

EMPOWERMENT OF WOMEN FARMER GROUPS TO PROMOTE RURAL DEVELOPMENT IN CENTRAL JAVA, INDONESIA

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Abstract: *This paper aims to present a government initiative in Banjarnegara district, Central Java, Indonesia to promote rural development through the empowerment of women farmer groups. The initiative includes the provision of social aid and technical assistance to women farmer groups in 2013. The policy is targeted to improve food consumption pattern in rural areas by utilising nursery and home garden with neighborhood approach. Fourteen women farmer groups consisting of 418 members participated in the program. All members were surveyed. The results showed that there was a significant decrease in household expenditure for vegetables after the implementation of the program. The benefit of home garden has been extended to the processing of locally produced foodstuff providing employment and source of income to the members. However, some impediments such as unstable motivation of members and contradictory choice of growing crops and raising chicken, need to be addressed.*

Key words: *rural development, women farmer group, home garden, food processing*

INTRODUCTION

Among the government's strategy to reduce poverty is the establishment of various institutions such as farmer groups. As Kartasasmita (1997) notes, efforts to improve the competitiveness of farmers include the development of agricultural institutions, empowerment, strengthening and capacity building of small farmer groups. Brauksiepe & Nienhaus (1997) suggest that cooperative, community and other independent organizations (within the right framework) developed significantly and are more effective than individual monopolist, powerful conglomerates and state enterprises in industrial and infrastructure projects. The right framework, according to them, requires the importance of monitoring within group or social control. However, most of the institutions are established for the purpose of distributing aid and facilitating the control tasks for program managers, not for community empowerment. Groups were seen as project facilitation instead of farmer empowerment (Syahyuti, 2007; Kedi Suradisastira, 2008).

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Based on the evaluation of the performance of the Ministry of Agriculture, there are findings of the lack of institutional empowerment and farmers' difficulty in accessing capital (Ministry of Agriculture Performance Report 2011, 2012). In order to act as participatory farmer groups, institutional development should be designed as an attempt to improve the ability of the farmer groups to become self-sufficient in supporting the agropolitan development. Friedman (1992) states that empowerment is concerned with the primacy of politics over the decision-making autonomy to protect the interests of the people, based on personal resources and through participation.

Banjarnegara district has been aggressively developing on agropolitan concept and agrotourism. The strategic plan of the district has noted the following agriculture-based Banjarnegara programs: food security, diversity of commodity, promotion of agribusiness and agrotourism, increasing farmers' income, and empowerment of poor farmers. Topography and geographical conditions in this area strongly support the growth of diverse crops and livestock. Therefore, the district has a pretty big opportunity to develop a diversity of crops as well as livestock. However, with the variety of potential food, Banjarnegara has been facing the problem of low level of calorie intake as compared to the recommended food calorie intake. The score of Banjarnegara in 2010 was 82.3 percent and in 2011 increased to 82.7 percent, still quite far from the target of Minimum Service Standards (MSS) in 2015 of 95 percent. The national figure during 2009-2011 has fluctuated from 75.7; 77.5; and 77.3 (Ministry of Agriculture, 2013).

Some studies show that the national availability of sufficient food does not guarantee food security at the regional, household, and individual levels. Therefore, the Government took the initiative to provide assistance to women farmers for IDR 47 million allocated for the following purposes:

- a. IDR 30 million for the development of members' home garden and demonstration garden. The social aid funds should be used directly for to build fencing, to buy seeds/seedlings, cultivation facilities, equipment to produce organic fertiliser and/or to build livestock sheds/pond;
- b. IDR 12 million for the development of nurseries;
- c. IDR 3 million for the development of school gardens; and
- d. IDR 2 million for the development of nutritious menu and/or small scale food processing enterprises.

This study describes the implementation of the program and evaluates the effectiveness from the viewpoint of the targeted households.

LITERATURE REVIEW

Working with group has been a popular strategy of most development organizations, especially in agriculture and natural resource management. Some 478,000 groups had emerged in the 1990s in Africa, Latin America and Asia (Pretty and Ward, 2001). The benefits from economies of scales have been well known. The organisation of small holder farmers, instead of individual farmer, serves as a more effective intervention for development or extension agents to educate farmers, help them to improve their technologies, reduce transaction costs, increase production, reduce costs of operation and gain access to markets, services and technical assistance (Spring fellow et al, 1997; Chloupkova and Bjørnskov, 2002; Swanson, 2006).

Farmer groups do not necessarily belong to men because women's role has been very significant in food production. Women contributed to 80 percent of domestic food production in Africa, 60 percent in Asia and the Pacific and 40 percent in Latin America (FAO, 1998). It is often assumed that women display more altruistic or solidarity behaviour (Westermann et al, 2005). Therefore, their access to financial services, agricultural extension, education, health care and human rights are the keys to assuring food security for all (Weisfeld-Adams and Emma, 2008). Yahya and Zhang (2014) found that access to resources such as land and capital, agro-inputs like seeds, fertiliser, pesticides, an access to modern technology were positive and statistically significant on food security. However, due to the multiple roles women play in the rural household, they do not fully benefit from extension services, particularly, when the time of delivery of extension service conflicts with their other household responsibilities (Protz, 1997). According to FAO (1998), rural women are burdened by their domestic tasks and family obligations and controlled by social restraints such that they are constrained not to be away from home to attend extension and training programmes.

Gardens have been promising to satisfy domestic food consumption especially fruit and vegetable. In US, community gardens may be an effective environmental strategy to promote fruit and vegetable consumption in rural communities (Litt et al., 2011; Barnidge et al., 2013). Therefore, public health practitioners should consider participants' level of participation in a community garden as well as informal policies about who has access to the produce grown if community gardens are developed as a community resource. One of the advantages of community gardens is that the food grown can be distributed to a wider population than those immediately involved.

METHOD

This study attempts to evaluate the effectiveness of a local government initiative to build rural areas through the empowerment of women farmer groups. The groups

utilise home gardens in order to improve household food calorie intake as well as to increase income by creating value added of the local food stuff. There are 14 women farmer groups consisting of 418 members participated in the program in 2013. All are interviewed. Having results of the interviews, focus groups discussion was conducted with 2 members of each farmer group to clarify and elaborate their answers. Effects of the program on household expenditure for vegetables were collected by comparing the expenditure before and after the program.

RESULTS AND DISCUSSION

Although women farmer groups received funding in 2013, only one group was founded in 2013; the establishment of rest varied from 2006 to 2012. It can be concluded that the foundation of the farmer groups is not simply to respond to government's incentive. Eleven out of 14 women farmer groups were established based on the initiative of members, the remaining 3 were inspired by television news, suggested by extension service, and assisted by a non governmental organization. The organisational structure of women farmer groups consists of a chairwoman, a secretary, and a treasurer. Divisions are customised to individual group needs. In general, members of board were democratically elected, only one farmer group reported that the board was appointed by village head. Growth in the number of members is impressive as shown in the following table.

Table 1
Growth of number of members of women farmer groups

No.	Name of farmer group	Growth if number of members		
		Initial (persons)	Current (persons)	Growth (%)
1.	Sri Handayani	35	65	85.7
2.	Panca Mulya	15	60	300.0
3.	Annisa	15	40	166.7
4.	Sedap Malam	30	60	100.0
5.	Karya Usaha 3	31	31	0.0
6.	Sekar Boja	30	210	600.0
7.	SidaMulya	30	167	456.7
8.	Subur Lestari	30	65	116.7
9.	Mitra Selaras	33	33	0.0
10.	Sida Makmur	30	30	0.0

11.	Setya Karya	10	30	200.0
12.	Sida Mulya	34	38	11.8
13.	Karya Sari	30	50	66.7
14.	Melati	30	30	0.0
	Total	383	909	137.3

The significant increase of members is shown by Sekar Boja whose membership has incredibly grown by 600 percent. Based on focused group discussion, the achievement was made possible due to strong leadership of the farmer group.

Extension and training have been extensively carried out by the women farmer groups. The trainings are generally pertaining to agricultural and husbandry practices and food processing techniques to increase value added. However, the diversity of training is subject to unique needs of individual group.

All women farmer groups stated that they maintain group cash to support group operation, but the sources are different. There are eight groups reporting that members are required to pay dues; others earn money from the sale of nursery and vegetables, and renting out disk mill.

Every women farmer group has a nursery, which is very important because the sustainability of home garden is highly dependent on the availability of plant seeds. The top ten plant seeds in the nurser is include cayenne pepper, eggplant, tomatoes, celery, water spinach, cauliflower, mustard greens, spinach, caisim, and broccoli. Seeds are generally consumed by members, but there are some nurseries which are also utilised by non members. Among 14 farmer groups, 9 groups distribute seeds to members and local people for free, but there are 5 groups selling to members and non members, charging a higher price to non members.

It is expected that home gardens extend beyond satisfying domestic food needs. Therefore, efforts to increase the value-added of local food stuff need to be appreciated. There are 49 members who operate food processing business.

The farmer groups meet regularly. Most of them meet monthly, but there is one group that meets weekly, and on other group does not meet regularly. General meeting agendas are typical such as seeding, nursery, education, and training. However, some farmer groups extend the agenda to saving rotation and spiritual building.

The role of extension service and the Office of Food Security is highly important in assisting the farmer groups. However, there is high variation in respondents' evaluation on the role of extension service and the Office of Food Security as the following table shows.

Table 2
Respondents' evaluation on the role of extension service and
The Office of Food Security

<i>No.</i>	<i>Evaluation</i>	<i>Extension service</i>	<i>The Office of Food Security</i>
1.	Very good	4	3
2.	Good	6	5
3.	Sufficient	2	5
4.	Not good	2	1
	Total	14	14

Home garden cannot be separated from waste management. Therefore, waste management should be integrated in the program. Three questions were asked to the respondents: a) whether they know what waste bank is, b) whether the farmer group is interested in waste management, and c) whether their farmer group has waste management. All but one farmer groups know about waste management. Two women farmer groups have operated waste management. Nevertheless, there is a promising response as those which have not operated waste management are interested to implement it.

The characteristics of respondents' home garden and the evaluation of this program is explained in the following sections.

1. Size of Home Garden

The size of respondents' home garden varies highly from few pieces of polybag up to hundreds square meters.

2. Ownership of Livestock

The following table describes livestock ownership as in integral part of home garden utilization.

Table 3
Ownership of livestock

<i>No.</i>	<i>Livestock</i>	<i>Number of livestock (head)</i>	<i>No. of farmer groups</i>
1.	Catfish	22,600	4
2.	Tilapia	600	1
3.	Chicken	155	3

4.	Rabbit	151	4
5.	Duck	60	1
6.	Marmot	32	2
7.	Goat	31	5
8.	Cattle	1	1

Table 3 shows that the top four livestock reared by respondents include catfish, tilapia, chicken, and rabbit.

3. Household Expenditure to Nurture Home Garden

Home garden was designed to encourage self financing; aid should serve as stimulant. The results show that respondents spend their own money to nurture their home gardens. The expenditures include fertiliser, seed, polybag, bamboo for fencing and shelves, gardening equipment, pesticide, and net to protect plants from chicken disruption.

4. Involvement of Household Members

Table 4
Involvement of household members in home garden

<i>Household members</i>	<i>Involvement in home garden activities</i>							
	<i>Planting</i>	<i>%</i>	<i>Watering</i>	<i>%</i>	<i>Nurturing</i>	<i>%</i>	<i>Preparing media</i>	<i>%</i>
Husband	117	28.0	88	21.1	43	10.3	202	48.3
Wife	416	99.5	396	94.7	417	99.8	311	74.4
Children	74	17.7	82	19.6	60	14.4	27	6.5
Grandpa	2	0.5	0	0.0	1	0.2	0	0.0
Grandma	33	7.9	8	1.9	0	0.0	32	7.7

Table 4 shows that husbands are mostly involved in preparing planting media. Wives are the ones responsible for most activities.

5. Comparison of Daily Vegetable Expenditure

The table shows that home gardens help economise daily household expenditure for vegetables. Before the program, only 14 households rely on home garden to meet daily need for vegetables. After the program, the figure increases to 80 households.

Overall, the average daily household expenditure for vegetables decreases by an average of IDR 7,981.00 to IDR 3,811.00. This finding has conformed Litt et al.(2011) and Barnidge et al.(2013).

Table 5
Comparison of daily vegetable expenditure

No.	Daily expenditure (IDR)	Before		After	
		Frequency	Percentage	Frequency	Percentage
1.	0	14	3.3	80	19.1
2.	500	0	0.0	1	0.2
3.	1,000-2,000	17	4.1	89	21.3
4.	>2,000-3,000	14	3.3	62	14.8
5.	>3,000-4,000	20	4.8	40	9.6
6.	>4,000-5,000	111	26.6	81	19.4
7.	>5,000-6,000	24	5.7	9	2.2
8.	>6,000-7,000	24	5.7	19	4.5
9.	>7,000-8,000	21	5.0	8	1.9
10.	10,000	135	32.3	16	3.8
11.	15,000	26	6.2	5	1.2
12.	20,000	5	1.2	5	1.2
13.	25,000	3	0.7	2	0.5
14.	30,000	2	0.5	0	0.0
15.	50,000	0	0.0	1	0.2
16.	75,000	1	0.2	0	0.0
17.	100,000	1	0.2	0	0.0
		418	100.0	418	100.0

6. Income from Home Gardens

Apart from satisfying domestic needs, there are few respondents who successfully earn money by selling their home garden products such as vegetables, seeds, and organic fertiliser as shown at Table 6.

Table 6
Income from home gardens

No.	Sales	Frequency of households	Percentage	No. of farmer groups
1.	Vegetables	66	15,8	10
2.	Seeds	51	12,2	7
3.	Compost	6	1,4	4

7. Benefits of the Program

Table 7 shows the respondents' opinion on the benefit of the program.

Table 7
Respondents' opinion on benefits of the program

No.	Indicators	Frequency	Percentage
1.	Save expenditure	183	43.8
2.	Meet domestic need for vegetables	105	25.1
3.	Increase income	103	24.6
4.	Improve nutrition	67	16.0
5.	Create green home yard	58	13.9
6.	Maximize the use of home yard	21	5.0
7.	Increase agricultural knowledge	12	2.9
8.	Increase awareness to grow plants	10	2.4

Most respondents (43.8%) admitted that the home gardens reduce household food expenditure, meet domestic need for vegetables (25.1%), and increase income (24.6%). Interviews with respondents reveal that they have a much higher expectation to the program; not only does the program reduce food expenditure but also increase their income. This is the future challenge of the program.

8. Strengths, Weaknesses, Opportunities, and Threats

Respondents' response on the strengths, weaknesses, opportunities, and threats of the program is presented at Table 8.

Table 8
Strength, weakness, opportunity, and threat

<i>No.</i>	<i>Strength</i>	<i>Frequency</i>	<i>Percentage</i>
1.	High member motivation	327	78.2
2.	Cooperation among family members	110	26.3
3.	Hobby	30	7.2
4.	Adequate land size	21	5.0
5.	Much leisure	11	2.6
<i>No.</i>	<i>Weaknesses</i>	<i>Frequency</i>	<i>Percentage</i>
1.	Limited leisure	345	82.5
2.	Low member motivation	96	23.0
3.	Limited land size	81	19.4
<i>No.</i>	<i>Opportunities</i>	<i>Frequency</i>	<i>Percentage</i>
1.	Extensions and trainings	298	71.3
2.	Continuous assistance	90	21.5
3.	Comparative study	38	9.1
<i>No.</i>	<i>Threats</i>	<i>Frequency</i>	<i>Percentage</i>
1.	Less predictable weather	292	69.9
2.	Pest and disease	327	78.2
3.	Chicken	207	49.5

Table 8 shows that the biggest strengths include high member motivation and strong cooperation among family members. However, low member motivation has been reported by respondents as one of the weaknesses. Nevertheless, there were more respondents reporting high motivation than those reporting low motivation (78.2% vs. 23.0%). Land size has been mentioned by respondents as the driving factor and the inhibiting factor as well. However, more respondents reported limited land size as a weakness than adequate land size as a strength (19.4% vs. 5.0%). Similar to land size, more respondents reported limited leisure as a weakness than those reported much leisure as a strength (82.5% vs. 2.6%). Nevertheless, there is a favourable finding because 26.3 percent of respondents mentioned cooperation among family members as a strength, which help overcome the problem of less leisure. The threats identified by respondents include less predictable weather, pest and disease, and chicken. As a natural factor, weather is

instrumental in agricultural production. A solution to this challenge could be green houses. However, this technology is not affordable to most of them. So far, only the group nursery that has been designed in simple green house using plastics instead of glass. Nevertheless, continuous assistance through trainings and extensions may help identify particular plants which are more resistant to adverse climate. Similarly, trainings and extensions are also expected to deal with the problem of pests and diseases. Chicken raising could be contra productive to plant cultivation as they are not reared in pens. In many groups, nets have been used to protect plants from chicken disruption. In two women farmer groups, chicken has been replaced by rabbit and goat to deal with the problem.

9. Suggestions to Improve the Program

Respondents were asked to recommend suggestions to improve the program. Table 9 presents the respondents' suggestions.

Table 9
Respondents' suggestions to improve the program

<i>No.</i>	<i>Suggestions</i>	<i>Frequency</i>	<i>Percentage</i>
1.	Increased extension	285	68.2
2.	More financial aid	198	47.4
3.	More training	152	36.4
4.	More seeds	48	11.5
5.	More assistance	28	6.7
6.	Competition to maintain motivation	11	2.6
7.	Increased member cohesion	4	1.0
8.	Autonomy to use the aid	1	0.2

Most of them (68.2%) recommended increased extension, followed by more financial aid (47.4%), and more trainings (36.4%). Interview with the officials of the Food Security Office of Banjarnegara district reveals that the office has been lacking personnels to supervise the widely spread women farmer groups across the district. Grants of production tools and machineries and trainings have been regularly provided by the office. Few respondents suggested competition among women farmer groups to encourage their motivation. The office explained that competition among home gardens have been done regularly. However, it was not made known in advance to the groups. It is recommended that the office

announce few months in advance in order to boost group motivation to improve their performance.

CONCLUSIONS

The home garden program with neighbourhood approach could be used as a means to promote rural development as it satisfies household vegetable (and in some households also animal protein) consumption, provides income, and protects environment. The decision to choose women farmer group is strategic because in many parts of the world, there has been extensive research findings that women have higher responsibility to improve household welfare. Several positive outcomes such as lower household expenditure for vegetables, increased income from selling vegetables, seeds, and fertiliser have been reported. However, there are some aspects that need to be improved. Limited number of extension service officers and personnels at the Office of Food Security calls for other parties including universities and non governmental organisations to take part in assisting the women farmer groups to promote rural development.

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