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To cite this article: E Martin *et al* 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **298** 012026

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Forest, sawah, and culture: Civilization of food sovereignty by Semende communities at South Sumatra

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Abstract. Food sovereignty is the aspiration of many parties and the vision of the Government of Indonesia. Making new fields (sawah), building and repairing irrigation, and provide incentives for the cultivation of food crops is the program being run by the government. On the other hand, the facts show that the conversion of sawah to other uses still exists in many places and cannot be prevented. However, Semende communities living in the upland of South Sumatra to show different performance; they tried to maintain the tradition of sawah at the time of changes in knowledge and the growing population. This study aims to understand and explain the success of the Semende communities in achieving food sovereignty. Research questions answered by qualitative research methods, especially through ethnographic notes concerning sawah management practices by Semende communities. The results showed that the preservation sawah closely related to tunggu tubang tradition and the social conventions of the existence of forests in the upstream region. Sustainability of sawah is the result of consistency and belief of Semende people about important value of sawah as cultural identity and basic capital of the household economy. These beliefs bring forth innovative attitude to maintain the existence of sawah. Therefore, the construction of physical infrastructure to achieve food sovereignty must be accompanied by socio-anthropological approach to the lives of farmers and forest control in the upstream region of sawah by community groups.

1. Introduction

The realization of food sovereignty and farmers' welfare is the vision of agricultural development in Indonesia today. The concept of food sovereignty in this vision is interpreted as "the right of the state and nation to independently determine food policies that guarantee the right to food for the people and that will give the right to the community to determine a food system that is compatible with the potential of local resources". The vision of food sovereignty is to be realized by the government, among others through the "food and nutrition security" mission, by increasing the availability, affordability and utilization of food as a fulfillment of food and nutrition consumption of the community. The government then translated it into a massive infrastructure development activity, covering the construction of irrigation networks for rice fields covering 1 million hectares, rehabilitation of irrigation networks for 3.3 million hectares of food land, and construction of 49 dams. (RPJMN 2015-2019). Is the development of agricultural infrastructure able to realize food sovereignty and the welfare of farmers? Is food sovereignty at the local level just utopia?

On the other hand, the government does not turn a blind eye that the land conversion continues to occur. In 2014, the Ministry of Agriculture reported that the annual conversion rate of paddy fields



reached 100,000 hectares, exceeding the rate of making 47,000 hectares of rice per year (Kompas, 3 October 2014). The rate of conversion of rice fields outside Java (132 thousand hectares per year) is much higher than Java (56 thousand hectares per year) [1].

There are at least three factors that determine the conversion of rice fields, namely the scarcity of land and water resources, the dynamics of development, and an increase in population [2]. These three factors are tendencies, something that is interconnected and considered inevitable. These symptoms are addressed by experts, for example [3] and government [4] with the proposed new rice field program. How can the development of agricultural infrastructure produce food security and realize food sovereignty when rice field conversion continues?

Changes in environmental conditions due to capitalist economic penetration and population pressure are faced by rural Javanese people with an adaptation strategy called by [5] as agricultural involution. The real form of agricultural involution is mutual help in the rice fields [6]. Agricultural involution is culture. Does agricultural involution also occur in rural Sumatra that has dry land farming? [5] did not link the symptoms of agricultural involution with the concept of food sovereignty at the community / farmer level. Based on [7] food sovereignty is *“the right of local peoples to control their own food systems, including markets, ecological resources, food cultures, and production modes”*. Whilst, food security is *“all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”*. This definition is sufficient to explain that food sovereignty is a political idea, while food security is more technical. Food sovereignty is considered a paradigm shift from food security based on capitalist economy to local control over food production [8,9]. What is the constellation of the two concepts in rural peasant communities in the uplands of Sumatra?

Although the conversion of rice fields has not been seen as a serious threat to food production, but according to [2] Irrigated rice fields are a national asset. Irrigated rice fields as cultural heritage are not only needed to support national food security, but also to maintain the quality of the environment. Therefore, innovative ideas are still needed in order to strengthen the ideals of food sovereignty, support agricultural infrastructure development programs, find the main problems in the field that are the cause of rice field conversion.

The Semende community in Muara Enim Regency, South Sumatra is a farming community that has traditionally been known as a producer of food barns. They are irrigated rice farmers who appear and develop on their own initiative and effort. Aside from being a rice farmer, the people in Semende¹ also grow coffee, rubber and horticulture. This paper aims to discuss and explain how the concept of food sovereignty is realized in the context of the Semende family and farming community.

2. Method

The research question about how the Semende communities in Muara Enim District, South Sumatra embodies food sovereignty is answered through an analysis of ethnographic records. We have worked on several research themes in Semende; farm forestry in 2006-2007, Arenga pinnata and protected forests in 2009-2010, community protected area in 2013-2014, jernang rattan in 2015, watershed management in 2016. These studies mostly use a qualitative approach. One of the results of the qualitative method is the field notes about the unique culture of the Semende community, including the Semende's views on sawah (rice fields) and their traditional life. These records can be categorized as ethnographic records, because they contain the results of interviews, stories, Semende people's attitudes about their lives. The purpose of ethnography is to understand the behavior and cultural attitudes of a community group [10]. A distinctive feature of the ethnographic research process is the fieldwork in a long time and is directly related to the daily lives of the community groups under study [11].

¹ Semende has two meanings, as a particular area located in the Muara Enim plateau and the name of the tribe that forms a sub-culture in South Sumatra

To strengthen the validity of the results of research on sawah culture, at the end of 2016 we conducted a case study. We chose two villages from 32 villages that we visited in Semende. Cahaya Alam Village in Semende Darat Ulu Sub-district and Pagar Agung Village in Semende Darat Laut Sub-District represent villages dominated by sawah. The two upland villages are directly adjacent to the forest area. Both villages are also the object of rice farming development from the government. Farmers in Pagar Agung Village follow the government's recommendation to plant new rice twice a year. Cahaya Alam farmers continue to grow their traditional rice. We designed case study (see 12) toward sawah production system; culture and household consumption, institutions and farmer groups, problems and solutions.



Figure 1. Two villages for the case study are located around forested areas (insert: Research location at upland South Sumatra Province/Source: maps.google.com)

We collected data by in-depth interviews with informants, participant observation, and focus group discussion. Informants were several leaders of certain sawah farmer group in each village and households where we stay and the neighbors. We not only ask about what is seen about the rice production system and the culture of household food consumption, but ask more deeply about how and why it happened, thus forming a thick description of their culture. We tried to be involved in the activities of informants in their sawah and irrigation areas that were problematic. This effort is facilitated by our previous good relations and understanding of their livelihood system. In general, we have carried out several stages of analyzing ethnographic data; reduction, data display, and verification. The ethnographic records generated from this case study are part of the verification stage in qualitative data analysis.

3. Result and Discussion

3.1. Main feature of Semende's sawah formation

Sawah is the main symbol system for the life of the peasant community in Semende. In addition plot of sawah, there are at least five main features that make up the completeness of the sawah, that are *dangau* (temporary house), *tengkiang* (granary), *kebun kawé* (coffee garden), *siring* (irrigation channel), and *ghimbe ulu ayek* (upstream forests). These six features are elements that make up the agrarian life system to be stable and sustainable. The completeness of the features in the sawah system is a hallmark of village independence and development.

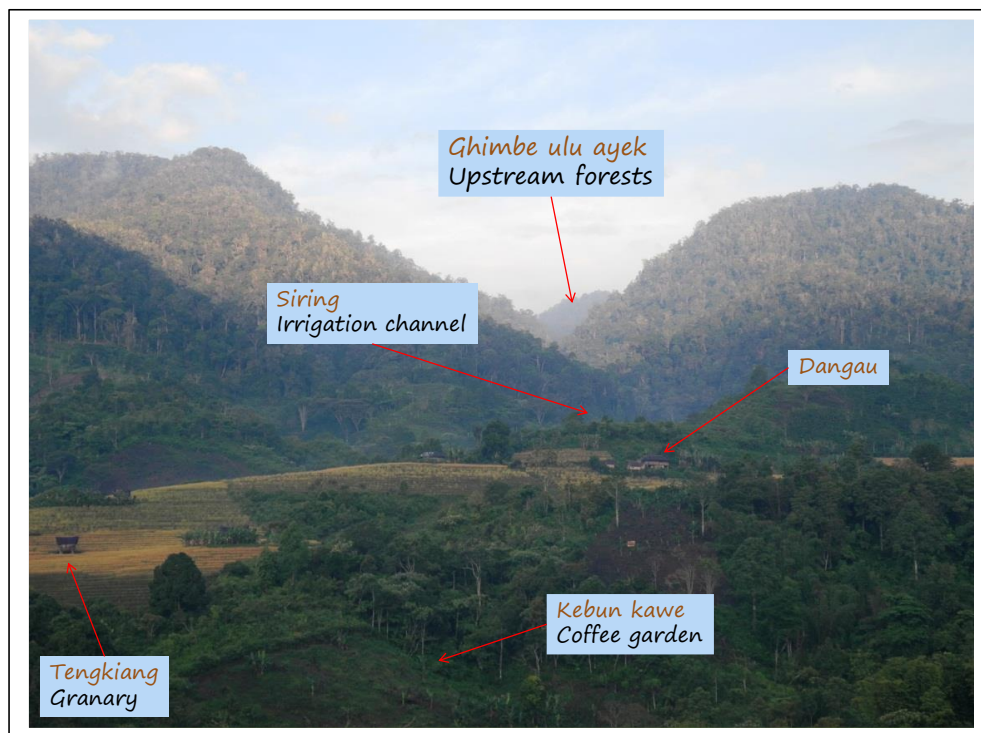


Figure 2. Features of upland Semende's sawah system

In the history of the formation of villages in Semende, the ancestors chose and determined a new location to live in if possible to cultivate sawah. They come to a place with the intention to be able to build a sawah. If the sawah has been built, then the settlement area will follow later. The Semende ancestors built sawah not only focusing on rice sawah as rice producers, but always equipped with coffee gardens or fruit-producing trees as sources of income. The complete features of the rice producing area and cash crop in a landscape are a prerequisite for the establishment of a permanent settlement, a new village. For Semende people, sawah are a source of livelihood, as a source of initial capital and the ultimate goal of upland agricultural life [13].

Intention to build sawah in a place is realized in the act of finding a relatively flat location for sawahs and their water sources. Their ancestors carried out collective action, *gotong royong*, building siring. The construction of traditional siring is usually done in stages and long. Therefore, farmers must have sufficient supplies, from the surrounding agricultural fields or the original village rice fields. As a result of the process, participants in *gotong royong* get plots of rice and water allocation. This process implies that the features of sawah plots, *siring*, and coffee plantations are the main elements in achieving food security, before the realization of food sovereignty. This means that the government's steps to build sawah and irrigation infrastructure are appropriate but incomplete. Farmers are not enough to only rely on rice fields, as a food source, but must have other farming areas as a source of cash income. In the context of the Semende community, farmers have double cultural cores, rice fields and dry land farming, not as described by [5] about the Javanese and Outer Javanese agricultural systems.

Ghimbe ulu ayek, *tengkiang*, and *dangau* are symbolic features as a prerequisite for achieving food sovereignty. The sustainability of rice production is determined by the availability of sufficient and controlled water. Therefore, the farmers who own sawah must be able to control the forest along the irrigation path and around the spring. *Tengkiang* is a place to store rice harvested, to meet consumption needs for one year and the next seed planting period. *Tengkiang* allows control over

consumption and production. *Dangau* is a symbol of hard-working sawah farmers. They have to stay in the sawah for a certain time. Without working hard the sawah will be abandoned. *Dangau* is a symbol of tenacity of sawah farmers. Farmers who always struggle to live independently. This feature of food sovereignty is not only political but also has a strong cultural character.

3.2. Household consumption and culture

The settlements of the villagers of Cahaya Alam and Pagar Agung are not far from their sawah.

Villagers dominated by *Tunggu tubang* family. *Tunggu tubang* is the eldest daughter who has been married in a family that is assigned to maintain, preserve, and manage ancestral treasure, mainly house and sawah. Those treasure is forbidden to be sold. *Tunggu tubang* have the right to cultivate and benefit from sawah. They are obliged to provide food needs for parents and other family members who still live at home. They also have to feed large family members who occasionally return to the village. Others villagers are *anak tengah* family and few non Semende family. *Anak tengah* usually focus on coffee or rubber farming. *Anak tengah* can farm sawah by establishing a contract system with the *tunggu tubang* family.

Sawah farmers in the village of Cahaya Alam and Pagar Agung have several differences and similarities. The difference that arises is in terms of planting production facilities (Table 1). Farmers in Cahaya Alam were not affected by the government's recommendation to plant new types of rice. They planted traditional rice with yields per hectare per year lower than Pagar Agung Village. Pagar Agung Village farmers have switched to the government's recommended rice cultivation a decade ago. They plant rice twice a year. They sell rice crops. They have to work harder to be able to work in the rice fields and coffee gardens in a narrow interval. They have *dangau* without *tengkiang*. In fact, the food security of Pagar Agung Village has increased, but their food sovereignty has decreased. They depend on seeds and fertilizer. However, the character of sovereign farmers is still visible from their freedom in determining the time of planting.

Table 1. Characteristics of sawah farming in the case study village and their culture

No.	Some characteristics of studied sawah village community	
	Cahaya Alam	Pagar Agung
1	Planting traditional rice	Planting goverment recommended rice
2	Yields stored in rice barn, subsistence, for sale in emergency situation	Yields is for sale after saving for six month consumption need
3	Rice production per year is about two tons	Rice production per year is more than two tons
4.	Regular planting season with low input	Irregular (freely) planting season with high input
5.	<i>Anak tengah</i> buy and save rice for a year need	<i>Anak tengah</i> buy and save rice for a year need
6.	Very proud in explaining <i>Tunggu Tubang</i> institution	Very proud in explaining <i>Tunggu Tubang</i> institution

Rice yields in Desa Cahaya Alam are relatively stable, roughly producing two tons of rice per hectare. Pak A is the family of *tunggu tubang*. He has 10 family members. Their rice consumption needs are 150 kg of rice per person per year, or 1500 kg per year. The remaining rice is used to meet social needs and as a reserve for the following year. Mr. A said "*We don't sell rice. Rice yields for family consumption only. If we don't lack rice, we can farm coffee without worrying*"

Mr. B is *anak tengah* family. He doesn't have rice fields. He has two coffee garden units. The results of the coffee harvest are prioritized to buy rice for one year. Even though he is an *anak tengah*, he still holds the principle of food first. Coffee farmers hold subsistence ethics that are influenced by sawah culture [14].

Semende people have one cultural identity, namely *tunggu tubang*. They are very proud of their cultural identity. Sawah are the main media for *tunggu tubang* formation. The ideals of the *tunggu tubang* culture are independence and stability. This is comparable to the expectations of the concept of food sovereignty. So, the physical form of the sawah and the idea of independence in the form of *tunggu tubang* is a unity, inseparable, both must exist.

3.3. Institution, managing problem, and challenges

We found some institutions or working rules in sawah production system. These institution was created culturally. There are three terms that have the meaning of rules for the community, namely *ataran sawah*, *ghimbe ulu ayek*, and *siring* (Figure 3). *Ataran* is a unit of certain area occupied for farming. Farmers must relate and work together with fellow members. *Ghimbe ulu ayek* is a forest around spring and *siring* path. Trees in *Ghimbe ulu ayek* cannot be cut down. *Siring* is a water way made by humans to irrigate rice fields. All sawah farmers in *ataran* have the responsibility to maintain and repair the *siring*. Violations of this institution contain sanctions. *Ghimbe ulu ayek*, sawah, *siring* and *tunggu tubang* institution created a sustainability mechanism that is proven to work and be effective in the present. [15].



Figure 3. Sawah and ulu ayek forests are considered as fixed landuse by Semende community

We found several sawah conversion cases. Farmers are forced to turn their sawah into coffee gardens because of constraints to lack of water. Landslides on the *siring* line often occur. In addition to being considered as a natural disaster, landslides also occur because some villagers violate the *ghimbe ulu ayek* rules. This problem cannot be solved by villagers alone. They usually invite the government to intervene. However, this method is only effective for forests within forest areas [16]

4. Conclusion and Suggestion

The food sovereignty has long been manifested and maintained by Semende people. Mostly smallholder farmer groups of Semende can control their own rice production system, including to sell or not its product, production modes, food culture, irrigation channel, water springs, and its forests. In

realizing food sovereignty, the center of attention of farmers is to work in irrigation channels and sawah, then protect the forest if disturbed, and continue the tradition of tunggu tubang. Food sovereignty is the result of the simultaneous work of these physical and non physical elements. So, food sovereignty is not a given, it is a mission to fight for.

Learning from the history and experience of Semende farmers, it turns out that building infrastructure of sawah and irrigation channels is not enough to realize food sovereignty. Farmers must have the power to manage forests that produce and protect water sources for sawah. Food sovereignty and proud attitude towards local identity should be the principles taught to the younger generation of farmers, in every program and activity of the government and other parties in the village, as a cultural movement.

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