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Rokat Tèkos Jhâghung (Ritual of Repellent of Maize-Eating Rats in East Madura: A Phenomenological Study)

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Abstract

East Madura, ie Pamekasan and Sumenep regencies, has an agricultural pattern that focuses on dry ecology. Therefore, the area is very suitable for the cultivation of maize crops. Various efforts have been made to improve the productivity of maize, both in terms of natural resource management and human resource improvement. This paper presents an another attempt, namely the supernatural effort through the *rokat tèkos jhâghung* ritual believed by the local farmers that it was able to repel maize-eating rats so that the productivity of maize will increase. This qualitative research conducted in Taghedhân kampung, Airmera Village, Sumenep by using the social theory of phenomenology, resulted in the finding that the *rokat tèkos jhâgung* ritual is a ritual of petition to Allah Almighty so that the maize crops of the village community are not encroached by the rats with the spiritual help of *tarètan sè empa'* (the four sisters), ie Sariyâ as a symbol of *aèng kabâ* (amniotic fluid), Nuriyâ as a symbol of *tamonè* (placenta), Bhuwana as a symbol of *tontonan* (umbilical cord), and Bhuwani as a symbol of *dârâ* (blood). This effort provides an alternative to the expulsion of rat pests that damage crops from rice fields, after previously there is a natural effort in expelling rat pests from rice fields in Bali through the recording of *gamelan blaganjur* sounds.

[Madura Timur, yakni Pamekasan dan Sumenep, memiliki sebuah pola pertanian yang memusatkan pada ekologi tegalan. Karenanya, wilayah

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tersebut sangat cocok untuk budidaya tanaman jagung. Berbagai usaha telah dilakukan untuk meningkatkan produktifitas jagung, baik dari sisi pengelolaan sumber daya alam maupun peningkatan sumber daya manusia. Tulisan ini menyajikan usaha lain, yaitu usaha supernatural melalui ritual *rokat tèkos jhâghung* yang diyakini oleh para petani setempat bahwa ia mampu mengusir hama tikus pemakan jagung sehingga produktifitas jagung meningkat. Penelitian yang dilakukan secara kualitatif di Kampung Taghedhân, Desa Airmera, Sumenep, dengan teori sosial fenomenologi ini menghasilkan temuan bahwa ritual *rokat tèkos jhâgung* itu merupakan ritual permohonan kepada Allah swt agar tanaman jagung masyarakat kampung tersebut tidak diganggu oleh hama tikus dengan bantuan spiritual *tarètan sè empa'*, yaitu Sariyâ sebagai simbol *aèng kabâ* (air ketuban), Nuriyâ sebagai simbol *tamonè* (ari-ari), Bhuwana sebagai simbol *tontonan* (tali pusar), dan Bhuwani sebagai simbol *dârâ* (darah). Usaha ini memberikan alternatif bagi pengusiran hama tikus yang merusak tanaman dari areal persawahan, setelah sebelumnya terdapat usaha natural dalam mengusir hama tikus dari areal persawahan di Bali melalui rekaman bunyi *gamelan blaganjur*.]

Keywords: *rokat tèkos jhâghung*; ritual; *tarètan se empa'*; maize-eating rats

Introduction

Indonesia is an agrarian country, since the majority of its population rely on agriculture. It is noted that more than 81.2% of Indonesians live in villages and 65% among them work in agriculture.[1] In an agrarian country, like Indonesia, land is an important production factor towards the well-being of its inhabitants. Therefore, the land issue is a very crucial one. In addition to land ownership, the ecological structure within a certain area is still a crucial issue for the achievement of one's welfare.

The problem of the ecological structure of the soil in a particular region also contributes to the attainment of the high or low level of agricultural production. Based on the ecological structure, Geertz divides the Indonesian territory into two parts, namely *Indonesia Dalam* (inner Indonesia) and *Luar Indonesia* (outer Indonesia). *Indonesia Dalam* consists

[1] Loekman Sutrisno, *Paradigma Baru Pembangunan Pertanian* (Yogyakarta: Kanisius, 2002).

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of Java and Madura plus North West Java, Central Java, East Java, South Bali, and Lombok, while the *Indonesia Luar* includes the outer parts of Java plus Southwest Java.[2] The separation of these two ecosystems, namely *Indonesia Dalam* which is centered on paddy fields[3] and *Indonesia Luar* which is centered on cultivation,[4] can influence the way of land use and agricultural productivity.[5]

With regard to Madura, there is a different view from Terra[6] that East Madura (Pamekasan and Sumenep Regencies) has a slightly deviating pattern from Javanese pattern. In the regencies, the pattern of agriculture is focused on dry (unirrigated) ecology *(ekologi tegal)*. In general, however, the Madura island has a very different ecology from Java. Kuntowijoyo, for example, illustrates the distinctiveness of dry ecology in Madura compared to the ecology of rice fields *(ekologi sawah)* in Java and the ecology of unirrigated fields *(ekologi ladang)* outside Java. He illustrates that in 1890, the fixed dry areas were 67.4%, the non-fixed dry areas were 2.9%, the rain-

[2] Clifford Geertz, *Involusi Pertanian; Proses Perubahan Ekologi di Indonesia* (Jakarta: Bhratara Karya Aksara, 1983), 13-5.

[3] A system of rice field is generally located in Java with a fertility of soil is very high. In the system, usually rice as a seed plant is planted two to three times during the year. Therefore, under the ideal conditions, the rice field is a truly sustainable agricultural system, in the sense of having the ability to be managed intensively over a long period of time.

[4] A unirrigated agricultural field *(peladangan)* is one form of strategies against forest ecosystems that have been going on since ancient times, long before the cultivation method was found. In the community of unirrigated agricultural field is known as the long term fallowing system principle, namely a pattern of unirrigated agricultural field is done with a rotation that lasts for a long time. Forests that have been cultivated in the form of unirrigated agricultural field and are beginning to lose their fertility are left idle for a relatively long time to allow the forests to regenerate. See M. Yamin Sani and Pawennari Hijjang, "Di antara Kearifan dan Kerawanan Ekologi: Implikasi Perubahan Pola Perladangan dan Masa Depan Komunitas Lokal*", A Proceeding of the International Symposium of Jurnal Antropologi Indonesia I: Membangun Kembali Indonesia* (Makassar 2000) and M. Yamin Sani, et.al., *Dinamika Sosial Ekonomi Komunitas Peladang dan Masa Depan* (Makasar: Yayasan Laut Biru Indonesia-Puspaintan, 1999)

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[6] G.J.A. Terra, "Farm System in South-East Asia" *Netherland Journal of Agricultural Science*, No. 6 (1958), 157-181.

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fed rice fields were 26.8%, the irrigated rice fields were only 3.1%. In the same year, in Java there were 46% of irrigated rice fields, 25.8% of rain-fed rice fields, 1.5% of wetlands, 23% of fixed dry areas, and 3.7% of non-fixed dry areas. In 1915, in Madura, there was an increase in the area of the fixed dry areas which were 68.8%, the non-fixed dry areas were 2.9%, the rain-fed rice fields were 25%, and the irrigated rice fields were 3.3%. The dry land in Madura is more dominant in the East Madura region than in the West Madura region. In East Madura, namely Pamekasan and Sumenep Regencies, the proportion of dry lands are 73.6% and 81.8% respectively. While in West Madura, namely Bangkalan and Sampang Regencies, the proportion dry lands are 60.4% and 58.8% respectively.[7]

The dry ecology in Madura is characterized by a lack of rainfall, marl sedimention, limestone formation, and the absence of a meaningful river to irrigate agricultural land. In the rainy season *(nembhârâ/nambhârâ)* which usually takes place between mid-November to the beginning of April, the average rain falls 16 days/month with an average rainfall of about 200-300 mm.[8] In Madura, however, there is a striking difference in the average of rainfall in the highlands and lowlands. In the highlands (mountain areas), the rainy season lasts longer, ie six months with high rainfall average, whereas in the lowland areas the rainy season only lasts about 3-4 months with lower rainfall average. Regional differences also determine the level of rainfall. In West Madura region (Bangkalan and Sampang Regencies) have higher rainfall rate compared to East Madura (Pamekasan and Sumenep Regencies).

The peculiarity of the structure of the moor ecology is also marked by the dominance of its soil surface by the arrangement of limestone and limestone deposits, with alluvial layers of sea along the North Coast of Madura and four alluvial plains of rivers, namely a alluvial plain of river is in the West, two alluvial plains of rivers are in the South, and a alluvial plain of river is in the East. The limestone sedimentation that almost forms a plain at the center of the latitudes along the hinterland regions of Madura is

[7] Kuntowijoyo, *Perubahan Sosial dalam Masyarakat Agraris: Madura 1850-1940,* trans. Machmoed Effendhie and Punang Amaripuja (Yogyakarta: Mata Bangsa, 2002), 34 and 39.
[8] Andang Subaharianto, et.al. *Industrialisasi Madura; Membentur Kultur Menjunjung Leluhur,* (Malang: Bayumedia Publishing, 2004), 19.

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often seen as a continuation of limestone mountains extending from Ngawi eastward to Surabaya. Limestone layers in the North and the South, and in the South, and East coasts are a continuation of limestone formations extending from Grobogan to the east along the northern part of East Java.[9]

The absence of the meaningful rivers to irrigate agricultural lands also form a distinct pattern in the dry ecology. Indeed, there are a number of rivers that cross the lands of Madura,[10] but small in size and in the dry season most of them dry up without water. This is due to the lack of availability of forests and the rareness of rainfall makes the scarcity of water resources.

The ecological formation of Madura soil gives a separate space for the formation of local knowledge of Madurese society. Through a series of observations and experiences, Madurese have local knowledge about how to manage local natural resources so that between them and their environment **there is** a balanced relationship and **does not exploit** in bulk. That is, the ecological formation of such Madura land "forced" the Madurese to choose adaptive crops. One type of crop developed by the Madurese in making use the ecological lack in its nature is maize crops.

This type of crop is widely grown by the Madurese. The total area of maize crops in Madura is approximately 400,000 ha[11] (30% of maize areas in East Java), but the productivity at farmers level is still low, ie 1.0 -1.5

[9] Kuntowijoyo, *Madura*, 25-26.

[10] There are a number of rivers in Madura, namely the Budduh River (11.50 km), the Jambu River (8 km), and the Gladak Mateh River (8 km) in Bangkalan; the Sodung River (22 km), the Kemuning River (20 km), and the Klampis River (14 km) in Sampang; the Sumber Payung River (11 km) and the Engrang River (11 km) in Pamekasan; the Parsanga River, the Kebonangung River, and the Jepun River in Sumenep. See respectively in Badan Pusat Statistik Kabupaten Bangkalan, *Kabupaten Bangkalan dalam Angka* (Bangkalan: BPS Kabupaten Bangkalan, 2000), 11; Badan Pusat Statistik Kabupaten Sampang, *Kabupaten Sampang dalam Angka* (Sampang: BPS Kabupaten Sampang, 1999), 4-5; Badan Pusat Statistik Kabupaten Pamekasan, *Kabupaten Pamekasan dalam Angka* (Pamekasan: BPS Kabupaten Pamekasan, 2004), 8; and Badan Pusat Statistik Kabupaten Sumenep, *Kabupaten Sumenep dalam Angka* (Sumenep: BPS Kabupaten Sumenep, 2000), 15.

[11] Badan Pusat Statistik, *Jawa Timur dalam Angka* (Surabaya: Badan Pusat Statistik Propinsi Jawa Timur, 2007)

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tons per hectare.[12] Thus the productivity of maize crops in Madura still needs to be improved.

Various attempts have been made, as indicated by several studies of experts. Zaed et.al[13] and Muhsoni[14] described the maps of the potential agroecosystem for maize cultivation. According to him, the area of Madura is very suitable for maize cultivation, which is 70,279.5 ha or 15.4% of the total area of Madura and the suitable for maize cultivation is 211,511.3 ha or 46.3% of Madura area. The salinity of irrigation water for maize cultivation is also decisive in maize production. Mindari, Maroeto, and Sheikhfani found that Madurese maize crops were more tolerant to be grown on soils containing irrigation water (ECw) to 3.85mS cm-1.[15]

Equally important is the treatment of Madurese local maize crops. According to the findings of Hamida and Dewi, the best treatment of local maize crops is to combine mycorrhizal inoculation and to spray ALA 0.05% at the intensity of watering every four days (K1M1P1).[16]

The Government of Indonesia also made an effort to introduce hybrid maize to the Madurese community, because as a Roesmarkam et al's research shows that the planting of hybrid maize in Madura has increased the productivity of maize.[17] However, Madurese society refuse to plant this

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[12] F. Kasryno, et al., *Gambaran Umum Ekonomi Jagung Indonesia* (Jakarta: Pusat Penelitian and Pengembangan Tanaman Pangan. Indonesia, 2007), 175.

[13] Sidqi Zaed ZM, et al., "Pengembangan Pola Tanam dan Diversifikasi Tanaman Pangan di Madura: Suatu Upaya Peningkatan Produksi dan Pendapatan Petani", *Agrovigor,* Vol. 3, No. 1 (Maret, 2010), 70.

[14] Firman Farid Muhsoni, "Kesuaian Lahan untuk Tanaman Jagung di Madura dengan Menggunakan Penginderaan Jauh dan Sistem Informasi Geografis", *Embryo,* Vol. *7,* No. 1 (June, 2010), 45-52.

[15] Wanti Mindari, Maroeto, and Syekhfani, "Maize Tolerance to Salinity of Irrigation Water", *J Trop Soils,* Vol. 16, No. 3 (2011), 211-218.

[16] Ruly Hamida and Kumala Dewi, "Efektivitas Mikoriza Vesikular Arbuskular dan *5-aminolevulinic Acid* terhadap Pertumbuhan Jagung Varietas Lokal Madura pada Cekaman Kekeringan", *Penelitian Pertanian Tanaman Pangan,* Vol. 34, No. 1 (2015), 61-67.

[17] S. Roesmarkam, et al., *Usulan Pemuliaan Varietas Lokal Jagung Madura Manding*, *Talango, dan Guluk-guluk* (Malang: Balai Pengkajian Teknologi Pertanian Jawa Timur, 2006)

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kind of maize for various reasons,[18] although productivity of Madurese local maize crops is lower than hybrid maize.[19]

Therefore, a local maize-based breeding program that produces the maize with the high varieties and tolerant to biotic and abiotic environments is an appropriate solution in increasing maize productivity in Madura Island. In this regard, Amzeri et al found through his research that based on morphological characters and RAPD markers, 5 local maize cultivars in the Madura In this regard, Amzeri et al found through his research that based on morphological characters and RAPD markers, 5 local maize cultivars in the Madura island, namely Tambin, Delima, Tambin-2, Krajekan, and Duko, had high production, early age, and kinship rather far away, so they can be used for breeding and maize cultivation development programs., namely Tambin, Delima, Tambin-2, Krajekan, and Duko, had high production, early age, and kinship rather far away, so they can be used for the programs of breeding and development of maize cultivation.[20]

In addition, as it was shown by Suprapti et al, that a improvement of Madurese local maize production is also influenced by farmers' experience. This means that the longer a farmer's experience in his or her farm will improve the technical efficiency, ie the farmer will conduct local maize cultivation better rom several sides, ie from land management, irrigation, fertilization, seed determination, labor utilization, harvesting, and so on.[21]

However, those has not been studied by experts is the efforts of the Madurese maize farmers that is supernatural,[22] through certain rituals. These

[18] Teti Sugiarti and Mardiyah Hayati, "Persepsi Petani Madura dalam Menolak Jagung Varietas Baru", *Embryo,* Vol. VI, No. 1 (June, 2009), 35-46.

[19] Erwhin Nurmansyah, *Analisis Pendapatan dan Faktor-Faktor yang Mempengaruhi Tingkat Produksi Usahatani Jagung pada Lahan Kering: Studi kasus di Desa Lomaer, Kecamatan Blega, Kabupaten Bangkalan, Madura, Jawa Timur* (Thesis at Faculty of Agriculture, Brawijaya University, Malang, 2011)

[20] Achmad Amzeri, et al. "Kekerabatan Jagung (*Zea mays* L.) Lokal Madura Berdasarkan Karakter Morfologi dan Penanda RAPD", *Biota,* Vol. 16, No. 2 (June, 2011), 227–235.

[21] Isdiana Suprapti, et al., "Efisiensi Produksi Petani Jagung Madura dalam Mempertahankan Keberadaan Jagung Lokal"**,** *Agriekonomika,* Vol. 3, No. 1 (April, 2014), 11-20.

[22] It is called as a supernatural effort, because the ritual belongs to the supernatural domain. See Cliffrod Geertz, "Religion as a Cultural System"*,* in *The interpretation of Cultures: Selected Essays*, Author: Cliffrod Geertz, 87-125 (USA: Fontana Press, 1993), 99.

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rituals were performed as an attempt to repel pests of rats which in turn will increase the productivity of maize. Natural effort in expelling pests of rats from the area of paddy fields has been done in Bali through the recording of *gamelan blaganjur* sounds.[23] Therefore, this study reveals a supernatural effort of maize farmers in East Madura through the ritual of *rokat tèkos jhâghung* in a phenomenological perspective.

Phenomenology: A Theoretical Framework

The phenomenology begins with the project of a German philosopher, Edmund Husserl (1859-1938), with the slogan "*zuruck zu den sachen selbst*" (back to the things themselves).[24] According to Husserl, a visible phenomenon is actually a reflection of an independent reality, since what appears is an object containing transcendental meanings.[25] Therefore, to be able to understand the realistic meaning, it must penetrate into the depths of the phenomenon that manifests itself,[26] or so-called noumena world, ie individual experiences that are reflected in the form of phenomena or actions that are full of meaning.[27] In his 'hands', this project revealed some more signs of a "feast" of subjectivism.

However, Alfred Schutz, a German social thinker, juxtaposed Husserl's phenomenology concept with Weber's *verstehen*[28] concept and transformed it into an interactionist analysis. Schutz's phenomenology is focused on the way in which ordinary members of society carry out their daily lives. In other words, he focused on the life of world or the world of

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[23] I Gusti Putu Suryadarma, et al., *Rancang Bangun Auidio Integrated Pest Management melalui Spesifikasi Spektrum Bunyi Binatang Alamiah dan Bunyi gamelan Blaganjur yang Tertulis Dalam Naskah Lontar Usada Carik. Satu Pendekatan Pengendalian Hama Terpadu* (Yogyakarta: Lembaga Penelitian UMY, 2013).

[24] Dister Ofm dan Nico Syukur, *Pengalaman dan Motivasi Beragama* (Yogyakarta: Kanisius, 1993), 25.

[25] See M. Sastraprateja, "Kata Pengantar" in Peter L. Berger, *Kabar Angin dari Langit,* trans. J.B. Sudarmanto (Jakarta: LP3ES, 1990), xiv.

[26] Waters, *Modern Sociological*, hlm. 31.

[27] Tom Campbell, *Tujuh Teori Sosial: Sketsa, Penilaian, Perbandingan,* trans. F. Budihardiman (Yogyakarta: Kanisius, 1995), 233.

[28] R.C. Bogdan dan S.J. Taylor, *Introduction to Qualitative Research Methods: a Phenomenological Approach to the Sosial Sciences* (New York: John Wiley and Sons, 1973), 45.

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life, a world that individuals live by as it is-experienced by members of society.[29] The world of everyday life is always an intersubjective one. In this intersubjective world, people create social reality and are forced by the existing social life and by the cultural structures of their ancestors. In this world, one always shares with others who also live and interpret it. Therefore, the world of a person as a whole will never be completely private. Even in the one's consciousness is always found evidence of the consciousness of others. This is proof that his unique biographical situation is not entirely a product of his own actions.[30]

In this context, Schutz stated about the importance of studying how interactions create and maintain a "ultimate reality". He was also concerned with how the actors receive a reciprocal perspective and how they build a taken-for-granted world that provides the order of social life.[31] The emphasis on the nature of the taken-for-granted world and the importance of everyday life in maintaining an actor's notion of reality is a major concern of phenomenology, as well as etnometodology. But the sociologists of phenomenology tend to focus on what people think.[32]

As an approach, the phenomenology attempts to study others by listening to their experience of their subjective world[33] which is the world of life for them which is independent from the preconceptions and interventions of researchers.[34] Therefore, applicatively, a researcher examines subjective facts, such as thoughts, feelings, ideas, emotions, intentions, and experiences of a person expressed in external acts, words, and deeds.

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[29] Ritzer dan Goodman, *Teori Sosiologi Modern*, hlm. 94.
[30] Irving M. Zeitlin, *Memahami Kembali Sosiologi; Kritik terhadap Teori Sosiologi Kontemporer,* trans. Anshori and Juhanda(Yogyakarta: Gadjah Mada University Press, 195), 259-60
[31] Ibid. 261.
[32] Jenny Perry, *Schutz, Garfinkel, and Sacks and Their Interrelatedness*, 2006: http://www.bangor.ac.uk/so/postgraduate/Perry-conf-pl-htm. Accessed on 12 June 2006.
[33] Norman K. Denzin and Yvonne Y. Lincoln (eds.), *Handbook of Qualitative Research* (California: Sage Publications, 1994), 489.
[34] Romo Eko Armada, *Phenomenological Methods in Practice of Sosial Research*, *Hand-out* of Research Methodology at Postgraduate Program, Airlangga University, Surabaya, 7 April 2006. No publication.

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How to know that the subjective fact as a form of expression of a person, not as a manifestation of structure or other interests? To bring this up, a researcher does not learn about the people *(mempelajari tentang masyarakat)*, but learn from the people *(belajar dari masyarakat)*. In the framework of *to learn from the people*, a researcher studies, for example, the language, the custom, the tradition, and the character of a person, all of which require understanding and verification that not only to others but also to the subjects studied.

As noted above, that the social facts in the phenomenological study are subjective. Therefore, the problem that arises later is how to overcome subjectivity by the subjects studied or by the researchers themselves? To disclose the social facts, expressions, and deeds which are seen as something derived from within a person, which are subjective phenomena to be objective phenomena, a researcher first 'postpones' (bracket/*epoche*)[35] for analytical purposes.[36] That is, the researcher puts aside all the beliefs, assumptions, theories, and judgments on expressions or deeds that were conceptualized in the mind of a researcher until the phenomena speak for themselves. These allow a researcher to see constitutive processes, by which a separate and distinct empirical world becomes an objective reality for members of the society.

In this study, the phenomenology is used to understand the action behind the ritual of *rokat tèkos jhâgung* in Pagedangan Kampung, Aermera Village, Sumenep Regency. In this case, I explore the subjective minds of the perpetrators of this ritual by setting aside the presumption that is in my mind.

Methods

This study uses a qualitative approach, namely a study design that can develop and be open in accordance with field conditions.[37] The use of the qualitative approach in this study is based on a reason that this study emphasizes the role of the researcher as an active learner, who can only tell

[35] The *epoche* term derived from Husserl. See Zeitlin, *Memahami kembali*, 220 and 278.
[36] Denzin and Lincoln (eds.), *Hand Book*, 490.
[37] See Yvonna S. Lincoln and Egon G. Guba, *Naturalistic Inquiry* (London-New Delhi: Sage Publication Inc., 1985), 41.

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something from the point of view of participants, informants, and research subjects, rather than as an expert who can "judge" them.

For that reason, the researcher uses an ethnographic research as a holistic-integralistic[38] method of research to obtain a thick descriptions.[39] While the theoretical framework used to help the researcher enters the field of research is a theory of phenomenology formulated and developed by Alfred Schultz. This study was conducted in Tangedhân Kampung, Aermera Village, Batu Putih Sub-District, Sumenep Regency, East Madura. The village was chosen as a research site because the community in the village is one of the villagers in East Madura, who still preserve the ritual of *rokat tèkos jhâghung*.

Techniques of data collection used in this study were participant and non-participant observations, indepth interview, and documentation study. The subject of this study is the perpetrators of *rokat tèkos jhâghung* ritual in Tangedhân Kampung, Aermera Village. While the informants of this study are community leaders and religious leaders in Sumenep Regency.

Data analysis in this study uses an interactive model analysis. By following this model, the data analysis takes place simultaneously with the data collection process. To maintain the validity of the data, the researcher uses the way suggested by Noeng Muhajir, namely the reseacher tests the achievement of findings, tests the tentative findings, and interprets the recording, audio, video, and the like.

As an action of data triangulation,[40] at the end of time of this study was used as a time to check data and field confirmation of interview and to validate observation result through interview. A Focus Group Discussions was also conducted as a means to consult with colleagues, scholars/experts, and Madurese figures to obtain data comparisons and confirmation of opinions.

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[38] Amri Marzali, "Kata Pengantar" in *Metode Etnografi,* written by James S. Spradley (Yogyakarta: PT. Tiara Wacana Yogya, 1997), xvi

[39] The term derived from Clifford *Geertz*, *The Interpretation of Culture* (New York: Basic Book, 1973).

[40] Thomas W. Christ, "Scientific-based Research and Randomized Controlled Trials, the "Gold" Standard? Alternative Paradigms and Mixed Methodologies", *Qualitative Inquiry,* Vol. 20, No. 1 (January, 2014), 72-80.

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Maize Crop in Madura

Maize is one of the grain food crops of the grass family. It originated from America and spreaded to Asia and Africa through the business activities of Europeans to America. The first introduction of maize to Indonesia was through Spanish and Portuguese merchants to Minahasa in the 16th century.[41]

In 1984, the maize was the main ingredient. It provided the most important source of calories to about 17 million of the 63 million rural communities in Central and East Java, South Sulawesi, and East Nusa Tenggara provinces, with 70 percent of the production being used for food for farmers' families.[42]

In the early 1800s, Raffles[43] noted the importance of the maize crop in the highlands of Java and Madura. The maize was the most important crop grown in dry lands *(lahan tegalan)*. It became a staple food in Madura, especially in East Madura. Therefore, the maize crop was a crop species that was grown by the majority of Madurese society. They prefer *jhâghung mèra* (citrus or local maize) rather than *jhâghung Jhâbâ* (white corn).[44] The cultivation of maize in Madura was the result of a series of observations, experiments, and finally Madurese elected the alternative crop which was adaptive in dry ecology.

For the Madurese, the cropping of maize, as a form of cultural adaptation to the ecological environment conditions they face, has long historical roots. Initially, this type of crop was introduced by an early

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[41]Jouke S. Wigboldus, "A History of the Minahasa c. 1615-1680", *Archipel,* Vol. *34*, No. 1 (1987), 79-83. See also David E. F. Henley, *Nationalism And Regionalism In A Colonial Context Minahasa In The Dutch East Indies* (Ph.D Thesis, the Australian National University, February 1992), 93.

[42] Paul Dorosh, et al., *The Corn Economy of Indonesia: Report of the BULOG/Stanford Corn Project to the Government of Indonesia*. Stanford, Calif.: Stanford University/BULOG Corn Project, 1985).

[43] Thomas Stamford Raffles, *The History of Java*. Singapore: Oxford University Press, 1988), 121-2.

[44] A. Djauhari, A. Djulin, and I. Soejono, *Maize Production in Java: Prospects for Improved Farm-Level Production Technology* (Indonesia: CGPRT Centre, 1988).

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Islamic disseminator in Madura, namely Prince Katandur.[45] The first time, he did his religious mission in Madura through a agricultural mean. Before leaving toward Madura, he was given provisions by Sunan Kudus in the form of two intact maize cobs. Arriving at Madura, he taught the Madurese society about the pattern of maize cultivation and they succeeded. The success of maize cropping and its ability to adapt on dry land quickly spread among Madurese society, so this crop became the staple food in Madura.[46]

A study showed that the maize was suitable to be planted in dry ecology, because this type of crop required a slightly dry soil conditions. On non irrigated land, the growth of this crop required an ideal rainfall of about 85-200 mm/month. The desired temperature of maize crops ranges from 21-34 degrees C, but for ideal growth of the crop required optimum temperature between 23-27^{0}C.[47]

The local knowledge of maize cropping is then inherited from generation to generation. Statistics show that the area of this crop has been always increasing. Colonial statistics in 1920 showed that the area of maize crop was 371,900 ha. In 1940, the maize cropping increased enormously to 309,700 ha.[48] The increase of this type of crop also occurred in 2000, which became 377,800 ha[49] and in 2007 reached 400,000 ha.[50]

The maize cultivation in Madura is basically to meet their own needs. They adhere to the principle of safety-first[51] in managing their

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[45] Prince Katandur is a son of Panembahan Pakaos. While Panembagan Pakaos ia a son of Sunan Kudus. See Raden Werdisastra, *Babad Sumenep*, trans. Moh. Toha Hadi (Pasuruan: PT. Garoeda Buana Indah, 1996), 323.

[46] Mohammad Kosim, "Kerapan Sapi; "Pesta" Rakyat Madura (Perspektif Historis-Normatif)", *Karsa: Jurnal Sosial dan Budaya Keislaman,* Vol. XI, No. 1 (April, 2007), 69, accessed on 12 January 2015. ejournal.stainpamekasan.ac.id/index.php/karsa/article/download/149/140.

[47] Kantor Deputi Menegristek Bidang Pendayagunaan dan Pemasyarakatan Ilmu Pengetahuan dan Teknologi, "Jagung", accessed on 11 February 2013, http://www.warintek.ristek.go.id/pertanian/jagung.pdf.

[48] Subaharianto, et.al. *Tantangan Industrialiasi Madura*, hlm. 41.

[49] Lihat Badan Pusat Statistik Propinsi Jawa Timur, *Jawa Timur dalam Angka 2000* (Surabaya: BPS Jawa Timur, 2001), 140 and 144.

[50] Badan Pusat Statistik, *Jawa Timur dalam Angka* (Surabaya: Badan Pusat Statistik Propinsi Jawa Timur, 2007), 129.

[51] James C. Scott, *The Moral Economy of Peasant* (New Haven: Yale University Press, 1981), 27.

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farming. This kind of pattern is characteristic of subsistence farmers, ie managing agricultural land to meet family needs. The farmers will be happy and feel prosperous when family needs can be fulfilled. But in reality, the yield of maize is not enough to feed the farmers. The yield of maize in Madura is roughly half of Java. In Madura 1 *bau* of dry land yielded about 5 *pikul* maizes, while in Java 1 *bau* yielded 12.5 *pikul* maizes.[52]

The safety-first principle also applies to the maize farmers in Tangedhân Kampung, Aermera village, East Madura. In the village, maize, for the most part, is grown with a monocropping system (single cropping), not intercropping. All Aermera farmers grow local varieties or traditional maize. The result is of course lower than that of hybrid maize or superior maize varieties. The reason, local maize taste better or sweeter, more durable stored, more resistant to pests, such as *kapang* (maize beetle/*sitophilus zeamais motsch*), and produce more grains than the powder.

The maize can be grown in all areas of Aermata Village, except in the northern hills where limestone 'rejects' any cultivation of crops. The Aermera Village has a slightly rocky soil structure. The Aermera villagers, which are generally farmers, own less than 1 ha of land. Only 15 households or about 2 percent of the population of Aermera Village have a land area of about 2 ha (16 *lagghu*).

Although most Aermera villagers have little knowledge about scientific terms and taxonomy, but they have an in-depth knowledge of their environment and use it to choose their livelihood. They distinguish the types of soil based on color, water retention, fertility, percentage of pebbles or rocks. With such a soil structure, the maize crop is a crop that must be planted by them. For centuries, it was the most important crop grown by Aermera farmers, and Madura farmers in general.

Ritual of *Rokat Tèkos Jhâghung* in the Community of East Madura

Ritual is a religion in action. That is, it is the expression of faith as well as the form of one's communication to the Transcendent in his religion. In a more specific sense, it is a form of action or celebration associated with

[52] Kuntowijoyo, *Madura*, 90.

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religious beliefs with a special nature, which can lead to a noble respect as a sacred experience.[53]

This explanation implies that ritual is a symbolic act of mind that is centered on the cosmic structure or holy presence.[54]Usually it is done consciously, and some are voluntary, and done repeatedly.[55] The elements of consciousness and some voluntary disregard the inclusion of personal habits or necessities in this definition.

Ritual of *rokat tèkos jhâghung* is implemented by the Aermera villagers, precisely in Pagedhângan Kampung, every year when they will start to plant maize. Usually, in a year it was held 2 or 3 times. Thus, as with other agricultural societies, the ritual calendar is carried out in accordance with agricultural rounds. The place is on a dry land to be planted with maize. As seen one afternoon in April 2016, hundreds of the Pagedhângan community, male and female, flocked to the middle of a dry land. They, as a social institution,[56] came voluntarily to the place by bringing food as *rasol*, five-colored porridge, and other ritual gear. The goal is to hold a ritual of *rokat tèkos jhâghung*, a ritual to repel maize-eating rats. The ritual, according to the Pagedhângan community, was carried out because rats are animals that are greedy to grains of maize and are difficult to eradicate by physical effort, such as installing rat traps and other manual efforts.

In zoology, rat is known as an aggressive animal. It can chase and capture, and defend itself very violently.[57] Due to its aggressive nature and ready to defend itself, the Òrúnmìlà (God of wisdom and science in the

[53] Thomas O'Dea, *Sosiologi Agama* (Jakarta: PT. Grafindo Raja Persada, 1995), 36.
[54] Evan M. Zuesse, "Ritual", in *The Encyclopedia of Religion, Vol. 11,* ed. Mircea Eliade (New York: Simon & Schuster Macmillan, 1995), 405.
[55] Miche`Le Porte, "Rite and Ritual", in *International Dictionary of Psychoanalysis*, ed. Alain de Mijolla, (USA: Macmillan Reference, 2002), 1503.
[56] Yang Fuquan, "Mentorship of Indigenous Cultural Specialists: A Case Study of Training of Dongba, Naxi Priests", *Lanscape of Diversity: Indigenous Knowledge, Sustainable Livehoods, and Resource Governance in Montane Southeast Asia*, *Proceedings of the III Symposium on MMSEA, 25-28 August 2002* (Kunning: Yunnan Sciences and Technology Press, 2002), 479-85.
[57] D.J. Conway, *By Oak, Ash, & Thorn: Modern Celtic Shamanism (Llewellyn's Celtic Wisdom)* (London: Llewellyn Publications, 1994), 86; Ted Andrews, *Animal-Wise: The Spirit Language and Signs of Nature* (Woodbury, MN: Llewellyn Publications, 1999).

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Yoruba community of Nigeria) likes rat.[58] The ugliness is that rat is animal whose hunger power is high, vengeful, and dishonest. Due to its destructive nature, the rat is seen as dirty creature. It is a symbol of evil, death, destruction, weakness, and plague.[59]

This ritual was preceded by fasting during the three days before the implementation of the *rokat*. According to Kiai Rifa'i, this fast is intended as a *washîlah* (an intermediary to God) so that the prayers offered by the Aermera villagers are granted by Allah Almighty. This is done based on the story of three men who are trapped in a cave and can not get out because of stone blocking. Finally, the three men prayed to Allah Almighty to get out of the cave through the mention of their good deeds. The first person asked to Allah through *(washîlah)* his good deeds, ie the good deeds to his parents. The second man affixed with *(tawashshul)* his fear of Allah Almighty while he cancelled the act of adultery to his niece. While the third person asked to Allah Almighty through his good deed by giving the rights of workers that are in his hands. Finally, Allah opened the door of the cave from a boulder blocking them, so that the three of them could get out of the cave safely.[60]

On a appointed day, this ritual was performed. It began with the recitation of the al-Fâtihah headed by Kiai Rifa'i, a spiritual leader in the village. The recitation of the first al-Fâtihah was addressed to the Prophet Muhammad pbuh, his companions and relatives. The second was awarded specifically to *tarètan sè empa*' (the four sisters), namely Sariyâ, Nuriyâ, Bhuwana, and Bhuwani. Then, the event was continued with the reading of *tahlil* and *do'a*.

The next event is a core event of the ritual, ie the burial of white, yellow, red, and black porridges. The white porridge was buried in the east of the dry land, the yellow porridge in the West, the red porridge in the South, and the black porridge in the North. According to H. Rawi, the four-colored porridge is dedicated to *tarètan sè empa*', namely Sariyâ, Nuriyâ, Bhuwana, and Bhuwani. The white porridge symbolizes Sariyâ as a symbol

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[58] Ajibade George Olusola, "Animals in the Traditional Worldview of the Yorùbá", *Folklore* 30 (2004), 168.
[59] Victoria Vesna dan Siddharth Ramakrishnan, *Metamorphosis of the Human Animal: Hox Zodiac*, accessed on 26 Februari 2017, http://artsci.ucla.edu/hox
[60] Interview with Kiai Rifa'i, 12 April 2016.

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of *aèng kabâ* (amniotic fluid), Nuriyâ as a symbol of *tamonè* (placenta), Bhuwana as a symbol of *tontonan* (umbilical cord), and Bhuwani as a symbol of *dârâ* (blood). The purpose of the offering is in order to *tarètan sè empa'* help the villagers spiritually in expelling the pests of maize rats.[61]

Aèng kabâ (amniotic fluid) is a clear and yellowish liquid that envelopes the fetus in the womb during pregnancy,[62] within the amniotic sac.[63] It is a protective pouch around the fetus that enables the movement and growth of the fetus and retains the fetus from trauma from impact. It also plays a significant defensive role as a part of the innate immune system because it has a regular antimicrobial peptide pool against common bacterial and fungal pathogens.[64]

Tamonè (placenta) is a discoid organ with a diameter of 20-25 cm, a thick of 3 cm and a weigh of 400-600 g,[65] which connects the fetus with its mother and serves as a nutrient and waste exchanger. The circulation of the fetus enters the placenta through the umbilical artery embedded in the umbilical cord. Once inside the placenta, the circulation of the fetus spreads to a unit called cotyledon. Once the nutrients have been absorbed and the waste product released, the fetal blood eventually collects into the umbilical vein, where it returns to the fetus through the umbilical cord.[66]

Tontonan (umbilical cord) is a blood vessel consisting of two arteries and one vein. This is where the relationship between mother and baby occurs, which is one end of the umbilical cord attached right to the navel of the fetus, while the other end is attached to the placenta. It serves as a

[61] Interview with H. Rawi, 12 April 2016.
[62] M. Sholeh Kosim, "Pemeriksaan Kekeruhan Air Ketuban", *Sari Pediatri,* Vol. 11, No. 5 (February, 2010), 379.
[63] Maryam, "Amniotic fluid and its abnormality"*, obstetrics* (December, 2011), 1.
[64] Xing-Long Tong, et al, "Potential Function of Amniotic Fluid in Fetal Development – Novel Insights by Comparing the Composition of Human Amniotic Fluid with Umbilical Cord and Maternal Serum at Mid and Late Gestation", *J Chin Med Assoc,* Vol. 72, No. 7 (July, 2009), 368-9.
[65] Graham J Burton, *Human Placental Structure and Development* (UK: Centre for Trophoblast Research, 2014), 2.
[66] Harvey J. Kliman, "From Trophoblast to Human Placenta", *The Encyclopedia of Reproduction* (2006), 8.

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"lifeline" that supplies nutrients and oxygen to the fetus for its developmental needs.[67]

While *dârâ* (blood) is an essential component of living organism that bringing oxygen from the lungs to tissues and carbon dioxide from tissues to the lungs to be removed, bringing nutrients from the gastrointestinal tract to the tissues and then delivering the rest of the metabolism through secreting organs such as the kidneys, and delivering hormones and blood clotting materials. Blood has an important role in clinical diagnosis, because it is easily collected and there are many diseases in which the blood composition and properties of the components are typically altered.[68]

According to Pak Luthfi, so important the role of *tarètan sè empa*', they can be connected with four angels, namely Gabriel, Mikhail, Israfil, and Azrael Angels.[69] The four angels generally have the function of protection and guarding to humans. It is told that when Gabriel appeared himself before the Apostle *(Rasul)*, he was always accompanied by three other angels, namely Mikail, Israfil, and Azrael. In association with amniotic fluid, that the presence of amniotic membranes when wrapped in the fetus is always accompanied by three other elements. Although physically the task of membranes stops after birth, but its existence spiritually keeps and guides the baby until the end of his life.

The Israfil is an angel who served as a blower of the resurrection trumpet. Based on its function, the placenta is a blower or a trumpet of life that works in the womb. After the baby is born, it still provides protection for humans after birth. The Mikhail is in charge of preserving life. As a connecting rope for human life, existence of the umbilical cord can be connected with the Mikhail. While, Izrael is a angel of death. Izrael is the power of God in the blood. When man is still a baby, Azrael regulates the exchange of blood from mother to fetus. When the baby is born, it remains faithful to the spiritual life of man.

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[67] Hamad Ali dan Fahd Al-Mulla, "Defining Umbilical Cord Blood Stem Cells", *Stem Cell Discovery,* Vol. 2, No.1 (2012), 15.

[68] Ch. Weiss and W. Jelkmann, "Functions of the Blood", in *Springer Handbook of Odor*, ed. Andrea Buettner (Berlin: Springer Berlin Heidelberg, 1989), 402.

[69] Interview with Pak Luthfi, 17 April 2016.

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The ritual event ended with eating together on food that was brought by them as *rasol* (alms). *Rasol* in this ritual is intended so that the wishes expected by the people of Pagedhângan Kampung, Aermera Villagers can be answered by Allah Almighty. *Rasol* in this case is one form of good deeds that can be used as a *tawashshul* so their prayers are granted by Allah Almighty.

Conclusion

From a phenomenological perspective, the ritual of *rokat tèkos jhâgung* is a ritual of petition to Allah Almighty so that the maize which was planted by community of the ritual practitioner is not destroyed or eaten by rat pest with the spiritual help of *tarètan sè empa'*, ie Sariyâ as a symbol of *aèng kabâ* (amniotic fluid), Nuriyâ as a symbol of *tamonè* (placenta), Bhuwana as a symbol of *tontonan* (umbilical cord), and Buwani as a symbol of *dârâ* (blood). The significant role of the *tarètan sè empa'* is that they are spritual bodyguards for fetuses and babies that was born by women until their adulthood. They can be connected with four angels, ie Gabriel, Mikhail, Israfil, and Azrael angels, which generally have the function of protection and guarding to human. The effort of the East Madura society provides an alternative for the expulsion of rat pests that damage the maize crop in the dry land, after previously there was a natural effort in expelling rat pests from areals of paddy fields in Bali through the recording of *blaganjur gamelan* sounds.

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