

Non-Rice Staple Food Patterns in Indonesia

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Abstract—Staple food is the main needs and cultural form of society. This study investigates the reasons and the patterns of staple food consumption in Indonesia. The design of study was qualitative research. The research location was determined purposive. The data were obtained through observation, interviews, and documentation. The validity of data was tested using a model of triangulation. Techniques of qualitative data were analyzed using analysis of ethnographic data models with the stages of data collection, determination of key variables, and data verification. Results showed that the staple food of Indonesian society is corn (*nasek jegung, geritan, nasi paron*) and cassava (*gaplek or nasi tiwul*). The reason for consuming non rice staple food because rice because of the water-source rareness, the major agricultural commodity, and low purchasing power. Moreover, the consumption patterns are eating three times a day which consists of non-rice staple foods and different side dishes.

Keywords—non-rice staple food; consumption patterns; East Java; Indonesia

I. INTRODUCTION

A staple food crops are sources of carbohydrate often consumed regularly as parts of the major food and energy contributing more than a third of total consumption of energy [1-2]. This food is the largest proportion of consumption in the dish in Indonesia which is as important as other foods. Indonesian people think that it is incomplete when they do not eat the staple foods when they are eating [2]. The Indonesian people majority consume rice as one of their staple foods, while other Indonesian people consume corn and cassava which is particularly found in Java Island, sago and sweet potato in the eastern Indonesia [3]. Thus, different areas has different basic food consumption pattern depends on the availability of local food found at each area [3].

FAO and the International Rice Research Institute (IRRI) reported Indonesia is recorded as a country that has high rice consumption per capita (*i.e.*, 139 kilograms per year in 2008 [4]. Since 2009, Indonesia is also the biggest rice importer country in the world because the need of rices in Indonesia is increasing every year. Meanwhile the price of rices is increasing as well, and the number of fertile areas for rice is decreasing [4-6].

Corn is the second most important cereal crop after rice. Some provinces in Indonesia, such as East Java, East Nusa Tenggara, North Sulawesi, South-East Sulawesi, and Papua, corn is consumed as a staple food as well as rice. More than 57% corn is grown in Java, which contributes about 61% of national corn production in Indonesia[3]. Beside rice and corn, the next Indonesian staple food is cassava. Cassava is the 3rd important staple after rice and corn. Therefore, cassava is often consumed during food scarcity or pre-harvest period [7]. The role of cassava as local staple food in strengthening food security of the rural households has been reported in various studies [7,8]

Various efforts had been done to develop various food alternatives such as instant rice, nuts, and tubers whose quality is as good rice [4,8]. However, the Indonesian people do not get used to accept these products as their new staple foods. Thus, it needs to clarify why they do not accept those new food staples yet. It can be seen from the fact that it is necessary to develop new basic food before it is to understand the food from the people they get used to and fondness of the food which made easier to accept.

Any particular aim of this research is to find out: (1) the background of the society choose crops intemperance; (2) the use of material as food; and (3) a staple food consumption patterns of people in East Java Indonesia. Urgency of this research is as a source of information for the government especially the department of food security East Java in formulating policy the target of the application of basic food diversification and the reinvigoration of food security in the household level to the community.

II. METHODS

The kind of research is qualitative research, a design research using ethnography approach with the Spreadley model [9]. The research location determined purposively based on initial data about diversity of foodstuffs community East Java Indonesia, namely: Gunung Sereng village Kwanyar sub-district district Bangkalan; village Ngepung Sukapura sub-district Probolinggo; and village Karangpatihan Balong Ponorogo district. This research was carried from March 2014 until October 2015.

Research data obtained through observation, interview, and documentation, by means of observations directly against the subject of research, in depth interviews to informants, recording, and a photograph as a material supporting evidence authentic as well as. Key informant number of 12

people from each village, consisting of community leaders, village, housewives, and young people. The validity of the data models tested use of triangulation. The data analysis was conducted qualitatively model with the phases of data collection, the determination of the key variables, and verification of data [9].

III. RESULTS AND DISCUSSION

A. Bangkalan District

1) *The background of the community choose staple food:* Background of Gunung Sereng community consuming corn because rice-fields and the yards (*pereng*) is dry land and often experienced drought, this caused the community cannot irrigate their land and the crops is failing and often occurs the prolonged famine [3]. Most plants according to arid regions are corn and in accordance with village elders orders to plant maize to avoid shortages. Corn harvest results that which overflows causing people to apply preservation against corn, because corn are unsustainable in a state of fresh. Preservation corn conducted the community the Gunung Sereng village through the provision of cornmeal. Corn, rice has long been known by the community, they are familiar with rice corn since they were small because in family their mother often of serving the food at the dining table, and it was done from generation to generation and finally into food habit of community [3].

2) *Reason use of materials as foodstuffs:* Gunung Sereng village community utilizing white corn as staple food every day, because corn is the result of major farm commodities. Consumption of maize as a staple food is influenced by local natural conditions that produce white corn crop productivity is high. The reason people consuming food derived from corn is very diverse. People who work as farmers and farm laborers said that with staple food consumed is rice corn feel more satisfied and hold hungry. It is because carbohydrates which were in corn higher than rice, the function of carbohydrates in the body had a role as primary energy. People believe their bodies will be more healthy and strong after consuming corn in the form of rice corn [10]. Another reason the community the Gunung Sereng village consuming corn because corn was considered relatively affordable price then price of rice, and having a more palatable and savory. The price of 1 kg of rice is IDR. 9.000,00/kg while the price of fine corn IDR.6.000,00/kg and grain corn IDR. 5.000,00/kg.

3) *Consumption pattern of foodstuffs:* Staple food of most people in Gunung sereng are pure corn or '*nasek jegung morni*' (Madura language) , mixed corn-rice or '*nasek jegung paron*' and rice, but the acceptance corn as a staple food is higher than rice. Rice corn a mixture of this are allocated to children teens who do not like to be with rice pure corn. Usually rice corn a mixture of this was consumed by people who had a medium social levels. In addition on daily consumption, usually people consume rice corn on special

occasions like religious event (Maulid Nabi, Isro Mi'roj, Khataman Quran) and events held as community service. A great variety side dish from animal and vegetable added in fulfilling corn rice. Portion, type and number of side dish depends on their economic level or family income [3]. Commonly, source of protein derived from animal particularly the local product like hering fish, mackerel-tuna, yellow-strip trevally, milkfish while the animal food consumption is coming from a domestic carp fish and tilapia.



Fig. 1 Pure corn (*nasek jegung morni*) and mixed corn-rice (*nasek jegung paron*) as staple food of Gunung sereng people

Most of vegetable protein derived from local materials too, the peanuts and soy beans to be made as tempe and tofu. Besides, the other animal sources ware egg, chicken and beef but rather rare because the price is expensive. Vegetables used by the community most of which yields spinach leaves, kelor leaves, cassava leaves, and sweet potatoes leaves. In processing the vegetables are usually processed by boiling such as *sayur bayam*, *sayur asam*, *lodeh nangka muda*, *sayur maronggi*, *urapan* and *lalapan*. Other dish as complementary are gorengan (fried tempe, fried tofu, *perkedel*), chili sauce (*sambal terasi*), shrimp or fish crackers (*krupuk*), and rempeyek.

B. Probolinggo District

1) *The background of community choose staple food:* The community in Ngepung Village, Sukapura Probolinggo District have '*geritan*' as staple food. Geritan was derived from corn uses a tool for the process of gerit namely the burrs from rock to sublimate corn [6]. Geritan consumed by community since the age of a great-grandfather them. First, geritan brought to Ngepung village by people who the origin of move from Blitar.



Fig.2 Type of geritan: rough geritan and soft geritan

Background of people in Ngepung consume geritan because located the villages is far from urban areas and the condition

of natural result that existed in the village. It made the people was very rare to descend in city only to buy rice as their daily consumption. They prefer to consume the result of the harvest themselves that mostly in form of corn.

2) *The reason use of materials as foodstuffs*: The reason of community still consume geritan till now was various. People who work as farmers and farm laborers revealed that, after consuming geritan they feel more resistant satisfied (not easily hungry). Coarse fiber in corn gave satisfaction than rice because function of soluble fiber food which is found on corn was slowing the speed of digestion in the intestines. Besides, the statement above of not easily hungry made the people could focus on their work. Commonly, before departing to the fields, they have breakfast and they will eat back on the day then eat at night (magrib) in the house. Geritan having savory taste better than rice, and more easily obtained. Geritan had good nutrition especially carbohydrate as a role in the body as main source of energy, therefore people believe the body more healthy and powerful if they consume geritan (corn).

3) *Consumption pattern of foodstuffs*: Daily food consumption patterns in Ngepung community generally composed of the main meal (staple food, vegetable-animal food, and dessert), entree or snack and drink. Time of eating the community was three times a day, breakfast at morning, lunch and dinner time. As a staple food, geritan has been consumed several years ago, because corn is their primary results. Most people still consume geritan until now. Besides, taking geritan as a staple food everyday, usually they cook geritan on special occasions as a religious and events held by the villagers as village ceremony or when they receive guests from other areas.



Fig.3 Presented geritan on special occasions, religious events or village ceremony

Geritan in a religious event usually placed in '*tampah*' or tray. Tray was made of bamboo, plastic or metal. Steamed geritan coarse was serve with mixed vegetable (*urapan*), fried noodles, chicken in bali seasoning (*ayam bumbu bali*), fried chicken, tempe and tufu curry (*kari tempe tahu*), salted egg (*telur asin*), bakwan jagung, and others. The community brought the food to nearest mushollah/mosque, to eat together with other persons. Usually, in a day geritan has consumed with accompaniment like *rempah* (coconut frikadels), *iwak asin* (salted fish), *pelasan/pepes ikan tongkol* (steamed tuna fish), *kare tahu tempe* (curry tempe-tofu), *kulupan* (boiled cassava leaves), *sayur lodeh/blendrang* and *sambal terasi* (chili sauce). If they has guest in their house, they also added

an additional food, like *urapan* (mixed vegetable), satai and fried catfish.



Fig.4 Daily food consumption community in Ngepung village

The accompaniment of geritan depends on their economic level [7]. The people who are less able to consume *geritan* only by making chili sauce, cassava leaves (*kulupan*), and salted fish.

C. Ponorogo District

1) *The background of the community choose staple food*: The community of Karangpatihan village start taking gaplek as foodstuffs a long time ago. Karangpatihan Village growth cassava plant as agricultural products mainly due to the condition of being hilly and dry land. Cassava plant was not needed a lot of water in its growth, so that alternative as the ones on dry land. The abundant of cassava crop caused the village community Karangpatihan do preservation of cassava because that can not be kept fresh. Preservation of cassava done the community through the manufacture of gaplek by means of cassava that had been peeled, dried and milled. Other reason was because conditions of the community mostly poor that causing purchasing power will get rice less and the more affordable is cassava.

2) *The reason use of materials as foodstuffs*: The village of basic food Karangpatihan influenced by the village of agricultural products. The availability of non-rice food was the only factor that influences willingness to consume in family [3]. The main of agricultural products in Karangpatihan village was cassava. Cassava or *gaplek* as a staple food become substitute for rice because land of Karangpatihan cannot grow paddy.



Fig.5 Tiwul rice, staple food of people in Karangpatihan, Ponorogo District

People who consumed cassava come from various societies. People who work as farmers and farm labourer's said that by

ingestion of foodstuffs namely *tiwul* rice feel more satisfied, strong, more resistant hungry, more healthy and feel avoid the disease. It is because of carbohydrates that being in cassava higher than rice. The function of carbohydrates in the body a role as the main energy so that it was not surprising the community believe their body will healthy and more powerful after consuming cassava in form of *tiwul* rice.

3) *Consumption pattern of foodstuffs*: Gaplek was the food that villagers Karangpatihan had. They will process of being *tiwul* then consumed with other food. In Java, Traditionally cassava is eaten as staple in the form of boiled tuber, gaplek and oyek, *tiwul* (cassava rice) [11,12]. According to the majority of the village community, they choose to consume daily because their basic food, besides being a tradition since their fathers into the habit. The habit of consuming *tiwul* cause people are more satisfied and satisfied after consuming *tiwul*. The assumption of the community was if they did not consume *tiwul* so they did not eat. The consumptions of *tiwul* not considered based on social status of someone. The society who are rich or consume *tiwul*. Based on the data profile karangpatihan, village 80 percent of the people who consumes *tiwul* as foodstuffs daily. *Tiwul* consumed by the village community Karangpatihan same as rice consumed in others. They consumed *tiwul* each day were varied, two or three times in a day (at morning, afternoon and evening). In every serve was equipped with side dish vegetables or animal food. The vegetables come from their own yard and from the forest like young jackfruit, *kara benguk*, pakis leaves, spinach, and rice beans for *sayur lodeh*. Source of animal protein were usually from meat, eggs, tempe, tofu, chicken and salted fish, catfish. Fresh fish which derived from sea very rarely found in the village because the village far from coastal areas.

IV. CONCLUSIONS

- Background consumption of staple food non rice at community in Bangkalan district because it was located in slopes of the mountain (*pereng gunung*) and dry land. The main agricultural product was corn. Probolinggo district had corn that which overflows as the natural result and the location of villages were distant from urban areas. While Ponorogo district being cassava as staple food because it was their main agricultural product, poverty and the low purchasing power.
- The reasons of Bangkalan district people consumed corn as staple food because it was the main farm commodities. In Probolinggo district because habits of eating *tiwul* was formed since they were child, while *gaplek* consumption in Ponorogo

community because it was a main agricultural products in the region and family low income.

- The food consumption patterns of community in Bangkalan district was *nasek jegung morni*. In Probolinggo district known with geritan and paron rice, and in Ponorogo district *tiwul* as a staple food. The food was consumed two or three times a day and served with side dish from vegetable-animal food, and others (*gorengan* and *sambal*).

REFERENCES

- [1] R. Spohrer, M. Larson, C. Maurin, A. Laillou, M. Capanzana, and Greg S. Garrett, "The growing importance of staple foods and condiments used as ingredients in the food industry and implications for large-scale food fortification programs in Southeast Asia," *Food and Nutrition Bulletin*, vol. 34, no. 2 (supplement) pp 50-51. 2013, The United Nations University. June 2013.
- [2] Baliwati. YF, Pengantar Pangan dan Gizi, Depok: Penebar Swadaya, 2004.
- [3] D. K. S. Swastika, "Corn self-sufficiency in Indonesia: the past 30 years and future prospects," *Jurnal Litbang Pertanian*, vol. 21, no. 3, 2002.
- [4] A. Widyanti, I. Sunaryo and A. D. Kumalasari, "Reducing the dependency on rice as staple food in Indonesia-a behavior intervention approach," *J. ISSAAS*. vol. 20, no. 1 pp. 93-103. May 2014.
- [5] D. Sanjur, *Social and Cultural Perspectives in Nutrition*, New York: Prentice Hall, Inc. Enlewood Cliffs, 1982.
- [6] A.Malian Husni, S. Mardianto, and M. Ariani. "Faktor-faktor yang Mempengaruhi Produksi, Konsumsi, dan Harga Beras, Serta Inflasi Bahan Makanan," *Jurnal Agro Ekonomi*, vol. 22 no. 2, pp 119-146, Oktober 2004.
- [7] H. Saediman, M. A. Limi, Rosmawaty, P. Arimbawa and Y. Indarsyih, "Cassava consumption and food security status among cassava growing households in Southeast Sulawesi," *Pakistan Journal of Nutrition*. vol. 15, pp 1008-1016. November 2016.
- [8] Gulati A, Reardon T. Asian food market transformation. Policy challenges to promote "competitiveness with inclusiveness." Prepared for policy forum agri-cultural and rural development for reducing poverty and hunger in Asia: in pursuit of inclusive and sustain-able growth. International Food Policy Research Institute (IFPRI)/Asian Development Bank (ADB). 9–10 August 2007. Manila: ADB Headquarters. Available at: http://conferences.ifpri.org/2020chinaconference/pdf/ManilaD_Gulati.pdf.
- [9] J. Spradley, *Metode Etnografi*, Yogyakarta: Tiara Wacana, 2006.
- [10] L. Nurlaela and C.A.N. Afifah, "Analysis of Factors Causing Food Insecurity in Probolinggo District". *Proceeding 2th Engineering International Conference*, Unnes 2013.
- [11] Darwis, W., C. Muslim and A. Askin, "Analisa usahatani dan pemasaran ubikayu serta teknologi pengolahan tapioka di Kabupaten Pati Jawa Tengah," *Prosiding Seminar Nasional Peningkatan Daya Saing Agribisnis Berorientasi Kesejahteraan Petani*, Oktober 14, 2009, Bogor, West Java, Indonesia, pp: 1-20. 2009.
- [12] Rahman, Fadly, Rijsttafel. *Budaya Kuliner di Indonesia Masa Kolonial 1870-1942*, Jakarta: PT. Gramedia Pustaka Utama, 2016.