

Women and Food Security: The Case of Belu Regency, East Nusa Tenggara Province, Indonesia

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ABSTRACT

In many countries, women are the primary producers and providers of food at the household and community levels. This paper reviews the role of women farmers in Belu Regency, East Nusa Tenggara Province, Indonesia, and seeks to provide an analysis of challenges and opportunities of women in dealing with food security issues. The analysis in this paper is based on the evidence collected from interviews and focus group discussion conducted with men and women farmers and experts and literature review of academic publications. The study reveals that the women not only plays important roles in the whole farming process, from choosing the best seeds to selling of crops, but also have responsibilities in ensuring food security for their family. However, women roles have not been recognized properly. Low self-confidence and education, lack of participation in decision-making process, social norms and culture are some of the challenges in enhancing the role of women in achieving food security. Providing fair chance of participation and increasing access and control of resources to women is likely to contribute more in agriculture management and eradicate vulnerability in food insecurity in the Belu Regency.

Keywords: women, food security, Belu Regency, gender, natural resource management

INTRODUCTION

In 1980s and 1990s, Indonesia under Soeharto regime was known as a successful agricultural country. At the time, Indonesia reached self-sufficiency of rice in feeding millions of its population. Food and Agriculture Organization (FAO) acknowledged this success by presenting a gold medal to President Soeharto in July 1986 (Abdullah, 2009). Unfortunately, this achievement was not spread uniformly across Indonesia. The development was centralized on western part of Indonesia and eastern part was left behind (Booth, 1999).

One of the eastern parts of Indonesia is Belu Regency in East Nusa Tenggara Province. It is also categorized as Indonesia's border area, which is directly adjacent with Timor Leste territory. Belu Regency's economy depends heavily on agriculture sector, which contributes 45.74% to the gross domestic product. In addition, 69.86% of the labor in Belu works in agriculture (BPS, 2013). Ideally, going by the above facts Belu Regency should have attained food security or at least food self-sufficiency for better prosperity. However, the current situation is paradoxical. Ministry of Development of Disadvantaged Regions in 2013 still categorized Belu as an undeveloped frontier and outermost region in Indonesia (Presidential Regulation No. 5/2010). This paradox implies that agriculture sector in Belu has not been managed well (Alami et al., 2013).

Learning from other countries experiences shows that one of the strategies to solve the above problem is by empowering women in agriculture sector in order to attain the pillars of food security: availability, access, utilization, and stability (ADB, 2013). Women's empowerment means providing significant opportunities to enhance their participation; not only in productive economic activities but also in decision-making process at all levels, including household, local communities, and national levels (ADB, 2013). In many countries, women are mainly responsible for the collection of food for daily household subsistence (Elmhirst and Resurreccion, 2008). They not only play roles in the whole farming process, from choosing the best seeds to selling the crops, but also have responsibilities in ensuring food security for their family (Alami, et al., 2013). Therefore, women in agricultural sector are believed to have important roles in ensuring food security.

Based on the above explanation, this research-based paper analyses the key roles women play in maintaining the pillars of food security and examines the challenges and opportunities in performing their roles.

RESEARCH METHODS

Data collection in the field was carried out in June 2013 in Belu Regency, East Nusa Tenggara Province, Indonesia. Both primary and secondary data are used in the study. Primary data were obtained from in-depth interviews and focus group discussions with various stakeholders and key informants comprising of male farmers, female farmers, local leaders, religious leaders, as well as local government institutions. Secondary data includes review of relevant literature on women and food security in general and in East Nusa Tenggara province, in particular, and statistical data from government institutions. These data were processed and analyzed using descriptive qualitative method. This research also applies Harvard Framework of Analysis to map the profile of activities, access and control between men and women in farmer families.

However, the paper focuses only on the results of field research as a primary source of information. It may not represent the agreed general facts, since women are not a homogeneous group. Therefore, it tries to identify the commonalities among various groups of women farmers in Belu. In addition, making use of gender analysis will depend on contextual issues with a variety of underlying factors (religious, social, and cultural). Nevertheless, the analysis is useful to understand the relationship between human, in particular women, and the environment in addressing food security issues.

FOOD SECURITY IN BELU REGENCY

According to the 1996 World Food Summit, food security exists “when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” (World Food Summit

1996). From this definition, FAO then state four dimensions of food security. The first is physical availability of food, which addresses the supply side of food security and is determined by the level of production, stock levels, and net trade. The second dimension is economic and physical access to food that related to the incomes, expenditure, markets, and prices of the foods. Third, food utilization, which commonly understood as the way body makes the most of various nutrients in the food. This dimension is influenced by feeding practices, food preparation, diversity of the diet, and intra-household distribution of food.

More importantly, stability of the three dimensions can be affected by weather conditions, political instability, or economic factors such as unemployment and inflation of food prices (FAO, 2008).

This paper seeks to study the issue of food security in one of regencies in eastern part of Indonesia. Belu Regency is located in Timor Island, East Nusa Tenggara province, Indonesia. Based on Food Security and Vulnerability Atlas of Indonesia 2009 issued by the Indonesian Ministry of Agriculture and World Food Program, Belu Regency has been classified as priority 2 area, which means the district is vulnerable to food insecurity due to general causes, such as 1) prevalence of underweight among children under five years, 2) villages that cannot be accessed by four-wheeled vehicles, 3) households without access to clean water, 4) population living below the national poverty line, and 5) households without access to electricity. Until 2012, the condition has not been changed significantly

Food Availability

In Food Security and Vulnerability Atlas of Indonesia, Ministry of Agriculture Republic of Indonesia and World Food Program used total major cereal production and total population to calculate the net cereal production per capita per day as an indicator for food availability. From 2007 to 2012, the trend of total major cereal production consisting of paddy, maize, cassava, and sweet potatoes showed a relative decline, from 121,508,000 kilograms (kg) in 2007 to 116,820,000 kg in 2012. The population has grown from 352,296 in 2010 to 362,610 in 2012 (BPS, 2013). It means that Belu in 2012 is more vulnerable in food insecurity than in 2007.

There are some factors that may cause its vulnerability to food availability. First, 92.8% of Belu's land is dry area. There are only 17,599 hectares (ha) of wet area that can be used to plant wet commodities such as paddy. Preferably, the local government should focus more on dry plant crops such as maize and cassava. But, in period of 2007-2012, the average maize production growth has been only 3.1% each year, while cassava production scored negative growth with 11.3% each year. Belu's government seems to give more focus on paddy's production since it is still been regarded as the main staple food in Indonesia. Its average growth reached 9.05% each year from 2007-2012 (BPS, 2013). Therefore, there is a need to change orientation of growing main staple food to make better food availability in Belu.

The second factor is majority of farmers in Belu still use traditionally simple method in agriculture practices. They still depend on knowledge and skill derived from their ancestors. Instead of using irrigation technology, they still depend on rain to water paddy field, which enables them to harvest only once a year. This happens because farmers don't have access to modern technology and method of agriculture practices, especially due to their low level of education and income. Thus, government and stakeholders should introduce modern methods of agriculture by training and providing farming tool assistance to farmers, both man and women.

Food Access

Access to food could be measured by the income, expenditure, and market. In terms of income aspect, Indonesian Ministry of Agriculture use number of people below poverty line as the indicator to the food insecurity. In 2012, total number of poor people in Belu is 53,500 or 14.54% of its population, which is higher than the national figure of

11.66%. A more serious condition exists in sub-districts level in border areas such as Tasifeto Timur and Raihat with 16.7% and 23.4% of poor population. From the expenditure aspect, Belu's per capita expenditure in 2011 only reached Rupiah (Rp.) 601,690 per month, lower than the average of provincial per capita expenditure that stayed on Rp. 607,310 (BPS, 2013).

From the market aspect, people in Belu's border area have difficulty to access market in district's capital due to long distance and poor road infrastructure. For example, people in Maumutin district have to pass 4 kilometers of rocky and dusty road to reach sub-district's town in Tohe. Then, they still have 36 kilometers again to reach traditional market in district's town of Atambua. This condition led them to sell their agricultural commodity to their neighbors and middlemen with lower price. Therefore, road infrastructure is required to help Belu's farmers to raise their income and open their access to market.

Food Utilization

Food utilization is commonly associated with nutritional status of individuals. If the causative factors consist of feeding practices, food preparation, diversity of diet, and intra-household distribution of food, the impact could be traced from health elements such as nutrition status of toddlers and life expectancy. From 28,469 toddlers who come to local community health center (*puskesmas*) in 2012, 70% are in normal status, while 26.15% are in moderate and 3.85% are in severe malnutrition status. It means that there were more than 8,000 toddlers in malnutrition status. For life expectancy, the average of maximal age for Belu's people in 2012 is 66.35 years, lower than East Nusa Tenggara provincial rate at 67.76 years and national rate at 69.87 years (BPS, 2013).

The low level of food utilization in Belu Regency may be caused by the low diversity of diet. They usually eat food crops produced by themselves from the farm field. Due to the dry conditions, only limited crops grows well such as maize and cassava, which contain more carbohydrates than other nutrition. For other kinds of food such as vegetables, farmers have to buy from market, which are located far from their villages.

Food Stability

There are some problems that could endanger food stability in Belu Regency. First, the rainy season in Belu lasts for short time, only 3 months from December to March each year, while the rest of the months are dry season. Therefore, farmers in Belu have short planting season with only one harvest annually. Another issue is preparing the land for planting by burning it. This method is regarded as the cheapest way and has been in practices for generations. According to Suyanto, Chokkalingam, and Wibowo (2003), this method could decrease land fertility and in long-term could endanger the sustainability of food crops production.

In political aspect, there are still border areas that have been disputed by Indonesia and Timor Leste, named Delomil Memo segment. Both governments still have different perception about the median line of 2.2 kilometers of border river and covers 41.9 ha of border area. Dispute could potentially escalate into an open communal conflict, since another disputed segment located between Timor Tengah Utara District of Indonesia and Oecusse District of Timor Leste has led communal conflict in 2012 and 2013 (Raharjo, 2014). Besides, some illegal cross-border activities like oil smuggling also disturbed energy supply and distribution in Belu that potentially could create tension between two border communities of both countries.

Four dimensions of food security above reflect that agriculture sector in Belu Regency has not been managed optimally. These factors could make Belu Regency vulnerable to food insecurity. Theoretically, one of the alternative ways to solve the problem is involving gender-sensitive approach in agriculture sector management by empowering women as well as men to have appropriate and fair participation, access, and control over agriculture resources.

WOMEN'S ROLES IN FOOD SECURITY IN BELU REGENCY

The agricultural sector is a major component of the economy and society in Belu Regency. This sector accounted for 45.74% (at constant prices 2000) from the local Gross Domestic Product in 2012, which is the largest sub-sector of food crops (groceries), farms, and plantations. Moreover, this sector also absorbs most of the labor force in Belu, amounting to 69.86%. The workforce in the agricultural sector not only consists of men but also women. The percentage of female farmers compared to men in the agricultural sector is 47%:53% (BPS, 2013). It shows that almost half of farmers in Belu Regency are women.

However, ADB argues that women's activity in agriculture is relatively unreported. Their role in agriculture is often not well recognized, partly due to the fact that women's work in subsistence agriculture is often part of the non-cash economy of the household (ADB, 2013). It is also true in case of Belu Regency, where most of women work in subsistence agriculture. Moreover, subsistence agriculture is still the main source of food and income in many communities throughout the world (Mehra and Rojas, 2008).

There are several studies that has linked women role in food security. Mehra and Rojas (2008) stated that women have crucial responsibilities in agriculture and they produce half of the world's food. Women are more likely than men to spend their income on the well-being of their families, including providing more nutritious foods. Karl (2009) also pointed the important role of women in food security as food producers, keepers of traditional knowledge and preservers of biodiversity, food processors and preparers, and food providers for their families. The multiple roles women play in agriculture have placed women as the key players in overcoming food insecurity. This part will analyze the various roles of women in agricultural sector and lay out the ways in which women contribute to the pillars of food security. The analysis is based on Activity, Access and Control Profile of Women and Men in Farmer Family in Belu Regency by Harvard Framework of Analysis.

Roles of women in the agricultural sector are visible from production to post-harvest activities. In carrying out a number of agricultural activities, there is division of labor between men and women. The division of tasks is usually not explicitly discussed since the beginning, as it has passed from generation to generation. There are dominant roles played by women or men, and several roles are carried out by both the gender. It is observed that women have important role in number of activities such as preparing the seeds, planting, tending, harvesting and processing. Men are mostly involved in heavy works such as clearing, spraying pesticides, and transporting the harvest. Activities such as selling crops are usually done jointly by male and female farmers.

Women spend most of their time in the field/farm/garden, which began at 07:00 am to 15:00 pm; however, it varies slightly based on different situation. For farmers whose lands are far away from the house, usually husband and wife set off together. However, if the

land is relatively close to the house, the husband goes for work first and the wife follows later. Mothers more often goes back to home first, because she has to do household work such as fetching water, which sometimes takes walking the distances of about 500 meters. This shows that women have important responsibility in managing the household reproductive activities.

There are division of labor between men and women in the production of maize. Before the planting, preparatory steps undertaken by men and women are weeding and preparing the seeds. Maize seeds are prepared by drying and storing it in container to avoid damages and these activities are generally carried out by women, because they are considered to have better knowledge in selecting seed of better quality. This knowledge has been passed on from generation to generation. Women also take part in planting of seeds. Men are in-charge for taking care of the maize crop. During the time of harvesting, which approximately takes place after 4-6 months after planting, women are involved in harvesting the crop. If the maize production is low, then the harvest is used for family's own consumption.

When the maize production is high, the surplus maize are transported and sold by both men and women farmers to Atambua, the capital Regency. Maize harvests are also usually bought directly from the farmers by the buyer. Men usually sell to collector's stores, while women sell only to the neighbors. For farmers in the border areas, such as in Belu, one of the major problems faced in selling agricultural products is transport accessibility. Lack of access to transport facilities has forced farmers to sell agricultural products to neighbors and local sellers in small quantities. In addition, selling agricultural products to Atambua requires additional cost for transporting the products.

It shows that women in Belu have been responsible in different phases of food production, such as selecting seeds, planting, watering and taking care of plants. Women's role as food producers ensures adequate food production for the family. This role has close connection to food availability, which is one pillar of food security.

Besides as food producers, women play important role as food providers to the household and community, which can contribute in achieving another pillar of food security, nutrition security. This security ensures adequate nutritional status in terms of protein, energy, micronutrients, and minerals for all household members (Quisumbing and Brown, 1995).

Women's also plays an important role in contributing to other pillars of food security, which is related to economic access to food. Many women farmers in Belu are involved in processing of food such as producing crackers from maize. This product is then either sold to the market in capital Regency or to neighbors in the surroundings. Women's income share has a significant and positive effect on household budget shares of staples and education. Further, women's role as food processors can reduce poverty that can be a major threat to household food security. Therefore, the household's access to food depends greatly on its real income (Quisumbing and Brown, 1995). The additional income in the hands of women increases the budget share spent on basic household needs (Duncan 1997, Hoddinott and Haddad, 1995).

Generally in East Nusa Tenggara province, women also have important role as keepers of traditional and indigenous knowledge of plants or seeds. Women's role in preparing and selecting the seeds, particularly of maize, is closely related to the myth of the relationship between women's will and corn. According to historical mythology in East Nusa Tenggara province, maize is the result of the sacrifice made by women. The emergence of maize is the result of the sacrifice of a woman to cope with drought in the region

(Hagerdal, 2012). The myth then becomes the foundation for belief of a close relationship between female and corn. Since then, women are considered of having good knowledge in selecting and storing corn seed after harvest. This role of women has relationship in ensuring food stability as one pillar of food security.

Once harvested and brought to home, the corn is stored in the attic of the house or smoked. This is done to make corn durable. More importantly, only the eldest daughter is allowed to climb to the roof of the house in the corn barn. Men do not have the authority to do it as it is considered as taboo. It is based on the understanding that if men go up to the barn, crops will not be enough regardless of the amount of maize produced. Women's knowledge on maize seed's selection is also a symbol of her readiness to get married. These understandings show female's authority to manage food. This local wisdom is only believed to be owned by women and is known as female wisdom. This custom is still in practice in some rural areas but it is no longer applied by farmers in the city.

WOMEN'S CHALLENGES AND OPPORTUNITIES IN FOOD SECURITY

The above discussions shows women have a significant role in the agricultural sector as an effort to ensure food security in the family. On the one hand, there are a number of opportunities related to women's role in food security at the household level. Women are the ones that can be relied upon in creating well-being of the family and directly or indirectly this impacts on the fulfillment of the family's daily needs, especially food. This shows the contribution of the role of women in ensuring food security by providing additional income and livelihood for the family.

However, on the other hand, there are still some issues which could be challenges in order to enhance the role of women in food security. Internally, motivation and self-confidence among women is relatively low and this is further exacerbated by their low level of education and mastery of skills or technology in carrying out their duties. Therefore, women are not empowered in optimal ways. This is important to be noted because women's empowerment comes from themselves (Karl, 2009). They need to organize themselves as women to raise their awareness, build solidarity and mobilization of women (Karl, 2009).

Meanwhile, externally, support for women at the policy level is still relatively low and is considered to inhibit the role of women. One example relates to the fact that women are dominant in small-scale farming. However, the emergence of large-scale commercial farming may threaten the existence of women who tend to make up the majority of small-scale food producers in many countries. Agricultural development strategies must target these populations. There should be strategies and investments to improve food production among small-scale women farmers, such as increasing crop yields, which are needed to ensure food security. In order to support women participation in decision-making and policy-making process, there should be political will in the legislation at all levels.

Women also face challenges in exercising women's rights, access to food and decision-making. These are linked to the cultural, economic and political dynamics surrounding the relationship between women and men. It is because the pattern of gender relations cannot be released to the role of culture and structure of the clan system that is growing in the local community. They are always bound in the community, so there is no personal value. Therefore, in decision-making process, women do not tend to be independent. It indicates a strong patriarchal culture in customary rules. Other challenges relate to

agriculture production capabilities, such as lack of water, agricultural inputs, and land ownership. Poor infrastructures, including roads and bridges, limits their ability to transport and market agricultural products. In addition, women experience lack of appropriate policy support. For example, women have important role in choosing the best seeds and taking care of plants but the training or education about it are provided only to men.

To deal with the challenges and to optimize the opportunities, there is a need to increase the productivity and role of women in the household and as a breadwinner labor such as by engaging in businesses in the agricultural sector. So, it can result in increasing household income and family food needs and ultimately to realize food security and family welfare.

CONCLUSION

This research has shown that, men and women involved in farming in Belu have different and dynamic roles based on skills and prevailing norms. Unfortunately, women's role has not been properly recognized, as they have not been involved enough in decision-making process and opportunities like agricultural training. Whereas, the evidence based on this research clearly shows that the involvement of women has been able to provide food for family sufficiently. By providing appropriate and fair chance of participation, access, and control to men and women's farmers, it's hoped that agriculture sector management in Belu will develop sustainably to eradicate vulnerability in food insecurity.

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