

## LOCAL COMMUNITY PARTICIPATION THROUGH AGRICULTURAL INITIATIVES IN MANAGING HYDROPONICS

NURHAFIZA HAYATUN NUFUS

Department of Non-Formal Education, Faculty of Teacher Training and Education, Banten-Indonesia

email: [2221210086@untirta.ac.id](mailto:2221210086@untirta.ac.id)

### ABSTRAK

The purpose of this article is to determine community participation in managing hydroponics, improve community knowledge and attitudes in managing hydroponics. The method used in this research is a literature study by analyzing articles that have been published by previous researchers. This research uses a literature study that is systematically carried out to collect, process and summarize data using methods that aim to find answers to the problems at hand. It is related to community participation in managing hydroponics. The results of the study show: (1) community participation in managing hydroponics can be seen from the activeness of the community (2) there is an increase in knowledge about how to manage hydroponics in the neighborhood (3) there is an increase in the standard of living of the local community. All communities can actively participate if they understand how to manage hydroponics properly. Based on the results of the research and discussion, it can be concluded that community participation through hydroponic management can have a positive impact on the community. Due to the existence of agricultural initiatives through hydroponics, the community is able to implement hydroponic methods or methods independently, they can increase crop production with better results and help reduce dependence on environmental factors. In addition, empowerment

**Keywords:** *community participation, hydroponics, methods*

### INTRODUCTION

In the early 1980s, the government incorporated the concept of community participation in development with community empowerment techniques. Communities were expected to participate in building and maintaining their neighborhoods in order for the community empowerment movement to succeed. The government then established several institutions in the community to encourage community participation and maintain mutual solidarity between communities. In order to create opportunities for the community to develop its territory, in the context of the role of community empowerment in creating a conducive atmosphere, these types of opportunities include services, education and utilization of existing infrastructure owned by the community. The community is given a source of opportunities in development with community support, which is provided according to the needs of the community. Communities are encouraged to be more involved in regional development by creating opportunities for communities to develop their areas through empowerment programs.

Community empowerment is a development strategy. In the development perspective, efforts to increase independence and internal strength of resources require an important role regarding human

capacity. Because empowerment is a concept of economic development that summarizes social values. The concept of empowerment reflects a new paradigm of development that is "people-centered, participatory, empowering, and sustainable".

There are two indicators that show an increase in socio-economic development in a region, including the Physical Quality of Life Index and the Human Development Index. To achieve these indicators of development success, community participation is needed. Because the importance of community participation is first, to get information about the conditions, needs and attitudes of the local community so that the program being run can run properly. Second, community participation is also the involvement of the community in the planning process to evaluation, because the community will be more enthusiastic when carrying out these activities and feel more part of the development program. Third, community involvement will foster the ability to participate both individually and in groups. This directly or indirectly will always involve the community in every decision-making for longer-term results.

The importance of community participation that joins together into a community group is a form of effort in order to achieve development goals and participate in supporting the success of development. The forms of participation carried out in development include various fields, namely social, cultural, economic and religious fields. If the interest of the community is high in terms of participation. Then the higher the empowerment process will be easy, which can already be said to be an empowered community. Therefore, fellow community groups can help each other to achieve development goals. Dusseldrop identifies various forms of participation activities carried out by each community in the form of: (1) Engaging in activities that can mobilize community participation (2) Becoming a member of community groups (3) Mobilizing community resources.

Indonesia is an agrarian country that has great potential in agricultural development. Indonesia's agricultural sector has proven to be the sector that has the largest role in national economic development. According to BPS (2013), agriculture plays the most important role as a source of livelihood for the community with a portion of 34.36%. The main role of the agricultural sector is a driving force for the government to develop agricultural programs that maximize the sector to meet the food needs of the local community as a whole and contribute to the improvement of the country's economy. Given the increase in people's consumption behavior to meet food needs by 4.9-65%, the program to increase food production must be a priority (Ministry of Agriculture, 2019).

Initially hydroponics was the same as growing plants without using soil, but as technology develops, hydroponics is used to grow plants by controlling plant nutrients according to their needs. Nutrients or nutrient solutions as a source of water and minerals are very important factors for the growth and quality of plant yields in hydroponic systems. With the community empowerment carried out through hydroponic management, it can bring up and improve the community's creative ideas in agriculture. Through training, the community can learn about the basic principles of hydroponics, the selection of suitable plant species and the fertilization process. The Hydroponic Program is essentially community empowerment that emphasizes the implementation of institutional strengthening of community development based on the principles of participatory and sustainable development. Hydroponic management activities prioritize development that is directly implemented and managed by the community. With the knowledge possessed by the community, they can develop expertise in farming (Nugraha, 2019). As for the important factors in the hydroponic system, the community needs to consider fertilization. Plants grown in hydroponic systems grow twice as fast as those grown in traditional systems. This is because there is direct interaction of the roots with oxygen, optimal acidity and increased nutrient uptake and balanced nutrient levels. (Suardana et al., 2020)

Empowerment in a social context refers to the ability of individuals to integrate into society by increasing the empowerment of the community concerned. A community that is physically and mentally healthy, educated. They have a high level of empowerment. Community empowerment is the basic element that allows society to survive in a dynamic sense, the community can develop itself to achieve

progress. In relation to the role of community empowerment in creating a conducive atmosphere, the community can create and develop opportunities. Opportunities that can be developed are education, services, utilization of facilities and infrastructure. These opportunities can be utilized by looking at or adjusting to the needs of the community. The community is encouraged to be more involved in regional development by creating opportunities for the community to develop the surrounding environment through empowerment programs.

Participation is defined as an involvement for the community in the process of identifying problems and opportunities that they expect in the future (Ocbianto, 2021: 21). This community participation is applied through agricultural activities to fulfill the needs and food security of the local community by utilizing the land they own. Hydroponic vegetable farming is currently increasingly popular among people in both rural and urban areas. Not only because of its efficiency in land utilization, but also because it is environmentally friendly. With the initiative of local communities through hydroponic vegetable farming, local communities can participate in producing quality food without having to depend on seasons or large tracts of land. Recent debates have focused on how different forms and levels of farmer participation can be combined with modern science to co-create new and transformative knowledge that goes beyond the "farmer-first" ideologies of the 1980s and early '90s.

Given the growing interest in on-farm experiments, living labs, and other integrative approaches, identifying appropriate levels of participation is becoming increasingly important.

Hydroponics in Indonesia There is still little information about the development of hydroponic systems in Indonesia. This is due to the lack of education on the benefits of hydroponic systems on limited land. Hydroponics requires sophisticated products, large investments, and specialized skills. These factors hinder the potential of hydroponics. However, there are no hydroponic entrepreneurs in Indonesia who have successfully exported horticultural products.

Agricultural initiatives are a source of income for some people, especially for the area of Indonesia that is agricultural land. Land for planting is often utilized by farmers. With a narrow or unused land size, farmers have efforts to develop agricultural products, one of which is hydroponic farming (Fathoni et al, 2020). Farmers assume that the hydroponic business is relatively costly. This happens because the lack of understanding about hydroponic vegetable management can make community participation less. (Ariati and Raka, 2019). Therefore, with the hydroponic farming initiative will increase awareness of the importance of sustainable agriculture, local community participation can be an interesting solution to do. They can learn modern and efficient farming methods, and support food security at the local level.

In addition, simple hydroponics can be a solution for people who live in urban areas or cities that have limited access to agricultural land. The hydroponic processing can use simple tools, such as used plastic bottles or tubes. The community can grow the hydroponics by utilizing the surrounding places such as the terrace of the house. This can give people the opportunity to produce their own fresh food, thus reducing dependence on outside supplies and reducing costs.

## RESEARCH METHODS

The method used in this research is a Study Literature Review. According to Jaya (2020: 149) says that "in library research, research is carried out using methods such as reviewing and studying various literature". The intended literature study is that researchers study books, journals, literature, notes and others. This is used as a reference based on the subject matter under study or the problem to be solved. Meanwhile, according to Darmalaksana (2020: 3) said that in the research stage, literature study can be carried out by collecting literature sources, both primary and secondary. Literature studies are carried out to combine, critically examine and collect information from several studies that are relevant to the object to be studied. This is based on previous studies that are relevant to the research questions.

The data analysis method used in this literature study is the content analysis method. The aim is to maintain the continuity of the evaluation process and prevent and overcome the lack of information. This research report is organized with the principles of simplicity and ease. It aims to understand the literature review in more detail and can make it easier for readers to understand the core content of the reading. The research uses a literature study method that aims to identify, review and evaluate research consisting of several stages. First, how community participation in hydroponic management. Second, the knowledge and attitude of the community when doing hydroponic management. This can be researched in journals related to community participation or empowerment and knowledge in managing hydroponics.

## RESULTS AND DISCUSSION

### Result

Table. 1  
Journal review on community participation in managing hydroponics

Research and years Research	Journal	Research Result
Netly Dini Aldila, (2020)	"Community Participation in Managing Hydroponics in Pengadegan Village, Pancoran District, South Jakarta"	Community participation in managing hydroponics can be seen from the activeness of the community and also the increase in knowledge about how to manage hydroponics in the surrounding environment. In addition, the participation of the surrounding community can already be actively involved because the community is able to increase economic production and income for the community. The activeness of the community can be seen through social activities such as conducting deliberations to make decisions from the implemented program until they can evaluate when the empowerment program has been implemented. The Pengadegan Village community seems to know a lot about how to manage hydroponic vegetables that provide them with many benefits and advantages.
Ja'far Amir, Ruby Galuh, Besar Agung Martono (2023).	"Hydroponic Program Increases Community Participation in Cileungsi Village Food Security Program: Mix Methode"	The result research is Community participation in Cileungsi Village has been fairly active because the role of the village government is able to direct and also encourage community participation in the hydroponic program which aims to maintain food security. Similar

		<p>to the first study, community involvement is very active in conducting the hydroponic program. Cileungsi Village has promoters who implement program activities that are dominated by housewives, who were once active in activities in the village.</p> <p>With the hydroponic program, the community feels satisfied with the harvest. This can influence community participation to participate in maintaining food security in Cileungsi Village. Community activism is very influential on the leadership in Cileungsi Village, which applies democratic leadership. They carry out various stages such as collaboration, discussion and joint decision-making.</p>
<p>Baharudin Nugroho, (2019)</p>	<p>Adi “Community Participation in the Implementation of PT.Otsuka Indonesia CSR Program through Hydroponic Plant Cultivation (a study on the community of Kalirejo Village, Lawang).”</p>	<p>The result research is The management of hydroponic farming activities in Kalirejo Village is tailored to the needs of the community with the aim of improving the standard of living of the local community. After conducting hydroponic cultivation activities, the community can create very fresh crops. This will have an impact on the increasing economic value. Community participation in Kalirejo Village is said to be good because there is active involvement in the stages of participation such as planning, implementation, evaluation and development.</p>

<p>Sekarrini, P. A., &amp; Siswanto, H. (2020)..</p>	<p>"The Role of Surabaya Hydroponic Lovers Community (Phs) in the Community Empowerment Process through the Hydroponic Village Program at Gemah Ripah Garden Corner Surabaya. Journal of Surabaya State University, 1-8."</p>	<p>The result research is the role of the community in the community empowerment process is the involvement of community groups in hydroponic management activities. Community participation plays a very active role, where the empowerment process is tailored to the needs of the community. It is directly and indirectly, the community can participate actively in the planning, implementation and evaluation process.</p>
<p>Erika Aprillia Renata, Savi Nadine Assalma Alhamdany, Ika Sari Tondang (2023)</p>	<p>"Community Empowerment through Simple Hydroponics for Rungkut Kidul Community in Surabaya City"</p>	<p>The result research is the community empowerment carried out by the local community is hydroponics. They have the initiative to do hydroponic management. The initiative will bring knowledge, skills, and resources to the community. With the existence of community empowerment, the goal is to prosper the community and increase independence. Hydroponics is a simple activity because of the cultivation of plants that do not use soil. Because the cultivation uses more water media that is rich in nutrients..</p>

In terms of the implementation of community participation, researchers found that community participation in the empowerment program was very involved. There is involvement from the community in carrying out the stages in participation that make them have a positive impact and also benefits. The complete explanation of previous research on the concept of community participation in hydroponic management.

### Concept Of Community Participation

Adi in Ocbianto (2021: 21) argues that participation is the involvement of the community in the process of identifying problems and opportunities that are expected to be faced by the community in the future, besides that the community can go through several stages such as decision making, implementation and evaluation. Meanwhile, Verhangen (Mardiakanto & Poewoko, 2015) (Irwa et al.2019) suggests that participation is a form of special interaction and communication related to the division of authority and responsibility (Mustansir et al., 2020).

In general, community participation is the participation of the community in the discussion process that makes decisions to go through various stages in implementation, decision making, efforts to overcome problems and evaluate changes that occur, all of these stages are carried out with community involvement. With the involvement or participation of the community in participation as a result of social interaction between the community and others.

## Stages Community Participation

The 4 stages or processes of community participation (involvement) are:

1. Participatory situation assessment  
Communities can empower themselves with confidence because they can be directly involved in the empowerment process from planning, decision making, analysis to decision accountability.
2. Group development  
Grouping people who are interested in the empowerment process, and then developing them into empowered community groups so that they can carry out empowerment activities or programs for other communities.
3. Preparation of activity plans and implementation  
Preparation of plans and implementation of activities that aim to enable community groups to develop and implement empowerment activities based on environmental issues and possibilities.
4. Participatory monitoring and evaluation  
Monitoring and evaluation of community empowerment programs to ensure that the program is running well and consistent with the goals of all parties involved in the community empowerment process.

Experts differ on the stages of community involvement in development. Ndraha (1990) asserts that the process of community participation in development includes the following stages of participation:

1. Participation in receiving and providing information. The community can have two directions in involvement or participation. So the community can receive information and vice versa, the community can also provide information. With this participation, good communication will be established.
2. Participation in providing responses or suggestions to the information received, either to reject or accept it. The community is given the opportunity to be able to provide responses and also refutations when they are participating.
3. Participation in development planning, including decision-making. When the community is making decisions, this step becomes their participation in development planning.
4. Participation in the implementation of development measures.
5. Participation in receiving development results.
6. Participation in the evaluation of development results.

According to Cohen and Ukhooff, Supriatna (2000), the forms of participation of program beneficiaries are participation in decision-making, implementation, use, and evaluation of development programs. In contrast, in Supriatna (2000), Conyers, Moedjarto, and Korter add identification of development issues and planning of development programs to these three forms of participation. Based on the various opinions mentioned above, the researcher can argue about the stages of participation, which need to be explained in the following so that it can be understood at what stage the opinions of the experts above are. The summary include: (1) Identify the problem (2) Make a plan (3) Decision-making (4) Implementation (5) Monitoring (6) Maintenance (7) Use

There are several factors that can influence community participation in the implementation of development and empowerment programs. These factors can support program implementation or can be an obstacle to program implementation. Adisasmita (2006) states that there are several supporting and inhibiting factors for participatory rural development. The supporting factors include:

1. The existence of strength, a sense of togetherness, awareness, and high sincerity by community members who have agreed together.
2. The existence of facilities (human resources, material resources) that support participatory development
3. The activity program meets the needs of the local community.

The inhibiting factors include:

1. Lack of education about the importance of community participation in the community development process.
2. Lack of active coordination in participatory development activities
3. Planning and programming of development activities are not based on community needs

### **Agriculture Concept**

Agriculture is important for the economic development of the agricultural sector, not only as a source of food but also as a source of livelihood. Agriculture is also not only a source of export revenue, but also a driving force and engine of growth in the economic sector, which is able to increase economic growth and equity, overcome poverty and unemployment, and improve people's welfare. In agriculture, farmers need land to grow crops and produce food to meet their needs, both those who own land and those who do not own land as a means of livelihood to make a living. Therefore, the relationship between farmers and agriculture cannot be separated because agriculture is not just about generating economic income for farmers. Because through farming, farmers can get the most out of their farming efforts. Agriculture is an activity that can utilize natural resources that aim to obtain results such as agricultural products (Soetrisno, 2016). Agriculture becomes an activity of planting and processing plants to obtain results that can be used as raw materials. The main sector in the economy has many techniques and systems, of which the hiroponic farming system is a favorite for local people.

### **Hydroponic Agriculture System Concept**

The word hydroponics comes from the Greek word "Hydroponos", where Hydro means water and Ponos means power. Hydroponics, also known as soil-less cultivation, is defined as the process of growing plants without using soil as a growing medium. Therefore, hydroponic plants are plants that are grown using water circulation without using soil as a growing medium, but can use burnt shells, rockwool, and others. The general definition of hydroponics is to grow plants without soil media, using only recycled water with additional nutrients to meet the needs of plants. using a certain amount of water for hydroponic growing media, but only using a small amount of water. The thing that needs to be considered in the process of planting using Hydroponic Media is the nutrients dissolved in water.

Hydroponics is a technique for growing plants that uses water as a growing medium that contains a certain amount of nutrients and oxygen. According to Susila (2017), hydroponics is a technique of growing plants in a controlled environment, without soil and with a controlled supply of plant nutrients, by using or reducing the substrate. Hydroponics is a concept of growing plants that utilizes water to meet the nutrients of plants (Susilawati, 2019). Hydroponic plants grow well without soil. The hydroponic system is a technique for growing plants without using soil as a growing medium. In addition, hydroponic systems are easy to operate with household equipment and are very efficient in community management (Susilawati, 2019). The concept of a hydroponic plant system includes:

1. Providing nutrients in the form of mineral solutions and nutrients that plants need by watering or dripping.
2. This technology allows you to keep more plants in a smaller space. In fact, you can maintain more productive plants even without soil media
3. Hydroponic cropping systems must be pesticide-free to avoid pests and diseases.
4. Aeroponics is the latest advancement in hydroponics. Place the plants on styrofoam until the roots droop.

### **Benefits Of Hydroponic Agriculture**

Hydroponic farming is an alternative cultivation concept that has many benefits, including: Plants grow and develop faster, Higher plant production, Success in plant growth and production is more guaranteed, Maintenance becomes more convenient, More efficient use of fertilizer (saving) Hydroponic farming benefits both farmers and the community by raising awareness about the importance of self-help management and positive behavioral changes in overcoming the situation of limited land. The community is able to change the lifestyle of consumers to be more productive and able to increase income for the family if they have more supplies.\



## Advantages Of Hydroponic

Growing plants hydroponically has several advantages over traditional planting on land. The advantages of growing plants with this system are:

1. **Flexibility:** Hydroponics is flexible because it can be applied to various conditions such as densely populated cities and limited land.
2. **Easy nutrient management:** Hydroponics ensures the balance of the nutrient solution used, making it easy to control the hydroponic system and easy to add or remove nutrients.
3. **Increased yield:** Hydroponics produces 2 to 4 times more yield than traditional systems. This is because the optimal conditions for plants, especially the essential nutrients, are always available.

As for the other advantages of hydroponic management, it has several advantages, including: plants of the same species can be placed close together, thus doubling the size per unit area and saving land use. The quality of the harvest is guaranteed due to the excellent control of the nutrients applied to the planting area, including: better shape, size, taste, color, and cleanliness. The harvest of hydroponic plants does not depend on the season or planting time, so market needs can be met through hydroponic cultivation. The types of hydroponics can be differentiated based on the medium used to grow the plants. The media is usually nutrient-free (sterile), but the nutrients needed by the plants are piped into the media or watered manually. The growing area can be gravel, sand, cork, charcoal, zeolite, or no aggregate substrate (water only). The most important thing in using a planting substrate is that it is pest-free so that mold and other diseases do not develop. (Roida, 2015).

## Disadvantages Of hydroponic

Although hydroponic management has many advantages, it also has disadvantages. The main disadvantage of the hydroponic system is that it requires a large initial capital, especially for the installation of the system. Some of the disadvantages of this system are according to Turner (2008) and Domingues et.al (2012) are :

1. Requires competent labor that has specific skills to run the hydroponic system. In hydroponic management, in addition to the community being involved in the implementation. The community must also have specialized knowledge and skills in managing hydroponics.
2. Not all crops can be grown using the hydroponic method. Only a few plants can be grown with the hydroponic method. Because more plants still use soil as their media.
3. Failure to do so can result in significant losses. At the beginning of hydroponic management, the community does spend a considerable amount of capital. So the community must be able to manage plants with the hydroponic method properly so that the results can generate benefits that are used according to their needs. This will also have economic and social impacts.
4. Initial capital is very expensive, for making hydroponics the community requires very expensive initial capital because of the large number of tools and materials. Although hydroponic management only requires a small area of land, hydroponics requires special containers and facilities to grow it. And not all plants can be managed with the hydroponic method. Hydroponic equipment is quite difficult to obtain and also maintain, so this is what makes people have to have very expensive crew capital in hydroponic management.

## Discussion

The discussion are that community participation can also be interpreted as community empowerment. Community participation in hydroponic management is an initiative that has the main goal of being able to provide knowledge, skills and community resources in order to increase independence and welfare. Hydroponics is a method of plant cultivation that does not use soil, but uses water media. The benefits of hydroponic management are that it can produce plants in an efficient way, the community can optimally manage the plant growing environment. Because hydroponics is very important to consider in terms of temperature, humidity and nutrient availability.

Community participation in managing hydroponics can be seen from the activeness of the community and the increase in knowledge about how to manage hydroponics in the surrounding environment. In addition, community participation has been actively involved because it can increase economic production and income for the community. Community activeness can be seen through social activities such as conducting deliberations to make decisions from the implemented program. The benefits obtained from the community in managing hydroponics itself, namely, can reduce environmental pollution and can save costs for the production of plants produced.

Community participation in hydroponic management is an agricultural initiative. The initiative is developed by the community which has goals and benefits in it. Because it will be a source of income for some people. Indonesia has a large area of agricultural land, which can be utilized by people who make a living as farmers. But hydroponic management is not only done by farmers, people in villages and cities who have not enough land can be used to manage hydroponics. Although the hydroponic management business is relatively costly, hydroponics can be a solution that can be done by the community by learning about hydroponic management. With a modern and efficient way of farming, the community will participate in supporting food security at the local level. Hydroponics is made possible by the enthusiastic involvement of the community in managing it. Hydroponics provides a simple solution for people living in urban areas, allowing them to produce their own fresh food, thus reducing dependence on outside supplies and reducing costs.

There is a connection or involvement of the community in managing hydroponics. The community is directly involved in several stages, including community participation. The community is involved in planning, implementation and evaluation or monitoring. From several journals or literature reviews that I have read, that community participation has been very active in empowerment programs. Because these activities have goals and benefits when the program is implemented. A development can run efficiently, because people can be invited to contribute and are always involved in programs. The impacts that will be received also vary, such as social, cultural and economic impacts.

## CONCLUSIONS

This article aims to determine community participation in managing hydroponics and improve knowledge and attitudes in the field. The research uses a literature study to analyze articles published by previous researchers and systematically collects, processes, and summarizes data to find answers to problems related to community participation in hydroponics. The results show that community participation in hydroponics can be seen in the activeness of the community, increased knowledge about hydroponics in the neighborhood, and an increase in the standard of living of the local community. All communities can actively participate if they understand how to manage hydroponics properly.

Community empowerment is a development strategy that focuses on increasing independence and internal strength of resources, focusing on people-centered, participatory, empowering, and sustainable development. Community participation is essential for obtaining information about the conditions, needs, and attitudes of the local community, participating in the planning process, and fostering participation in decision-making for longer-term results. Community participation is crucial for achieving development goals and supporting the success of development. This can be achieved through various forms of participation, including social, cultural, economic, and religious fields. In Indonesia, the agricultural sector plays a significant role in national economic development, with 34.36% of the population relying on agriculture for livelihood.

The government develops agricultural programs to meet local food needs and improve the economy. Hydroponics, a method of growing plants without soil, can be used to improve community creativity in agriculture. Training and knowledge acquisition help the community develop expertise in farming. Hydroponic systems grow faster than traditional systems due to the direct interaction of roots with oxygen, optimal acidity, and increased nutrient uptake. Community empowerment is essential for

a dynamic society, allowing individuals to integrate into society and develop themselves. This empowerment can create opportunities for education, services, and utilization of facilities and infrastructure. Participation in agricultural development is applied through agricultural groups, promoting community involvement and addressing future problems and opportunities.

## REFERENCES

- Baharudin Adi Nugroho, 2019. *Partisipasi Masyarakat dalam Pelaksanaan Program CSR PT.Otsuka Indonesia melalui Budidaya Tanaman Hidroponik (studi pada masyarakat Kelurahan Kalirejo, Lawang)*
- Budi Wiratno. 2016. Jurnal Pendidikan Ilmu Sosial. *Partisipasi Masyarakat Dalam Pendidikan*, vol 26 No.1 Juni. Hal. 29
- Erika Aprillia Renata, Savi Nadine Assalma Alhamdany, Ika Sari Tondang (2023). Pemberdayaan Masyarakat Melalui Hidroponik Sederhana Bagi Masyarakat Rungkut Kidul Kota Surabaya
- Ibrahim, M., Mustanir, A., Adnan, A. A., & Alizah P, N. (2020). *Pengaruh Manajemen Pengelolaan Badan Usaha Milik Desa terhadap Peningkatan Partisipasi Masyarakat di Desa Bila Riase Kecamatan Pitu Riase Kabupaten Sidenreng Rappang. Movere Journal*, 2(2), 56–62.
- I Gede Made Agustina Putra., & I Putu Dharmawan Pradhana. (2023). Program Sosialisasi Pengembangan Tanaman Hidroponik di Desa Kampung Kusamba Guna Meningkatkan Ketahanan Pangan. Volume 5, Nomor 1, Maret 2023, 774-781
- Lukas Pawera, Ravishankar Manickam, Carolyne Wangungu, Uon Bonnarith, Pepijn Schreinemachers, Srinivasan Ramasamy. (2024). Guidance on farmer participation in the design, testing and scaling of agricultural innovations. *Agriculture System*. Volume 218, June 2024, 14006
- Mirzaqon. T, A dan Budi Purwoko . 2017. Studi Kepustakaan Mengenai Landasan Teori dan Praktik Konseling Expressive Writing. *Jurnal BK Unesa*, 8(1).
- Mustanir, A., Muhammadiyah, U., & Rappang, S. (2019). *Partisipasi Masyarakat Dalam Pembangunan Infrastruktur Di Desa Timoreng Panua Kecamatan Panca Rijang Kabupaten Sidenreng Rappang*. February.
- Ndhara. 1981. *Partisipasi Masyarakat Desa Dalam Pembangunan Desa*. Jakarta : Yayasan Dharma IIP. Hal. 119.
- Netly Dini Aldila, 2020. *Partisipasi Masyarakat Dalam Mengelola Hidroponik Kelurahan Pengadegan Kecamatan Pancoran Jakarta Selatan*.
- Nugraha, A. W. 2019. Pemberdayaan Masyarakat Desa Sumberdadi dengan Pelatihan Hidroponik dan Pupuk Organik. *JPP IPTEK (Jurnal Pengabdian Dan Penerapan IPTEK)*, 3(1), 25–32.
- Pande Wayan Suarsa. 2015. *Jurnal Ilmu Sosial dan Humaniora*. Pemberdayaan Masyarakat Melalui Pelatihan Ergo-Entrepreneurship Untuk Mengembangkan Pengetahuan Dan Sikap Kewirausahaan Serta Meningkatkan Pendapatan Pedagang Kuliner Lokal DiDesa Peliatan, Ubud, Gianyar, vol.4 No.2 Oktober. Hal. 611.
- Roidah, I. S. (2014). Pemanfaatan lahan dengan menggunakan sistem hidroponik. *Jurnal Bonorowo*, 1(2), 43-49.
- Romalasari, A., & Sobari, E. (2019). Produksi selada (*Lactuca sativa* L.) menggunakan sistem hidroponik dengan perbedaan sumber nutrisi. *Agriprima, Journal of Applied Agricultural Sciences*, 3(1), 36-41.
- Samsukdin, S. (2023). Konsep Pertanian Organik Lahan Kering Melalui Pemanfaatan Budidaya Maggot (Black Soldier Fly). *JURNAL AGROSAINS: Karya Kreatif dan Inovatif*, 8(1), 18-26.
- Sekarrini, P. A., & Siswanto, H. (2020). Peran Komunitas Pecinta Hidroponik Surabaya (Phs) Dalam Proses Pemberdayaan Masyarakat Melalui Program Kampung Hidroponik Di Pojok Kebun Gemah Ripah Surabaya. *Jurnal Universitas Negeri Surabaya*, 1-8.
- Singih, M., Prabawati, K., & Abdulloh, D. (2019). Bercocok tanam mudah dengan sistem hidroponik NFT. *Jurnal Abdikarya: Jurnal Karya Pengabdian Dosen dan Mahasiswa*, 3(1).