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SUSUNAN PENGELOLA

INDIGENOUS KNOWLEDGE OF MINANGKABAU COMMUNITY IN THE CONSERVATION OF LOCAL PLANT GENETIC DIVERSITY

Pengetahuan lokal masyarakat Minangkabau dalam melestarikan keanekaragaman genetik tumbuhan lokal

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Abstract: This paper discusses the current issues on achieving sustainable food security through understanding the role of indigenous knowledge of Minangkabau community in conserving local plant genetic diversity. Minangkabau is an ethnic group indigenous to the highlands of West Sumatera (Indonesia). It is amongst the world's largest matrilineal society. In Minangkabau ceremonies, food plays a central role which honour religious and life cycle rites. The food ingredients and spices are rich in biodiversity, creating a demand for genetic diversity conservation for supporting food security in the future. Conservation of genetic diversity of the ingredients and spices are passed through indigenous knowledge as verbal communications which consist of beliefs, customs, tools, techniques, and rituals. These kinds of knowledge are in sense of producing, choosing, and preparing foods' ingredients and spices. The Minangkabau maintains their farmland in a unique way in order to achieve food security for their community. The uniqueness lies in the active roles of women in food provision for their families. The women are inherited the clan land therefore they are not allowed to leave their relatives after getting married. Local food security and culture thus depend on indigenous knowledge passed on to the daugthers from the mothers (matrilineally). This tradition has positive contribution to the conservation of ingredient and spices' genetic diversity in this area. Nevertheless, sustainable management of this tradition needs to be taken into consideration. Transforming indigenous knowledge into documentation and compilation will contribute to enhancing knowledge of local communitites and then be expected to sustain local plant genetic diversity. Its preservation in data base form must be taken place as quickly as possible to prevent it from being lost at unpredecented rate.

Keywords: Minangkabau, indigenous knowledge, matrilineal, biodiversity, genetic resource, food security

INTRODUCTION

According to World Food Summit (1996), food security will occur only when all people during their lifetime have access physically and economically to enough foods in order to meet their dietary needs as well as food preferences for a healthy and an active lifestyle. When people do not get enough healthy food regularly, they become exposed to ill health and shorter life due to poor nutrition. A major cause of food insecurity is poverty therefore sustainable effort in eradication of poverty is very critical to the improvement of access to food. Improvement in food production, especially staple foods, must be undertaken within the framework of sustainable natural resources management in order to eliminate the unsustainable patterns of consumption and production.

Indigenous people and their communities play fundamental and significant roles in the food sector and its sustainability. Promoting full participation and empowerment of people, especially women, will help in food insecurity eradication. It has been a long known that women play an important role in providing food and nutrition for their family. Women, however, have often lack access to education, training, and decision making so prevent them from having knowledge about food safety and nutrition.

Agricultural plant and diversity is being lost due to its declination over years. Some of species is considered rare and even endangered. This has become one aspect of a natural disaster. Declining of genetic diversity gives a serious impact and consequences for future production of food and good nutrition. The diversity is being lost partly due to unsustainable agricultural practices while strengthening food supply can be done through maximizing available resources in a sustainable manner. One example is through empowering local community especially women in their ability to access and adopt recommended technology.

Indigenous knowledge, on the other hand, is an essential phenomenon to sustainability of genetic diversity, and in the long run, to human development (Warren, 1992). Even though indigenous knowledge has long been ignored by most people, to Minangkabau people, it has been practicing for decades and still surviving up to now. To them, importance of commitment towards plant and genetic diversity conservation has never been questioned. Minangkabau relative membership is traced through mother's side (matrelinialism) (David and Ploeger, 2010).

THE ROLE OF MINANGKABAU PEOPLE IN CONSERVING LOCAL PLANT GENETIC DIVERSITY

Indonesia has many ethnic groups and each has developed and kept their traditions. One of the largest ethnic groups of the Sumatera islands is Minangkabau. Most of Minang mothers in rural and urban areas are housewives while most of Minang fathers in rural area are farmers and in urban area are entrepreneurs (Februhartanty, 2011).

For decades, the Minangkabau ethnic have practiced domesticating crops and spices as food as food sources. They selected the best adapted species among the wild germplasms for the cultivation and utilization. Even though this effort has traditionally been passed on from generation to generation, permanent risk of loss of genetic diversity of cultivated plants and their wild counterparts cannot be avoided due to unsustainable practices of cultivation and its utilization. Changing of environmental condition has also contributed to the loss of genetic diversity of indigenous species.

Women in Minangkabau community maintain and control heredity rights to the land and houses. Men, on the other hand, have no stake in family home and this situation forces them to leave their families and even their home town to seek their fortune. This tradition is called *merantau* (Februhartanty, 2011). The mothers, as the owners of the land, hold responsibility for the cultivation, but then the decisions still depends on the sharing system among the family member before commencing the cultivation (David and Ploeger, 2010). Because women control land inheritance, the women's kin group has the responsibility in maintaining the continuity of family and the distribution of cultivation of the land (Dreyfuss, 1992).

Matrilineality is a system in which the decendants belong to mothers' lineage and as its consequences this also involve the inheritance of property through female line. Every family member is identified by his or her mother's clan. The mother posses the technique of food processing, the ingredients and spices for the preparation of food. Some of the women still cultivate herbs and spices in their yards but some of the spices are obtained from a weekly market. Young women receive the traditional knowledge that is passed from one generation to the next through experiences (David and Ploeger, 2011). Agriculture sustainability however, requires scientific respect for those with the wisdom of generations of nonscientific farming, and if possible more effective collaboration with them (Warren, 1992).

Minangkabau custom comes from nature according to the proverb "growth in nature is our teacher". It is stressed out that in nature all is born from the mother. The mothers play dominant role in raising the children thus give contribution to character building of the next subsequent generation (Sanday, 2005). Matrilineal system in Minangkabau is in accordance with nature that the mother bears the next generation and raises the child. It is set so that the children would always have a family, enough food, and ancestral land (Sanday, 2005). There is a strong implication that the mother has a significant role in increasing food diversity through food culture in the house hold. This is achieved by their ability to use local genetic resources and cultivating the spices in their yard. This system put the kitchen as a central of women's activity and therefore women play a significant role in managing farm to work activities (David and Ploeger, 2011).

CONSERVATION OF INDIGENOUS GENETIC RESOURCES

As indigenous species are most adaptive resources, they can be good sources of genes for improvement of genetic diversity of cultivated species. Therefore there is a great need in conserving their germplasms as well as improving the production of local species (Adebooye and Opabode, 2004).

It is undeniable that spices species in Minangkabau area is declining and thus faced by threat to their diversity. By realizing this situation, it is suggested to take the steps in conservation effort. This can be done for example by collection of samples of the species that most common used by the community. The collection has to be accompanied by the ability to build a simple data base to prevent the diversity from being lost. The role of educated Minangkabau people who study outside the land and have enough knowledge in biodiversity is very important in giving information to the local. Indigenous knowledge has to be transformed into proper documentation in order to sustain local genetic diversity information. An investment is strongly needed in this effort and this can be achieved not only by the help of local government but also by the local community themselves. This in turn will help in conservation and sustainable utilization of the genetic resources and to broaden the base of agriculture practices and the improvement of food security.

As suggested by Adebooye and Opade (2004), efforts in conserving indigenous genetic resources are as follows:

1. Developing a seed bank. Seed needs to be stored and recorded properly. Regular check must be undertaken to test the viability of the stored seeds. This will be as an insurance against genetic diversity loss.
2. Crop Type Collection Center (CTC): it is called also as gene banks in the field for species that do not easily produce seeds.
3. Conservation in natural ecosystem (*insitu* conservation). This is intended to protect germplasms in their ecosystem. In this way, indigenous species are protected in their natural habitat. A law inforcement must be implemented to ensure a successful *in situ* conservation effort to prevent illegal and over-exploitation of the conserved species.
4. Capacity building. There is a need for having expertise of genetic resources. Therefor there is a role of local government and community to train their representatives about conservation knowledge.

CONCLUDING REMARKS

Minangkabau people follows matrilineal heritage giving women an advantage in ownership of land and livestock. In this sense women interact closely with natural resources and become managers of their land. This task put them into the responsibility for managing biodiversity as well as providers of variety of family meals. Traditionally they have knowledge in this task but capacity building for the improvement of their knowledge still necessary needs to be taken into consideration. The profile of gender role in Minangkabau community bears evidence that women are key contributors to household food security and the conservation of local plant and genetic diversity.

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