

# A contrast among farmers' ethnic groups: is this a social polarization tendency?

*Siti Aida Adha Taridal*<sup>1,1</sup>, *Nur Isiyana Wianti*<sup>2</sup>, *Muhammad Arsyad*<sup>3</sup>, and *Arifiana Shima Ekaputri*<sup>4</sup>

<sup>1</sup>Department of Agribusiness, Faculty of Agriculture, University of Halu Oleo, Kendari 93232, Indonesia

<sup>2</sup>Department of Agricultural Extension, Faculty of Agriculture, University of Halu Oleo, Kendari 93232, Indonesia

<sup>3</sup>Department of Agricultural Socio-economics, Faculty of Agriculture, Hasanuddin University, Makassar 90245, Indonesia

<sup>4</sup>Marketing Department, University of Birmingham, United Kingdom

**Abstract.** The aim of the study was to capture the differences between Tolaki, Javanese, and Bugis ethnic in relation to their livelihoods in paddy upland farming activity. The study uses the post-positivism paradigm. In our research setting in Sulawesi drylands ecology, Tolaki local farmer, inhabit most areas of dry land, tend to be sub-subsistence and subsistence-oriented, their planting system is shifting cultivation, or the swidden farming, which was the legacy of their ancestors. Javanese tend to be subsistence and supra-subsistence oriented, while the Bugis farmer is expansive and supra-subsistence oriented. Another important message showed the symptoms of social polarization between the Tolaki and the Bugis as ethnic immigrants. The climax conditions will lead to social conflicts between Tolaki local farmer, Javanese, and Bugis migrants as a result of the emergence of social polarization.

## 1 Introduction

Agriculture serves as a valuable source of income, contributing to poverty reduction through global food security [1]. For Indonesian, rice is one of valuable income, besides two seasons of secondary food crops (*palawija*). Rice production in many parts of Indonesia is still dominated by wet rice (*sawah*), while paddy on dryland and cultivation in which perennial export crops (i.e. cashew, cocoa, and pepper) play only a secondary role.

About 791.000 acres of the area in Sulawesi is drylands ecology [2]. This drylands area is around 3.15 percent of the total drylands area in Indonesia. The Drylands rank among the geographically largest, biologically least productive and demographically fastest growing biomes on earth [3]. Livelihoods in these semi-arid and arid regions have evolved under variable, unpredictable and extreme environmental conditions [4]. Not only the ecology vulnerability but also social economic vulnerability. Roden *et al.* [5] argued that dry land areas of open access have led to heightened insecurity and ongoing conflicts over land-use rights, with livelihoods tending towards an unsustainable use of the environment. It

---

<sup>1</sup> Corresponding author: [aidataridala@yahoo.com](mailto:aidataridala@yahoo.com)

signifies that the dry land ecology is like two sides of a coin, on one hand, it is open, and on the other hand it also creates risks and challenges.

While progress has also been made on the poverty front, 1.4 billion people still live in extreme poverty. Seventy-five percent live in rural areas of developing countries, especially sub-Saharan Africa and southern Asia [6]. Altieri [7] said that throughout the developing world, resource-poor farmers (about 1.4 billion people) located in risk-prone, marginal environments, remain untouched by modern agricultural technology. Globally, there are approximately 2.5 billion people involved in full- or part-time smallholder agriculture, managing an estimated 500 million small farms. Studies by Rigg *et al.*, [8] showed that poverty rates are higher in rural areas –generally between two and four times higher- and, moreover, that this gap has usually widened rather than narrowed.

Later, Rigg *et al.* [9] said that the World Bank's view noted above about the need to modernize farming begins to gain traction. Increases in farm productivity have been critical in reducing absolute poverty across East Asia over the last four to five decades, because such growth is powerfully pro-poor and spatially and socially inclusive for the very reason that the smallholder has been the dominant farm type. In Asian countries like Cambodia, the Lao PDR and Myanmar, and in regions of Indonesia, there is considerable remaining scope to pursue agriculture-based strategies for development and poverty alleviation.

Peasant conditions even more difficult because many government policies do not support the efforts in reducing vulnerability. Pokorny *et al.* [10] showed that discourses regarding the development of the Amazon region highlight the importance of the local cultures, local knowledge and participation of smallholders, such as indigenous people, traditional communities and small-scale colonists. Current policies, however, still pursue a development model that is oriented towards global commodity markets and the capacity of well-qualified entrepreneurs with the capital required for large-scale investments, despite a growing consensus on its ecological incompatibilities, social limitations and economic risks. Later, Jacobsen [11] found that the implementation of the land tenure policy of the Vietnamese government has affected the agricultural system, livelihood strategies and food self-sufficiency of Thai farmers in a remote upland village.

In Sulawesi's dry land paddy, the farmer was separated by the ethnic dimension, reflect their types of smallholder, and asserted their attention for persistence and subsistence life as a peasant, or make deeper engagement with the market relation as a farmer. This article focuses on smallholders in upland of South-Konawe regency with their differences. The aim of this study was to capture how the differences between Tolaki, Javanese, and Bugis are, in relation to their livelihoods in paddy upland farming activity.

## 2 Method

This study used the post-positivism paradigm. Methodologically, two different approaches are incorporated into the unity of mutual support. A first approach is a quantitative approach, using the survey as a method of data collection in the field. A second approach is a qualitative approach using non-survey approach oriented to study the cases, in the realm of qualitative research. Thus, we take a case study as an instrument to get the social fact with a view to capturing much more precisely on the different ethnicities. Like in Baito, farmers are divided into Tolaki and Javanese. While in Laeya, farmers are divided into Tolaki and Bugis.

The unit of analysis is the household. The study population was all upland rice farming households in four sub-districts: District of Wolasi, District of Baito, District of Kolono, and District of Laeya, South of Konawe Regency, Indonesia (Fig. 1). Respondents were chosen randomly (simple random sampling). The total number of respondents were 395 households (33,3% of total population). The number of respondents in the District of

Wolasi were 70 households (5,9% of total population), in the District of Baito were 156 households (13,2%), in District of Kolono were 67 households (5,7%), and in the District of Laeya were 116 households (8, 61%). The research was conducted on May-July 2016.



**Fig. 1.** The study site [12].

### 3 Results and discussion

#### 3.1 Planting behaviour by ethnic

Ethnicity is a social category that shows the differences in cultural value orientation and then reflected in social behaviour. Stratify peasant farmer into age, class, ethnicity and gender while often describing poverty as an absence of entitlements, no land rights, no ability to employ assets or simply as a condition of weak capabilities [13]. In this paper, we will clarify the tendency of the ethnic dimension of farmers which will be associated with farming behaviour applied by the farmer households in each ethnicity.

We found that shifting cultivation system with *huma* system performed by almost all Tolaki peasant, while the cropping pattern system only used by a small part of Javanese peasant. Javanese farmers with large land used *huma* system. However, for Javanese smallholders who have small plots of land, cultivation system is farming permanently. The term of land used by the peasant of Tolaki are two years, and then they would move on to a new land. While the Javanese smallholders with no land to cultivate did shifting cultivation without a certain period. If the crop harvesting is not a satisfactory, Javanese farmers will soon move to other land in the next planting season. The soonest move is made every year, while the latest is three years.

The results also show a different trend in the behaviour of upland rice crop cultivation among Tolaki and Javanese farmers. For example, Tolaki farmers began planting in December to February, while the Javanese farmers start planting in October-November. Nowadays, Lampung upland rice varieties innovation has been largely accepted by 62 % of farmers in the district Baito. Farmers tend to quickly adopt the Lampung varieties. Almost 92 % of the Javanese farmers have now been using upland rice varieties types of Lampung on their own lands. Meanwhile, some Tolaki farmers (approximately 25 %) have begun to change this type of rice paddy fields to the type of Lampung. Symptoms of farming behavioural changes could not be separated from the imitative behaviours Javanese peasant for Tolaki people managed to increase their production of rice fields far above the amount of production produced by Tolaki farmers. However, 75 % of Tolaki farmers in the district of Baito are using local varieties in the area Baito.

In addition to the differences in the use of paddy fields seed, Javanese and Tolaki farmers also differ in drylands paddy fertilization maintenance behaviour. Almost all (93

%) Java farmers performed plant maintenance twice a month using toxic chemicals (farmers called it the "Rambo", "Noxon", "DMA" and "TMA"). Javanese farmers also tend to use chemical fertilizers, NPK, namely to maintain soil nutrients for rice fields. Some (32 %) Tolaki farmers also use toxic chemicals to kill weeds twice a month, but most of them (68 %) still maintain manually, i.e. mowing weeds that interfere with the growth of paddy field twice in a month and the ways of mystical, i.e. using a "prayer" and water that has been blessed with prayer then sprinkled on the plants that have been grown. It is believed by some Tolaki farmers, especially the elderly, to be able to protect the rice fields from pests. Some (36%) Tolaki farmers has also switched to NPK, but the rest of them in Baito used manure, which is organic waste from livestock (i.e. cows and goats).

Tolaki and Javanese cropping patterns are relatively the same, i.e. intercropping system and stocking seed planting system. The plot of land owned by Tolaki and Javanese are three to five types of plants. Besides paddy, the land fields are planted with corn, soybeans, sweet potatoes, manioc or cassava, vegetables, plants and fruits (i.e. pineapple and papaya). Chickens also roam freely around the plants, since the farmers believe that their excreta provide essential nutrients.

However, there are differences in the types of hedge planted by Tolaki and Javanese. Tolaki peasant tends to plant teak, not only as a hedge but also as the "symbolic" plants which serves as markers of land that had been prepared for the planting in the next season. In addition, teak considered as savings or future income. Meanwhile, the types of crops grown by Javanese farmers tends to be a commercial crop such as coconut, cocoa, and cashew nuts. Most of Javanese small peasant plant teak as a hedge.

Thus, another difference between Tolaki and Javanese smallholding is in cropping activities such as harvesting and post-harvesting. As a result of the use of different varieties among Tolaki and Javanese, resulting in the difference on the mechanism of harvest and post-harvest inclination and orientation of production for the households. As discussed previously, Javanese smallholders use Lampung upland rice varieties that are superior in terms of results and post-harvest, as well as the innovation that was introduced by the government through the Department of Agriculture South Konawe.

Despite that, some farmers (i.e. Tolaki peasant) still survive using local varieties. The Tolaki respondents told us that the indigenous variety has become a habit and does not need money to buy the seed. The Lampung variety is easily cropped in harvest time. This makes the smallholders use the crescent (farmers call it the "sickle") at the harvesting time, which perceived to be more effective compared with the cutting stems using "*ani-ani*". Javanese smallholders who use the sickle-like systems will tend to blow the system when the harvest arrives. In this system, Javanese farmers open opportunities for certain parties sharing system for harvesting by using a sickle. Yields then divided into four sections. Three parts to owners of agricultural land, while one part goes to the helpers that help with the harvest.

Meanwhile, most of the Tolaki who uses *ani-ani* using "*Bawon*" system like traditional paddy harvest in rural Java before the green revolution. *Bawon* system gives the opportunity to all members of the community to participate and harvest the rice by using *ani-ani* and receive a certain part of the results: 3 parts go to the land owner and 2 parts to the helpers. For the Tolaki peasant with no land ownership (known as "*tunakisma*"), this system would help the household in terms of food security.

In addition to that, after harvesting, Javanese smallholder then drying and threshing the grains by beating them or using grain threshing machine, and storing the grains for a month in the house. The Javanese said that the advantage of Lampung or Batutegei variety that has been developed by Javanese farmers is it is easy to process to become rice that ready to eat. The crops were then sold to the middlemen, or directly to the consumers. Most of the rice stock is stored at home for personal consumption.

For the Tolaki, after the paddy were harvested, it is then dried relying on sunlight. After it is dry, it is then tied up and stored in the barn. If they want to consume it, they would stomp and pound the paddy traditionally using "*alu-alu*" to separate the relatively thicker skin than Lampung variety. This collective process had an impact on the division of the results of rice processing. The entire crop after divided by five, three parts for the owner are stored in the granary. Storage is intended for their own use (subsistence), and preparation of the seeds for the next planting season.

The Bugis and the Tolaki are similar. Bugis Farmer and Tolaki peasant plant wetland paddy seed in their fields and half of the Tolaki peasant plant their land with local seed. The majority of both ethnics plant their field with Lampung as superior varieties which was introduced by the local government which have better productivity levels than local varieties. However, more Bugis than Tolaki farmers use this variety. This behaviour occurs from experiments in Bugis farmers to plant species of paddy fields belonging to their recognized Bugis farmers of higher productivity levels than the paddy fields. This behaviour was also due to the limitations and unavailability of irrigation channels with an adequate water supply for paddy rice farming activities. For upland, paddy planting activity carried out once a year, while for paddy wetland is grown twice a year. Both Bugis and Tolaki use dryland paddy only for subsistence, while the wetland paddy is used more for commercial purposes (to be sold to earn money).

Another important and crucial finding shows that shifting cultivation (*huma*) was also carried out by Tolaki farmers in District Laeya. In each plot of land cultivated up to two planting seasons or two years, then Tolaki farmers will leave the farm and seek new farm land. Land that has been cultivated is then planted two years of plantation crops such as cocoa, pepper and cashew nuts. Agricultural land is then burned and left for two weeks, before they start cultivating the land. Most Tolaki peasant (in Laeya, and south Konawe as a general) never use the chemical fertilization, their reliance on the remains of litter which works as organic fertilizer.

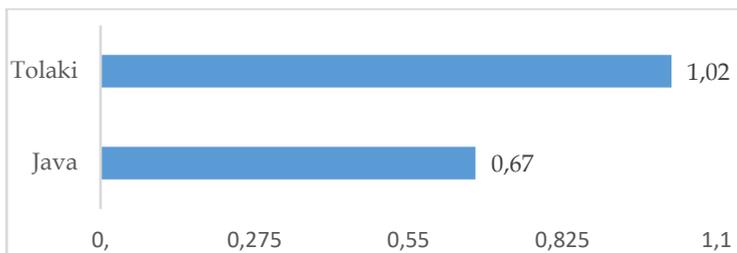
Bugis farmers are performing the settled cultivation system. This trend occurs not only because of the width of the land plantation area but also because of their work ethic. They utilise the big area by dividing it and planted it by similar plants without *tumpang Sari* cropping (monoculture). Bugis farmers are focusing on the establishment of the benefits of farming systems in drylands. Grains derived from the plot of commercial cash crops such as pepper, cocoa, and cashew nuts as well as a land plot of rice crops grown on a dry land. While paddy fields with plots that tend to be more narrowly directed at meeting the subsistence household needs for food.

The next differences between Tolaki and Bugis farmers are related to harvest and post-harvest. On dry land rice harvest activities, all farmers who plant Bugis Lampung (*batutegi*) variety harvested by using "*sabit*" (a scythe) or "*arit*" (sickle). Meanwhile, Tolaki farmers who grow local rice varieties harvested using *ani-ani* and this activity is predominantly done by women. Once they done harvesting, the Bugis Farmers will put the grains (which falls easily) into a sack to dry, and then store it in the house. To make it into rice, Bugis farmers would bring the grains to rice mill. Before storage, the harvest should be given to those who helped with the blow harvesting system. Bugis people do not easily allow all parties to help harvesting like "*bawon*" systems which are widely adopted by Tolaki farmers. They believe if they apply "*bawon*" system, it will reduce the profit earned from the harvest of the particular type of paddy, or will reduce the consumption of subsistence rations for these types of paddy fields. Bugis farmers use the used paint bucket (size 25 litres) as measurement in sharing the yield to those who helped. According to key informants, the harvest results usually obtained approximately 10 paint buckets. Eight buckets are for the owner of the land, and two buckets for those who helped to harvest.

Most of the peasant of Tolaki do the same with Bugis farmers during harvest and post-harvest, especially the use of superior varieties Lampung (*batuteği*), but the ones who still use local varieties will behave differently. Tolaki farmers who survive using local varieties will use the *ani-ani* to harvest. This labour-intensive system uses the revenue sharing system “*bawon*”, which is letting anyone come to help and enjoy the harvest obtained. Once the harvest is obtained, grains are then tied up (1 bunch = ± 5 litres of rice). If there are five ties were obtained, two of them go to the helpers, and remaining three go to the land owners. After the harvest, the owner will split the grains into two purposes: the one to be soon consumed, and the other to be put in a good barn for food stock in the following months. Both are to be seeds in the next planting season. The grain for immediate consumption should be trampled upon beforehand to separate the skin with the grains. The next stage is to pulverize them by using “*alu-alu*” (a mortar-pestle). As for the grains stored in the barn, they are dried for a few weeks before kept in the granary. Almost the entire crop of paddy fields used by Tolaki people to meet household subsistence.

### 3.2. Agrarian structure and social polarization by ethnic

In Baito district, there is a tendency related to differences in ownership of agricultural land between Tolaki and Javanese farmers of rice fields. In general, the ownership of agricultural land by Tolaki farmers comes from inheritance. On the other hand, the Javanese smallholders acquire their lands by buying from Tolaki farmers. Tolaki farmers tend to lose their land, in contrast to agricultural land expansion as that of the Javanese farmers. The tendency shows that when Tolaki farmers in Baito are facing a pressing needs, for example to finance their child’s marriage, they would prefer to release their agricultural land to buyers.



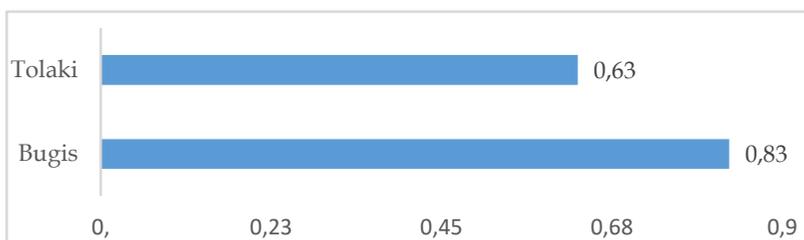
**Fig. 2.** The average of plantation land that owned and controlled by the Tolaki and the Javanese in Baito District.

Figure 2 showed that the average Tolaki farmers farmland area of paddy fields are larger than the Javanese farmers’. The average area of agricultural land of rice fields owned by farmers of rice fields in the district of Baito i.e. about 0.98 ha. Javanese farmers or homesteader immigrant communities have upland rice farms with an average area of about 0.67 hectares owned or below the overall average of respondents in District Baito. Meanwhile, Tolaki farmers have agricultural land above the overall average of respondents in District Baito with the average value of the agricultural land owned area of approximately 1.02 hectares. Based on this fact, the projection of the shrinkage of agricultural land owned by Tolaki farmers must be done to show the burgeoning of Tolaki farmers with no land ownership (“*tunakisma*”), which is in contrast to the Javanese farmers with their ever-expanding agricultural land. This might be caused by the increasingly expensive cost of farming. If this keeps happening, the polarization or class differentiation among Tolaki and Java farmers could arise.

We analysed using the gap between the farmer by Morton [14], which he called a continuum of smallholders and subsistence farmers and design three fluid groupings mainly pertaining to food security: sub-subsistence; subsistence; and supra-subsistence. It is a salient feature of the ‘three types’ of peasant farmers that ‘sub-subsistence’ refers to peasant farmers who are chronically food insecure and rely on irregular cash income from various off-farm sources while ‘subsistence’ refers to those who are periodically food insecure relying on irregular cash income from diversification into a range of sources. Actors in this two categories end to be risk evaders. Finally, ‘supra-subsistence’ refers to peasant farmers who have adequate resources but are constrained in times of a severe drought or ill-health. Some of those may operate as opportunity seekers [15]. A strong assumption occurred that every smallholder could be rational in both cultural values or customs and economic reason.

Results of research give us the important message that most Tolaki farmers are as peasants who orientated for sub-subsistence and subsistence. It is characterized by the Tolaki farmers who only has little and adequate land, no capital, few physicals assets, using collective action to reduce risk, using members of the family as labour, and agricultural activities by *huma* system. The Tolaki elders in their upland do not engage much in commercial activities and market interaction. We found that crops and land meanings for Tolaki are embedded with believe, culture, core as local people identity, and privilege from Olawi as sharing food for others in the village. Thompson and Scoones [16] said that even though rural populations at large are relatively poorer than urban populations, they are not equally poor because rural livelihood worlds are diverse. On the other hand, the Javanese smallholders tend to be actors who are at subsistence orientation and supra-subsistence. For example, Javanese farmers are already using farming equipment, using seeds of better productivity than the local seeds (i.e. Loiyo); all of these leads to a surplus of land-based agriculture. A major implication of this finding showed that the Javanese farmers are more progressive because [17] argued that in Java, the land availability is getting very scarce, and its role as a transferable asset is changing.

There is a social phenomenon which is similar to the sub-district Baito but tend to show the phenomenon of social polarization between the two groups of peasant and farmer with different ethnic (i.e. Tolaki and Bugis) that occurred in the Laeya District. This figure shows the social polarization occurred in the Laeya District.



**Fig. 3.** The difference on the average area of agricultural land owned by Bugis and Tolaki in Laeya District, 2016.

Based on figure 3, the research found that the average area of agricultural land for paddy farming activity owned by Bugis farmers is wider than those of Tolaki farmers. Bugis farmers have an average area of 0.83 hectares of agricultural land, while Tolaki peasants controlled an average area of 0.63 hectares. Most of Bugis have large farms, while Tolaki farmers' land tends to be sinking in terms of land status: from the owner of extensive land becoming landless farmers. In fact, in some cases, some of the peasants are landless or called "*tunakisma*". They cultivated the land belongs to *PT. Kapas* called *Hutan Tanaman Industri* or HTI (industrial timber estates), which those smallholders called it as

"*pinjam-pakai*". The respondent said that there is no obligation for the peasant for the government on the loan use or "*pinjam-pakai*".

Longacre and Hermes [18] argued that inequalities in rice landholdings and yields were ameliorated through the household exchange of pottery. Households with the highest rice productivities (rice yield divided by field area) received pots from households with lower productivities. There is a clear inverse relationship between household investment in rice farming and ceramic exchange to other community households. By tracing out the exchange networks, we find that village division have an influence on who exchanges with whom.

The fact that Bugis farmers as immigrant communities tends to have larger farms today than the Tolaki, could not be separated from the indigenous Tolaki farmers in Laeya District who easily release his own agricultural land to fulfil their urgent economic needs. The research found that Bugis farmers obtain agricultural land by buying from Tolaki farmers as well as from inheritance.

Not only the symptoms of social polarization between Tolaki and Bugis farmers, differences were also shown in the system of planting, maintenance, harvesting, and post-harvesting. The results showed that Bugis farmers tend to be very expansive in managing assets in the form of land, more expansive than Tolaki farmers. Bugis farmers manage agricultural land other than paddy rice paddy fields: crops and commercial plantation crops such as cocoa, clove, and cashew nuts. Bugis Farmers, unlike Tolaki farmers who grow by cropping system, they focus on the plots of land for growing similar plants. We found that Bugis farmer was an entrepreneurial farmer who are profit-oriented, business-knowledgeable, and skillful in business expansion.

Acciaioli [19] said that not all cases of Bugis migration exhibit such an orderly sequence of differentially organized migration stages. Later, he found in many ways that the Bugis movement to the Lindu plain in Central Sulawesi displays a less orderly, simultaneous invocation of different bases of recruitment. Although the coasts, valleys and upland plains of Central Sulawesi have long constituted a frontier for Bugis expansion, the privations imposed by a prolonged state of warfare between guerillas battling for the creation of an Islamic state in eastern Indonesia and the largely Japanese national army from the early 1950s to the mid-1960s [20], an era labeled locally the *gerombolan* ('gangs'), transformed this continual dribble into a veritable stream.

Based on the results, we believed that the sum of this situation would cause Tolaki farmers to slowly lose their soil due to land selling culture for fulfilling their daily and social needs (i.e. for the cost of their children's marriage), while Javanese and Bugis farmers keep expanding their agricultural land. If the indigenous Tolaki farmers are eliminated from local land ownership, there would be food insecurity, which could trigger chronic poverty and the burgeoning of crime as its result. The climax could be the social conflicts among Tolaki local farmers, Javanese and Bugis migrants as a result of the emergence of social polarization. This indicates that the gap truly affects social polarization.

## 4 Conclusion

In our research setting in Sulawesi drylands ecology, Tolaki local farmers who inhabit most areas of the dry land, tend to be sub-subsistence and subsistence-oriented. Their planting system is shifting cultivation or the swidden farming, which they learned from their ancestors. In Baito district, Tolaki farmers and Java smallholders are dominating. Javanese farmers tend to be subsistence and supra-subsistence oriented. While in Laeya, the Bugis farmers is expansive and supra-subsistence oriented. Furthermore, the results showed the symptoms of social polarization between Tolaki as locals and Bugis as ethnic immigrants in

Laeya. This study recommends the local governments to assert land tenure system and provide regulations to protect the locals (especially Tolaki) with no land ownership or "tunakisma" in shifting cultivation on their property of "ulayat" rights. The government should also set strict regulations in order to protect the land as the core of Tolaki's culture from social changes which emerged from the new land tenure and new business system from outsiders.

## References

1. IFAD. *Smallholders, Food Security, and the environment*. IFAD and UNEP. (2013)
2. Sukarman, I.G. Subiksa, S. Ritung. Identification of potential dry land for food plant development in prospects for dryland agriculture for supporting food security. Agricultural research and development agency Republic of Indonesia. (2012)
3. Millennium Ecosystem Assessment (MEA). *Ecosystems and Human Wellbeing: Synthesis* (Island Press, Washington DC, 2005)
4. E. Huber-Sannwald, M.R. Palacios, J.T.A. Moreno, M. Braasch, R.M.M. Pena, J.G. de A. Verduzco, K.M. Santos, *Philos. Trans. R. Soc. Lond. Ser. BBiol. Sci.* **367**, 1606, 3158-3177 (2012)
5. P. Roden, C. Bergmann, A. Ulrich, M. Nusser, *Journal of Arid Environments*. **124**, 239-248 (2016)
6. IFAD. *Smallholders, Food Security, and the environment*. IFAD and UNEP. (2013)
7. M.A. Altieri. *Agroecology: the science of natural resource management for poor farmers in marginal environments*. *Agriculture, Ecosystems & Environment* **93**, 1-3 (2002)
8. J. Rigg, A. Salamanca, E.C. Thompson. The puzzle of East and Southeast Asia's persistent smallholder. *Journal of Rural Studies* **41**, (2016)
9. J. Rigg, A. Salamanca, E.C. Thompson. The puzzle of East and Southeast Asia's persistent smallholder. *Journal of Rural Studies* **41**, (2016)
10. B. Pokorny, W. de Jong, J. Godar, P. Pacheco, J. Johnson. From large to small: Reorienting rural development policies in response to climate change, food security and poverty. *Forest Policy and Economics* **36**, (2013)
11. J. Jacobsen, K. Rasmussen, S. Leisz, R. Folving, N. V. Quang. The effects of land tenure policy on rural livelihoods and food sufficiency in the upland village of Que, North Central Vietnam. *Agricultural Systems* **94**, 2 (2007)
12. Central Statistic Biro (CBS). *Konawe Selatan dalam Angka* (CBS, Kendari, 2015)
13. A. Sen. *Development as Freedom* (Oxford University Press, Oxford, UK, 1999)
14. J.F. Morton. The impact of climate change on smallholder and subsistence agriculture. *Proceedings of the National Academy of Science* **104**, (2007)
15. A. Jerneck, L. Olsson. More than trees! Understanding the agroforestry adoption gap in subsistence agriculture: Insights from narrative walks in Kenya. *Journal of Rural Studies* **32**, (2013)
16. J. Thompson, I. Scoones. Addressing the dynamics of agri-food systems: an emerging agenda for social science research. *Environmental Science & Policy* **12**, 4 (2009)
17. T. Bottema, M. Sirega, H. Madiadipura. Family Life History as a Tool in The Study of Long-term Dynamics of Poverty: an Exploration. Proceeding of National Seminar Land and Household Economy 1970-2005 "Changing Road for Poverty Reduction". Indonesian Center for Agricultural Socio-Economic and Policy Studies (ICASEPS) and ESCAP. (2009)
18. W.A. Longacre, T.R. Hermes. Rice farming and pottery production among the Kalinga: New ethnoarchaeological data from the Philippines. *Journal Anthropological Archaeology* **38**, (2015)

19. G. Acciaioli. Kinship and debt; the social organization of Bugis migration and fish marketing at Lake Lindu, Central Sulawesi. In: *Bijdragen tot de Taal-, Land-en Volkenkunde, Authority and enterprise among the peoples of South Sulawesi* 156, no: 3, Leiden, (2000)
20. G. Acciaioli. Kinship and debt; the social organization of Bugis migration and fish marketing at Lake Lindu, Central Sulawesi. In: *Bijdragen tot de Taal-, Land-en Volkenkunde, Authority and enterprise among the peoples of South Sulawesi* 156, no: 3, Leiden, (2000)