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# IMPLICATION OF FARMING CULTURAL CHANGES ON FARMHOUSES IN NGADAS VILLAGE

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#### **ABSTRACT**

People in Ngadas Village have enough time to live in their fields. Therefore, the community build farmhouses to help farming activities. However. as agricultural landscape, cultivation Ngadas Village has various dynamics. Changes that occur in the agricultural be traced landscape can agricultural features formed by the type of agricultural land use. In addition, it can be traced through cultural features that are the result of interactions between human activities and the environment such as farmhouses. Therefore, this study aims to find out the implications of agricultural features on cultural features, especially space in farmhouses. The in-depth interview and observation methods were conducted to identify, then the data obtained were analysed by synchronous and diachronic methods. So, the changes that occur can be determined descriptively. The results of the study show that the culture of shifting cultivation that has become permanent causes the fields to develop along with the changes in the plants that have been planted, the addition of activities and intensity of plant management. More fixed location of the farm more developed and permanent farmhouses has been built. More activities carried out in the fields and the higher intensity of plant management, the wider and more space needed for the fields.

Keywords: Agrarian culture, Agricultural landscape, Farmhouses

## INTRODUCTION

Ngadas Village. Ngadas is known as a vegetable-producing village (Agustapraja, 2017; Anggiana & Bergas, 2014; Batoro, Setiadi, Chikmawati, & Purwanto, 2011; Endarwati, 2013). Ngadas residents are tough field farmers and live in groups in the hills (Supanto, 2016; Sutarto, 2006). The dependence of the community on agricultural land makes Ngadas have a strong agrarian image (Subadyo, 2016). Similar to other farming communities, such as the Kasepuhan Sunda and Madura communities, the agricultural landscape is located outside the clustered residential areas (Febrianto, Wulandari, & Santosa, 2017). However, there are differences in patterns of activity in farming and inhabiting.

People in Ngadas Village have enough time to live in their fields. Therefore, community have been built houses to help their farming activities. However, as an agricultural landscape, cultivation Ngadas Village has various dynamics. Dynamics can be interpreted as a continuous movement following changes in time (Quinn & Ciugudean, 2018). The time factor plays a role in the emergence of dynamics (Pfeuty, Kress, & Pain, 2018). Dynamics can also be interpreted as a process of change that is formed and influenced by the condition of the landscape in a long time (Jiang et al., 2018). This is also inseparable from the social and cultural history of Ngadas Village. Agricultural landscapes are often symbolized as cultural landscapes, which are usually defined as landscapes that are managed in traditional. local. historical ways (van Berkel & Verburg, 2014).

Changes that occur in the agricultural landscape can be traced through

agricultural features formed by the type of agricultural land use. In addition, it can be traced through cultural features that are the result of interactions between human activity and the environment, including agricultural related structures (e.g. barns, hedges, farmhouses), road lanes and transmission lines and signs such as boards or fences (Gao, Barbieri, & Valdivia, 2013).

This study aims to determine implications of cultural change in farming on the farms in Ngadas Village. The study of changes or dynamics is useful in documenting traditional architecture. especially those related to the typical agricultural landscape. Research on farm houses and agricultural landscapes has actually been carried out by several previous researchers, but the majority are done abroad. Research on typology, for example, has been carried out by (Picuno, 2012), which is actually far different from this research. In Indonesia, farm houses that have been discussed quite a lot are Leuit, which incidentally is only one of the functions that are in the fields in Ngadas and its location is not a single unit with its agricultural landscape (Nopianti, 2016). With the benefits and renewal above, this research is very important to do.

#### **METHODS**

The study was conducted using qualitative methods. Data obtained were analyzed by synchronous and diachronic methods. So, the changes that occur can be determined descriptively. The research will conducted in Ngadas Village, Poncokusumo District, Malang Regency (Figure 1). Ngadas Village is located within Bromo Tengger Semeru National Park. Therefore, Ngadas Village is also referred to as an enclave village. But in this study only focus on agricultural landscape in Ngadas. The time of the study was start from January to June 2019.

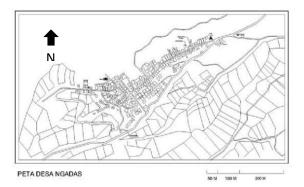


Figure 1. Map of Ngadas Village Source: Subadyo, 2016

The stages of research are carried out in sequence in the following order:

#### a. Preparation

Preparation includes literature studies and field observations to determine research topics and loci.

## b. Preliminary Research

Preliminary research is conducted to determine the research sample that will be used along with the approach with the parties who will be the subject of research.

#### c. Data Collection

Data collection is based on research needs and field conditions. Data collection can be in the form of images, graphics, visuals, or writing. The data collected in this study are:

- The history of the culture of farming in Ngadas Village was explored through literature and in-interview
- The data on the physical aspects of agricultural features in accordance with the history of the agricultural landscape in Ngadas Village was obtained through field observations, literature studies and in-interview
- The data on the cultural aspects of the agricultural landscape are in the form of farmhouses in spatial aspects that can identified through space organization, functions, relationships between spaces, and location and (Febrianto position et al.. 2017). obtained through field observation, literature study and interview.
- The selection of objects is done by accidental sampling.

## d. Data Analysis

Data analysis is used to find research answers. Data analysis is performed on collected data. In this study, descriptive qualitative analysis was used. More specifically the analysis carried out is synchronous and diachronic analysis, so that the relationship of quality can be seen in line with the history of the Region.

## e. Synthesis

Synthesis is the process of bringing together all the results of the analysis so that one finding that is valid and accountable can be found.

### f. Conclusions

Conclusion is the final answer of the research and is the essence of the synthesis process.

## **RESULT AND DISCUSSION**

# A. History of Farming and Agricultural Features in Ngadas Village

In its history, it was mentioned that Ngadas was opened by *Eyang Sedek* around the 18th century as an effort to expand the influence of the kingdom of Mataram Islam, *Kraton Kasunanan* Surakarta (Agustapraja, 2017). But in its development, residents who later migrated into this village were the Tengger tribe who had previously lived in other villages around Mount Bromo. So that now almost 99% of the residents of Ngadas are the Tengger tribe (BBTNBTS, 2013).

Ngadas Village community was originally a shifting field farmer (BBTNBTS 2013) with the main agriculture which is corn (Figure 2). Corn as the main commodity and staple food of society then changed because of the new order green revolution of 1968 that replaced corn with a long harvest period of 10-12 months with plants that had high economic value.

The cropping system then changes, the middle slope area planted by cassava and corn is replaced by coffee and cloves. Meanwhile the upper slope, corn is replaced by commodities, cabbage, potatoes, and shallots (BBTNBTS, 2013).



Figure 2. Cornfield on Ngadas: Photo is taken in 1910
Source: Tropenmuseum on BBTNBTS, 2013

However, in 1982 at the 3rd World National Park Congress in Denpasar, Bali, the Indonesian government established Bromo Tengger Semeru to become a National Park. The impact is that the community cannot carry out a shifting cultivation system due to the existence of a boundary of protected forest belonging to the National Park. Finally, the farmers and TNBTS agreed to share zones that could be utilization zone and protected zones. Utilization zone referred komplangan (Batoro et al., 2011). The agricultural system then develops by planting multi-culture, and is separated by waterways vertically to avoid landslides on steep slopes (Subadyo, 2016). Until now, Ngadas farmers have left shifting fields and plants are dominated by potatoes because of their higher economic value and shorter harvest time of around 3-4 months.

More clearly and concisely, the history and development of farming methods in Ngadas Village can be seen in Table 1.

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Table 1. The development of farming in Ngadas Village

No	Timeline	Farming	Plant
		culture	
1	1910-	Nomaden	Corn and
	1968		cassava
			(staple
			plants)
2	1968-	settled	Coffee,
	1982		cloves,
			potatoes,
			cabbage,
			shallots
			(commercial
			crops)
3	1990an-	settled	potatoes,
	now		cabbage,
			shallots

### B. Cultural Feature Identification

Cultural features are the artifacts of human culture, which is farmhouses (Gao et al., 2013; Pouta, Grammatikopoulou, Hurme, Soini, & Uusitalo, 2014). Through the results of independent interviews and observations, it was found that the houses in Ngadas Village were not originally houses with impermanent material, people used to call them *sudung*. *Sudung* only contains one space, which is a storage area for agricultural equipment and seeds. Based on the results of coginitive mapping in the community, the *sudung* illustration is shown in Figure 3.



Figure 3. Sudung

Sudung has only one space, namely storage space. Storage space is used to store fertilizer. Because there is only one room, there is no relationship between spaces. The location of sudung or fields is relatively flat land and is located in an affordable area from all corners of the field.

Meanwhile, existing farmhouses (Figure 4) developed from the 1960s with material that continued to changes. In the 90s, it is still using natural ingredients, now it has used other materials such as zinc, or brick on the walls.



Figure 4. (a) Farmhouse facade (b) farmhouse plan

Farmhouses now have three space units, namely a place for storing agricultural tools and seeds, resting places and cage/stable. Storage space is used to store agricultural equipment and seeds (Figure 5).

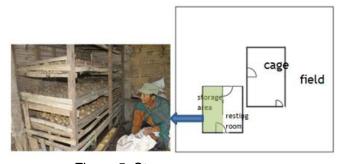


Figure 5. Storage room

The rest room is used for eating and drinking and *gegenen* activity during the rainy season (Figure 6).

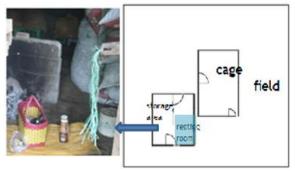


Figure 6. Rest Room

Cages/stable (Figure 7) is used to store livestock. There are two main livestock raised in Ngadas, namely horses and pigs.

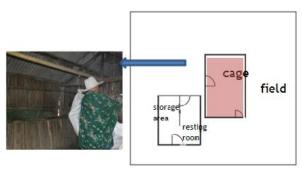


Figure 7. Cage

Every room in the farmhouse is an important unit in supporting agricultural activities. Due to the importance of agriculture as well, the orientation or direction of the farmhouse always faces the farmland and is located in a relatively flat or flat area.

#### C. Analysis Result

Through diachronic-synchronous analysis can clearly describe each detailed condition according to a certain time, obtained conditions such as in the chart below (Figure 8).

The chart above shows that each time period the farming methods in Ngadas Village changed. It is in line with the changes of farmhouse's physical elements agricultural landscape cultural features in Ngadas. In the span of 1910-1968 the community still adopted a shifting cultivation and planting corn system. Corn is a non-intensive plant; therefore it is not difficult to be treated.

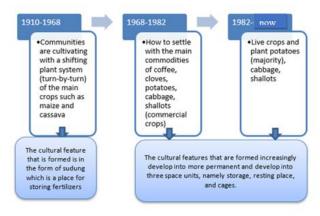


Figure 8 Agricultural features and cultural features in Ngadas Village

Farmers do not need to be intense in the fields. The crops were brought to their homes, because basically the Tengger people had a *pedharingan* as a place to store their crops in their homes (Ayuninggar, Antariksa, & Wardhani, 2012).

Then, in 1968-1982 with the green and replacing plants revolution commercial plants, the maintenance activities were also more intensive. The community began to build farmhouses as a place to store agricultural tools and potatoes seed. Potato seeds need special temperatures so they cannot be stored anywhere. Therefore, the farmhouses play an important role in the regeneration of potato farming. The nursery itself is intended to reduce production costs considering potatoes are a large profits commodity (Anggiana & Bergas, 2014). Each potato harvest is left for a few kg to be used as seed during the next planting period. In the process of waiting for the replanting period, the potato seeds must be stored in the fields.

Gradually with the presence of land and the existence of protected forest boundaries in 1982 until now, the houses were made more permanent and had stable. The orientation of the farmhouses that remain facing the fields also aims to monitor the fields from disturbance. Safety factors are the main factors that take into consideration the orientation of the farmhouses. This is in accordance with basic human needs in the form of security in certain environment (Cheng & Kuo,

2015; Downey, Threlkeld, & Warburton, 2017).

### CONCLUSSION

The cultural change in farming the Ngadas Village community from shifting fields to sedentary agriculture has implications for the cultural features that exist in the Ngadas village agricultural landscape. The cultural feature in question is the physical aspect in the form of the cultural results of the Ngadas people in farming, which are farms. Initially, the community planted a shifting cultivation system with corn and cassava staple crops. In addition, corn plants do not need to require intensive care. So, farmers only need sudung which is fertilizer storage. Then, as the changing farming methods by permanent agriculture and the replacement of plants into commercial crops, especially potatoes, make farmers build permanent houses with larger units of space to collect potato seeds that must be made by them. More intensive care also causes farmers to be longer in the fields and need a place to rest. Cultural features that are formed increasingly becomina are permanent and develop into three space units namely storage, resting place, and cage/stable. So, changes in farming methods change the way plants are taken care of. So, it needs more supervision and maintenance. Farmers finally need space for agricultural equipment and rest room. In addition, shifting agriculture that turns into permanent agriculture makes farmers not reluctant to make a cage/stable because there is no longer any field displacement. Thus, the farmhouse which initially only had one unit of space developed into three units of space.

# **REFERENCES**

- Agustapraja, H. R. (2017). Penerapan Genius Loci Pada Pemukiman Masyarakat Ngadas Tengger Malang. *Jurnal CIVILLa, Vol 2*(No 1).
- Anggiana, V., & Bergas. (2014).

  Pembangunan Pariwisata dan

  Perampasan Ruang Hidup Rakyat:

- KSPN Menjawab Masalahnya Siapa? : Balai Taman Nasional Bromo Tengger Semeru.
- Ayuninggar, D. P., Antariksa, & Wardhani, D. K. (2012). Pola Hunian Tempat Tinggal Masyarakat Tengger Desa Wonokitri Kabupaten Pasuruan. *Jurnal Tesa Arsitektur, Vol. 10* (No.1).
- Batoro, J., Setiadi, D., Chikmawati, T., & Purwanto, Y. (2011). Pengetahuan Tentang Tumbuhan Masyarakat Tenggerdi Bromo Tengger Semeru Jawa Timur. *Jurnal WACANA, Vol 14*(No 1).
- BBTNBTS. (2013). Hikayat Wong Tengger: Kisah Peminggiran dan Dominasi: Balai Besar Taman Nasional Tengger Semeru.
- Cheng, C.-K., & Kuo, H.-Y. (2015).

  Bonding to a new place never visited: Exploring the relationship between landscape elements and place bonding. *Tourism Management*, 46, 546-560. doi:10.1016/j.tourman.2014.08.006
- Downey, H., Threlkeld, G., & Warburton, J. (2017). What is the role of place identity in older farming couples' retirement considerations? *Journal of Rural Studies*, *50*, 1-11. doi:10.1016/j.jrurstud.2016.12.006
- Endarwati, M. C. (2013). Pengaruh Mitos Pada Bentukan Ruang Bermukim Di Desa Ngadas Kecamatan Poncokusumo Kabupaten Malang. Jurnal Tesa Arsitektur, Vol 11(No 1).
- Febrianto, R. S., Wulandari, L. D., & Santosa, H. (2017). Spasial Ruang Pada Hunian Masyarakat Peladang-Muslim Desa Juruan Laokmadura Timur. *MODUL, vol 17*(no.01).
- Gao, J., Barbieri, C., & Valdivia, C. (2013).

  Agricultural Landscape
  Preferences. *Journal of Travel*Research, 53(3), 366-379.
  doi:10.1177/0047287513496471
- Jiang, P., Cheng, Q., Zhuang, Z., Tang, H., Li, M., Cheng, L., & Jin, X. (2018). The dynamic mechanism of landscape structure change of arable landscape system in China. *Agriculture, Ecosystems* &

- *Environment,* 251, 26-36. doi:10.1016/j.agee.2017.09.006
- Nopianti, R. (2016). Leuit Si Jimat: Wujud Solidaritas Sosial Masyarakat di Kasepuhan Sinarresmi. *Patanjala, Vol.* 8 (No. 2), 219 - 234.
- Pfeuty, B., Kress, C., & Pain, B. (2018). Network Features and Dynamical Landscape of Naive and Primed Pluripotency. *Biophys J, 114*(1), 237-248.

doi:10.1016/j.bpj.2017.10.033

Picuno, P. (2012). Vernacular farm buildings in landscape planning: a typological analysis in a southern Italian region. Journal of Agricultural Engineering, volume XLIII(e20).

doi:10.4081/jae.2012.e20

- Pouta, E., Grammatikopoulou, I., Hurme, T., Soini, K., & Uusitalo, M. (2014). Assessing the Quality of Agricultural Landscape Change with Multiple Dimensions. *Land,* 3(3), 598-616. doi:10.3390/land3030598
- Quinn, C. P., & Ciugudean, H. (2018).

  Settlement placement and socioeconomic priorities: Dynamic
  landscapes in Bronze Age
  Transylvania. Journal of
  Archaeological Science: Reports,
  19, 936-948.
  doi:10.1016/j.jasrep.2017.05.046
- Subadyo, A. T. (2016). Arsitektur Pekarangan Suku Tengger di Kantung Taman Nasional Bromo Tengger Semeru. Paper presented at the TEMU ILMIAH IPLBI 2016.
- Supanto, F. (2016). Model Pembangunan Ekonomi Desa Berbasis Agro Ekowisata Sebagai Penyangga Ekonomi Kawasan Taman Nasional Bromo Tengger Semeru: Studi Pada Desa Ngadas Kecamatan Poncokusumo Kabupaten Malang. Paper presented at the Dinamika Global: Rebranding Keunggulan Kompetitif Berbasis Kearifan Lokal, Gedung Pascasarjana FEB UNEJ.
- Sutarto, A. (2006). Sekilas Tentang Masyarakat Tengger. Paper presented at the Jelajah Budaya, Yogyakarta.

van Berkel, D. B., & Verburg, P. H. (2014).
Spatial quantification and valuation of cultural ecosystem services in an agricultural landscape.

Ecological Indicators, 37, 163-174. doi:10.1016/j.ecolind.2012.06.025