

# Sustainable Reserve Food Garden Program and Its Implication for Food Security in Pacitan Regency Indonesia

Indartato<sup>\*</sup>, Abdul Hakim<sup>\*\*</sup>, Amin Setyo Leksono<sup>\*\*\*</sup>, and Bagyo Yanuwadi<sup>\*\*\*</sup>

<sup>\*</sup> Postgraduate Environmental Doctor Program Brawijaya University

<sup>\*\*</sup>Public Administration Department, Faculty of Administrative Sciences Brawijaya University

<sup>\*\*\*</sup>Department of Biology, Faculty of Mathematic and Natural Sciences Brawijaya University

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**Abstract-** Food is a basic human need so that it must be fulfilled qualitatively and quantitatively. This prompted the government to issue a policy in the form of a sustainable food house area program. The purpose of this study was to determine the implications of sustainable reserve food garden (SRFG) area programs for the sustainability of food fulfillment in Pacitan Regency, East Java, Indonesia. This research was conducted in the Dersono Village (Pringkuku Sub-regency), Tahunan Baru Village (Tegalombo Sub-regency) and Nanggung Village (Pacitan Sub-regency), Pacitan Regency. Field data were taken by observing the condition of the home garden of the SRFG program participants, which includes the elements of the yard and the types of constituent plants. In addition, interviews were also conducted with the community regarding the benefits of home garden plants to support food needs, as well as with local governments regarding the plan, implementation and evaluation of SRFG program activities. The results showed that the plants planted in the SRFG participant's house were mostly food crops that had benefits for staple foods, vegetables, fruits, medicines and ornamental plants. The significances of the implementation of the SRFG have had the result of decreasing the cost of community consumption, increasing community income and increasing soil cover in the home garden area. The implementation of SRFG also provides economic, environmental and social services for the community. The local government seeks to provide assistance, guidance, monitoring and evaluation of the development of the SRFG so that the program runs sustainable. The local government provides assistance, guidance, monitoring and evaluation of the development of the SRFG so that the program runs sustainable

**Keywords:** continuous, interview, need, observation

## I. INTRODUCTION

Food is the most important human need in his life. Food in the scope of life of nation and state is one of the important commodities. Food security up to the household level has a very basic development perspective. This is because access to a balanced supply of food and nutrition is one of human rights. In addition, the process of establishing quality human resources is strongly influenced by the success of meeting the adequacy of food needs and food security [1].

Food security is a condition where all households have both physical and economic access to obtain sufficient food to meet the needs of all family members. In addition, food security is also a condition where households are not at risk of losing both physical and economic access to food. Food security is the determination of the concept of food security, namely purchasing power or income to meet living costs [2]. The status of food security of each household or individual is usually determined by the interaction of agro-environmental, socioeconomic and biologic factors [3]. National food resilience & independence must start from the household. The use of yard for household food development is a strategy to realize household food independence. Home yards are one of the family's economic resources. The yard also has the functions of ecology, aesthetics, socio-culture and other environmental services which are also important, so the development of this home yard is in line with the concepts of sustainable development [4]. Utilization of home yards is a strategic step in supporting food security, however, the use of home gardens that are still traditionally have constraints such as narrow land area and tend to narrow, human resource capacity is still low, planted commodities are still limited, lack of availability of land management technology the yard and the production orientation that is limited to meet household needs and has not seen market aspects. Considering this, the sustainable food house area program (SRFG) is carried out to provide incentives to optimize the management of the home yard [5]. This was also supported by Presidential Regulation No. 22 of 2009 concerning the Policy for Accelerating the Diversification of Local Resource-Based Food Consumption. The SRFG program was first implemented in Pacitan Regency which continues to develop as a form of diversifying food crops through optimizing home yards. This is important, because Pacitan Regency is a dry hilly area that can rely on home gardens as a source of food. Increasing the SRFG program activities in Pacitan Regency both in quantity and quality need to be improved, besides being able to meet food needs at the family level, it can also be an example or other regional model in utilizing home yards through

SRFG. The purpose of this study is to study sustainable food house area programs and their implications for food and ecological fulfillment and regional government efforts to support the sustainability of the SRFG program.

## II. METHODS

This research was conducted from January to September 2018 in three villages as follows Nanggung Village (Pacitan Sub-regency), Tahunan Baru Village (Tegalombo Sub-regency) and Dersono Village (Pringkuku Sub-regency), Pacitan Regency (Figure 1).

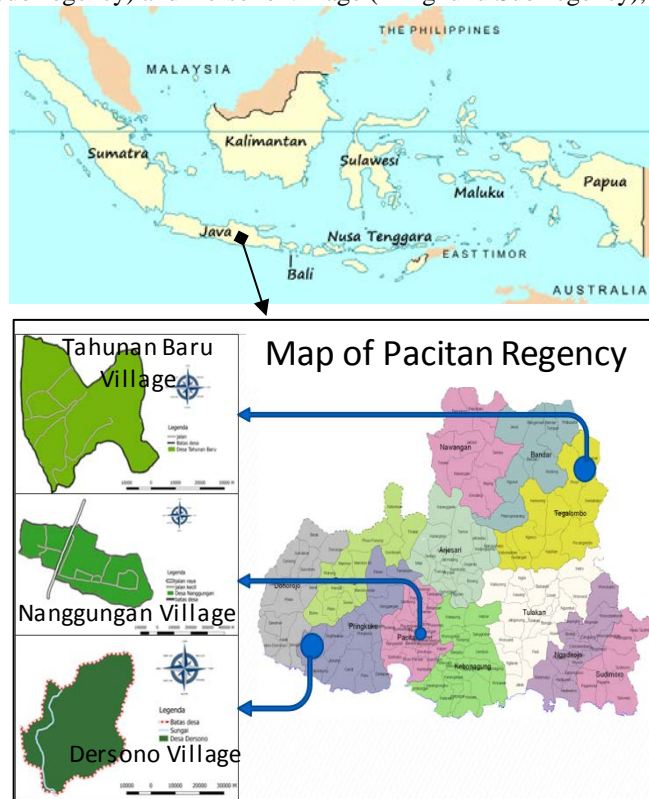


Figure 1. Research Location in Pacitan Regency, East Java, Indonesia

Data collection is done by distributing questionnaires, field observations and interviews. The questionnaires were used to analyze the economic impact of implementing SRFG with five answer choices. The observations were done to observe of the conditions of the SRFG program home yard to analyze the ecological and social impacts of the implementation of SRFG. The interviews were carried out with the community regarding the benefits of home garden plants to support food needs, while those with regional governments were done regarding planning, implementing and evaluating SRFG activities. Questionnaire data analysis was used in the environmental scale with the perception level grouped into five categories (Table 1).

Table 1. Categories of public perception

Score	Category
1 to 1.8	Very un-supported
1.8 to 2.6	Unsupported
2.6 to 3.4	Fair
3.4 to 4.2	Supported
4.2 to 5	Very supported

The results of observations and interviews were analyzed with descriptively. The descriptive qualitative research seeks to describe and interpret what happened.

### III. RESULTS AND DISCUSSION

#### A. Recipient elements of SRFG participating houses in Pacitan Regency

The yard is a land that is around the house and has a bond with the owner the houses of the community participating in the SRFG program have almost the same elements as other yards, except that the participants of the SRFG have additional components such as nurseries, demonstration plots sometimes have fish ponds. The other elements of the yard include:

- The fence is a yard divider with other land usually from a wall or composed of various types of plants
- Front yard is a land in front of a house that is often cleaned and planted with plants that have aesthetic value but often planted with fruit, vegetables and other food crops.
- Right and left yards are a yard that located on either side of the house, usually used as a place to hang out or plant fruits, vegetables and other food ingredients.
- *Mburitan* is a yard that is on the left and right side of the house which is usually used as a place to hang out or plant fruits, vegetables and other food ingredients.
- Home open dumping is a hole made to remove household waste
- Home waste disposal is a hole made to dispose of household waste
- Livestock cages are a place for raising people on a small scale, usually animals that are farmed are native chickens, goats, cows, manila ducks or rabbits. Most of the plants planted in the SRFG participating house are food crops that have benefits for staple foods, vegetables, fruits, medicines and ornamental plants.

#### B. Implementation of SRFG in Pacitan Regency

Implementation of yard utilization program policies by paying attention to various programs that have been running. Before the SRFG program, other programs based on the utilization of home gardens were also carried out such as the Acceleration of Diversification of Food Consumption, and the Women's Movement for Optimizing the Yard [5]. Increased Food Diversification (Food Diversification) with the aim of increasing food diversity, according to regional characteristics programmed by the Ministry of Agriculture [6].

The food diversification policy starts from the Presidential Instruction (Inpres) No. 14 of 1974 concerning Efforts to Improve the People's Food Menu and until the last through Presidential Regulation No. 22 of 2009 concerning the Policy for Accelerating the Diversification of Local Resource-Based Food Consumption. The government has made various efforts to diversify food, but in reality the level of public consumption still relies on the main food, namely rice and the level of consumption which is still below the recommended fulfillment of nutrition. The steps taken by the government are through the use of land with the use of local resources managed by households, namely the home yard [3].

Optimizing the home garden is a policy program of the Ministry of Agriculture regarding SRFG or Sustainable Food House Estate Development. SRFG is a form of visualization of Presidential Regulation No. 22 of 2009 concerning the Policy for Accelerating the Diversification of Local Resource-Based Food Consumption as well as an update on the program for Accelerating Diversification of Food Consumption (P2KP) and the Women's Movement for Optimizing the Yard [3]. The Rationale for the Development of the SRFG Model follows up on the direction of the President of the Republic of Indonesia at the event the Food Security Council Conference on national food security and independence must start from the household. Furthermore, other policies came out related to the development of SRFG such as Decree of the Minister of Agriculture of the Republic of Indonesia Number 12/Kpts/Kn.210/K/02/2016 concerning Technical Guidelines for the Movement of Accelerating Diversification of Food Consumption in 2016 and Decree of the Minister of Agriculture of the Republic of Indonesia Number 08/Kpts/Rc.110/J/01/2017 Regarding the Technical Guidelines for Optimizing the Land Use of the Yard through the SRFG in 2017.

Relatively fast adoption of SRFG in Pacitan Regency was supported by the issuance of regional policies in the form of Regent Pacitan Instruction to the community in the Pacitan region to develop and implement the SRFG model and Instruction of the East Java Military Command which was followed up by the Pacitan Military Office to members to develop the SRFG at the Military office location and the Military Office. In addition, the Pacitan Regency Food Security Office has a growth target and the development of SRFG villages is 12 villages per year in addition to being active in various SRFG activities at the provincial and national levels. In 2016 the village programmed to become SRFG village was Mendolo Kidul Village, Punung Sub-regency, Krajan Village, Sudimoro Sub-regency and nine villages in the Nawangan Sub-regency. Another study reported that this program has been effectively implemented in Kediri Regency East Java, with a value of 78.41%, where the accuracy of the target was 88.40%, program socialization was 78.10%, program objectives were 82.47%, and program monitoring was 70.67%. The supporting factors of the program are effective program objectives, effective methods and socialization media, complementary understanding of the socialization material, the ability of the Farmer Women Group in effective plant preservation, the benefits of the effective M-KRPL program for Farmer Women Group members, and continuity bookkeeping activities and making reports on the use of funds [6].

C. Impact of SRFG in supporting the level of household consumption and supporting sustainable ecology in Pacitan Regency  
The implementation of the SRFG Program in Pacitan Sub-regency has a positive impact on the community's economy. There are two positive impacts of the SRFG program. The first positive impact of the SRFG program is that the community can save on expenses for daily food consumption, especially the costs of purchasing animal vegetables and food (eggs and poultry meat). The positive impact of the second SRFG program was that they can sell the harvest from the development of the SRFG to get additional income when the production of vegetables and livestock exceeds their daily needs. Community members of the SRFG program can also get additional income from the sale of plant seeds and processed crops and livestock, including aquaculture. Based on the public perception that the SRFG program in Nanggungun Village is included in the category of very supported cost savings for daily food consumption, vegetable production, livestock and fisheries that exceed the needs can be sold to obtain additional income with a value of 4.5. Whereas in Dersono and Tahunan Baru Villages, the categories assisted them with a score of 4.2 and 4.0 (supported).

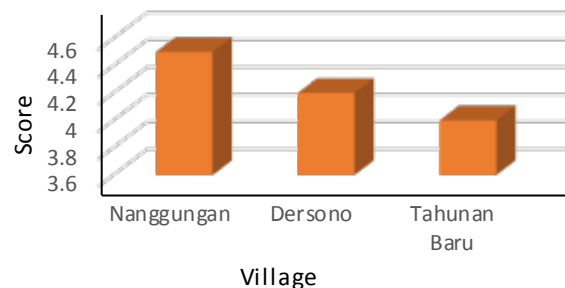


Figure 2. SRFG positive impact on the community economy

The participants of SRFG program in Dersono Village stated that the community has received a varied income increase, between IDR 5,000.00 - IDR 15,000.00 per day. People in Nanggungun Village claimed to have increased their income from the SRFG program under Rp. 5,000.00 per day, whereas the income in Tahunan Baru Village Community increased between IDR 5,000 IDR 10,000 per day.

The ecological impact of the SRFG program is the conservation of rural landscape culture, namely the existence of a yard. Besides that, there is also a conservation of flora and fauna due to cultivation activities. The existence of gardens in the SRFG program strongly supports ecosystem services, especially in terms of provisioning of food, maintaining layers of top soil, producing carbon stocks, and oxygen supply. Some studies that have been carried out recognize the positive impact of home gardens to food and services and provide additional numbers such as income and livelihood opportunities for resource-poor families and provide a number of ecosystem services [7]. A study in America showed that Community Gardens sustainable development policies by linking issues of health, education, community development and food security with the use of green space in towns and cities. The article concludes that the use of urban open spaces for parks and gardens is closely associated with environmental justice and equity [8].

#### D. Government support for sustainability of SRFG

Support from government officials can be done in various ways. One of the supports that the government can provide especially the Village Government to the SRFG program is with budget support. Budget support can be done by allocating a budget for the SRFG program. Budget allocation in the village for the SRFG program can be done through the Village Revenue and Expenditure Budget or APBDes. The allocation of the village budget for the SRFG program is very necessary because it can help improve the SRFG program. The existence of budget support for the SRFG program is expected to develop the SRFG program. Budget support from the Village Government also indicates a village contribution to the implementation and development of the SRFG program.

In addition to budget support, giving awards to the people who preserve the SRFG program also needs to be done. The SRFG program is not a fleeting program but awards people who preserve the SRFG program. This is to foster enthusiasm for the community in preserving the SRFG program. The awarding of the community to preserve the SRFG program will make the community motivated in preserving and improving the SRFG program. The community will compete to get awards by trying to preserve and improve the SRFG program. Therefore, the Pacitan Regency Government must accommodate the award in the form of a competition or competition event. The Pacitan Regency Government can hold an SRFG competition between villages. The race was given to all villages that organized the SRFG program. The race will determine the champion or who is entitled to an award because it has preserved the SRFG program well. The award must be based on an independent and objective assessment. Awarding the preservation of the SRFG program can be given to villages (groups) or individuals.

Another thing that is not less important is the intensity of the SRFG program instructor to go into the field. As mentioned in the previous section, one of the problems in the implementation of the SRFG program is the presence of an SRFG program extension agency that is still low to go to the field. In fact, extension workers are very trusted by the community who preserve the SRFG program. Information and advice provided by extension agents is always trusted and implemented. However, the lack of intensity of

extension workers to go into the field has made the community unable to preserve the SRFG program to the fullest. This is because no one guides and answers the problems experienced by the SRFG program community. In the future, the intensity of the extension agent going into the field must be increased. The Pacitan Regency Government through the Office in charge of the SRFG program must make a mandatory schedule for extension agents to go into the field. The schedule must contain the intensity of extension agents to come to the field. The schedule made is an obligation that must be adhered to by the instructor. Therefore, there must be sanctions for extension agents who do not take to the field on schedule. An intense schedule and sanctions for those who violate will make the instructor more diligent and disciplined in plunging into the field. The more diligent and disciplined the discipline goes into the field, the problems faced by the people who preserve the SRFG program will be minimized.

The SRFG program in Pacitan Regency has in fact a positive impact on changes in the ecology of the area that is the location of the program. One positive impact on ecological change is that the environment around the house is more beautiful. To improve the SRFG program to the community. The local government provides assistance, guidance, monitoring and evaluation of the development of SRFG so that the program runs on an ongoing basis

#### IV. CONCLUSION

Most of the plants planted in the SRFG participating house were food crops that have benefits for staple foods, vegetables, fruits, medicines and ornamental plants. The implications of the implementation of SRFG have the effect of decreasing the cost of community consumption, increasing their income and land cover in the area of the home garden. The regional government provided assistance, guidance, monitoring and evaluation of the development of SRFG so that this program successfully implemented as planning basis.

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#### AUTHORS

**Indartato** – PhD Student, Doctoral program of Environmental Science, Postgraduate School, Universitas Brawijaya.

**Abdul Hakim** – Professor, Public Administration Department, Faculty of Administrative Sciences Brawijaya University.  
Email: hakimend61@gmail.com

**Amin Setyo Leksono** – Associate Professor, Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Brawijaya. Email: amin28@ub.ac.id

**Bagyo Yanuwadi** – Lecturer, Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Brawijaya.  
Email: yanuwadi@ub.ac.id

**Corresponding author** – Amin Setyo Leksono, Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Brawijaya, Jl. Veteran, Malang, Jawa Timur, Indonesia, 65145. Phone: +62-341-575841, Fax: +62-341-554403. Email: amin28@ub.ac.id