

DOI: 10.32663/ja.v21i2.4389

**AGRICULTURAL EMPOWERMENT MODEL AND
DEVELOPMENT POLICY IN REALIZING FOOD SECURITY
PILLARS: SYSTEMATIC LITERATURE REVIEW**
(*Model Pemberdayaan Pertanian dan Kebijakan Pembangunan Dalam Mewujudkan Pilar
Keamanan Pangan*)

Lina Asnamawati^{1*}, Is Eka Herawati¹, Eha Saleha¹, Yuliawati², Ana Nurmalia³

¹Universitas Terbuka, Jalan Cabe Raya, Pondok Cabe, Pamulang, Tangerang Selatan 15437, Banten –
Indonesia

²Universitas Mercu Buana, Jalan Meruya Selatan No. 1 Kembangan, 11650 Jakarta-Indonesia

³Universitas Dehasen, Jalan Meranti Raya No. 32 Sawah Lebar Kota Bengkulu 38228 Bengkulu-
Indonesia

Corresponding author, Email: linaas@ecampus.ut.ac.id

ABSTRACT

Community empowerment is an economic development concept that outlines community values to create a new paradigm in development that is people-centered and participatory. The Systematic Literature Review (SLR) approach was used by the researchers to perform their investigation. To capture worldwide trends from previous research, data was analyzed using Microsoft Excel and the Bibliometric tool. The Prism Protocol was used to collect data. An in-depth examination of 44 papers on farmer empowerment and agricultural development policies to achieve sustainable food was undertaken. According to the study's findings, the four pillars of food security are availability, affordability, usage, and stability, and empowerment should play a part in strategic food and nutrition strategies from 2020 to 2024. Empowerment stresses the acquisition of sufficient skills, knowledge, and abilities.

Keywords: *agricultural development, empowerment model, food security pillar, policy*

ABSTRAK

Pemberdayaan masyarakat merupakan suatu konsep pembangunan ekonomi yang menguraikan nilai-nilai masyarakat untuk menciptakan paradigma baru dalam pembangunan yang berpusat pada masyarakat dan partisipatif. Pendekatan Systematic Literature Review (SLR) digunakan oleh peneliti untuk melakukan penyelidikannya. Untuk menangkap tren global dari penelitian sebelumnya, data dianalisis menggunakan Microsoft Excel dan alat Bibliometrik. Protokol Prism digunakan untuk mengumpulkan data. Kajian mendalam terhadap 44 makalah tentang pemberdayaan petani dan kebijakan pembangunan pertanian untuk mencapai pangan berkelanjutan telah dilakukan. Berdasarkan temuan studi tersebut, empat pilar ketahanan pangan adalah ketersediaan, keterjangkauan, penggunaan, dan stabilitas, dan pemberdayaan harus berperan dalam strategi pangan dan gizi strategis dari tahun 2020 hingga 2024. Pemberdayaan menekankan pada perolehan keterampilan, pengetahuan, dan keterampilan yang memadai. kemampuan.

Kata kunci: kebijakan, model pemberdayaan, pembangunan pertanian, pilar ketahanan pangan

DOI: 10.32663/ja.v21i2.4389

INTRODUCTION

The world has experienced a decrease in poverty (World Bank, 2017). However, 10% of the world's population is still poor and half of the poor live in Sub-Saharan Africa (World Bank, 2020). Many of the World's poor are farmers (Cervantes-Godoy and Dewbre, 2010; Ogutu and Qaim, 2019), which may explain the observation that the agricultural sector is more effective in eradicating poverty than the non-agricultural sector (Cervantes-Godoy & Dewbre, 2010), however, agriculture faces many challenges that hinder its performance. Therefore, empowering farmers is feasible because it has a positive relationship with the desired development outcomes, including better food and nutritional security status (Ochungo et al., 2022)

Indonesia is an agricultural country, so agriculture is an important sector in the national economy. This can be seen from the large number of people who work in the agricultural sector. (Ayun et al., 2020). Agricultural sector policies will be beneficial for national development. Thus, strategic policies need to be designed according to needs that will have a direct impact on improving the community's economy (Mubyarto, 1989). In the agricultural sector that is directly dealing with food, it is natural for food security to be a strategic study to improve welfare (Ochungo et al., 2022). Improving welfare in the agricultural sector does not rule out the possibility of community performance in the informal sector. The performance of this sector consists of several clusters; agriculture, fisheries, forestry, coastal, labor, domestic servants, and others (Tumangkeng, 2018) Self-reliance support can be implemented with agribusiness-based community

empowerment programs using modern agricultural technology (Sumardjono, 2008).

However, in Indonesia there are many smallholders or subsistence farmers, most of whom have limited resources and depend wholly or partially on subsistence production. Small farmers are generally rural and mostly live below the poverty line. The poverty experienced by farmers is a consequence of agricultural involution, low levels of productivity leading to low incomes. (Martin et al., 2016). Many smallholders are unable to make ends meet, especially if crops fail due to pests or natural disasters. To survive in that situation, many farmers then carry out other activities, such as selling goods in small quantities, working as freelance laborers, or other jobs (StudyCha, 2013)

One of the agricultural development activities is improving the quality of human resources (HR) of farmers and their families. It aims to improve the knowledge, attitudes, and skills of farmers and their families so that they can develop more productive agriculture and at the same time improve the welfare of their families. Low crop production will lead to low-income levels for farmers. To obtain maximum results and higher income, empowerment is needed regarding technical aspects, social aspects, and institutional aspects (Desiana & Aprianingsih, 2017)

An estimated half of the world's population relies on subsistence agriculture and about 40 percent of farmland is cultivated by small farmers. Then a small number of farms of about 130 million provide direct life to billions of people. This shows the importance of the role of smallholders in world development. Similarly, the number of smallholders in

DOI: 10.32663/ja.v21i2.4389

Indonesia continues to increase from year to year. Therefore, smallholders must get protection and empowerment to maintain and improve their farming business (Murdiyanto et al., 2016).

The empowerment process does not occur by itself, but with community participation and participation so that it can be effective. For empowerment to take place and succeed it is not only necessary to participate and master science and technology, but we must build people as well to be able to adjust their thoughts and actions to the developments that occur and have a sense of responsibility and participate in maintaining the results or efforts that have been implemented (Margayaningsih, 2018). Empowerment is a concept related to power. It has been defined as "the ability to get what one wants, and the ability to influence others to feel, act, and/or behave in ways that advance one's own interests" (Dodd and Gutierrez 1990) and "the capacity to exert control and influence over decisions that affect one's life space for one's own sake" (Zimmerman 2000).

Empowerment has different meanings in different sociocultural and political contexts, usually involving the use of terms such as self-efficacy, control, self-power, self-reliance, independence, making one's own decisions, and being free to define them (Narayan 2002). Empowerment has intrinsic value and can be applied at both individual and collective levels. In a broad sense, empowerment is the expansion of freedom of choice and action. It means increasing one's authority and control over resources and decisions that affect one's life. When people exercise real choices, they gain greater control over their lives (Dr. Vladimir, 1967).

The empowerment of natural resources is currently not optimal. The availability of technology is currently not able to accommodate these resources. According to (Mayrowani, 2016) agriculture is a business that has no certainty caused by the influence of natural conditions such as soil and climate. However, the agricultural sector is one of the resilient sectors in the era of the Covid 19 pandemic, growing by 16.24% while other sectors have declined. This is due to people's consumption patterns that place basic commodities as their spending priority (99.99%). Empowerment carried out for farmers to maintain food to remain sustainable.

The problem of uneven food supply over time, The capacity of upstream food actors (farmers and ranchers) is still limited and the use of conventional on- and off-farm technology, The problem of harmonization of the import period with the harvest, Geographical variations that have not been supported by adequate distribution channel infrastructure encourage price disparities between regions, income disparities, people's purchasing power and understanding of food consumption safe, nutritious and sufficient in the community (Purwaningsih, 2008)

According to Law Number 18 of 2012 concerning Food. Achieving food that is always available in an adequate, safe, quality, nutritious, and diverse manner at prices that are affordable to people's purchasing power, and do not conflict with the beliefs and cultures upheld by the wider community. Advances in communication technology, transportation and government policies involving the private sector in the process of agricultural development have caused sources of information, technology,

DOI: 10.32663/ja.v21i2.4389

agricultural innovation to become more diverse (Laible et al., 2015)

Conservation technology systems are applied to build a sustainable agricultural sector. The implementation of agricultural technology has been long and used for more than 40 years, the technology provides great contribution value in monitoring and maintaining supply channels in the form of agricultural products or distribution of other supporting equipment. includes agriculture, animal husbandry, fisheries, food crops, plantations, and others. Sustainable food or sustainable food system in Indonesia is an effort to optimize food intake from various sides. Not only a matter of quantity, but sustainable food also focuses on preserving the environment, providing wider access, as well as food at affordable prices. Food as a necessity faces challenges to achieve sovereignty. (Subagyono et al., 2004); (Ma'ruf, 2017)

The condition of Indonesia as an agricultural country and formed from

thousands of islands is one of these challenges, both now and in the future. Pangan Bijak Nusantara is a vision of sustainable food sovereignty that is fair and respects local wisdom for all people in Indonesia (Kaputra, 2015). It is necessary to mainstream Indonesia's existing sustainable food system into government policies. The policy is designed by considering the condition of Indonesia as an archipelagic country so that appropriate policies are obtained and able to meet the characteristics of different regions on each island (Food Security Council, 2009). In addition to policies, the role of every level of society, from the process of production, and distribution, to consumption is also important so that a sustainable food system can be successfully implemented. With such conditions, an empowerment model is needed that can realize the pillars of food security.

METHOD

1. The procedure of systematic review

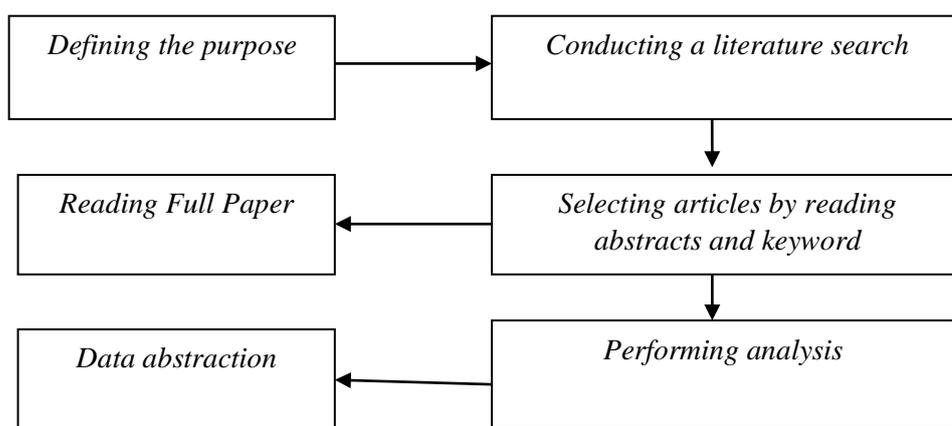


Figure 1. Illustrates the schematic procedure of a systematic review of research.

2. Selection studies process

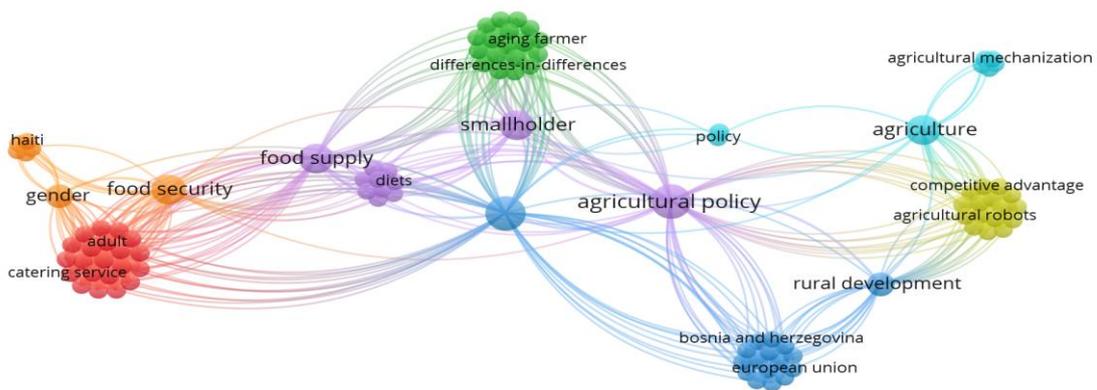
According to the data processing of 44 Scopis journal publications, there are at

least 7 groups that discuss empowerment and agricultural policy. The most commonly

DOI: 10.32663/ja.v21i2.4389

used keyword appears to be agricultural policy, with the word empowerment in blue nude coming in second. Furthermore, other tiny clusters could be exploited for more in-

depth research, such as the phrases gender, food consumption, agricultural robots, and corporate social responsibility.



Many problems in Scientific articles in 2021 included rural development and robotics in agriculture, which shifted in 2022 to issues of smallholders, diet, food supply, and food security, and are now more focused on catering services and agricultural

mechanisms. However, a few articles in the Prestigious journal still discuss the agricultural empowerment paradigm, which deserves further examination.

RESULTS AND DISCUSSION

Table 1. Article Review Overview

Researchers	Research Topics	Findings
(Khusna et al., 2019)	Development of Rice Farmer Empowerment Model through Upstream Downstream Agro Maritime Program in Agriculture	The Jember Region local government's rice empowerment for farmers strategy, implemented in the Upstream and Downstream Agromaritime Program in the Agricultural Sector, is based on partnership. This program's stakeholders include the East Java Provincial Government, Food Crops and Horticulture Service, Agricultural Technology Research Center, Bank Jatim, Jasindo Insurance, GAPOKTAN Mitra Tani Sejati, and farmers. To ensure the success of both the Upstream and Downstream Agromaritime Program in the Agricultural Sector, all stakeholders play diverse

DOI: 10.32663/ja.v21i2.4389

		responsibilities. According to the research findings, the evaluation of the 2018 Agromaritime Upstream and Downstream Program in the Agricultural Sector indicates that the program continues to struggle with downstream processes. The creation of a model for enabling rice farmers via the Upstream and Downstream Agromaritime Program.
(Wulanjari & Setiani, 2016)	Farmer Empowerment Strategy in Farmer Business	<p>Community empowerment is a process to improve the ability and capacity of the community to utilize the resources they have, both human resources (HR) and natural resources (SDA) available in their environment to improve the welfare of farmers. Empowering farmers can be done by the government or by the private sector. The government is through related agencies, while the private sector is carried out by private companies through CSR (Corporate Social Responsibility). The empowerment strategy is carried out using a group approach.</p> <p>The results showed that: i) empowerment should use a participatory approach; 2) empowerment must be able to change behavior; 3) Empowerment should touch all aspects of needs. Based on several research results, it can be concluded that the empowerment of farmers in farming is needed related to increasing income and welfare.</p> <p>Empowering farmers through farmer groups will increase knowledge about risk management, capital, and marketing. In addition, it also increases positive attitudes towards innovation and sustainability of agricultural businesses carried out, as well as other skill levels in farming.</p> <p>The application of the participatory development model (maize-livestock integration program) is a very wise implication, which makes it very strategic in seeking the empowerment of poor farmers in agricultural development in rural areas, towards increasing the income and welfare of farmer households. In addition, farmer empowerment programs should be integrated not only related to financial aspects but also research and development aspects as well as post-production handling aspects</p>
.	<i>Improving Income</i>	The empowerment of farmer groups is

DOI: 10.32663/ja.v21i2.4389

<p>(Desiana & Aprianingsih, 2017)</p>	<p><i>through Farmers' Group Empowerment Strategy</i></p>	<p>considered necessary because in agricultural development, farmer groups are the main resources and subjects of development in developing their agricultural businesses. This paper aims to explore strategies for empowering farmer groups to increase their income. This paper is only based on a literature review with the topic of farmer groups and empowerment to explore phenomena in the agricultural sector.</p> <p>Farmer group empowerment strategies such as farmer group learning and innovation as well as information and communication technology (ICT) have a positive influence on increasing their income. The most important farmer group empowerment strategies in the relevant literature were identified such as farmer group learning and innovation and ICT</p>
<p>(Ginige & Richards, 2012)</p>	<p><i>A Model for Enhancing Empowerment in Farmers using Mobile Based Information System</i></p>	<p>Farmers living in villages in Sri Lanka do not have access to proper information to make decisions about their livelihoods and as a result they face constant difficulties in their lives. They use mobile phones to communicate but are not currently connected to the Internet.</p> <p>The model examines several empowerment processes and support tools that will help them achieve their goals in the hope that they will have an increased sense of control, self-efficacy, knowledge, and competence. This empowerment model is applied to the development of mobile-based information systems that are being developed by international collaborative research groups to address farmers' problems.</p> <p>Sri Lankans face many problems due to lack of information to make the right decisions with regards to their livelihood activities. Although some of this information is available on government websites and from farm officials, so far farmers have not utilized this information effectively. There are two aspects to making effective use of this information. The first aspect is to provide information to farmers. The second aspect is empowering farmers through the best use of this information. To investigate this issue, an international collaborative research project has been initiated to implement Mobile Based Information Systems to provide timely, relevant, and personalized information to farmers and to help them make the best use of such information</p>

DOI: 10.32663/ja.v21i2.4389

		<p>to improve their livelihoods.</p> <p>As the next step of our empowerment model investigation, we are in the process of developing a profit calculator. This tool will be tested for usefulness with farmers in Sri Lanka. From the insights that will be gained, the development of profit calculators and empowerment models will be refined. This iterative process will be repeated for other devices in the proposed enablement model. Farmers need personalized information in the context of their own situations and tools in order for them to act on this information. Based on this we have presented an empowerment model with empowerment activities that will enable them to make their own decisions, become independent, pro-active, empowered, and improve their lives.</p>
(Murdiyanto et al., 2016)	<i>The Small Farmers Empowerment Model</i>	<p>This research is to design a model of empowering smallholders in Salam-Trump on. The study used quantitative methods. Data collection method with observation, interviews, and Focus Group Discussion (FGD). The collected data is tested for validity with triangular sources and methods.</p> <p>The analysis technique uses the Miles and Huberman models. The results showed that empowerment by using farmer groups as agents of change is more suitable to be applied to smallholders. This is due to the social and emotional closeness between smallholders and farmer groups.</p> <p>Empowerment by using farmer groups as agents of change is more suitable for smallholders. This is related to the social and emotional closeness between smallholders and farmer groups, so that the empowerment process can run smoothly and sustainably This model provides better empowerment of smallholder's agricultural techniques (<i>better farming</i>), improved farming, and improved lives of farmers and communities (<i>better living</i>)</p>
(Widjajanti, 2011)	Community Empowerment Model	<p>Research findings show that there are two patterns of ways that lead to increasing community empowerment, where (1) a pattern consisting of two stages for empowerment, and (2) a pattern that shows that to increase empowerment requires three stages of a process</p> <p>There is a correlation where the higher the</p>

DOI: 10.32663/ja.v21i2.4389

		<p>empowerment process will be able to create community empowerment. The implementation of the results of this research is that empowerment wants human capital development, and it would be even better if empowerment is supported by the development of the ability of empowerment actors. The process of increasing the empowerment of community members through the empowerment process is manifested from social capital, human capital, physical capital, and the ability of actors. This will be able to provide a better solution because it can add to the explanation that the community empowerment process is necessary to achieve community empowerment. There are two patterns to increase community empowerment.</p> <p>The empowerment process in Sumber Rahayu Village has a significant effect on community empowerment. This empowerment process is marked by the community's ability to make problem analysis, planning, implementation, and evaluation of an empowerment program. The role of actors needs to be improved in their knowledge and skills to provide support in facilitating the success of empowerment, to increase sustainable community independence. The second pattern is a pattern of gradual pathways that can be traversed for community empowerment. Increasing community empowerment can be achieved through the empowerment process due to the role of human capital and physical capital. This finding provides a solution that business capital which includes physical modes and human capital does not automatically generate community empowerment. The development of physical capital will stimulate the development of human capital which will support the empowerment process which will ultimately increase community empowerment.</p> <p>To be able to increase their empowerment, the community is not only enough to develop physical capital, but also must improve the quality of its human resources as a condition for success in empowering. This research proves that human capital plays a role in changing community resources to achieve the success of</p>
--	--	---

DOI: 10.32663/ja.v21i2.4389

		the empowerment process.
(Mulyaningsih, et.al. 2022)	Farmer Empowerment Strategy in Supporting Local Food Diversification in Pandeglang District	<p>The strategy to increase the empowerment of farmers in realizing local food diversification is prepared based on short-term strategies and long-term strategies. The short-term strategy carried out is how to: improve farmers' perceptions through extension services and provide understanding that by diversifying corn, sweet potato, and cassava foods have relative advantages, are not complicated to maintain, have compatibility with natural conditions, and are easy to try.</p> <p>Long-term strategies are carried out by increasing farmer independence by increasing farmer empowerment in improving the ability of farmers to manage farm finances, the ability of farmers to partner and the ability of farmers to adapt to conditions so that farmers have independence in competitiveness, sanding, and filtering in increasing food diversification.</p>

Forms of Behavior of Farming Communities in Sustainable Food Improvement

Farm business activities can be carried out in two ways, namely in traditional and modern ways. How to cultivate rice fields in the traditional way, namely the processing of rice fields carried out with simple tools such as sickles, hoes, plows, and rakes which are all done by humans or assisted by animals for example, buffaloes or cows. While how to cultivate rice fields in a modern way, namely processing rice fields carried out by machines. With tractors and soil processing tools that can work alone (Lestari & Idris, 2019)

According to Mangola (2017), the importance of empowerment for farmers in relation to economic development is required so that the farming community will have optimal abilities in agricultural activities.

The capabilities referred to in relation to empowerment include: 1). Creating a conducive climate so that quality, s are able to form and develop their groups in a participatory manner (from, by and for farmers); 2) Fostering the creativity and initiative of smallholders to take advantage of every available business opportunity, information and access to capital; 3) Help expedite the process in identifying needs and problems as well as formulating plans and solving problems faced in their farming; 4) Improve the ability to analyze market potential and business opportunities and analyze the potential of the region and resources owned to develop commodities developed / cultivated to provide greater business profits; 5) Improve the ability to be able to manage farming commercially, sustainably and environmentally friendly; 6) Improve the ability to analyze the business potential of each member to become a

DOI: 10.32663/ja.v21i2.4389

business unit that guarantees market demand in terms of quantity, quality and continuity; 7) Develop the ability to create specific local technologies; 8) Encourage and advocate for farmers to be willing and able to carry out savings and loans activities to facilitate business capital development.

Furthermore, strategies that can be carried out by the community for the development of agricultural commodities within the scope of sustainable food agricultural land called cultivation areas are carried out through (a) strategies for the realization and improvement of integration and linkage between cultivation activities, including the determination of cultivation areas that have national strategic value for the utilization of natural resources in land space, air space, and including space in the earth synergistic to realize a balance of regional space utilization; development of superior cultivation activities in the region along with infrastructure in a synergistic and sustainable manner to encourage economic development of the region and surrounding areas; development of cultivation activities to support political, defense and security, socio-cultural, and science and technology aspects; and development and preservation of agri-food cultivation areas to realize national food security; (b) strategies to control the development of cultivation activities so as not to exceed the carrying capacity and accommodating capacity of the environment, including limiting the development of built-up cultivation activities in disaster-prone areas.

Development of urban areas by optimizing the use of space vertically; development of green open space with an area of at least 30% (thirty percent) of the urban area; and (c) strategies for the

development of urban facilities that can support rural activities as the basis of the regional economy and in order to suppress population migration from villages to cities.(Satria et al., 2019)

The role of empowerment in community development for sustainable food improvement

Empowerment is a process to give power to the powerless and reduce power to those who are too powerful so that balance occurs (Djohani, 2003). Similarly, according to Rappaport (1984), empowerment is a way by which people, organizations, and communities are directed to be able to control or rule over their lives. According to Parsons (1994), empowerment emphasizes that people acquire sufficient skills, knowledge and power to influence their lives and the lives of others who concern them.

Research that (Haryanto et al., 2017) the involvement of facilitators as empowerment actors in overseeing the empowerment process is an important source as a pathway to achieve community empowerment. In more detail (Dahana Daru Harvianto, 2021) emphasizes that the essence of empowerment is how to make people able to build themselves and improve their own lives. The term able here contains meaning: empowered, understanding, motivated, having opportunities, seeing, and taking advantage of opportunities, energized, able to cooperate, knowing as an alternative, able to make decisions, dare to take risks, able to seek and capture information, and able to act according to initiative.

The Role of Counseling in Community Empowerment

The Role of Extension

Extension activities have many roles in the agricultural sector, including in terms

DOI: 10.32663/ja.v21i2.4389

of sustainable food improvement. Nasution (2004) stated that agricultural extension is an effort to help farmers to always improve the efficiency of agricultural business. In the sense of "helping" the community to help themselves, the following points of thought are contained; (1) agricultural extension services must refer to the needs of the targets to be assisted, rather than targets must obey the wishes of agricultural extension work goal. (2) agricultural extension services led to the creation of independence, not make the targets more dependent on agricultural extension workers, (3) agricultural extension services must refer to improving the quality of life and welfare of the targets, and not prioritizing physgoal. targets that often have little benefit for improvement Quality of life of the goal

Slamet (2001) nine characteristics that constitute a new paradigm in extension include: 1. Information services, where extension services must be able to prepare, provide, and present all the angulation needed by farmers (production, processing, marketing, and so on). Information needs to be prepared and packaged in a form and language that is easy for farmers to understand. 2. Locality, where to fulfill the principle of this locality, the Center for the Study of Agricultural Technology (BPTP) and similar institutions must be more functionalized, even expanded to level II areas in the form of experimental and research stations. The research conducted should aim to solve the problems or needs of local farmers. 3. Agribusiness-oriented, where principles and technologies related to agribusiness must be more developed and studied by extension workers.

Cooperation and coordination with institutions that handle processing and

processed products are needed by agricultural extension agencies. 4. Group approach, where extension workers need to be well prepared to foster groups and develop group leadership so that groups grow into dynamic farmer groups so that they can launch village community development that really comes from the bottom up. 5. Focus on the interests of farmers, where extension workers must be closer to farmers and able to identify the interests of farmers and pour in extension programs through cooperation with farmers. 6. Humanistic-egalitarian approach, where extension workers need to be equipped with a set of knowledge and skills related to social communication, social psychology, and social stratification. 7. Professionalism, namely the need for structuring and improving educational and training institutions that handle extension workers. 8. Accountability, namely the need to create an evaluation and accountability system that can be operated appropriately and accurately, each type of extension activity must be clear and measurable in purpose, the cost of extension must be considered with the results and impact of the extension. 9. Satisfying farmers, where proper education, training and example can produce extension workers who are able to extend wholeheartedly

Counseling, namely counseling as an educational, democratic and continuous process according to Sumardjo (1999) means that, (1) extension workers must be able to bring human changes in behavioral aspects, both cognitive, affective and psychomotor, (2) extension workers must be able to develop a free atmosphere, to develop the ability of the community in terms of thinking, discussing, solving problems, planning and acting together under the

DOI: 10.32663/ja.v21i2.4389

guidance of those among them, so that there shall be a settlement from them, by them and for them, and (3) extension shall begin from the condition of the farmer towards their desired goal, based on the ever-evolving needs and interests, perceived by the target of the extension.

Extension workers as motivators play a role in encouraging independent farmers to make changes by using new ideas to improve their standard of living. Extension workers are frontline professionals who take the initiative to make changes, help target communities carry out their farming activities, introduce and disseminate new ideas, encourage participation, and support the interests of Martinez's target communities (Mardikanto, 2009). According to Rogers and Shoemaker (1971) that, extension workers play a role in various things, namely: (1) developing the need for change, (2) fostering relationships for change, (3) identifying and analyzing problems, (4) cultivating change plans on targets, (5) planning change plans, and (6) stabilizing changes so that goals are able to develop themselves.

Extension workers must be able to provide advice to provide the best for farmers according to Mosher in Mardikanto (1982) the role of agricultural extension workers is to help farmers so that brands can take the maximum benefit from existing opportunities to increase their production power in accordance with existing possibilities. The roles of extension workers are as follows:

1) Agricultural extension workers as teachers can empathize, convey what they are, respect, always be present, acknowledge the presence of others, and open.

- 2) Agricultural extension workers as advice are by suggestions for solving problems that are being faced, suggestions for choosing the best alternatives, suggestions related to various matters related to efforts to increase income.
- 3) Agricultural extension workers as an analyst help identify problems that demand ability, determine impact points, which are simple problems for problem solving.
- 4) Agricultural extension workers as organizers are able to organize farmers and community groups by developing themselves, able to foster themselves to be objective, fair to all group members and responsive to attitudes, feelings and needs.

Another thing expressed by Suhardiyanto (1992) that the importance of the presence of extension workers for the community is that there are advances achieved through extension activities, namely (1) Technological improvements, namely superior seeds, fertilization, weed control, pests and diseases, processing and storage of production products, livestock breeding, improving nutrition and health; (2) Organizational improvement, which includes farm business management, budgeting, agricultural credit, marketing and cooperatives.

Farmer Empowerment Model for Sustainable Food Improvement

Food is one of the basic needs besides shelter. If there is life, humans always need food. Sustainable food or sustainable food system in Indonesia is an effort to optimize food intake from various sides. Not only a matter of quantity, sustainable food also focuses on preserving

DOI: 10.32663/ja.v21i2.4389

the environment, providing wider access, as well as food at affordable prices (Population and Environmental Development et al., 2020)

Food security according to (Suryana, 2003) is an integrated food economic system consisting of various subsystems. The realization of food security is a synergy and interaction of the three subsystems, namely: a) Food availability subsystem, covering aspects of production, reserves and balance between food exports and imports; b) Food distribution subsystem, including physical and economic accessibility to food equally; c) Consumption subsystem, concerning efforts to increase knowledge and ability of the community to have an understanding of food, nutrition, and good health, so as to manage their consumption optimally.

However, food security in creating sustainable food in Indonesia can be said to be still lacking. This is due to the imbalance in composition between people's food groups, where rice consumption is still too high while consumption of animal foods, vegetables and fruits is still low. Therefore, through Law Number 18 of 2012 concerning Food, the government conducts food administration. Food management is an activity of planning, implementing, and supervising in the provision, affordability, fulfillment of food consumption and nutrition, and food security by involving coordinated and integrated community participation. (Laily, 2014)

Increasing income and welfare of farmers still experience various kinds of obstacles, namely inadequate infrastructure, other problems that arise in rural areas that cannot be avoided are high land use conversion, low levels of agricultural productivity, lack of application of

agricultural innovation and technology, and uncertain climate change that can trigger increased job shifts and there is a possibility of encouraging population migration from villages to cities. (Windari, 2021).

The problems faced by farmers according to Agus (2009) in Mutmainah and Sumardjo (2014) which revealed that the characteristics of farmers who have not been empowered include; 1) have 45 low education, 2) work as laborers, 3) low ability to provide funds, 4) low knowledge in the use of available raw materials, 5) marketing is still in the local scope, 6) low ability to make plans, 7) low ability to explain things that damage the environment. The level of empowerment of farmer group members is measured by the ability of farmers to be entrepreneurial and independent in entrepreneurship. These two aspects are measured through three aspects of behavior, namely the level of knowledge, tendencies, attitudes, and skill levels.

In general, farmers who are empowered through farmer groups tend to have a high level of empowerment. This is evidenced by the high level of knowledge of farmers about risk management, capital, and marketing, then a positive attitude towards innovation and sustainability of the farmer business being run, as well as a good level of skills in farming (Mutmainah and Sumardjo, 2014).

An empowerment model is needed for sustainable food improvement. Sustainable food systems are expected to be created from the application of conservation technology. By improving and developing businesses from upstream to downstream and involving the community in increasing the value of agricultural products that support competitiveness. In order to create domestic

DOI: 10.32663/ja.v21i2.4389

self-sufficiency and increase the number of overseas sales. Empowerment is stated in the Village Law and Community Empowerment, article 112 Paragraph (3): The Government, Provincial Regional Government, and District/City Regional Government empower rural communities by: a. Applying the results of the development of science and technology, appropriate technology, and new findings for the economic and agricultural progress of the village community; b. Improve the quality of government and village communities through education, training, and counseling, and c. Recognize and function original and/or existing institutions in the village community. Paragraph (4): Village community empowerment as referred to in paragraph (3) is carried out with assistance in planning, implementing, and monitoring Village and Rural Area Development. Explanation of Article 90 (b): What is meant by "assistance" includes the provision of accompanying human resources and management.

Furthermore, according to Parson et.al. (1994) empowerment can be done with three oppressive of empowerment which refer to: a) A development process begins with individual growth which then develops into a greater social change, b) A psychological state characterized by self-confidence, usefulness and ability to control self and others, c) Liberation produced by social movements, which starts from the education and politicization of the weak and then involves efforts the collective of the weak to gain power and change the structures that are still oppressive

The empowerment according to Chambers (1985) states that the approach that prioritizes or prioritizes farmers as a farmer first approach. The characteristics of

the farmer first approach are as follows: 1. The main goal is to empower farmers. 2. Farmers are facilitated by outsiders in analyzing needs and priorities. 3. Transfer of technology from outsiders to farmers through principles, methods, and a set of choices. 4. The farmer is given the opportunity to choose the material he needs. 5. The behavioral characteristics of farmers are characterized by the application of principles, choosing from a set of options, and trying and using methods. 6. The main result to be achieved by outsiders is that farmers can improve their adaptability and provide wider choices for farmers. 7. The characteristics of the extension model are mainly from farmer to farmer. 8. Extension agents act as facilitators and seekers and provide options.(Sadono, 2008)

Efforts to improve the empowerment of farmers are efforts to improve the formation of mental attitudes through an independent attitude in trying. It is recognized that the way or system of farming until now is still generally traditional. The alternative to the development of farmers' mental attitudes is through increasing non-formal education, increasing activities through continuous counseling so that farmers have broad knowledge and insight in agriculture (Economics et al., 2013)

The farmer empowerment model is also carried out in various ways, namely empowering farmers through the Association It is concluded that 1) the working mechanism of the Association in increasing the knowledge of its members includes: through meetings of farmer group administrators from each hamlet at the village level, farmer group meetings attended by Gapoktan and PPL administrators as resource persons, meetings between

DOI: 10.32663/ja.v21i2.4389

Gapoktan, PPL and farmer groups. With the Association of its members can be empowered because there are often exchange activities of information, experience, discussion so that the knowledge and way of thinking of farmers become dynamic, not static, and better able to accept innovations, for example being able to receive superior seeds that can produce more abundant rice; 2) to change the mindset of farmers through comparative studies and skills training; 3) the mechanism of association as a mediator in meeting capital needs for agricultural businesses by coordinating members to get study programs and cooperate with KUD and BRI; 4) the mechanism of the Association in coordinating agricultural production results in order to get a higher selling value, the Association accommodates farmers' products at a decent price, cooperates with KUD and traders to buy agricultural products at a selling value that provides benefits to farmers, in collaboration with SOEs. With the existence of Gapoktan, agricultural production results get a higher selling value, so that the welfare of farmers will increase (Ratna, et al., 2012).

Some activities of the Ministry of Agriculture that use an empowerment approach include Guidance on Increasing the Income of Small Farmers-Fishermen (P4K), Participatory Integrated Development in Rainfed Areas (PIDRA), Project for Increasing Farmer Income Through Innovation (P4MI) or Poor Farmer's Income Improvement Through Innovation Project (PFI3P), as well as the Pilot Program and Acceleration of Agricultural Technology Innovation Correction (Primatani). These four activities are action activities that are directly implemented in the field by taking

separate activity locations based on the concept and approach of their respective activities (Syahyuti, 2007)

Several things that are recommended for farmer empowerment programs should be integrated not only related to financial aspects but also research and development aspects and post-production handling aspects. Integration is carried out across departments/agencies under the coordination of regional heads; Second, crop commodities to be developed should vary not only horticultural crops and food crops but also industrial crops adapted to the suitability of agro-climatic elements and regional potential by developing the concept of "One Product One Village". This concept facilitates the handling of pests and diseases as well as the marketing of results. Commodity development must be accompanied by continuous research activities so that CSR funds should be directly disgenerated to be efficient both in terms of cost and time. (Wulanjari & Setiani, 2016)

The external supporting factor in the farmer empowerment program is one of the factors that can support the development of agriculture, as well as in Beset Village. The empowerment program provided makes farmers more skilled and knowledgeable, and this can affect the results of farming businesses to be better as expected to create food security. In addition, the support provided by the Regional Government helps improve the quality of the farmers' own production. The support provided can be in the form of assistance as well as knowledge and skills provided to farmers in running a better farming business. d. External Supporting Factors. Running the program provided by the Government, supporting aspects are needed to run well and smoothly.

DOI: 10.32663/ja.v21i2.4389

One of these aspects is the assistance provided by the Government to farmers. This assistance can ease farmers in running their farms. This helps the farming business that is run get maximum results, where the maximum results can also create food security in Betet Village, Ngronggot District. (Laily, 2014)

Empowerment models that can be done include: 1). Creating a conducive climate so that farmers are able to form and grow their groups in a participatory manner (from, by and for farmers); 2) Fostering the creativity and initiative of smallholders to take advantage of every available business opportunity, information and access to capital; 3) Help expedite the process in identifying needs and problems as well as formulating plans and solving problems faced in their farming; 4) Improve the ability to analyze market potential and business opportunities and analyze the potential of the region and resources owned to develop commodities developed / cultivated to provide greater business profits; 5) Improve the ability to be able to manage farming commercially, sustainably and environmentally friendly; 6) Improve the ability to analyze the business potential of each member to become a business unit that guarantees market demand in terms of quantity, quality and continuity; 7) Develop the ability to create specific local technologies; 8) Encourage and advocate so that farmers are willing and able to carry out savings and loans activities to facilitate business capital development (Mangowal et al., 2013).

CONCLUSION

1) Supportive agricultural activities will be very effective in carrying out

agricultural cultivation both traditionally and modernly.

- 2) The role of empowerment in sustainable food improvement is the way by which people, organizations, and communities are directed to be able to control or control their lives. Empowerment emphasizes that people acquire enough skills, knowledge, and power to influence their lives and the lives of others who concern them.
- 3) The role of extension services in empowering farmers can be done in several ways, namely: developing the need to change; fostering relationships for change, identify and analyzing problems; growing a plan for change in goals; plan for change, and stabilizing change so that the goal can develop itself.
- 4) An empowerment model is needed for sustainable food improvement. Sustainable food systems are expected to be created from the application of conservation technology. By improving and developing businesses from upstream to downstream and involving the community in increasing the value of agricultural products that support competitiveness, providing the necessary infrastructure, supporting technology, forming farmer groups, and encouraging and advocating so that farmers are willing and able to carry out savings and loans activities to facilitate business capital development

REFERENCES

- Anwas, Oos M. (2003). *Pemberdayaan Masyarakat Di Era Global*. Bandung: Alfabet
- Ayun, Q., Kurniawan, S., & Saputro, W. A. (2020). *Perkembangan konversi lahan pertanian di bagian negara agraris*.

DOI: 10.32663/ja.v21i2.4389

- Vigor: Jurnal Ilmu Pertanian Tropika Dan Subtropika*, 5(2), 38–44.
<https://doi.org/10.31002/vigor.v5i2.3040>
- Cervantes-Godoy, D., & Dewbre, J. (2010). Economic importance of agriculture for poverty reduction. *Development*, 23, 27.
<https://doi.org/10.1787/5kmmv9s20944-en>
- Chambers, R. (1985). *Rural Development: Putting The Last First*. London; New York: Longman.
- Dahana Daru Harvianto. (2021). *Pemberdayaan Petani Jagung Oleh Dinas Pertanian Dan Ketahanan Pangan Di Kota Palangka Raya Provinsi Kalimantan Tengah (Studi Di Kelurahan Kalampangan Kecamatan Sabangau)*. 2013–2015.
- Desiana, N., & Aprianingsih, A. (2017). Improving Income through Farmers' Group Empowerment Strategy. *The Asian Journal of Technology Management (AJTM)*, 10(1), 41–47.
<https://doi.org/10.12695/ajtm.2017.10.1.5>
- Dewan Ketahanan Pangan. (2009). kebijakan umum ketahanan pangan 2006 – 2009. *Gizi Dan Pangan*, 1(1), 57–63.
- Dr. Vladimir, V. F. (1967). Konsep dasar pengabdian kepada pembangunan dan pemberdayaan. In *Gastronomía ecuatoriana y turismo local*. 1(69).
- Ekonomi, P., Di, P., Tumani, D., Maesaan, M., Minahasa, K., & Mangowal, J. (2013). Pemberdayaan masyarakat petani dalam meningkatkan pengembangan ekonomi pedesaan di desa Tumani Kecamatan Maesaan Kabupaten Minahasa Selatan. *Governance*, 5(1).
- Ginige, T., & Richards, D. (2012). A model for enhancing empowerment in farmers using mobile based information system. *ACIS 2012: Proceedings of the 23rd Australasian Conference on Information Systems, December*.
- Haryanto, Sumardjo, Y., Amanah, S., & Tjitropranoto, P. (2017). Efektivitas peran penyuluh swadaya dalam pemberdayaan petani. *Jurnal Pengkajian Dan Pengembangan Teknologi Pertanian*, 20(2), 141–154.
- Hueston, W. D., Heider, L. E., Harvey, W. R., & Smith, K. L. (1990). Determinants of high somatic cell count prevalence in dairy herds practicing teat dipping and dry cow therapy and with no evidence of *Streptococcus agalactiae* on repeated bulk tank milk examination. *Preventive Veterinary Medicine*, 9(2), 131–142. [https://doi.org/10.1016/0167-5877\(90\)90031-C](https://doi.org/10.1016/0167-5877(90)90031-C)
- Kaputra, I. (2015). Alih fungsi lahan, pembangunan pertanian dan kedaulatan pangan. *Jurnal Strukturisasi*, 1(1), 25–39.
- Reni Chaireni, K., Agustanto, D., Amriza Wahyu, R., Patmasari Nainggolan, (2020). Ketahanan pangan berkelanjutan. *Jurnal Kependudukan Dan Pembangunan Lingkungan*, 1(2), 70–79.
<http://jkpl.ppj.unp.ac.id/index.php/JKPL/article/view/13>
- Khusna, K., Fadhilah Kurniati, R., & Muhaimin, M. (2019). Pengembangan model pemberdayaan petani padi melalui program hulu hilir agromaritim bidang pertanian. *Matra Pembaruan*, 3(2), 99–98.
<https://doi.org/10.21787/mp.3.2.2019.89-98>
- Laible, G., Wei, J., & Wagner, S. (2015). Improving livestock for agriculture - technological progress from random

DOI: 10.32663/ja.v21i2.4389

- transgenesis to precision genome editing heralds a new era. *Biotechnology Journal*, 10(1), 109–120. <https://doi.org/10.1002/biot.201400193>
- Laily, S. F. R. (2014). Pemberdayaan petani dalam meningkatkan ketahanan pangan (studi di desa Betet Kecamatan Ngronggot Kabupaten Nganjuk. *Jurnal Administrasi Publik Mahasiswa Universitas Brawijaya*, 2(1), 147–153.
- Lestari, U., & Idris, M. (2019). Peran kelompok tani dalam kegiatan usahatani kakao di desa Ketulungan Kecamatan Sukamaju Kabupaten Luwu Utara. *Jurnal Agribisnis Indonesia*, 7(2), 92–101. <https://doi.org/10.29244/jai.2019.7.2.92-101>
- Mardikanto, Totok dan Sutarni, Sri. (1982). *Pengantar Penyuluhan Pertanian*. Surakarta: Haspara.
- Mutmainah, R., & Sumardjo. (2014). Peran kepemimpinan kelompok tani dan efektivitas pemberdayaan petani. *Sodality : Jurnal Sosiologi Pedesaan*. 182-199
- Ma'ruf, A. (2017). Agrosilvopastura sebagai sistem pertanian terencana menuju pertanian berkelanjutan. *Bernas*, 13(1), 81–90.
- Margayaningsih, D. I. (2018). Peran masyarakat dalam kegiatan pemberdayaan masyarakat di desa. *Jurnal Publiciana*, 11(1), 72–88.
- Martin, E., Suharjito, D., Darusman, D., Sunito, S., & Winarno, B. (2016). Subsistence ethics of smallholder coffee grower: Understanding the dynamics of agroforestry development in the upland of South Sumatra. *Jurnal Sosiologi Pedesaan*, 94, 92–102.
- Mayrowani, H. (2016). Pengembangan pertanian organik di Indonesia. *Forum Penelitian Agro Ekonomi*, 30(2), 91. <https://doi.org/10.21082/fae.v30n2.2012.91-108>
- Mudrieq, S. S. H. (2014). Problematika krisis pangan dunia dan dampaknya bagi Indonesia. *Academica: Majalah Ilmu Sosial Dan Ilmu Politik*, 6(2), 1287–1302.
- Murdiyanto, E., Soemanto, R. B., Wijaya, M., & ... (2016). The small farmers empowerment model. *International Journal of ...*, 4(9), 5870–5876. <http://eprints.upnyk.ac.id/13342/>
- Ochungo, P., Veldtman, R., Abdel-Rahman, E. M., Muli, E., Ng'ang'a, J., Tonnang, H. E. Z., & Landmann, T. (2022). Fragmented landscapes affect honey bee colony strength at diverse spatial scales in agroecological landscapes in Kenya. *Ecological Applications*, 32(1), 1–13. <https://doi.org/10.1002/eap.2483>
- Parson, et. Al, (1994). *The Integration Of Social Work Practice*. California. Wardworth.inc. Rappaport,J
- Purwaningsih, Y. (2008). Ketahanan pangan: situasi, permasalahan, kebijakan, dan pemberdayaan masyarakat. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi Dan Pembangunan*, 9(1), 1. <https://doi.org/10.23917/jep.v9i1.1028>
- Rogers, E. M. dan F. F Shoemaker. (1971). *Communication of Innovations*. New York. The Free Press
- Ratna, Nyoman Kutha. (2012). *Penelitian Sastra: Teori, Metode, dan Teknik*. Yogyakarta: Pustaka Pelajar.
- Suhardiyono. (1992). *Penyuluhan Pertanian Terjemahan dari Agriculture*. Jakarta: Mitra Wacana.
- Sumardjo. (1999). *Transformasi Model*

DOI: 10.32663/ja.v21i2.4389

- Penyuluhan Pertanian Menuju Pengembangan Kemandirian Petani (kasus di Propinsi Jawa Barat)*. Disertasi.
- Sadono, D. (2008). Pemberdayaan petani: paradigma baru penyuluhan pertanian di Indonesia. *Jurnal Penyuluhan*, 4(1). <https://doi.org/10.25015/penyuluhan.v4i1.2170>
- Satria, J., Falatehan, A. F., & Beik, I. S. (2019). Strategi perlindungan lahan pertanian pangan berkelanjutan di Kabupaten Bogor. *Jurnal Manajemen Pembangunan Daerah*, 10(2). https://doi.org/10.29244/jurnal_mpd.v10i2.27786
- Subagyono, K., Haryati, U., & Talaohu, S. H. (2004). Teknologi konservasi air pada pertanian lahan kering. *Teknologi Konservasi Tanah Pada Lahan Kering Berlereng*, 1, 151–188.
- Tumangkeng, S. (2018). Analisis potensi ekonomi di sektor dan sub sektor pertanian, kehutanan dan perikanan kota Tomohon. *Jurnal Berkala Ilmiah Efisiensi*, 18(1), 127–138.
- Widjajanti, K. (2011). *Model pemberdayaan masyarakat*. *Jurnal Ekonomi Pembangunan*, 12.
- Windari, W. (2021). Model pemberdayaan masyarakat dalam upaya pembangunan ekonomi lokal berbasis produksi di pedesaan community empowerment model in production-based local economic development effort in rural areas. *Jurnal Agirekstensia*, 20(1), 90–106.
- Wulanjari, M. E., & Setiani, C. (2016). Strategi Pemberdayaan Petani Dalam Berusahatani. *Jurnal Pengkajian Teknologi Pertanian*, 1(10), 41–51. <http://digital.library.ump.ac.id/51/1/4>.