

Organic Medical Plants Urban Farming Based on Family Empowerment on Bekasi, West Java

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Abstract: Increased consumption of organic medicinal plant products for health has stimulated organic urban backyard farming activities in semi-urban communities. The purpose of this study was to analyze the impact of family empowerment on farmer adaptation to the market for urban farming products. The study employed participatory action research methods in which field researchers were assigned the task of analyzing the impact of family empowerment on the ability of communities to adapt to the market. Data was collected through observation, interviews, and focus group discussions among family empowerment participants and facilitators. The results of the study indicate that market and consumer demand for organic products was the driving force behind the decision of communities to engage in innovative sustainable organic urban farming activities. As part of those activities, males were found to play roles in the technical preparation of land (or planting media) and marketing, whereas females played more roles in plant maintenance and harvest processing. Families that were adaptive to the market needs of urban organic farming, including by creating innovative products, were found to be increasingly active and influential in the community, taking the initiative to develop businesses and increase productivity. Overall, the study proved that family empowerment with urban farming innovation leads to business sustainability in line with the Sustainable Development Goals (SDGs).

Keywords: ecological adaptation, family empowerment, organic farming, urban farming.

西爪哇省勿加泗基于家庭赋权的有机药用植物城市农业

摘要: 为健康而增加的有机药用植物产品的消费量刺激了半城市社区的有机城市后院农业活动。这项研究的目的是分析赋予家庭权力对农民适应城市农产品市场的影响。这项研究采用了参与式行动研究方法, 其中分配给现场研究人员的任务是分析家庭赋权对社区适应市场能力的影响。通过家庭授权参与者和促进者之间的观察, 访谈和焦点小组讨论来收集数据。研究结果表明, 有机产品的市场和消费者需求是社区决定参与创新的可持续城市有机农业活动的原动力。作为这些活动的一部分, 发现雄性在土地(或种植介质)的技术准备和销售中发挥作用, 而雌性在植物维护和收获加工中起更多作用。人们发现, 适应城市有机农业市场需求的家庭(包括通过创造创新产品)在社区中变得越来越活跃和有影响力, 并主动发展企业并提高了生产力。总体而言, 该研究证明, 通过赋予城市农业创新能力来实现家庭赋权可以实现与可持续发展目标(可持续发展目标)相一致的商业可持续性。

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关键词：生态适应，家庭赋权，有机农业，城市农业。

1. Introduction

There has been a rapid increase in demand for organic agricultural products from around the world with the market increasing by 20 per cent per year. This is because of an increasing public awareness of the need for healthy lifestyles as well as the establishment of international obligations requiring farmers to guarantee that agricultural products meet safety, nutrition, and eco-labeling standards. Organic farming is quite a promising industry in Indonesia. Indeed, the country has many indigenous tropical natural resources, an abundance of sunlight, water, fertile soil, and a local culture of respecting nature. Prioritizing organic farming in high-economic value crops would help meet domestic and export market needs, thus, urban farming of medicinal plants employing their backyards has also increased in semi-urban communities. The purpose of this study was to analyze the impact of family empowerment on farmer adaptation to the market for urban farming products in Indonesia.

Urban farming, particularly backyard cultivation of medicinal plants, is a response to people's concerns about limited land for agriculture [1] and a way for families to generate income. The cultivation process is oriented towards increasing productivity and optimizing local human resources. Urban farming is also in line with the Sustainable Food House Region Program, an effort launched by the Government of Indonesia through the Ministry of Agriculture to improve food security and family nutrition. Rangelov narrowed down the concept of urban farming to activities related to the processing, cultivation, and production of food in urban areas usually made for economic or daily use [2]. All activities are carried out through the recycle and reuse of domestic waste. Urban farming could help meet the needs of the organic products market in keeping with global health trends. Urban farming in three districts in the capital city of Indonesia, Jakarta, has also been studied [3].

The increase in urban farming shows that society has adapted to the actual needs of the market for organic medicinal plants. In the 21st century, urban societies are increasingly aware of the dangers of synthetic chemicals in agriculture and are more and more careful to choose safe and healthy food that is produced in an environmentally friendly manner. "Back to Nature" is a trending lifestyle, replacing the habit of using synthetic chemicals, such as fertilizers, pesticides, and plant growth hormones in agricultural production. Therefore, people are looking towards innovative urban organic backyard farming which relies on natural resource input without synthetic chemicals. Healthy

and highly nutritious food can be produced through organic farming in semi-urban communities, especially in action research scenarios.

Family empowerment has the potential to elevate the role of women, especially in urban farming. It can also help to enhance the ability of families to adapt to changing consumer dynamics, which is thought to depend on education level, activeness in society, social status, initiative, and yields. In efforts to fulfill their social and environmental responsibilities, companies managing natural resources (mining companies, for example) have adopted family empowerment initiatives in the cultivation of organic medicinal plants. Therefore, CARE (Center for Alternative dispute Resolution and Empowerment), a research and community development center from IPB University, was collaborating with PT. PERTAMINA EP Asset 3 Tambun Field Pertamina Tambun (Indonesian government company that manages oil and gas resources, particularly in Bekasi and Karawang) to enhance family empowerment. Together with neighboring communities, IPB University and PT Pertamina EP Asset 3 Tambun Field are launching a family-based organic urban farming program for sustainable environmental management. The main objective of the joint program is to develop safe and healthy agricultural products with minimum environmental damage.

The novelties explored in this research project were: (1) the application of family empowerment in urban backyard farming, particularly in the cultivation of organic medicinal plants, (2) the implementation of gender roles by the community in sustainable organic urban farming innovation in the context of increasing consumer awareness of organic products, and (3) empowerment of families in urban farming innovation as a way of adapting to the market and ensuring business sustainability in line with efforts to achieve the SDGs.

2. Research Methodology

This research project used a participatory research method in which field researchers became facilitators of family empowerment for a year. Facilitators consisted of alumni of IPB University who assisted the participants in the program location and maintained the community connection with stakeholders including Pertamina, CARE IPB and local government officials, managed community groups, provided information, education and updates regarding innovations, assisted the marketing of the products. The study took place

across six villages (Bongas Wetan, Cidenok, Karanglayung, Doudo, Hurip Jaya, and Samudra Jaya) and four districts (Bekasi, Indramayu, Gresik, Majalengka) in Indonesia, all of which could potentially benefit from community empowerment. The number of empowerment participants was 141. The participants are defined as people from the community who were the subject of the family empowerment. The data was collected using a cybernetic method and triangulation technique. The field researchers collected data during the process through observation, in-depth interviews, and focus group discussions among participants and stakeholders. Secondary data were obtained from documents, study reports, village offices, relevant government agencies, and other relevant statistics from Statistics Indonesia (BPS, the Central Bureau of Statistics), books, journals, or the internet. Data were analyzed qualitatively. The processed results were then analyzed and interpreted.

The method for analyzing family interest in this program was based on the interviews with participants for their motivation in cultivating medicinal plants organically. Descriptive statistical analysis of census data was also employed. The analysis was performed based on the time used and the activities of males and females in urban farming every day to observe families' roles, especially women. Correlation and adaptation tests were carried out by considering the level of education and the effectiveness of participants in family empowerment in applying urban farming for organic medicinal plants to analyze family adaptation to consumers' actual needs of organic medicinal plant products.

The back to nature principle, synergizing natural potential so that it becomes more useful and has a function that complements, serves, and supports the biodiversity and ecological balance, was implemented in applying organic farming in this action research. Organic urban farming utilized the biodiversity and ecological balance. This program was yield-oriented by optimizing the balance of continuous natural element functions.

3. Results

The scope of this research result are: (1) the implementation of gender roles in the innovation of sustainable organic urban farming triggered by the increasing awareness of consumers of organic products, (2) the implementation of family empowerment in the development of organic medicinal plants through urban farming in the backyard, and (3) the realization of farmers' agribusiness sustainability in line with efforts to achieve SDGs supported by family empowerment with urban farming innovation.

This organic urban farming program's general objective was to develop a farm with the main focus of "respecting the mother nature" while having an

ecological-economic perspective. The program participants are (a) group members in two villages; (b) the community, especially farmers in Hurip Jaya Village and Samudera Jaya. The obstacle encountered in implementing the collaboration program was droughts that hit the area for approximately three months and caused many of the plants to wilt. Another problem encountered was the limited land available for the cultivation of medicinal plants and organic vegetables and market limitations. To overcome this, changing the dead plants and expanding the planting in the Aliksa members' backyard and the vacant land in the village were conducted.

The family empowerment of medicinal plants included 20 villages in five districts. Those were the operational area of PT Pertamina EP. Hurip Jaya Village and Samudera Jaya Village have suburban typology. Located near Jakarta, Indonesia's capital city, Bekasi Regency was gradually shifting into an urban typology. Nevertheless, agriculture was still the main livelihood of the citizens of Hurip Jaya and Samudera Jaya Village. Rapid industrial growth attracted investors and job seekers from outside the region. It was not only physically affecting the ecosystem but also the community's lifestyle. The conversion of agricultural land into industrial estates demanded government action in order to maintain food security. Industrial estates' development was also often considered a threat to the environment due to the waste produced. Creating a better environment should be the government's duty and be the responsibility of the community.

On the other hand, agricultural business development faced constraints, especially with the increasing cost of farming, including fertilizer costs. On the other hand, the cultivation of medicinal plants in the villages of Hurip Jaya and Samudera Jaya, which had been running for the past ten years and managed by PT. Daun Mas, produced a large amount of plant waste that reaches 4–6 tons. Medicinal plant waste can be a source of environmental pollution if it is not managed further. The waste's decay causes unpleasant odors, also pollutes the environment. The pollution was also a strong reason for the company to encourage an organic farming urban program. Therefore, the development of this program is essential because (1) as an effort to improve public health; (2) as an effort to increase public knowledge about the importance of waste management; (4) as an effort to improve people's welfare through additional income obtained from the sale of derivative products of medicinal plants; (3) reducing the cost of farming through the use of cheaper organic fertilizers.

4. Attractiveness of Organic Urban Farming Innovations

The study results indicated that the needs of the

market/consumers of organic products had become a driving force for the community to implement innovations in sustainable urban farming of organic medicinal plants. The change was triggered by the herbal medicine industry's presence in an affordable area for urban farming products of organic medicinal plants. The commercial of medicinal plant products attracted more male participants, as female participants have more roles in domestic activities (family). The market needs of organic medicinal plants that can accommodate family empowerment participants' products per year are quite large. The group products accommodated in the partner company were 794 pcs, or IDR 30,351,000, in fresh and processed medicinal plants.

5. Implementation of Family Empowerment and Its Impact

In the program's implementation, the male participants actively participated in both technical land or planting media preparation and plant cultivation, product processing, and marketing. The program implementation process included two stages, namely initiation, and revitalization. Details of the program implementation process are presented in Table 1.

Table 1 Process of program implementation in 2017-2018

Target	Activities	Output Targets	Stakeholders
Initiation Step (2017)			
Community of Hurip Jaya and Samudera Jaya Village	<ul style="list-style-type: none"> • Cadre recruitment and group formation • Training on composting from organic fertilizer waste 	<ul style="list-style-type: none"> • Formation of groups in both villages • There were 20 urban farming organic Program Cadres • Compost were produced 	<ul style="list-style-type: none"> • PT. Pertamina Tambun Field • Community of Hurip Jaya and Samudera Jaya Village • Facilitator
Group members in Hurip Jaya and Samudera Jaya Village	<ul style="list-style-type: none"> • Making a center unit for <i>tanamati obat keluarga</i> (TOGA) or medicinal plants for the household • Training for making <i>jamu</i> (traditional medicine) making training • Addition and expansion of medicinal plants 	<ul style="list-style-type: none"> • Construction of TOGA House as demonstration plot • Improvement and replacement of productive plants • There were 150 types of medicinal plants 	<ul style="list-style-type: none"> • PT. Pertamina Tambun Field • Community of Hurip Jaya and Samudera Jaya Village
Revitalization Step (2018)			
Community of Hurip Jaya and Samudera Jaya Villages	<ul style="list-style-type: none"> • TOGA house care • Campaigns and usage of organic fertilizers in the cultivation • Sales initiation of organic medicinal and vegetables plants 	<ul style="list-style-type: none"> • Implementation of TOGA house revitalization • Socialized organic urban farming at the village level • Increased income of members 	<ul style="list-style-type: none"> • PT. Pertamina Tambun Field • Community of Hurip Jaya and Samudera Jaya Village
Community of Hurip Jaya and Samudera Jaya Villages	<ul style="list-style-type: none"> • Expansion of beneficiaries outside the Aliksa group • Development yard (<i>pekarangan</i>) TOGA 	<ul style="list-style-type: none"> • Increased number of beneficiaries up to 50 people • Organic medicinal and vegetable plants cultivation in the yard of each Aliksa member 	<ul style="list-style-type: none"> • PT. Pertamina Tambun Field • Community of Hurip Jaya and Samudera Jaya Village
Stakeholders in Hurip Jaya and Samudera Jaya Villages	Partnership Development	1 urban farming organic program partner	<ul style="list-style-type: none"> • PT. Pertamina Tambun Field • Community of Hurip Jaya and Samudera Jaya Village • PT. Daun Mas

One of the efforts carried out to strengthen product marketing was to start accepting orders in the village scope, even though the selling price was based on proximity/has not been managed professionally. The groups were also recommending medicinal plants to

people with diabetes, and it showed promising results. As for the organic vegetable plants, sales have begun in the Hurip Jaya Village community's scope for kangkong and Chinese amaranth. The implementation of the urban farming organic program in approximately 1.5 years had impacted various parties, as can be seen from the following Table 2.

Table 2 Impact of the organic urban farming program for 2017-2019

Output	Outcome
<ul style="list-style-type: none"> • At least 1 TOGA House in each village • 150 types of medicinal plants • 15 types of vegetable products • Aliksa group as new institution • 2 cadres empowering organic agriculture and TOGA • Availability of 900 kg of compost • The establishment of synergic partnerships between parties • Increased income of group members 	<ul style="list-style-type: none"> • Awareness to understand the life cycle of plants at the level of farmers group (Hurip Jaya and Samudera Jaya Village) • Awareness and understanding to increase the production volume (number and type) through alternatives by making plant shelves under conditions of limited land area • Awareness to build and enrich the collection of biodiversity medicinal and vegetable plants • Awareness of the importance of supporting facilities and infrastructure in the effort to revitalize sustainable environmentally-friendly agriculture • The practice of making <i>simplicia</i> and <i>Godokan</i> • Initiation to sell organic medicinal and vegetable products at the group representative village
<ul style="list-style-type: none"> • 6 tons of herbal waste were utilized 	<ul style="list-style-type: none"> • Herbal waste produced were utilized • Partnerships with surrounding communities were established

6. Ecological Adaptation through Family Empowerment

From an ecological perspective, the illustration of family adaptation to the dynamics of consumers' actual needs in the program was in line with education and activity. The program was also conducive to realizing business sustainability that is in line with developing SDGs, namely economic, ecological, and social aspects. referred to a study by Sumardjo et al. that reported patterns in the adaptation to environmental changes in the respondents of backyard innovations, namely: (1) apathetic, (2) reactive, (3) proactive, and (4) anticipatory. The sequence was based on the adaptiveness level exhibited by the participants. This study's results were shown in Table 3, and it turned out to be in line with the previous empowerment study on medicinal organic plants urban farming [4]. The following is the profiling of respondent's adaptation types to the environmental changes in more detail:

1. The apathetic participants was observed in people with generally lower income and inadequate formal education. This lower social class relies on the intervention from other parties. Their adaptation response was primarily influenced or encouraged by others, namely extension workers and local cadres.

2. Reactive participants exhibited by people with a basic formal education level. The middle to lower class of society who tend to the locality was in this group. This type only reacts to the risks and

appraisal by other participants before they start making changes.

3. Proactive participants was observed in people having experienced formal secondary education, relatively cosmopolitan, and keeping contact with local cadres or facilitators' information. They acts instantly after getting updates from the community leaders, business partners, or extension workers. Generally, they actively partake in the program to obtain insight, sufficient skills, and a positive approach towards the risks involved.

4. Anticipatory participants exhibited mainly by local leaders who have possessed adequate adaptation attitudes. They have a relatively high level of education and cosmopolitan. They possess access to cyber extension digital information and actively communicate with counselors/assistants. This type can process information from several sources and plan making business plan by calculating the risk involved and the impact of changes.

Improving adaptive community attitudes towards more proactive and anticipatory types, rather than reactive was necessary to lower the risk. The effectiveness of assistance program had proven fruitful in strengthening community adaptation attitudes ranging from the apathetic and reactive ones to more proactive and anticipatory ones.

Table 3 Distribution of empowerment participants based on the type of adaptation

Type of Adaptation	Persen (%)
1. Apathetic	14,2
2. Reactive	44,0
3. Proactive	31,2
4. Anticipatory	10,6

Note: The number of empowerment participant was 141 and spread around six villages, four regency

Positive correlation was observed in almost all variables in the family empowerment process, except education (Table 4). However in this study from the Table 4, the data showed that education was not significantly related to activeness, character, initiative, farming yields, and adaptability to the dynamics of strategic environmental change. Overall, The families who turned out to be adaptive are taking more initiatives, more active, having higher status in the community, and more productive.

Table 4 Correlation coefficients between gender, education, activeness, status, and initiative with results and adaptability

Variable	Gender	Education	Activeness	Social status	Initiative	Yield	Adaptability
1. Gender	1	-.196	-.366*	-.244	-.273	-.499**	-.310
2. Education		1	-.177	-.110	-.087	.122	.000
3. Activeness			1	.905**	.867**	.860**	.881**
4. Social status				1	.901**	.760**	.874**
5. Initiative					1	.837**	.845**
6. Yield						1	.832**
7. Adaptability							1

Note: N=34 (based on census data)

* Significant correlation was detected at the 0.05 confidence level (2-tailed)

** Significant correlation was detected at the 0.01 confidence level (2-tailed)

Empowering the community through urban farming to cultivate organic plants for medicinal use in the backyard by considering the principle of sustainable development turned out to be conducive to accomplishing SDGs in the semi-urban area in Bekasi. The development of sustainability was observed from the economic, ecological, and social perspectives. The business sustainability performance of urban farming for organic plants for medicinal use was showed in Table 5.

The aspects of the SDGs (Table 6) that could be achieved from this program were in line with the following objectives (according to the number of SDGs achievement): (1) efforts to eradicate poverty; (2) efforts to achieve food security and nutrition improvement, and promote sustainable agriculture; (3) promote a healthy lifestyle and support welfare for all ages; (5) gender equality realization and women empowerment; (8) striving for sustainable economic growth through the provision of employment; (9) encouraging innovation for semi-urban communities in the effort of organic farming in the backyard; (11) encouraging semi-urban communities to have a sustainable business; (12) encouraging sustainable, productive business patterns; (17) partnerships to achieve business goals in sustainable development. Therefore the aspects of sustainable development as described by Cernea [5] and Elliot [6] could be considered as partially applied in this program. In the perspective of sociology described by Cernea [5], two elements can be the tools to achieve sustainable development, which also means a supporting factor for realizing sustainable institutions. The two elements are the existence of the social organization and social techniques. First, social organization is a concept that helps explain social action, human relations, complex forms of social organization, institutional planning, cultural aspects, motivations, stimuli, and values that regulate behavior in dealing with natural resources. Second, there are appropriate social techniques to accelerate the coordination of social action. The actions are intended to prevent behavioral weakness, foster associations' development, social planning expertise, and social capital development. The social technique is a tool to achieve sustainable development by constructing public awareness to invest in building social capital. Participant awareness was built through communication and simple consultations to increase participatory management; from incentive systems to institutional controls; from tradition to changing old practices by introducing innovation; from empowerment to forming social cohesion; and from the behavior of individuals who are economically

motivated to build the strength of solidarity, trust, self-organization, and acceptance of group values.

Table 5 Performance of the sustainability of the business of organic medicinal plants in the backyard

Aspect	Indicator	Unit	Before	After	
				2017	2018
Economy	Sales	IDR 000	0	0	30,351
	Production	Kg	0	15	93
	Product sold	Pes	0	0	794
	Product variation	Varians	0	5	17
	Number of trees	Trunk	0	150	550
Nature	Processed Liquid Waste	Liter	0	0	10
	Domestic Liquid Waste	Kg	0	0	1
	Utilization waterways	waterways	0	1	12
	Indirect beneficiaries	person	0	50	2,670
Social	Number of groups	group	3	3	2
	Number of group members	person	22	22	33
	Active members	Person	0	22	19
	Number of vulnerable members	person	0	4	4
	Number of business partner	partner	0	1	2

Social organization in this program began with the formation of organic farmer groups in two villages. The facilitator conducted organic cultivation training through a group forum, provided motivation for members, and accompanied group planning activities. The social techniques were carried out to accelerate the coordination of social action in the organizing process, started by building awareness of applying organic farming techniques such as organic fertilizer usage, replacing chemical fertilizers and pesticides, and using natural enemies against pests. In addition, the application of this technique built knowledge that organic agriculture restores living creatures, and improves soil fertility to increase productivity. The application of social techniques to improve participatory processes in the development of organic agriculture can be done by using participatory techniques—methods for reducing big ideas about the participation process into easy-to-apply technical steps. The participatory techniques include discussion methods, workshop methods, action planning methods and strategic planning methods [7]. Discussion methods focus on the subject matter or shared experience, exchanging ideas without conflict, and deepening insight and problem-solving skills among group members. Workshop methods are insight and discussion focused on a group (common ground), building consensus in groups, and initiating joint actions. Action planning methods are formulating a real plan after consensus has been reached on program ideas, creating a transparent form of accountability, and initiating joint actions in groups. Participatory methods are also applied in this urban farming organic program, including discussion, dialogue, planning, and joint action in carrying out organic farming.

Table 6 Description of the contribution of family empowerment

efforts to SDGs achievements			
SDGs No	SDGs	Empowerment Impact	Details
1	No poverty:	Efforts to eradicate poverty	15 % increase in the income
2	Zero hunger	Efforts to achieve food security and nutrition improvement, and promote sustainable agriculture	Consumption of organic vegetables
3	Good health and wellbeing	Promote healthy lifestyle and support welfare for all ages	Application of integrated organic agriculture
5	Gender equality realization and women empowerment	Male participants responsible for preparing facilities and processing tools. Female participants responsible for maintaining the plants. Marketing was performed by both male and female participants	Role and task management between male and female in downstream and upstream business.
8	Decent work and economic growth	Produced the products that is needed by the market	Additional income: IDR 300,000/family/month
9	Industry, innovation and infrastructure	The innovation to manage small agricultural land and yard	Urban farming adoption
11	Sustainable cities and communities	Utilization of yard to produce items that is demanded by the market	Urban farming
12	Responsible consumption and production	Relatively safe product from organic farming	Free from exposure of dangerous chemicals
17	Partnerships for the Goals	Synergy between internal and external partnership	Improving social capital

The initiation of the urban organic farming program in Bekasi Regency is a process towards better livelihoods. The direction of change is aimed at gradually fulfilling essential needs in people's lives, namely strengthening the relationship of cooperation between organic agricultural actors and group cohesiveness, increasing farmers' income, increasing local knowledge in rice cultivation, and ensuring soil fertility. Thus, organic agriculture is an effort to realize socially, economically, and ecologically sustainable development. This is in line with what had been stated by Rangelov about the benefits of urban farming [2].

Padmanabhan and Beckmann describe institutions as a set of rules that shape human behavior and the structure of social, political, and economic interactions [8]. The sustainable urban organic farming institution in Bekasi Regency involves various actors with their respective characteristics; who have roles, status, rights, and obligations; and who share the same goal of gaining economic, social, and ecological benefits. Farmers, who are the members of farmer's groups and joint groups, play a vital role as producers of vegetables and organic medicinal plants. At the same time, group managers have a vital role in managing the rules for fulfilling organic vegetable orders and shipping products to consumers. In addition, assistants empower organic farmers by providing essential information such as alleviating plant disease pests, offering access to training, and opening up market networks. The local government also supports the development of organic agriculture especially with the role of Agricultural Extension as farmers' companions in the field. The role of each stakeholder can be seen in Fig. 1. The institution of urban farming partnerships in Fig. 1 indicates the processes of realizing sustainable development. Sustainable development from a sociological perspective is focused more on the human dimension, so by choosing to conceptualize sustainable development from this angle, it emphasizes the sustainability of society's social system [9]. Sociologists will place social system sustainability, participation, and empowerment as essential points in clarifying sustainable development [9, 10]. In

connection to that, the sustainability of the social system is interpreted as institutional sustainability.

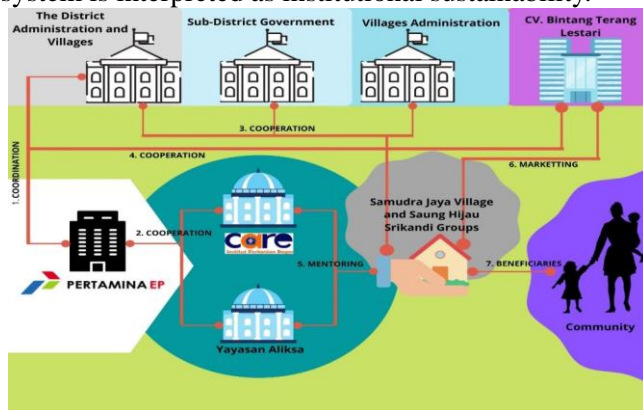


Fig. 1 The role of each stakeholder in the organic farming program

The applied values of the results are (1) Developing sustainable organic medicinal plants on urban farming innovation requires attention to the interests and needs of the product market; (2) To be effective in managing sustainable urban farming in the backyard, the division of labor between men and women is needed, with consideration to the aspects of activities and the time available between them; (3) The role of community groups in communication innovation is essential to expand public interest in urban farming of organic medicinal plants; and (4) Urban farming of organic medicinal plants that is adaptive to the market and family resources is important to be developed as an alternative to achieve several aspects of the SDGs.

7. Conclusion

1. The market needs for organic medicinal plant products have attracted the community to empower families through sustainable organic urban farming innovations.

2. Male participants utilized their leisure time productively by working on the technical preparation of land or planting media, plant cultivation, and processing and marketing of products. The men were interested in this program due to the commercial value of the commodities. Female participants were seen more as supporters in maintaining plants and domestic activities.

3. The more adaptive a family is to the dynamics of ecological change (strategic environment), the more active it becomes; the more prominent positions it has in the community, the more initiative it takes to develop the business; and the more productive it gets, the higher yields of farming it gains.

4. From an ecological perspective, a family that adapted to the dynamics of urban organic farming's innovative products became increasingly active and influential in society, taking more initiative to develop businesses and getting more productive.

5. Empowering families through urban farming innovations also promotes business sustainability

aligned with the SDGs' economic, ecological, and social aspects.

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