 using a participatory approach comprising site observation, land clearing and preparation, seedling procurement, planting, plant labeling, and the preparation of a maintenance plan. The target groups were village officials, members of the Family Welfare Empowerment (PKK) group, and nearby residents; the available activity records do not provide a disaggregated participant count. Data were drawn from field observations, participation forms, daily activity schedules, and photographs, and were analyzed descriptively. The activity established one 3 × 1 m (3 m²) garden containing 16 plant species and simple information labels. Residents contributed seedlings from their home gardens, participated in collective work, and helped prepare a watering roster. The program provided an initial facility for environmental greening and introducing medicinal plants; however, changes in knowledge, plant utilization, and health outcomes were not quantitatively assessed. Sustaining the garden will require regular maintenance, clear task allocation, and continued support from the village government and local health cadres.

Keywords: Community Empowerment, Family Medicinal Plants, Participatory Approach, TOGA Garden, West Aceh

ABSTRAK

Program pengabdian ini bertujuan memanfaatkan lahan kosong di halaman Kantor Keuchik Gampong Arongan sebagai taman Tanaman Obat Keluarga (TOGA), sekaligus menyediakan ruang penghijauan dan pengenalan tanaman obat berbasis partisipasi masyarakat. Kegiatan dilaksanakan pada 16–23 Agustus 2026 dengan pendekatan partisipatif melalui tahapan observasi lokasi, pembersihan dan pengolahan lahan, penyediaan bibit, penanaman, pemasangan label, serta penyusunan rencana pemeliharaan. Sasaran kegiatan meliputi aparatur gampong, ibu-ibu PKK, dan warga sekitar; jumlah partisipan tidak tercatat secara terpilah dalam dokumen kegiatan. Data diperoleh dari observasi lapangan, formulir partisipasi, jadwal harian, dan dokumentasi foto, kemudian dianalisis secara deskriptif. Hasil kegiatan berupa satu taman TOGA berukuran 3 × 1 m (3 m²) yang ditanami 16 jenis tanaman dan dilengkapi label informasi sederhana. Partisipasi warga tampak melalui sumbangan bibit dari pekarangan, gotong royong, dan penyusunan jadwal piket penyiraman. Kegiatan ini menghasilkan sarana awal penghijauan dan edukasi pengenalan tanaman obat, tetapi belum

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mengukur perubahan pengetahuan, pemanfaatan tanaman, maupun dampak kesehatan secara kuantitatif. Keberlanjutan taman memerlukan pemeliharaan rutin, pembagian tanggung jawab yang jelas, serta pendampingan pemerintah gampong dan kader kesehatan.

Kata kunci: Gampong Arongan, Partisipasi, Pemberdayaan Masyarakat, Taman TOGA, Tanaman Obat Keluarga.

INTRODUCTION

Community service through the university's Community Service Program (Kuliah Kerja Nyata/KKN) connects academic resources with locally identified needs. In this context, a Family Medicinal Plant (Tanaman Obat Keluarga/TOGA) garden can serve several practical purposes: making use of available yard space, supporting environmental greening, conserving locally familiar plants, and providing a visible learning resource. These functions are consistent with the Ministry of Health's guidance on independent traditional-health care, which identifies TOGA gardens as spaces for greening, education, and the development of household initiatives (Ministry of Health of the Republic of Indonesia, 2016). The current national health framework is also set out in Government Regulation No. 28 of 2024, which implements Law No. 17 of 2023 on Health (Republic of Indonesia, 2024). At the global level, the World Health Organization's Global Traditional Medicine Strategy 2025–2034 emphasizes strengthening the evidence base and supporting safe, effective, and culturally respectful traditional medicine (World Health Organization, 2025).

Previous community-service studies demonstrate different ways of developing TOGA initiatives. Karamina et al. (2020) involved PKK members in planting and utilizing family medicinal plants, while Maulana et al. (2020) demonstrated the use of vacant land for TOGA cultivation as part of village development. More recent programs have combined observation, counseling, practical training, and cultivation. Doniarsah et al. (2023), for example, focused on increasing the productivity of small plots through TOGA cultivation, whereas Hidayati et al. (2023) combined community education with practical processing of medicinal plants. Anggraini et al. (2025) further illustrate how cultivation and product innovation can be integrated into community empowerment. These studies indicate that TOGA programs may extend beyond planting to include education, cultivation skills, and product development; however, the design and scope of each program need to reflect the available land, community resources, and implementation capacity.

Research on medicinal plants in Aceh has also documented local knowledge and plant diversity, including Viena et al.'s (2018) study in Pidie. In addition, community-based TOGA development has emphasized the importance of involving residents and local institutions in cultivation and maintenance (Muttaqin et al., 2018). Nevertheless, the presence of a communal garden, the availability of seedlings, and the participation of residents do not automatically demonstrate increased knowledge or improved health outcomes. Such changes require specific evaluation instruments and follow-up measurements. This distinction is important when reporting the results of a short-term KKN activity.

Initial observation and informal conversations with residents in Gampong Arongan, Arongan Lambalek District, West Aceh Regency, identified an unused, weed-covered plot in the yard of the Village Head's Office. Some residents continued to use herbal plants for household purposes, but the available communal space had not been organized as a learning or cultivation area. The site was visible and accessible to residents, making it a feasible location for a small demonstration garden. The local issue was therefore not the absence of all medicinal-plant knowledge, but the lack of an organized shared space that could demonstrate how a limited plot could be used and maintained collectively.

Based on this situation, the KKN Group 54 team and the community implemented a TOGA garden initiative on 16–23 August 2026. The program had three operational objectives:

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(1) convert the unused plot at the Village Head's Office into a small TOGA garden; (2) involve village officials, PKK members, and nearby residents in seedling provision, planting, and the preparation of a maintenance arrangement; and (3) establish a visible demonstration space for introducing medicinal plant species and encouraging the consideration of similar planting in household yards. Accordingly, this article describes the implementation process, physical outputs, forms of community participation, and conditions that may affect the garden's continuity. It does not claim measurable changes in health or knowledge because these outcomes were not assessed.

METHODS

The community service activity took place in the yard of the Village Head's Office (Kantor Keuchik), Gampong Arongan, Arongan Lambalek District, West Aceh Regency, Aceh Province, Indonesia, from 16 to 23 August 2026 (eight calendar days). The scheduled activity period was 15.00–17.30 Western Indonesia Time (WIB). The target participants were village officials, members of the Family Welfare Empowerment (PKK) group, and residents living near the activity site, working together with students from KKN Group 54 of Teuku Umar University. Muliya Fikri and Ulfia Maulida were the activity coordinators. The available records identify the participant groups but do not state a complete participant count; therefore, this article does not estimate or infer the number of residents involved.

The activity used a participatory implementation approach. Students and residents worked together through collective work (gotong royong), with community contributions recorded through participation forms and field documentation. Implementation comprised six connected stages: (1) site observation and selection; (2) clearing weeds and preparing the plot; (3) preparing the soil and planting media; (4) collecting and sorting seedlings supplied by students and residents; (5) planting and installing plant labels; and (6) preparing a watering and maintenance roster. The sequence is summarized in Figure 1. The tools and materials recorded in the activity report included seedlings, soil, fertilizer, polybags where needed, hoes, shovels, machetes, a hose or watering equipment, plant-label boards, paint, and wood or bamboo for the garden boundary.

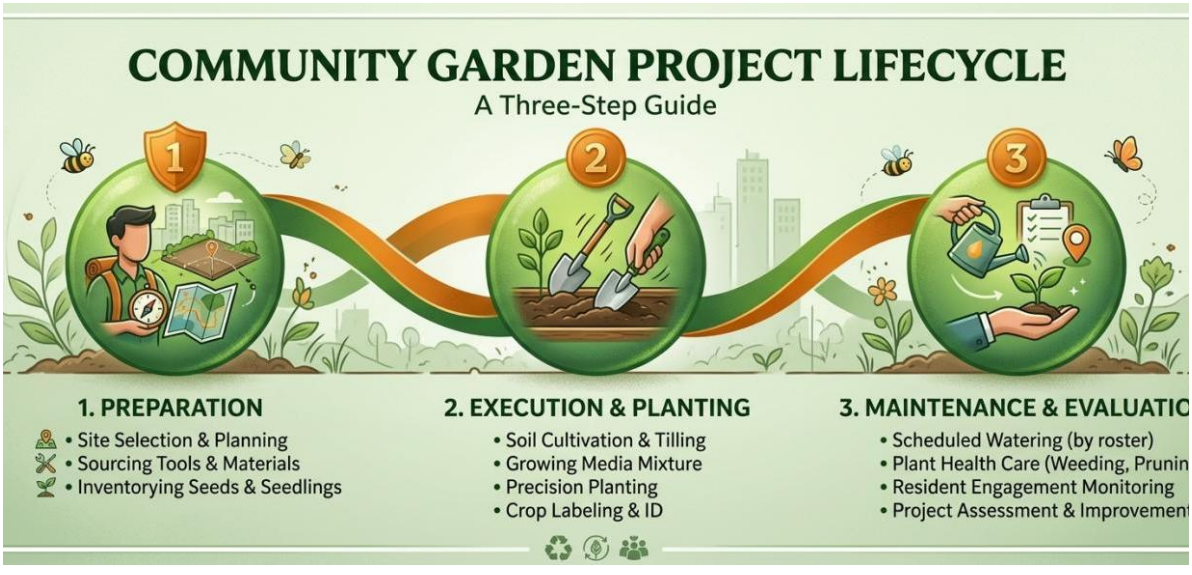

Figure 1. Stages in the implementation of the medicinal plant garden (TOGA) creation program in Gampong Arongan.

The tools and materials used include medicinal plant seedlings, soil, fertilizer, polybags (if needed), a hoe, a shovel, a machete, a hose or watering equipment, plant labels, paint, and

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wood or bamboo for garden borders. Documentation of the various stages of the activity is presented in Figures 2–5.

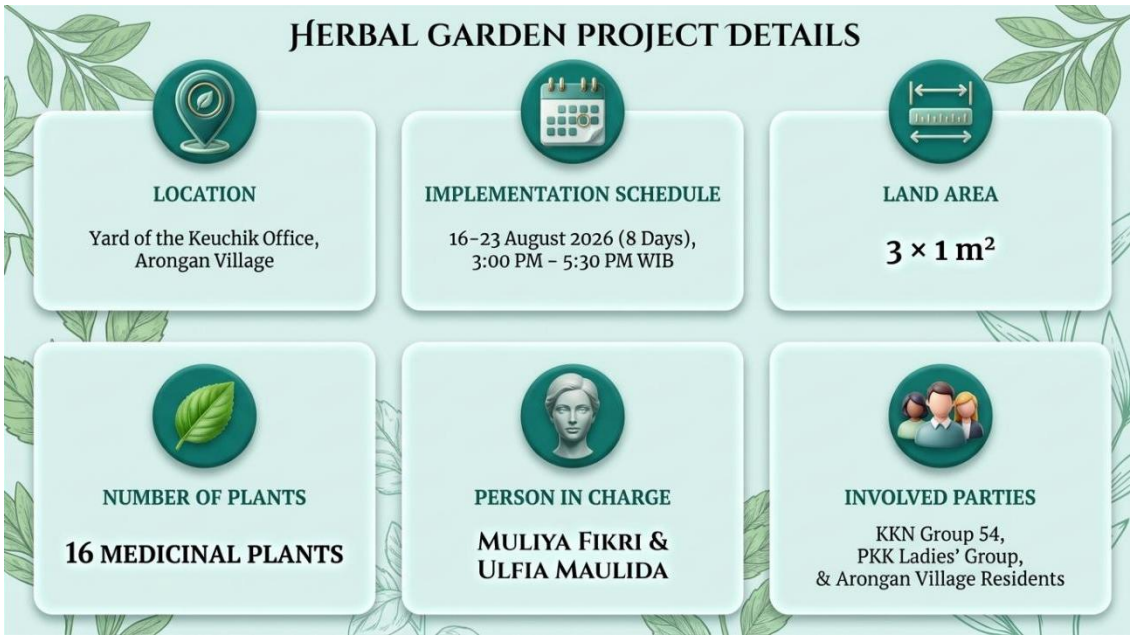

Figure 2. Profile of the TOGA (family medicinal garden) program implementation: location, timing, land area, number of plants, person in charge, and groups involved.

The descriptive analysis was organized around the program's three objectives: land conversion into a TOGA garden, community involvement in its establishment and maintenance planning, and the creation of a demonstration space for introducing medicinal plants. Photographs were used as visual documentation of the stages and physical outputs, while the participation forms and activity schedule were used to describe the roles and timing recorded by the KKN team.

RESULTS AND DISCUSSION

3.1 Implementation of TOGA Park Creation

The first objective was to convert an unused plot into a communal TOGA garden. The selected site was the yard of the Gampong Arongan Village Head's Office, where the plot had previously been covered by weeds and was not being used as a designated planting area. Its position near the village office made it visible and accessible to residents. The activity therefore focused on creating a modest demonstration site rather than developing a large-scale medicinal-plant cultivation area.

The work was conducted from 16 to 23 August 2026 by KKN Group 54 students in collaboration with village officials, PKK members, and nearby residents. Muliya Fikri and Ulfia Maulida coordinated the activity. The documented sequence included site preparation, clearing and soil preparation, seedling collection, planting, labeling, and preparation of a watering roster. Collective work enabled residents to contribute to the establishment of the garden rather than participate only as intended beneficiaries.

This approach is consistent with earlier community-service experiences that used underutilized land for TOGA cultivation. Maulana et al. (2020) described the use of vacant land for planting family medicinal plants as part of village development. The Arongan activity applies a similar principle on a smaller plot, with the scale determined by the land available at the village office and the short KKN implementation period.

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Figure 3. Preparation of planting media for the construction of a TOGA garden in the yard of the Gampong Arongan Keuchik Office.

The soil and planting area were organized to make plant placement more orderly. This preparation was necessary because the site had previously been covered by weeds. The photograph provides evidence of the work process; it is not, by itself, a measure of plant growth or the quality of the soil.



Figure 4. The garden area was then bordered with bamboo to make the planting boundary visible and keep the small plot organized. Using locally available materials made it possible to establish a simple boundary without requiring specialized infrastructure.

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3.2 Types of Plants and Achievements of the TOGA (Family Medicinal Garden)

The physical output of the activity was one TOGA garden measuring 3 × 1 m, equivalent to 3 m². The garden contained 16 plant types and was equipped with simple information labels. The labels were intended to help visitors identify the plants and support the garden's role as a basic learning resource. These are directly observable outputs aligned with the first and third program objectives.

The 16 plant types recorded in the activity report were red ginger, turmeric, lemongrass, aloe vera, snake plant, Java turmeric, aromatic ginger, galangal, betel leaf, sambiloto, cat's whiskers, Indonesian bay leaf, pandan, celery, basil, and lime. Seedlings came from both students and residents: some were supplied from residents' home gardens, while others were provided by students. Table 1 lists the recorded plant names, scientific names, and seedling sources.

Table 1. Types of plants, scientific names, and sources of seeds in the Gampong Arongan TOGA park.

No.	Plant name	Scientific name	Source of seedlings
1	Red ginger	Zingiber officinale var. rubrum	Student
2	Turmeric	Curcuma longa L.	Student
3	Lemongrass	Cymbopogon citratus	Student
4	Aloe vera	Aloe vera	Villagers
5	Mother-in-law's tongue	Dracaena trifasciata	Villagers
6	Temulawak	Curcuma xanthorrhiza	Student
7	Kencur	Kaempferia galanga	Villagers
8	Galangal	Alpinia galanga	Student
9	Betel leaf	Piper betle	Villagers
10	Sambiloto	Andrographis paniculata	Villagers
11	Cat's whiskers	Orthosiphon aristatus	Villagers
12	Bay leaf	Syzygium polyanthum	Villagers
13	Pandan leaves	Pandanus amaryllifolius	Villagers
14	Celery	Apium graveolens	Student
15	Basil	Ocimum basilicum	Villagers
16	Lime	Citrus aurantiifolia	Student

Table 1 shows that seedling procurement was not solely the responsibility of the student team. Residents contributed several plants from their own yards, demonstrating the use of locally available resources in the garden's establishment. This contribution is relevant to the program's participatory objective because it connects the communal garden with household planting resources. The table records the species and seedling sources; it does not establish the medicinal efficacy, safety, or recommended dosage of each plant.

The garden's limited area required the number and arrangement of plants to be adapted to the available space. Despite this constraint, the plot provides a small-scale example of how unused communal land can be organized for TOGA cultivation. Its value at this stage lies in the existence of the demonstration space and the range of plants introduced, not in evidence of increased household cultivation or health benefits, neither of which was measured during the activity.

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Figure 5 documents the garden after the plants had been arranged and labels installed.

Compared with the initial condition described in the site observation, the plot had been converted into a defined planting area. The recorded outputs were one 3 m² garden, 16 plant types, simple labels, and a proposed maintenance arrangement. These outputs correspond to the program objectives; the available photographs do not provide evidence of longer-term plant survival.

3.3 Community Participation in the Implementation of Activities

Community participation was recorded through the involvement of PKK members and nearby residents in seedling provision, clearing the plot, preparing the soil, making planting beds, planting, and watering. These activities were carried out together with KKN students through gotong royong. The participation forms and photographs support the description of these forms of involvement, although the available records do not provide a complete attendance count or quantify the contribution of each participant group.

Residents' seedling contributions made use of plants already available in household yards and reduced the need for the student team to supply every plant. More importantly, the contribution connected household resources with the communal garden. Involving residents in both establishment and maintenance planning may create a basis for shared responsibility, although actual continuity after the KKN period would need to be checked through follow-up observation.

The involvement of PKK members is comparable to the community partnership approach described by Karamina et al. (2020), while Muttaqin et al. (2018) also discuss community involvement in developing TOGA cultivation in a partner village. More recent programs have expanded this approach through education and practical training (Doniarsah et al., 2023; Hidayati et al., 2023). In Arongan, however, the documented activity centered on establishing the garden and organizing participation; it did not include a structured training module or a measured assessment of learning.

Residents and the KKN team prepared a watering roster as an initial arrangement for distributing maintenance responsibilities. This indicates that maintenance was considered during implementation. However, the available documentation does not verify whether the roster was followed consistently after the students completed their placement. The roster

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should therefore be interpreted as a proposed continuity mechanism, not as evidence that long-term maintenance has already been achieved.

3.4 Utilization of the Medicinal Plant Garden (TOGA) and Its Sustainability

The garden has the potential to function as a visible communal space for greening and introducing medicinal plant species. Its location at the village office allows residents to observe the plants, while the labels provide basic identification information. These functions correspond to the educational and environmental roles of TOGA gardens described in the Ministry of Health's guidance (Ministry of Health of the Republic of Indonesia, 2016). At the same time, the garden's present function should be understood as introductory: the activity did not include formal health education, plant-use demonstrations, or assessment of visitors' knowledge.

The regulatory context should be cited accurately and kept current. The Ministry of Health's Regulation No. 9 of 2016 specifically addresses the development of traditional health through independent care using TOGA gardens and skills; the regulation describes functions including greening and education. The broader health framework is now governed by Law No. 17 of 2023 and its implementing Government Regulation No. 28 of 2024 (Republic of Indonesia, 2024). The earlier Government Regulation No. 103 of 2014, cited in the original manuscript, has been revoked by Government Regulation No. 28 of 2024 and is therefore not used here as the current legal basis.

Medicinal plants should be introduced responsibly. A communal TOGA garden can support the recognition and cultivation of plants traditionally used by households, but it does not replace diagnosis, clinical assessment, or treatment at health facilities. Any further education on preparation and use should be provided with support from qualified health personnel and should address identification, hygiene, safety, possible adverse effects, and appropriate referral to health services. This cautious framing is consistent with the World Health Organization's 2025–2034 strategy, which emphasizes evidence, safety, and culturally respectful practice in traditional medicine (World Health Organization, 2025).

Previous programs show that TOGA activities can include knowledge assessment and practical skills development. Sari (2019), for example, reported an increase in participants' mean knowledge score from 71.56 before the intervention to 84.69 afterward. Hidayati et al. (2023) also combined education with practical processing, while Anggraini et al. (2025) integrated cultivation with product innovation. These outcomes cannot be transferred to the Arongan program because it did not administer a pre-test or post-test, conduct structured training, or assess processing skills. Accordingly, the present results are limited to the garden's establishment, the 16 recorded plant types, the labels, and documented community contributions.

The activity has a limited, practice-level relationship with the Sustainable Development Goals, particularly SDG 3 (Good Health and Well-being) through the provision of an introductory resource on medicinal plants, and SDG 15 (Life on Land) through the greening and productive use of a small plot. These links describe the program's intended contribution; they should not be interpreted as measured progress toward SDG indicators because no relevant outcome indicators were collected.

A possible next stage is to extend the garden into structured education on cultivation and safe plant utilization, or to explore value-added products under appropriate technical supervision. Sepriani et al. (2020) describe a community-service activity involving PKK members in the production of instant herbal powder from TOGA plants, while Hidayati et al. (2023) report practical training in infused water and instant ginger granules. Such activities were not part of the Arongan program and should be treated as recommendations for a separate follow-up activity, with attention to hygiene, product safety, and relevant regulatory requirements.

3.5 Constraints and Limitations of Activities

The first limitation concerns the short implementation period. The eight-day activity enabled the team to establish the garden and prepare a watering roster, but the students could

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not directly maintain the site after their KKN placement ended. The continuity of the garden therefore depends on the implementation of the roster and support from the village government and residents.

The second limitation is the small plot size of 3 m², which restricts the number of plants and the scope for expanding the garden at the same location. Future development should consider plant spacing, sunlight, water access, and the capacity of residents to maintain the site.

The third limitation is the absence of a structured outcome evaluation. No pre-test/post-test, knowledge questionnaire, skills assessment, or measurement of health outcomes was documented. It is therefore not possible to conclude that the activity increased community knowledge, changed health behavior, or improved health status. The reported findings should be read as implementation and output achievements.

The fourth limitation concerns follow-up. Although a watering roster was prepared, the available records do not establish whether it was implemented consistently or whether all 16 plant types survived over time. A follow-up visit, a simple plant-survival checklist, a maintenance log, and brief interviews with the responsible residents would provide more reliable evidence of sustainability.

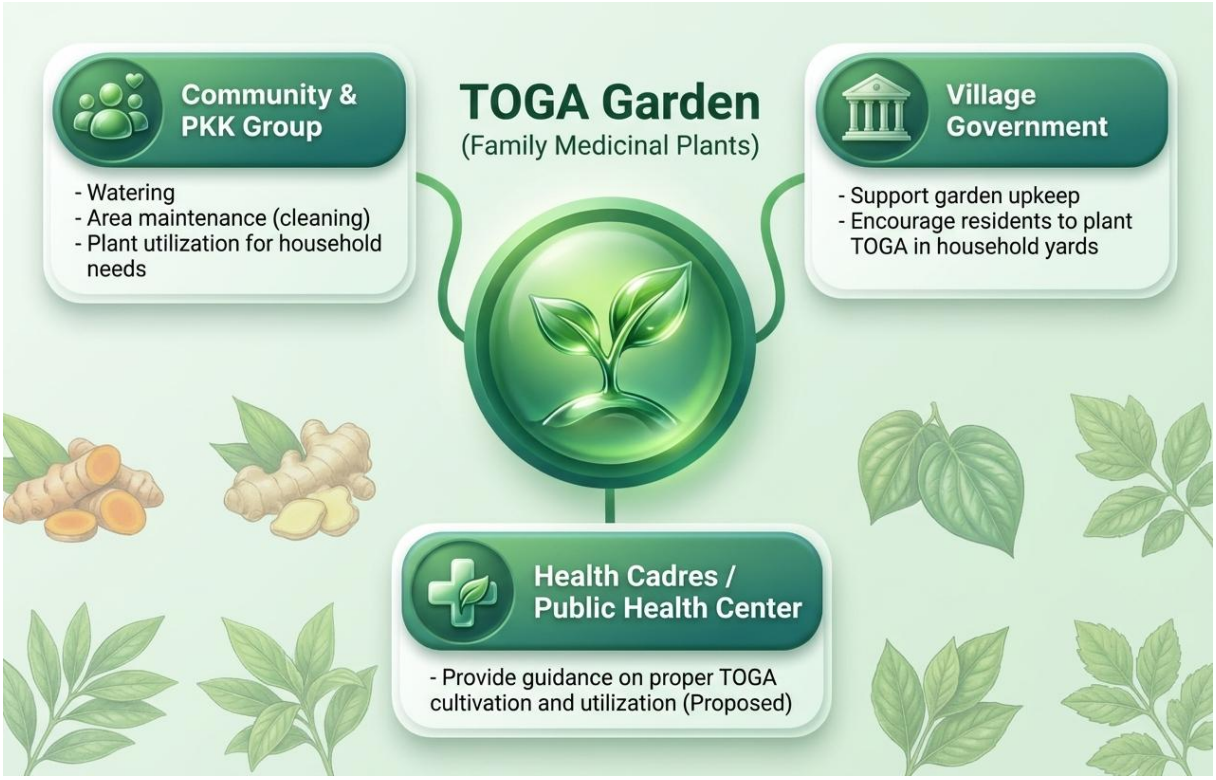

Figure 6. Recommendations for the distribution of roles to support the maintenance and sustainability of the TOGA park in Gampong Arongan.

Figure 6 presents a proposed division of roles for maintaining the garden: residents and PKK members can undertake routine watering and basic care; the village government can support coordination, tools, and maintenance arrangements; and local health cadres or the community health center (Puskesmas) can provide appropriate education on safe and responsible plant use. These roles are recommendations for continuity and should not be interpreted as evidence that all parties have formally committed to or implemented these responsibilities.

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CONCLUSIONS

The community service activity in Gampong Arongan converted an unused plot in the yard of the Village Head's Office into one 3 × 1 m (3 m²) TOGA garden containing 16 plant types and simple information labels. Implemented on 16–23 August 2026, the activity involved KKN students, village officials, PKK members, and nearby residents through seedling contributions, collective work, planting, and the preparation of a watering roster. These outputs address the program objectives of utilizing available land, involving community members, and establishing a visible introductory space for medicinal plants. The main practical implication is that a small communal plot can be organized as a shared greening and learning resource when local seedlings and community labor are mobilized. However, the activity did not measure changes in knowledge, plant-use behavior, health outcomes, or long-term plant survival; such impacts cannot therefore be claimed. The village government and residents are recommended to assign a named garden coordinator, maintain a simple watering and plant-survival log, and conduct periodic checks. A follow-up program with PKK members and local health cadres or Puskesmas staff is also recommended to provide evidence-informed education on plant identification, cultivation, and safe use. Future evaluations should record participant numbers and use pre-test/post-test or other suitable instruments if changes in knowledge or skills are intended outcomes.

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