

## Sociology of Disaster in the Fulfillment of Adequate Food and Nutrition for Rural Households during Pandemic

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### **Abstract**

*The fulfillment of adequate food and nutrition had become a challenge during Covid-19 pandemic, particularly at family level in rural area. Prior to pandemic, rural people has suffered from hunger and malnutrition at a high number, and this was increasing because of pandemic. The rising of main food price due to extreme weather and various barriers in food production and distribution are several effects of pandemic in food issue. This action research in the form of a socialization in terms of a community service activity was held to deepen an understanding on the importance of adequate food and nutrition fulfillment at family level and explore alternatives to the food and nutrition fulfillment at public level during Covid-19 pandemic. This research is a participatory action research and is completed by involving the research object in conducting the research, the learning, and the application of the action. As a result, a local agricultural system is acceptable as an alternative to a conventional system in order to deal with food issues, because it can empower the potency of locally natural and human resources to meet the local community's food demand. By this socialization event, it has formulated an action plan in the form of a series of activities related to a self-sufficient farming based on local resources.*

**Keywords:** *socialization, food and nutrition, pandemic, self-sufficient farming, local agricultural system*

### **INTRODUCTION**

Food and agriculture sector were also beaten by the pandemic. As a result, increasing hunger and malnutrition cases become a serious threat for global civilization. The effect of pandemic to the world's food and agriculture condition comprises a rise of food insecurity population, which will be worsen due to natural disaster and extreme weather. For example, the rising price of rice was resulted from prevented production and distribution and panic buying due to pandemic, not to mention unpredictable weather (FSIN & Global Network Against Food Crises, 2020). During the pandemic, a crisis on agriculture that has broadened to a food and nutrition crisis existing in some parts of the world can possibly pervaded Garum District of Blitar Regency in East Java, Indonesia. This is the location where this research was taken place. As a global issue, export and import or trade on food and agricultural products were reduced or even

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halted because every country prioritized domestic food provision. Meanwhile, Indonesia Large-Scale Social Restriction (PSBB) has become a policy resulting in an expanding disruption of agricultural production and food distribution from national to local level. An obstruction to food supply can trigger off hunger and malnutrition cases in different areas (Indradewa, 2020).

Rural community have their special means to deal with the food issues by mobilizing the potency of both rural human and natural resources. An agricultural area and its society practicing subsistence farming can produce food for household needs adequately, independent of a support from outsiders. Traditional farming practices, which have been abandoned in recent years, can optimize the potential resources in rural area and replace modern farming practices with high dependency to external input of production. Authentic knowledge inherited from our ancestors regarding a selection of healthy local food can be reclaimed to be our daily diet to displace various instant food that can trigger degenerative diseases and malnutrition. Mutual assistance, which sociologically adheres to rural society, can be a key social capital to overcome and prevent a food crisis.

This community service research was analyzed using Sociology of Disaster Theory, particularly System Complexity Concept. The theory will be combined with the concepts of food sovereignty and subsistence farming during pandemic in rural areas.

Based on the previous research, social experts can arrange a social engineering by stabilizing social system in the community to theoretically understand the sociology of disaster. The community, either individually or in a group, should make efforts to anticipate unpredictable effects of a disaster by generating their resilience for enjoying a post-pandemic stability. The efforts can be in the form of different internally and externally interaction patterns, both among community members and between social groups involving in the disaster mitigation system. Their resilience can be improved by intense and dynamic interactions between social circles, such as in family, peer-groups, and surrounding environments, in order to achieve positive transformations. These efforts are definitely significant to alter their traumatic situation to resilient capacities. For the sake of creating a social stability system, the decision makers and practitioners should focus on small measures with possible potency to make a massive change and small problems with a great solution alternatively (Budirahayu, 2019).

Another research on sociology of disaster shows that a disaster can bring about a new social dynamic in a community. It can make positive or negative impacts to the community's socio-cultural situation both in the short and long term. The social transformation in a community is inevitable, especially in disaster-affected areas. In a disaster mitigation and the post-disaster development, all external supports and program should take into account sociological and anthropological values of the local community. This is important to avoid social-cultural conflicts and build community's independence as a condition to create their resilience against a disaster (Saputra, 2016).

This activity entitled "The Dissemination of The Importance of Adequate Food and Nutrition Fulfillment for Rural Households during Pandemic" in the form of

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community service-based research was targeted at Nahdliyin (NU) members in Garum District of Blitar Regency, particularly Nahdlatul Ulama Branch Representatives Council (MWC NU), who commonly organizes Islamic-religious activities. By deliberately choosing Nahdliyin members as a research target, I hope to cover a large number of rural community since MWC NU has scores of members scattered in various corners of rural areas with high vulnerable level of poverty, hunger and malnutrition. According to the World Bank, two third of overall poorest people globally reside in rural areas (FAO, 2017), including Indonesia as one of developing countries. The area of Garum District consists of villages so it meets the criteria as agricultural areas, both from the residents' livelihoods and the physical characteristics of its environment.

This activity aimed to deepen our understanding on the importance of the fulfillment of adequate food and nutrition for rural households and to probe some alternatives as a solution to food and nutrition problems at community level during pandemic. The following is that all good lessons learned from the activity can be replicated in other villages, targeting to either NU mass base or the public who live in rural areas.

## **RESEARCH METHODOLOGY**

This community service-based research applied an action research approach in which research, learning, and implementation (action) put together, generally known in social science as an approach aiming to bring about a social change. The researcher employs his/her experience to share with another researcher for making a decision and seeking answers to problems they found in their research object based on ongoing data and information they collect throughout the research processes. Another researcher can be an associate partner or the research object per se (Beukema, 2009).

As one of action research as an umbrella of different action research approach, Participatory Action Research (PAR) was applied in this research. PAR was used from 1970s era specifically in third world countries as an approach in action research aiming to be implemented in field practices (Beukema, 2009). PAR is regularly used as a learning process to find a solution for community problems with significant contribution to science and social change. As an approach, PAR is reliable for undergoing transformative change and community empowerment against globalisation ideology and religious doctrine (Afandi, 2020).

This research was also performed through Disaster Sociology approach using System Complexity Theory. The originators of the theory are Sanders, Munford, and Liedenberg who state that a system has constantly change and move characters but still existent and strong because it is adaptive and evolutionary to the changing environmental situation. The application of this theory in the field of community empowerment can elaborate how family and community have the ability to adapt with the existence of disasters and other variation of natural condition (Budirahayu, 2019). Three concepts relating to System Complexity Concept and the description are as follows:

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1. Disproportionate relation between cause and effect  
This theory is called disproportionate because a change occurs as a result from a small amount of input can produce a massive effect due to a variety of intervention. In connection with disasters, a disparate, even contrasting pre and post-disaster condition can bring out positive potency in releasing the victim's resilience to cope with the impacts of disaster in the long run. In a selection of system, there are interactive and supportive parts until creating an evolving system that interacts with other systems.
2. Emergence  
This process occurs after the first concept above. It is in the form of a reaction by someone's or a group of disaster's victims that grow to be dynamics. A resilience that shown in this process is that because of the existence of a disaster, a society will be trained to identify a disaster and take an action based on a prevailing social system, so there will be a reciprocally supporting and understanding interaction in a group.
3. Obedience  
This process occurs as a result of a high level of interaction between individuals and a group until empathy and sympathy will be arisen that are important for precipitating fear and threats from a disaster. As a consequence, the social system will be automatically returned stable and evolutionary (Budirahayu, 2019).

## **RESULTS AND DISCUSSION**

According to Law No. 24/2007 on Disaster Management, there are natural, non-natural, and social disasters. Several incidents including technological breakdown, modernization failure, epidemic, and pandemic are categorized into non-natural disasters. Based on National Disaster Management Agency (BNPB), COVID-19 is a non-natural disaster that can be called pandemic built upon WHO statement (Arifin, 2020).

FAO sent a retrospective expression to global community on the threat of food crisis as an effect of COVID-19 pandemic. The fulfillment of food and nutrition for Indonesia's people to household levels is suggested by utilizing local food and family farming products. This is such a strategic measure to overcome and prevent food crisis. Local food has a great variety, including staple food, vegetables, fruits, medicinal plants, and spices. Food Diversification Program has been launched a long time by the Ministry of Agriculture. However, data shows that in 1980s the proportion of staple food was dominated by rice amounted to 81.1%, while cassava only 10.02% and maize 7.82% due to New Order era policy, namely Green Revolution and the Five/Seven Farming Enterprise. In 1954, the percentage of staple food consumption by Indonesia's people was still extremely varied i.e. rice 53.5%, cassava 22.6%, maize 18.9%, and potato 4.99% (Indradewa, 2020).

Regarding the food crisis, the concepts of food security and food sovereignty is known in the food provision processes. Food security is "a condition food fulfilled-

households that is reflected in the availability of adequate, both in quantity and quality, safe, equitable, and affordable food". Meanwhile, corresponding to Law No. 18/2012 food sovereignty is "the right of a country to decide its food system in accordance with the potency of its local resources" (Indradewa, 2020). From the above-mentioned definition, the food sovereignty concept will be more elaborated in the process of this community service activity since the fulfilment of food and nutrition at household level will be done by exploring local food resources.

Some alternatives to food from local resources can be cultivated at household level, for example sorghum and porang (a tuber plant with the Latin name *Amorphophallus muelleri*). Sorghum has an advantage i.e. resistant to drought, whereas porang flour can be relied as a substitute for wheat flour, porang can be cultivated under a shade so it is suitable for multiple-cropping, which has high efficiency and effectiveness level (Indradewa, 2020). In addition to staple food, vegetables also play an important role to face food crisis for completing adequate nutrition for human's health. Consuming vegetable will be good to increase human's immunity against various diseases. As a developing country, Indonesia still has to deal with low vegetable consumption due to poverty and food insufficiency. At household scale, vegetable cultivation can be applied using different methods on limited lands. In connection with that condition, a few vegetable varieties are recommended to be cultivated, such as spinach, water spinach, marigold, basil, collards, cassava, and sweet potato. Cultivating various types of vegetables is advantageous during pandemic when people has to stay at home all the time (Taryono, 2020).

By way of this community service activity, "The Dissemination of The Importance of Adequate Food and Nutrition Fulfillment for Rural Households during Pandemic" was carried out by Sociology of Religion Study Program of Sayyid Ali Rahmatullah Islamic State University of Tulungagung for Nahdliyin members in Garum District, Blitar Regency in collaboration with Nahdlatul Ulama Branch Representatives Council (MWC NU) Garum District, Blitar Regency.

COVID-19 pandemic threatened the people's food provision, especially people in rural areas where the number of hunger and malnutrition is higher than in urban areas. Most of Garum area belongs to rural area, which according to the result of discussion in this activity there have been no cases on hunger and malnutrition. However, the discussion forum agreed that preventive measures are strategic to avoid food crisis since it will be ironic when the crisis occurs in a vast agricultural area dominated by farmers. Then the forum discussed on what kind of preventive measures can be done in the context MWC NU of Garum District circle. The forum viewed that a potency on self-sufficient farming practices, which was initiated by Nahdlatul Ulama Agriculture Development Institute (LPPNU) can be revived as an antithesis to conventional farming mostly practiced by farmers in this area in the last three decades.

Self-sufficient farming can be defined as a subsistence farming in which the fulfillment of food and nutrition for farmers' households becomes the first priority by production system utilizing local and natural potency and this farming is closest to the

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attainment of food sovereignty. Meanwhile, conventional farming is more market-oriented and lots of external input production and fabricated chemicals. The mode of Conventional farming adopts globalization ideology as most of its means of production are obtained from multi-national companies and its distribution processes are directed at export market. Farmers are encouraged to produce as much food as possible monoculturally for market until they experience a shortage in fulfilling the food needs of their own family. Besides, food diversification is more reliable for family nutrition, it results from environmentally-friendly policultural farming. In general, the effect of globalization of food and agriculture are homogeneity and standardization that directly threaten both bio and socio-cultural diversity. Socio-cultural diversity can also be destroyed along with the destruction of traditional farming system (Anton, 1995).

The pattern of people's consumption due to the influence of globalization in the form of the proliferation of instant and ready-to-eat food with low nutritional content has resulted in various kinds of degenerative diseases, such as malnutrition to mortality. Food is produced in variety of long processes and it has changed so much from its original form until its nutritional value is reduced or even lost. This is also caused by the distance between food production and consumer's locations, requiring packaging, storage, and distribution that are full of various synthetic chemicals and other engineering processes. Along with changing food consumption patterns, various types of food and the local culture that accompany it have also disappeared.

A perspective that COVID-19 pandemic is a non-natural disaster is important in the context of long-term mitigation and prevention. The pattern of agricultural production and consumption that has been referred to a modern pattern, which is heavily influenced by the globalization ideology, is very vulnerable to a food crisis. In reality, hunger and malnutrition cases have not been detected in Garum District. This situation can be defined using three concepts of System Complexity Theory in the following:

1. **Disproportionate relation between cause and effect** occurs in the context of socio-cultural change in the field of food and agriculture due to COVID-19 pandemic. This can be explained through globalization practices of food and agriculture in a package of Green Revolution adopted by the government for four decades, characterized by modern than traditional system. However, as soon as COVID-19 pandemic hit along with the threat of food crisis, people return to subsistence and natural farming. They are not fully adopting traditional practices but combining them with the latest appropriate technology, such as husk charcoal as a planting medium, permaculture system, hybrid seeds, and so on. People back to the garden and take care of it, applying natural materials around them as plant fertilizers, until eating fresh or slow processing food as opposed to fast food. From various places, many inspirational household gardens emerge that are shared in many online discussions, and healthy food and agriculture figures rule cyberspace. An exchange of seed and agricultural and food science also takes place simultaneously. Various food recipes are created in order to respond to COVID-19 either as medicine or to increase immunity. This situation continues to develop
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creatively until it brings up various competitions on family food garden and best recipes, for instance. The value and prestige of self-produced and organic food within a family are increasing and calculated. Even, multiple big companies copy the techniques and jargons of natural farming and healthy food for selling their products. In essence, by the existence of COVID-19 pandemic, food production and consumption have changed from conventional to agroecological system.

2. **Emergence** in this context is that there are more agroecological agricultural experts as a result from mutual learning and sharing following the pandemic. Even though some of them are previously unknown in this field, they can be an expert due to their self-taught learning and practice. Agricultural experts work together with health experts to develop a formula to overcome the pandemic. Then, the government and their stakeholders create fixed procedures from prevention to mitigation and self-isolation techniques for the victim. Different professions, forum, and communities in the village work together to socialize COVID-19 health protocol and implement it as strictly and firmly as possible. Socialization can be carried out both virtually and offline, and there are announcements and appeals regarding COVID-19 pandemic in several locations in the village.
3. **Obedience** in the context of pandemic is in the form of mutual cooperation and caring for each other in the society. dalam rangka pandemi ini berupa bergotong royong dan saling peduli dalam masyarakat. When a resident is positive for COVID-19, others will help to meet all her/his needs. Residents also take an initiative to share neighborhood security and build patrol posts, which have long been abandoned in the villages. Empathy and sympathy among residents and rural communities are not only possible in real world, but also in cyberspace like Whatsapp Group and Facebook. Villages in Garum District already have proper internet access that can be used by the residents both individually and in groups. During pandemic, having an internet connection really helps to create a conducive situation and a sense of security.

## CONCLUSION

The outbreak of COVID-19 pandemic have significantly influenced global food and agriculture condition until it has increased hunger and malnutrition cases, particularly in developing and under-developed countries. The Covid-19 pandemic is included in the category of non-natural disasters in which the community responded by creating socio-cultural changes to the food and agriculture system. They are starting to leave the modern system that is full of the influence of globalization ideology towards a local system that is more environmentally, naturally, and socio-culturally friendly. Local systems adapted from traditional systems combined with appropriate technology are customized to the needs of the community and current environmental conditions.

In the context of the target activity, Nahdliyin members as the main target and the management of the MWC NU Garum District in particular, gave a very good response following the implementation of the socialization. The activity initiated by

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LPPNU in the form of a Training on Self-Sufficient Farming is very relevant to be reactivated in order to respond to COVID-19 pandemic by taking measures to prevent food crises and malnutrition for families in Garum District.

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