

Atsiri Duskar Wangi: A Local Potential-Based Community Empowerment Model for Essential Oil Distiller Groups in Wayame Village, Ambon, Maluku

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Abstract. Essential oil distillation is one of the local economic activities developed by the Bunga Tani Group in Wayame Village, Ambon City, Maluku. However, the group still faces challenges in optimizing local resources, developing value-added products, utilizing distillation by-products, strengthening institutional capacity, and expanding market access. This study aims to analyze the local potential-based community empowerment model implemented through the *Atsiri Duskar Wangi* Program, a Corporate Social Responsibility (CSR) initiative of Pertamina Patra Niaga Integrated Terminal (IT) Wayame. This research employed a descriptive qualitative method, with data collected through in-depth interviews, field observations, Focus Group Discussions (FGD), and document review. The results indicate that the empowerment process strengthened the group's existing assets and capacities through capacity development, product diversification, supporting production facilities, by-product utilization, institutional strengthening, market access development, and monitoring and evaluation. The intervention increased production capacity from 200 kg to 515 kg per production cycle and increased group income from approximately IDR 24,000,000 to IDR 55,000,000 per production cycle. The program also supported the development of derivative products and the conversion of distillation by-products into compost fertilizer. These findings demonstrate that an integrated, asset-based empowerment approach implemented through a corporate CSR program can enhance the economic value of local resources while strengthening community self-reliance and sustainable livelihoods.

Keywords: *Community Empowerment, Essential Oils, Corporate Social Responsibility.*

A. INTRODUCTION

Community empowerment is an important approach to sustainable development that positions communities as key actors in the process of social and economic change. Empowerment is not merely intended to address community needs through external assistance, but also to enhance communities' capacity to identify, manage, and develop the resources at their disposal. From the perspective of the Asset-Based Community Development (ABCD) approach, Kretzmann & McKnight (1993) emphasize that community development should begin by identifying and mobilizing the capacities and assets already available within the community. This asset-based approach views individual skills, community organizations, social relationships, local institutions, and available resources as essential forms of capital for fostering community self-reliance and sustainable development.

A local potential-based approach has become increasingly relevant to community economic development, particularly in communities whose livelihoods depend on natural resources. Local potential encompasses not only natural resources but also knowledge, skills, experience, social relationships, local institutions, and economic activities that have already developed within the community. Thus, the success of community empowerment is determined not merely by the extent of external assistance provided, but also by the capacity to connect and develop these diverse assets into productive activities that generate added value for the

community. This perspective also helps shift the development process away from a *deficit-based approach* and reduces dependence on external resources.

In the context of local resource-based economic development, essential oils represent a promising commodity that can be further developed through a community empowerment approach. Indonesia is recognized for its rich diversity of essential oil-producing plants, which are distributed across various regions, including Maluku, also known in English as Moluccas. Maluku Province is endowed with rich biodiversity and a variety of aromatic plants that have considerable potential to be utilized as raw materials for essential oil production, including cloves, nutmeg, cajuput, and other locally available plant species. However, the development of the essential oil industry in Indonesia continues to face challenges related to value addition. Research on the competitiveness of Indonesian essential oils indicates that technological limitations and low levels of processing remain among the key challenges in enhancing the economic value of these commodities. This condition demonstrates that the development of the essential oil sector should not be focused solely on production, but should also encompass technological advancement, processing, product diversification, and value creation.

Wayame Village, located in Ambon City, Maluku Province, is one of the areas within the Ring 1 operational area of Pertamina Patra Niaga Integrated Terminal (IT) Wayame. Geographically, the area is characterized by a combination of hilly and coastal landscapes. These geographical conditions shape the socio-economic characteristics of the community and influence patterns of local resource utilization. Despite the geographical challenges, the community of Wayame Village possesses a range of local assets that can be developed as a foundation for community empowerment, including natural resources, local knowledge, skills, social networks, and existing economic activities.

One of the local potentials that has developed in Wayame Village is the community-based essential oil distillation activity. This activity demonstrates the community's existing knowledge and skills in processing plant-based resources into essential oils. From an asset-based community empowerment perspective, the presence of distillers, their experience in the distillation process, the availability of raw materials, and the social relationships within the groups constitute community assets that can serve as a starting point for local economic development. Therefore, essential oil distiller groups in Wayame Village should not be viewed merely as communities in need of assistance, but rather as communities that already possess foundational capital that can be further strengthened and developed.

However, the existence of these local potentials has not yet been fully reflected in the economic value generated by the community. Essential oil distillation activities continue to face challenges related to the optimization of production processes, quality improvement, product diversification, business development, and broader market access. Challenges also remain in the utilization of distillation by-products. The distillation process generates residual materials that have the potential to be reused through a circular economy approach or transformed into derivative products. When these by-products are not managed optimally, a portion of the economic and environmental potential generated from the production process may be lost.

Studies on the development of essential oil-based products in Indonesia indicate that product diversification can serve as a strategy to increase market value and strengthen community economic self-reliance. Gondokesumo et al. (2025), through a community development program in Jatijejer Village, Mojokerto, demonstrated that essential oils can be further processed into value-added derivative products, such as *inhalers* and *diffusers*. In addition, solid waste generated from the distillation process was utilized as organic fertilizer. This approach not only enhanced the economic value of essential oil commodities but also

supported waste management and the long-term sustainability of the community development program.

In addition to issues related to production and the utilization of distillation by-products, the capacity of the groups to manage their businesses also represents an important challenge. Essential oil distiller groups require not only technical skills in the distillation process but also competencies in business management, packaging, branding, marketing, financial record-keeping, and the development of business networks. Previous research on the empowerment of community groups based on essential oil-producing plants has also demonstrated that limited technical knowledge of distillation processes and product formulation can hinder the optimization of the commodity's economic value. Setiana et al. (2025) demonstrated that participatory training integrating extraction techniques, purification, formulation, and product stability was able to enhance the technical capacity of community groups while supporting downstream product development and business diversification based on essential oils. This approach demonstrates that community capacity building is required not only at the raw material production stage but also in developing the ability to process essential oils into value-added derivative products with broader market opportunities.

The next issue concerns the strengthening of group institutions. The knowledge and distillation skills possessed by individuals need to be developed into collective capacities to ensure that the continuity of these activities does not depend on particular individuals or external support. This is consistent with the asset-based development approach, which recognizes community organizations and social relationships as assets that can be mobilized to foster local economic development. Kretzmann & McKnight (1993) specifically identify individual capacities, local associations, institutions, and relationships among community actors as important components of asset-based community development.

Therefore, the challenges faced by essential oil distiller groups in Wayame Village are not limited to production constraints, but rather stem from the lack of integration among local potential, community capacity, product innovation, by-product utilization, institutional strengthening, and market access within a comprehensive empowerment ecosystem. Increasing production capacity without corresponding market development may not result in a significant increase in community income. Conversely, product development without strengthening institutional capacity and group capabilities may be difficult to sustain in the long term. Therefore, an empowerment model is needed to systematically integrate and connect these aspects into a coherent and sustainable framework.

This context provides the foundation for the development of Atsiri Duskar Wangi, a local potential-based community empowerment model initiated through the CSR program of Pertamina Patra Niaga IT Wayame and focused on essential oil distiller groups in Wayame Village. The model builds upon assets already possessed by the community and encompasses a systematic process of capacity building, product innovation, value creation, by-product utilization, institutional strengthening, as well as market and partnership development. This approach positions distiller groups not as passive beneficiaries, but as key actors who possess knowledge, skills, and resources that can be further strengthened and developed.

The development of this model is further supported by previous research findings indicating that essential oil product diversification and digital marketing can enhance opportunities for community economic self-reliance. A study conducted in Jatijejer Village demonstrated that the development of essential oil-derived products and the strengthening of marketing strategies can serve as approaches to increase product value and strengthen community economic self-reliance. These findings highlight the importance of shifting the orientation of essential oil development from merely producing primary commodities toward developing a value chain that generates broader economic benefits for the community.

Nevertheless, previous studies on community-based essential oil development have largely focused on improving production skills, product diversification, or the adoption of technology. There remains a research gap in developing an integrated approach that combines local asset-based community empowerment with capacity building, value addition, by-product utilization, institutional strengthening, and the economic sustainability of distiller groups within a single empowerment model. Addressing this gap constitutes the primary contribution of the present study.

Based on these conditions, this study aims to analyze a local potential-based community empowerment model for essential oil distiller groups through the CSR program of Pertamina Patra Niaga IT Wayame, namely Atsiri Duskar Wangi, in Wayame Village, Ambon City, Maluku. Specifically, this study examines: (1) the local potentials and assets possessed by the distiller groups; (2) the challenges and gaps in the development of distillation activities; (3) the empowerment process in enhancing community capacity and value addition; and (4) an empowerment model that can support the economic self-reliance and long-term sustainability of essential oil distiller groups.

This study is expected to make a theoretical contribution to the development of scholarship on local asset-based community empowerment, particularly in the context of communities whose livelihoods and economic activities are based on natural resources. From a practical perspective, the empowerment model implemented through the Atsiri Duskar Wangi Program is expected to serve as a reference for governments, corporations, higher education institutions, and other stakeholders in designing community empowerment interventions that extend beyond increasing production capacity. Rather, the model seeks to facilitate the transformation of local potential into added value, economic self-reliance, institutional strengthening, and long-term community sustainability.

B. LITERATUR REVIEW

1. Community Empowerment

Community empowerment is a process aimed at enhancing the ability of individuals and groups to access resources, make decisions, develop their capacities, and exercise greater control over various aspects that affect their lives. According to Perkins and Zimmerman (1995), empowerment is a process through which individuals, organizations, and communities gain the capacity to increase control over their lives and participate in decision-making processes that affect them. At the group level, empowerment involves the ability of members to build collective capacity, manage resources, and achieve shared goals.

In the context of community development, empowerment is also closely associated with participation. Zimmerman (2000) explains that empowerment is a multidimensional construct encompassing psychological, interactional, and behavioral dimensions. This means that communities need not only to possess a sense of competence, but also the capacity to understand their environment, access resources, participate in decision-making processes, and engage in collective action. Accordingly, community empowerment in this study is conceptualized as a process of enhancing the capacity and self-reliance of essential oil distiller groups through the utilization of local assets, the strengthening of individual and collective capacities, the development of innovation, and the reinforcement of institutional capacity and economic access

2. Local Potential - Based Development

Local potential-based development is an approach to development that places the resources and capacities already available within a community as the starting point for the empowerment process. Through the Asset-Based Community Development (ABCD) approach,

Kretzmann and McKnight (1993) emphasize that community development should begin with the identification and mobilization of assets already possessed by the community, rather than focusing solely on the problems or deficiencies present within the community. These assets may include individual capacities, community groups, local organizations, institutions, natural resources, and social relationships that can be developed into sources of community strength. In this study, local potential-based development is analyzed through five types of assets: natural assets, human assets, social assets, physical assets, and economic assets.

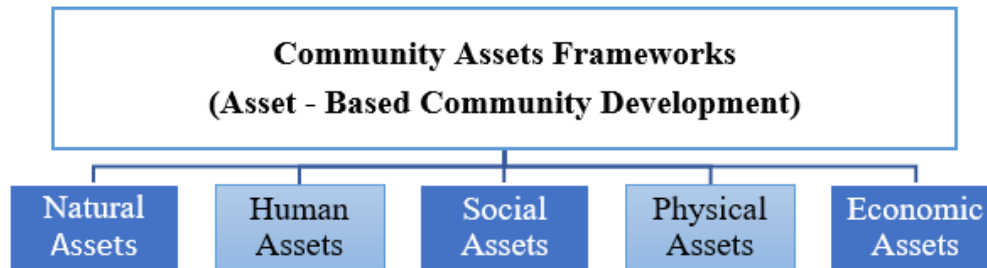


Figure 1. Five Types of Assets

Source: Kretzmann and McKnight (1993)

- a. **Natural Assets**
 Natural assets, or natural resources, refer to the environmental resources available within a community that can be utilized to support livelihoods and economic activities. These assets include land, water, plants, forest resources, biodiversity, and other natural resources. The management of natural assets needs to be carried out sustainably to ensure that economic development does not lead to excessive resource exploitation.
- b. **Human Assets**
 Human assets refer to the assets embodied in individuals, encompassing knowledge, skills, experience, health, creativity, and capabilities that can be utilized to support community livelihoods.
- c. **Social Assets**
 Social assets refer to relationships, networks, trust, norms, and the capacity of community members to work together toward shared goals. Putnam (2000) explains that social capital is associated with networks, norms, and trust that enable individuals within a community to coordinate and cooperate for mutual benefit. Strengthening social assets is essential because community-based enterprise development requires collective action. Knowledge, resources, and economic opportunities can be more effectively developed when trust and mechanisms for cooperation exist among group members.
- d. **Physical Assets**
 Physical assets refer to facilities and infrastructure that support the social and economic activities of community members. However, the mere availability of physical facilities is insufficient to achieve sustainable empowerment. Physical assets need to be accompanied by enhanced community capacity to operate, maintain, and further develop these facilities.
- e. **Economic Assets**
 Economic *assets* refer to resources that have the potential to generate income, business opportunities, or economic value for the community. These assets may include products, enterprises, market access, capital, business networks, and other economic opportunities.

3. Capacity Development in Community Empowerment

Capacity development is an essential component of the empowerment process because the availability of resources alone cannot generate sustainable change if communities lack the capacity to manage and further develop them. According to UNDP (2009), capacity development is a process through which individuals, organizations, and societies develop, strengthen, create, adapt, and sustain capacities over time to achieve development objectives. This definition indicates that capacity extends beyond individual skills and also encompasses organizational capabilities and the institutional environment that enable activities to be sustained over time.

4. Value Creation and Product Diversification

Value addition and product diversification can be explained through the perspective of Value Chain Theory developed by Michael Porter (1985), which views value creation as the outcome of a series of activities that transform inputs into products with greater value for consumers. From this perspective, value enhancement does not occur solely at the production stage but can be generated through processing, product development, technology adoption, marketing, and distribution. Therefore, the greater the number of value-creating activities controlled by economic actors, the greater their potential to capture economic benefits from a commodity.

Meanwhile, the concept of diversification can be understood through Igor Ansoff's (1957, 1958) Product-Market Strategy, which positions diversification as a growth strategy involving the development of new products and new markets. Ansoff emphasized that diversification differs from market penetration, market development, and product development because it involves changes in both the product and market dimensions and requires the development of new knowledge, skills, and resources.

5. Institutional Strengthening and the Sustainable Livelihoods Approach

According to Ostrom's (2005) perspective, institutions are understood not merely as formal organizations, but also as encompassing rules, norms, decision-making mechanisms, and patterns of interaction that shape how actors behave in managing resources and addressing collective problems. The sustainability of institutions depends on the community's ability to establish rules that are appropriate to local conditions, implement monitoring mechanisms, resolve conflicts, and adapt management mechanisms over time.

Meanwhile, Scoones' (1998) Sustainable Livelihoods Approach (SLA) views livelihoods as a combination of resources and capabilities that people utilize to develop sustainable livelihood strategies. This framework emphasizes natural, economic/financial, human, and social capital, as well as organizational and institutional factors, as important elements influencing livelihood outcomes. Accordingly, institutional strengthening can be understood as a mechanism that enables communities to organize and optimize their livelihood assets in order to develop adaptive, self-reliant, and sustainable economic strategies.

C. METHOD

1. Research Design

This study employed a descriptive qualitative research design to provide an in-depth description of the community empowerment process implemented through the CSR Program of IT Wayame, namely Atsiri Duskar Wangi. A descriptive qualitative approach was selected because it enables researchers to obtain a comprehensive and contextual understanding of community experiences, the utilization of local potential, capacity building, product diversification, institutional strengthening, and sustainable livelihood strategies without

imposing excessive theoretical abstraction that is detached from empirical data (Sandelowski, 2000). This design was used to examine how the local potential of essential oil-producing plants is developed as a foundation for community empowerment capable of enhancing community capacity, creating economic value, strengthening group institutions, and supporting the sustainability of community livelihoods.

2. Research Participants

Participants in this study were selected using purposive sampling, in which informants were chosen based on their knowledge, experience, and direct involvement in the community empowerment process and the development of the essential oil business. The primary participants consisted of members of the Bunga Tani Group, an essential oil distiller group in Ambon, Maluku, particularly those involved in distillation, processing, product development, and business management activities. To obtain a more comprehensive perspective, the study also involved program facilitators, community leaders, and relevant stakeholders with knowledge of the program's development and implementation processes. Participants were selected based on their level of involvement, experience, and the relevance of the information they could provide to the focus of the study.

3. Data Collections

Data were collected through in-depth interviews, field observations, Focus Group Discussions (FGDs), and document review. In-depth interviews were conducted with members of the essential oil distiller group and relevant stakeholders to obtain information regarding their experiences, knowledge, capacities, business management processes, and perceived changes throughout the implementation of the empowerment program. Field observations were conducted to directly examine distillation activities, product processing and diversification, the utilization of production facilities, as well as the group's institutional interactions and practices. FGDs were conducted to obtain collective perspectives on the group's challenges, needs, empowerment processes, and development, while also identifying similarities and differences in experiences among participants. Meanwhile, document review was conducted on program documents, activity reports, implementation records, group-related data, and other supporting materials relevant to the empowerment process. These four techniques were employed complementarily to facilitate source and methodological triangulation, thereby enabling the collected data to provide a more comprehensive, contextualized, and credible understanding of the implementation of the Atsiri Duskar Wangi Community Empowerment Program.

D. RESULT AND DISCUSSION

1. Local Context and Characteristics of the Essential Oil Distiller Community in Wayame Village

Wayame Village is characterized by a combination of coastal and hilly landscapes. These geographical conditions influence community livelihood patterns and the utilization of local resources as part of economic activities. One of the economic activities developed in Wayame Village is essential oil production, which is carried out by the Bunga Tani Group. Essential oil distillation has become part of the community's economic activities and has been developed based on the knowledge and experience possessed by group members. This activity demonstrates that essential oil production is not an entirely new economic activity introduced through the empowerment program, but rather an activity that has emerged and developed within the community and is closely connected to local knowledge regarding the utilization of natural resources.

The Bunga Tani Group has experience in processing several types of essential oil-producing plants. Based on the research findings, four types of essential oils constitute the group's main commodities: cajuput oil, clove oil, patchouli oil, and red lemongrass oil. The diversity of these commodities indicates considerable local resource potential that can be further developed as a foundation for the community's economic activities. At the initial stage, distillation activities were conducted at the community level using relatively simple traditional distillation equipment. The community's knowledge of the distillation process was largely acquired through practical experience and intergenerational learning within families. This condition represents a strength, as the community already possesses *existing knowledge* and basic skills to carry out the production process. However, the relatively simple production practices also indicate opportunities for improvement, particularly in terms of production efficiency, process standardization, product quality, derivative product development, and business management. The following illustration shows the traditional distillation furnace used by the Bunga Tani Group for essential oil production.

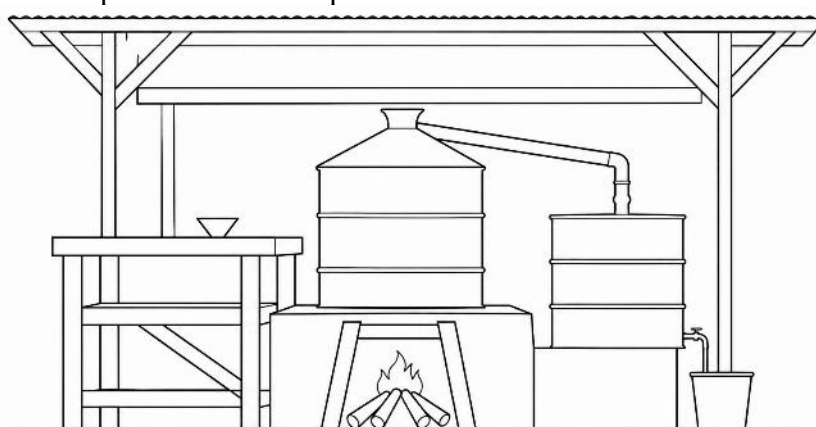


Figure 2. The Traditional Distillation Furnace Used by the Bunga Tani Group for Essential Oil Production

Source: Researcher's Own Documentation and Data Processing, 2026

The characteristics of the essential oil distiller community in Wayame Village thus demonstrate a combination of local knowledge, production experience, natural resources, group organization, and ongoing economic activities. The community was not in a condition of lacking capacity when the empowerment program was initiated. Rather, its members already possessed foundational assets that could be further developed. This condition is significant because the empowerment approach was not solely aimed at providing new capabilities to the community, but rather at strengthening existing capacities so that they could be leveraged to generate greater economic value.

Nevertheless, the availability of local resources and distillation experience has not yet been fully accompanied by the capacity to optimize the economic value of essential oils. The group's previous activities were primarily oriented toward the production of essential oils as primary commodities. As a result, much of the commodity's economic value remained concentrated at the early stages of the value chain, while opportunities for further processing, product diversification, brand development, and market expansion had not been fully utilized. Thus, a gap existed between the available resource potential and the community's capacity to transform these resources into higher value-added business activities.

This initial condition provided the foundation for the development of *Atsiri Duskar Wangi*. The program approach was directed toward identifying and mobilizing assets already possessed by the community, strengthening community capacity, developing value addition and product diversification, utilizing distillation by-products, strengthening group institutions,

and expanding access to markets and partnerships. Accordingly, the local context of the community served as the starting point for a transformation process from experience-based distillation activities toward a more integrated, value-added, and sustainable management of essential oil potential.

2. Local Potential and Community Assets

Community empowerment through Atsiri Duskar Wangi was analyzed from the perspective of Asset-Based Community Development (ABCD), which positions assets already possessed by the community as the starting point of the empowerment process. The findings indicate that the development of the distiller group is supported not only by the availability of natural resources but also by various interconnected community assets. In terms of natural assets, the availability of essential oil-producing plants cultivated in the community's own gardens serves as a primary resource for production activities. These plants possess not only ecological value but also economic value when processed into essential oils and their derivative products.

In terms of human assets, the distiller group possesses practical knowledge and experience acquired through previous distillation activities, as well as intergenerational knowledge passed down within families. This knowledge encompasses the ability to identify raw materials, understand the distillation process, and process essential oils. Such experience represents an important asset, as the empowerment program did not begin from a condition in which community members lacked capabilities entirely, but rather from an existing capacity that was subsequently strengthened and developed through a process of capacity building.

Meanwhile, social assets are reflected in the presence of the Bunga Tani Group as a platform for community interaction and collaboration. The group provides a space for members to share experiences, engage in production activities, and interact with program facilitators and other relevant stakeholders. The existence of the group also provides a foundation for developing collective capacity, as the knowledge and skills acquired through the program can be shared, disseminated, and further developed collectively among its members.

In terms of physical assets, the distillation activities are supported by production facilities and equipment that enable community members to process raw materials into essential oils. These facilities constitute important physical capital for business development, although optimizing their utilization still requires improvements in technical capacity and management practices. The physical assets currently owned by the Bunga Tani Group consist of a distillation boiler and a distillation furnace. Meanwhile, economic assets are reflected in the distillation activities that have generated products for the market. The availability of essential oil products indicates that the group already has an established economic activity that can be further developed through increased value addition, product diversification, and expanded market access.

These findings indicate that the main challenge faced by the group does not lie in the absence of assets, but rather in the suboptimal mobilization and integration of these assets. Natural resources are available, community members possess distillation experience, the group has been established, and economic activities are already underway. However, the linkages between these assets and product development, institutional strengthening, and market access remain to be further strengthened. This condition provides the basis for the development of the Atsiri Duskar Wangi Program as an intervention oriented toward strengthening community assets and capacities.

Accordingly, local potential in the context of essential oil distiller groups is understood not merely as the availability of essential oil-producing plants, but as a combination of natural resources, community knowledge, social relationships, production facilities, and existing

economic activities. This perspective reinforces the ABCD approach, which emphasizes that sustainable empowerment can be fostered by developing strengths already present within the community and subsequently connecting them with external resources and opportunities.

3. Challenges Faced by the Essential Oil Distiller Group

Despite possessing various local assets, the findings indicate that essential oil distiller groups still face several challenges in optimizing these assets into more sustainable livelihood opportunities. These challenges are not limited to production-related aspects but also encompass human resource capacity, product development, institutional strengthening, marketing, and the utilization of distillation by-products.

From a technical perspective, the group still needs to strengthen its knowledge and skills in essential oil production and processing. The distillation experience already possessed by community members provides an important foundation; however, practical experience does not automatically translate into standardized production processes. Knowledge of quality control, process efficiency, post-production handling, and quality consistency becomes increasingly important as the products are developed for entry into broader markets.

The next challenge lies in product downstream development and diversification. Prior to the implementation of the program, the group's economic activities were largely oriented toward producing essential oils as primary products. This condition limited the economic value captured by community members, as activities remained concentrated at the production stage. In fact, essential oils offer considerable opportunities for further development into a variety of derivative products with higher added value. Limited knowledge of formulation, processing, packaging, and product development has been one of the factors constraining this downstream development process.

Furthermore, the findings indicate challenges in managing distillation by-products. The distillation process generates residual materials that, when not utilized optimally, are merely regarded as waste. This condition indicates an opportunity that has not yet been fully utilized to apply the principle of more efficient resource utilization. Distillation by-products have the potential to be developed into products or materials that provide both economic and environmental benefits, thereby supporting a circular economy approach in the development of the group's business.

From an institutional perspective, the challenges faced by the group concern not only its existence as an organization but also its capacity to manage activities collectively. Business development requires clear role distribution, coordination mechanisms, administrative procedures, activity record-keeping, production management, and the ability to make collective decisions. Therefore, institutional strengthening is essential to ensure that the empowerment process does not stop at enhancing individual skills but develops into collective capacity that can be maintained and sustained by the group.

Limited market access also poses a challenge to increasing the economic value of essential oils. Products with good quality do not necessarily generate optimal economic benefits when the group lacks access to consumers, marketing networks, and business partners. In this regard, the Bunga Tani Group still relies on traditional sales methods and does not yet have an online marketplace through which its products can reach a broader consumer base. In addition, the group has not yet obtained product certification from the Indonesian Food and Drug Authority (BPOM), creating regulatory constraints on product marketing and market expansion. This condition demonstrates that increasing production capacity needs to be accompanied by strengthening business and marketing capacities. In other words, the empowerment process needs to connect production capabilities with the capacity to create, capture, and sustain economic value.

These challenges demonstrate the existence of a *capacity gap* between the local potential available within the community and the group's ability to optimize it. Therefore, empowerment interventions cannot rely solely on the provision of facilities or isolated technical training. A more integrated approach is required, combining capacity development, value creation, product diversification, by-product utilization, institutional strengthening, and market access within a continuous and sustainable empowerment process.

4. Community Empowerment Process

Atsiri Duskar Wangi Program was developed in response to the gap between the assets possessed by the group and the community's capacity to optimize those assets. The empowerment process positions community members as active subjects who possess assets, knowledge, and experience that can be further developed. Through this approach, the program is not intended to replace the capabilities already possessed by the community, but rather to strengthen and expand these capacities so that they can generate greater economic value and support the sustainability of the group's livelihoods.

The empowerment process began with the identification of the group's potential and needs. This identification process was conducted through social mapping in Wayame Village. As a follow-up to the social mapping process, CSR Officers of IT Wayame conducted a Focus Group Discussion (FGD) with the group and local government representatives. This stage was undertaken to understand the community's initial conditions, the potential of local resources, the capacities of group members, ongoing distillation activities, available facilities, and the various challenges faced by the group. The findings from this identification process served as the basis for determining interventions that were appropriate to the group's needs and local characteristics. This approach ensured that the program was built upon assets already possessed by the community while simultaneously addressing existing capacity gaps in the management and development of the essential oil business.

The next stage involved community capacity development through training and facilitation. Capacity development was not limited to technical skills in essential oil distillation but also encompassed knowledge of post-production processing, derivative product development, packaging, business management, and marketing. The Bunga Tani Group received training in essential oil processing using more modern methods, training in the development of derivative products such as linen spray and antiseptic spray, as well as digital marketing training to support product marketing. This process enabled group members to develop their *existing capacity*, which had previously been acquired through practical experience, into more structured capabilities that could support sustainable business development.

Once the foundational capacities had been strengthened, the process continued with the development and diversification of essential oil products. Cajuput, clove, patchouli, and red lemongrass oils, which had previously been utilized primarily as main products, were further developed into value-added products such as linen spray and antiseptic spray. Diversification was undertaken to expand the utilization of essential oils, create alternative product offerings, and open up opportunities in more diverse markets. At this stage, community members were no longer positioned solely as producers of raw commodities but were introduced to the process of value creation through product processing and development.

Periodically, the group received support in the form of facilities and equipment to support the production process and the development of derivative products. One form of support was the provision of a temperature-measuring device to improve precision in the distillation process. Previously, the group relied solely on the boiling point of water as a

reference for determining the conditions of the distillation process. In addition, the group received a packaging sealing device to replace the manual sealing process previously used.

Support was also provided through the provision of more modern and diverse packaging, including bottles in various shapes and sizes tailored to different product types and consumer needs, ranging from 10 ml, 25 ml, to 50 ml. These smaller sizes replaced the previously used 100 ml bottles, which were considered less practical by most consumers. The packaging development was further complemented by the use of more standardized labels to strengthen product identity and branding, which had not previously been implemented consistently. In addition, the provision of more appropriate packaging materials and sales bags contributed to improving product presentation and enhancing the group's professionalism in marketing activities.

The subsequent stage of the empowerment process involved the utilization of distillation by-products as compost fertilizer. The distillation process generates residual materials in the form of plant matter that has undergone extraction. Prior to the implementation of the program, these by-products had not been fully utilized and therefore had the potential to become discarded materials. Through facilitation, the distillation by-products were processed into compost fertilizer that could be reused for the cultivation of essential oil-producing plants. This stage demonstrates the application of *resource efficiency* and circular economy principles, as residual materials from one production process are returned to the utilization cycle as inputs for agricultural activities. In addition to reducing potential waste, this utilization also creates new functional value from the essential oil production process.

The program subsequently focused on strengthening group institutions. Individual capacity development and product development need to be supported by the group's ability to manage activities collectively. The CSR Program of IT Wayame strengthened the group's institutional capacity through improved coordination among members, clear role distribution formally documented in the group's decree, communication, activity management, and the development of the group's capacity to make collective decisions and manage business activities. Through this institutional strengthening, the knowledge and skills acquired throughout the program are expected not to remain concentrated among particular individuals, but to develop into collective capacity that can be maintained and further strengthened by the Bunga Tani Group.

The next stage involved the development of networks and market access. Essential oil products and their derivatives require marketing support to ensure that increased production capacity can generate tangible economic benefits. Therefore, the group was assisted by the CSR Program of IT Wayame in obtaining product certification and a distribution permit from the Indonesian Food and Drug Authority (BPOM), thereby reducing regulatory barriers to product marketing. In addition, to strengthen product identity, the CSR Program of IT Wayame and the Bunga Tani Group conducted a rebranding process encompassing product packaging and product communication, while also developing networks with parties that could support market expansion. This stage served as a link between strengthened production capacity and broader opportunities to generate economic benefits.

To ensure that the entire process was implemented in accordance with the program objectives, regular monitoring and evaluation were conducted. Monitoring was carried out to assess the progress of activities, the level of member participation, the utilization of facilities, developments in production and derivative products, the management of distillation by-products, and various challenges that emerged throughout the empowerment process. Monitoring was conducted twice a month or adjusted according to the needs of the group. Meanwhile, evaluation was conducted to assess the changes occurring following the program intervention, particularly in terms of community capacity, product development, institutional

strengthening, economic outcomes, and environmental aspects. The results of monitoring and evaluation served as a basis for identifying follow-up needs and adjusting facilitation strategies accordingly.

Monitoring and evaluation also served as a mechanism for shared learning among community members, program facilitators, and relevant stakeholders. Findings obtained throughout this process were used to improve production practices, enhance product quality, optimize the utilization of distillation by-products, and strengthen group management. Thus, evaluation was not positioned merely as the final stage of the program, but as an integral part of the learning process that enabled the empowerment process to develop adaptively in accordance with the group's evolving conditions and needs.

Overall, the empowerment process of Atsiri Duskar Wangi can be described as a sequence beginning with the identification of local potential and community needs, capacity development through training and facilitation, practical application of knowledge, product development and diversification, the provision of supporting production facilities, the utilization of distillation by-products as compost fertilizer, institutional strengthening, network and market access development, and monitoring and evaluation. This sequence demonstrates that the empowerment process was implemented gradually and in an integrated manner by connecting the assets and *existing capacity* already possessed by the community with capacity development, value creation, more efficient resource utilization, collective capacity strengthening, and expanded economic opportunities. Monitoring and evaluation were conducted regularly as part of the learning and program adjustment process, enabling the overall empowerment process to develop adaptively while supporting the sustainability of the group's business and livelihoods.

Ultimately, this process was directed toward transforming the simple utilization of local resources into a more productive, value-added, and sustainable management of essential oil potential. The integration of product development and by-product utilization also demonstrates that program sustainability is not viewed solely from an economic perspective, but also takes into account environmental and institutional dimensions. Thus, Atsiri Duskar Wangi establishes an empowerment process that extends beyond skills enhancement by fostering community capacity to manage resources, create value, and collectively sustain their business activities. Overall, the empowerment process is illustrated in the following figure:



Figure 3. The Empowerment Process

Source: Researcher's Own Documentation and Data Processing, 2026

5. Before-and-After Analysis

The *before-and-after* analysis demonstrates changes in the condition of the essential oil distiller group following the implementation of the Atsiri Duskar Wangi Program. The changes were analyzed across several key dimensions, namely community capacity, product development, economic value, institutional capacity, market access, and environmental aspects. This analysis was used to assess the extent to which the program interventions transformed the group's initial conditions and strengthened the community's capacity to manage and develop its essential oil potential. The following table presents a comparison of the group's conditions before and after the implementation of the program.

Table 1. Before-and-After Analysis of the Program

Indicator	Before	After
Community capacity	Knowledge and skills in essential oil distillation were acquired primarily through practical experience and intergenerational knowledge. The group had limited knowledge of modern processing methods, derivative product development, packaging, and marketing.	Member capacity increased following 2 training sessions and 3 educational sessions covering essential oil processing, derivative product development, packaging, business management, and <i>digital marketing</i> , enabling members to develop broader knowledge and skills for essential oil business development.
Production process	Essential oil distillation relied primarily on practical experience and the boiling point of water as a reference, without the use of a temperature-measuring device. The packaging process was also carried out manually.	The production process is supported by a temperature-measuring device and packaging sealing equipment, enabling more controlled distillation and more consistent and efficient packaging
Production facilities and infrastructure.	The group had only 2 main production facilities, namely a distillation furnace and a distillation boiler.	The group has 4 main production facilities, with the addition of a temperature-measuring device and modern packaging sealing equipment.
Product development	Product development focused primarily on 4 essential oil products: cajuput oil, clove oil, patchouli oil, and red lemongrass oil.	Product development was diversified through the addition of 2 derivative products, namely <i>linen spray</i> and <i>antiseptic spray</i> , alongside the four existing essential oil products.
Packaging and branding	Products generally used 100 ml bottles, which were considered less practical by some consumers. Product labels and branding were not applied consistently.	Packaging is available in 10 ml, 25 ml, and 50 ml sizes, with more standardized labels, updated branding, and improved packaging and sales bags.
By product utilization	Approximately 450 kg of distillation by-products were	450 kg of distillation by-products were processed into 350 kg of compost fertilizer, representing a

Indicator	Before	After
	generated but had not been optimally utilized.	22.22% reduction in mass, and were subsequently reused for the cultivation of essential oil-producing plants.
Institutional Capacity	The group had been established; however, collective activity management, role distribution, and coordination mechanisms had not yet been optimized.	Role distribution was clarified through the issuance of 1 group decree, while coordination and communication were strengthened, and collective decision-making capacity was developed
Market Access	Marketing was conducted primarily through traditional methods, with limited consumer reach and no digital marketing channels.	The group began developing <i>digital marketing, rebranding</i> , and marketing networks, while receiving facilitation for product certification and distribution permits. To date, 3 products have obtained BPOM certification, strengthening the group's readiness to access broader markets.
Business Sustainability	Business activities relied primarily on individual capacities and existing experience in essential oil distillation.	Individual and collective capacities were strengthened through product development, institutional strengthening, market development, and regular monitoring and evaluation.
Economic Value	Economic value was primarily generated through the sale of essential oils as primary products, with value addition largely concentrated at the production stage. Before the facilitation program, the group generated approximately IDR 24,000,000 per production cycle.	Income increased to approximately IDR 33,600,000 per production cycle in the first year, followed by IDR 44,600,000 in the second year and IDR 55,000,000 in the third year, representing an overall increase of 129.17% from the initial condition. This increase was supported by derivative product development, packaging diversification, improved <i>branding</i> , and expanded market access.

6. Economic Value Creation

One of the key changes observed following the implementation of the Atsiri Duskar Wangi Program was the increase in the group's production capacity, reflecting strengthened economic capacity in managing and developing the essential oil business. Prior to the implementation of the program, the group's production capacity was approximately 200 kg per production cycle. Following facilitation in the first year, production capacity increased to 300

kg, representing a 50% increase from the initial condition. This increase continued in the second year, when production capacity reached 401 kg, representing a 33.67% increase compared with the first year. In the third year of facilitation, production capacity increased further to 515 kg, representing a 28.43% increase compared with the second year. Overall, production capacity increased by 315 kg or 157.5% compared with the initial condition. This upward trend indicates that the empowerment process not only resulted in improvements in knowledge and skills but was also reflected in the group's ability to progressively increase its production scale. The increase in production capacity thus provides an indication of the group's growing ability to optimize local assets and potential into more productive economic activities. The following figure illustrates the increase in the group's essential oil production capacity throughout the three-year implementation of the Atsiri Duskar Wangi Program:

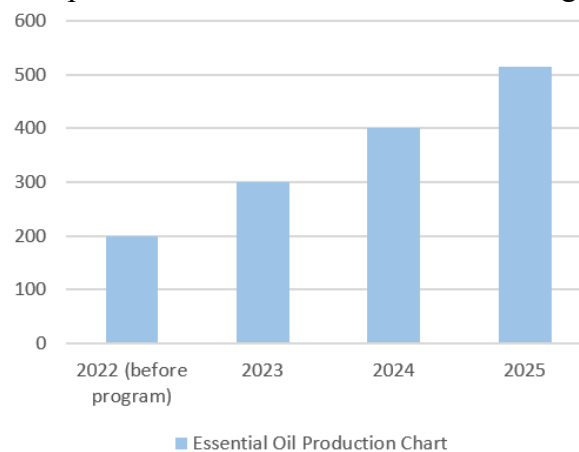


Figure 4. Essential Oil Production Chart

Source: Researcher's Own Documentation and Data Processing, 2026

The increase in production capacity was accompanied by an increase in the group's income. Prior to the facilitation program, the group's income was approximately IDR 24,000,000 per production cycle. In the first year of facilitation, income increased to approximately IDR 33,600,000 per production cycle, representing an increase of IDR 9,600,000 (40%) compared with the initial condition. In the second year, income increased further to approximately IDR 44,600,000 per production cycle, representing an increase of IDR 11,000,000 (32.74%) compared with the first year. Subsequently, in the third year, income reached approximately IDR 55,000,000 per production cycle, representing an increase of IDR 10,400,000 (23.32%) compared with the second year. Overall, the group's income increased by IDR 31,000,000 or 129.17% compared with the pre-facilitation condition. This increase indicates the group's growing ability to create and capture economic value from essential oil commodities through increased production capacity, derivative product development, improved packaging and *branding*, and expanded market access. The following figure illustrates the increase in the group's essential oil sales revenue throughout the three-year implementation of the Atsiri Duskar Wangi Program:

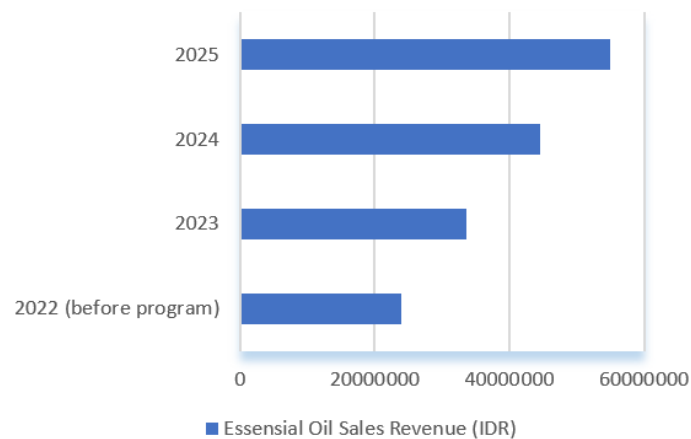


Figure 5. Essential Oil Sales Revenue

Source: Researcher's Own Documentation and Data Processing, 2026

When considered as a whole, the increase in production capacity from 200 kg to 515 kg per production cycle and the increase in income from IDR 24,000,000 to IDR 55,000,000 per production cycle demonstrate a positive change in the group's economic performance throughout the facilitation period. These changes indicate that the empowerment interventions have contributed to a transformation from distillation activities that were previously oriented primarily toward the production of essential oils as primary commodities toward a more developed business activity with greater production capacity and higher opportunities for economic value creation. Thus, the economic dimension of the Atsiri Duskar Wangi Program is reflected not only in the increase in production volume but also in the group's growing ability to optimize local potential into a more productive and sustainable source of income.

E. CONCLUSION

This study demonstrates that the Atsiri Duskar Wangi Program provides a local potential-based community empowerment model for strengthening the capacity and economic self-reliance of essential oil distiller groups in Wayame Village, Ambon City, Maluku. The findings show that the Bunga Tani Group already possessed various local assets, including natural resources, practical knowledge and experience, social capital, production facilities, and existing economic activities, which were subsequently strengthened through capacity development, product diversification, supporting facilities, by-product utilization, institutional strengthening, market access development, and regular monitoring and evaluation. The integrated empowerment process enabled the group to move beyond primary essential oil production toward greater value creation and more efficient resource utilization. This transformation is reflected in the increase in production capacity from 200 kg to 515 kg per production cycle (157.5%) and group income from approximately IDR 24,000,000 to IDR 55,000,000 per production cycle (129.17%), alongside the development of derivative products such as *linen spray* and *antiseptic spray*, the conversion of approximately 450 kg of distillation by-products into 350 kg of compost fertilizer, strengthened institutional capacity, and expanded market opportunities through *digital marketing*, *rebranding*, and product certification. Overall, the findings indicate that sustainable community empowerment requires more than increasing production capacity; it requires the integration of local assets, *existing capacity*, value creation, product diversification, resource efficiency, institutional strengthening, and market access to transform local potential into productive economic activities while supporting community self-reliance and sustainable livelihoods.

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