

Local wisdom and archipelago agriculture: Poverty in Maluku

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Abstract. Maluku is an archipelago province where its inhabitants mostly settle on small islands and conduct agricultural activities on very limited land with relatively low fertility rates. In such conditions, islanders' local wisdom in Maluku is one of the cultural values that are still manifested in their life order, which is the social capital of archipelago communities. Local wisdom is derived from society's knowledge and has a high social value in sustaining their lives when faced with all limitations and challenges. Islanders often face difficulties in marketing their agricultural products and limited transportation access to get a good education and health services. This has contributed to poverty among people living on small islands, as indicated by a poverty rate of 18.5%. Interestingly, local wisdom has been practised by communities for a long time when undertaking their agricultural activities. It is anticipated that global climate change also impacts agricultural practices undertaken by the islanders in Maluku. Therefore, this article's objectives were to (1) analyze the form of local wisdom of islanders and its impact on sustainable archipelago agriculture development, (2) suggest ways to alleviate poverty in Maluku using local wisdom as social capital. The finding suggests that local wisdom's value cannot be separated from the interactions between humans and their environment. This is a driving factor in the advancement of economic and socio-cultural aspects. Responsible marketing is another aspect that should be taken into account.

1. Introduction

Poverty in small islands in Maluku is one of the most critical problems in Indonesian national development. High prices and inflation have lowered the purchasing power of the consumers. Consequently, the percentage of the poor has increased.

With the poverty rate of 17.99%, Maluku has been placed fourth among the 10 poorest provinces in Indonesia, next to NTT (Papua, Papua Barat, NTT, Maluku, Gorontalo, Aceh, Bengkulu, NTB, Sulawesi Tengah and Lampung) [1]

The boundary of small islands tends to have potential threats internally and externally. This is because many small islands in Maluku are located next to the country border, in which those small islands are isolated with limited transportation access. The majority of the areas close to the country border are considered less developed due to limited access to social and economic infrastructures. According to [2], food security among people in the small islands in Maluku has been worsened due to their dependency on rice as their staple food. The late distribution of rice by the government could easily cause a hunger disaster. This indicates that people have become dependent on rice supplied by the government, and they have stopped planting their traditional plants, including yam, corn, sago and other tuber crops.

According to Maluku Province Statistics, in 2020, Maluku population was 1.831.880 or approximately 0.68% of the total Indonesian population based on 2020 BPS (269.603.400 people)[1]. Maluku reached its golden age during the Dutch Colonisation around 350 years ago when the spices trade started to blossom, particularly Cloves (*Eugenia aromatica*) and Nutmeg (*Myristica fragrans*). These two native Maluku commodities were very well sought after during those years. This golden age started to weaken along with the end of Dutch Colonisation in Indonesia. Cloves and Nutmegs have



been planted all across Indonesia so that Maluku is not the only province producing those two commodities any longer.

So far, the government has put different policies and mechanisms to alleviate poverty, including the distribution of cash and rice commodities. However, the distribution of cash payment and rice commodity has not been very effective because many have not been placed to suitable targets, opening misused funding opportunities. This could also potentially create social conflicts. Three things need to be considered: 1) What poverty is and why people are poor, 2) Policy perspective to alleviate poverty, and 3) To what extent local wisdom belonged to the people could alleviate poverty?

This article aims to: 1) Analyze the form of local wisdom of islanders and its impact on sustainable archipelago agriculture development; and 2) Suggest ways to alleviate poverty in Maluku using local wisdom as one of the social capitals.

This research contributes to the understanding of the local wisdom of islanders in Indonesia. To understand the people in Maluku, it is important to comprehend the archipelago agriculture being practised in Maluku. If we are to understand society comprehensively, it is hopeful that policy development should be implemented to empower the people with their potential and what they have. The great contribution is how local islanders' local wisdom can become one of the social assets to plan sustainable development to alleviate poverty in Maluku.

This article is structured into four sections. The next section will discuss the methodology. Section three presents findings and interpretation. Finally, section 4 concludes the article.

2. Methodology

Conventionally, poverty definition is centered on reducing poverty toward reduced income or consumption and possession of assets. For example, a low-income family's income is less than 1,920 kg rice equivalent per year [3]. The assumption is that higher-income family will have more opportunity to consume more calories and healthier foods. Another poverty measurement is the possession of asset and stock. Powerlessness or vulnerability decreases as possession of asset and stock increase.

According to [4], poverty is strongly associated with social deprivation, access to natural resources such as water, house, health services, education and transportation. The root of poverty includes low life expectancy, vulnerability, isolation and interdependence. Poverty is also related to feeling secure, autonomy and self-identity. For example, feeling secured and autonomy could reduce the dependency on other people. Poverty is multidimensional, including economic, social and politics [5].

Economically, poor people do not possess anything (*having nothing*), socially they do not become anything (*being nothing*), and politically, they do not have rights except they are the victims of development (*having no rights and being wrong*). Because of possessing many sides, poverty can be seen as the beauty defined differently by different people who look at the beauty. Since poverty cannot be separated from politics, thus no definition of poverty is the most truthful. *There is no one correct, scientific, agreed definition because poverty is inevitably a political concept and therefore inherently a contested one*[6].

In Indonesia, academics, politicians and government institutions define poverty (*objective views*). Consequently, every institution defines its definition individually. The condition of government and political institutions with vested group orientation describes how difficult it is to combat poverty in Indonesia. To prevent bias, poor people must formulate what poverty is (*subjective views*). This is useful to obtain deep comprehension (*insight*) about the concept of poverty relevant to the local condition.

Local wisdom in society is derived from the social values inherited from generation to generation. Those values have been passed on by the forefathers who have successfully maintained and developed our agro-ecosystem. The value has become a norm, which regulates how each member of society should behave towards each other, plants, animals, and natural resources.

Population growth due to birth and migration and external development intervention have influenced the lifestyle and balance between human beings and nature. However, research suggests that local people still apply local wisdom to manage natural resources to fulfil their needs.

Formal education (*science*) can learn and collaborate with the farmer knowledge and local wisdom. This collaboration will result in sustainable management of human and natural resources. The application of this concept in Maluku while caring for ecology and ethnoecology is considered the concept of the archipelago agriculture system, which can assure sustainable human living and the environment.

Therefore, mutual collaboration is a precondition to empower local people in managing their natural resources. Sustainable natural resources management is an efficient and effective strategy in combating and alleviating poverty.

The information used in this article comes from various literature reviews, which have been analyzed and synthesized to obtain a comprehensive understanding of poverty in Maluku. This poverty could be combated using local wisdom and the archipelago agriculture system.

3. Results and Discussion

In the record, there are 17 thousand islands in Indonesia, although only a few islands have been potentially used. Hopefully, the ocean infrastructure development can open up increased economic access to unreached small islands. It is realized that up until now, the potential effect of coastal areas, small islands and the ocean in Indonesia has not been productively and optimally used for the advancement, betterment, and autonomy of the nation.

Suppose Indonesia considers herself to be the centre of world maritime. In that case, the development should be supported by centres of new growth economic along with the coastal areas, Alur Laut Kepulauan Indonesia (ALKI), small islands, and border areas. This effort is designed to increase people's welfare, produce valuable ocean products and services, and increase the fishery sector's contribution to the economy and create better employment.

The size of Maluku is 46.914,03 Km² or around 2.45% of the size of Indonesia (1.913.578,68 Km²). There are 1.340 islands, both with and without name. Of all the islands in Maluku, only Seram island is categorized as big island (24.342,5 Km² or 51,89% of the size of Maluku), while the rest are grouped as small islands. Thus, Maluku is called archipelago province, consisting of 9 districts and two cities. The nine districts include, Kabupaten Maluku Tengah, Kabupaten Seram Bagian Barat, Kabupaten Seram Bagian Timur, Kabupaten Maluku Tenggara, Kabupaten Kepulauan Aru, Kabupaten Maluku Tenggara Barat, Kabupaten Maluku Barat Daya, Kabupaten Buru, and Kabupaten Buru Selatan. Two cities are Ambon and Tual. Natural potential in Maluku with specific archipelago characteristics makes it Maritime Centre of Indonesia.

The government of Maluku seems to disagree with the statistics of poverty of 17,99% produced by BPS. The provincial government considers that Maluku is rich in natural resources. Thus Maluku should not be categorized as one of the poorest provinces in Indonesia. Maluku has been the result of the unfair treatment of the central government in Jakarta.

Research in Maluku by [7, 8, 9] suggests that, unlike continental region, 92% of Maluku is the ocean, and 85% of the villages are coastal regions. Ironically, almost 70% of family income sources in rural areas comes from agriculture, the rest from fishery and non-agriculture (off-farm and/or non-farm). This implies that Maluku people live in the ocean region but are land oriented (bivalent). Agriculture land potential has been facing the problem of levelling of production. In contrast, ocean potential has not been optimally utilized using adaptive technology due to the competitive economy stirred by investment and innovation.

The contribution of the economic sector is changing from agriculture to trade. The agriculture contribution to Maluku domestic, regional product tends to decrease at 28% in 2020. However, agriculture still contributes to employment (49%). This figure implies that labor productivity in agriculture is still low and inefficient because 49% of agriculture laborers only contribute around 28% of the regional gross domestic product.

Implicitly, the transformation of economic structure and employment from an economy stirred by resources (agriculture and ocean) to an economy driven by investment and capital (food processing industry for agriculture and ocean) has not been working smoothly because the industry sector (processing) is not yet ready to absorb the abundance of employees from the agriculture sector in rural areas.

The problem is that, on the one hand, agriculture human resources are not skilful and ready. On the other hand, the processing industry's investment level is still relatively low (except for few private businesses, including sawit palm, cocoa, tuna, pearl and natural gas from Masela block, sago and seagrass industries. However, the enforcement of agribusiness system intervention tends to be unsustainable due to unskillful workers as an example. As a result, there is an explosion of agriculture workers and rural workers, predicted to be more educated, who work in the informal economic sector in the rural and urban areas.

Road infrastructure is another problem in Maluku. Bridge and ocean transport has progressed very slowly, resulting in many small islands being still out of reach. This has made poverty worse. Learning poverty is actually to know a daily problem. As a real problem, this is very different from the discipline question, which is generally abstract. If the resolution of a discipline question is postponed, the impact is not that great on the life of the individual who has the problem. However, if a genuine issue such as poverty is postponed, death may threaten the individual. This indicates that efforts to reduce poverty are more than just how to produce positive and normative knowledge and how to use the ability to make a prescription and action.

The prescription quality produced is subject to positive and normative knowledge, the interactive knowledge of both, possessed by the decision-maker. Apart from prescription quality, the quality action is subject to skill, expertise, discipline, determination, and other positive characters owned by the person.

Local wisdom, as reported by [10, 11, 12], cannot be at all obtained through formal and informal education but can only be understood from a long experience through direct observation. Local wisdom was born from learning by experience, kept and transferred from one generation to the next generation. Local wisdom's main benefit is to create regularity and equilibrium between social, cultural and sustainable natural resources.

Local wisdom practised by islanders includes an agriculture system called *dusung* (traditional agroforestry) for people in Seram and Ambon island [13]. The same concept as *dusung* is called *Tnyafar* for people in Maluku Tenggara Barat [14, 15]. *Dusung* and *Tnyafar* are traditional agriculture systems, which combine annual and perennial crops.

Sasi is a local knowledge, which prevents people from harvesting the crops when they are not ready. The main idea of *Sasi* is to obtain a good harvest. *Sasi* is applicable in the agriculture and fishery sectors and has been practised by all Maluku farmers. Although, some will call it differently according to their local languages.

For food security, people from Maluku Barat Daya practice *namlaikerne* [16], meaning that they dry the cassava or mango seed to be kept for a long time. Later on, during the long dry season, these products will then be consumed.

In principle, like other people, poor people have instinct, which can help them organize their lives. Although they categorize themselves as inferior, they still can survive and continue their life producing offspring. They also can utilize their internal energy as well as external energy from external resources. Poor people have shown their endurance and ability to look for foods and preserve natural resources and local traditions. This is where the concept of local natural wisdom is born.

Nanere [17] first introduced the agriculture concept suitable in Maluku islands in 1992. According to [17], the archipelago agriculture system is the most ideal in Maluku. In their lifestyle, the islanders living in a small island tend to apply their agriculture practices to get maximum production on a subsistence basis using local knowledge, called local wisdom.

Precisely, Maluku consists of a range of islands so-called archipelago. This archipelago can be seen as one geography, economy, defence and politics.

According to [17], the agriculture system is an agriculture system on the island and small islands based on biophysics, geography, and people, which guarantees increased production and a sustainable environment.

Archipelago agriculture system assures that there is an agriculture system practice according to the biography of Maluku. The purpose of applying local wisdom on each island is to strengthen the archipelago agriculture system and alleviate poverty in Maluku.

Environmental conservation and global warming have been attracting a lot of attention from modern businesses and traditional ones. This has followed the footsteps of the consumers' positive evolution in terms of pro-environmental knowledge, awareness, attitude, and behaviors. A big push by consumers towards tackling the environmental challenge has been to take refuge in green and sustainable consumption.

One of the crucial elements of business operation is marketing. It has become a challenging issue for any business, whether small or big, as the customer demands and environmental trends are more dynamic than ever before. The current trends desire to analyze the matter of promoting green-marketing initiatives and examining how it affects customers' business and behaviour where they make their purchase. Marketers need to be responsible not only for customer satisfaction but also for environmental preservation and protection.

Responsible marketing is defined as a marketing approach taking into account the long term and short term interest of society [18]. The idea of responsible marketing is focused on transparency, honesty, fairness, encouragement of responsible use of products, and refraining from misleading consumers [18, 19]. Some practical examples of responsible marketing that has been practised from generation to generation in Maluku include *Sasi*, *Namlaikerne*, *Dusung* and *Tnyafar*. While people are crying out for responsible marketing, where people live in small islands of Maluku for many centuries, they have already been practising this concept, so-called responsible marketing.

4. Conclusion

As poverty in Maluku is multifaceted, it is important to view it from different angles. According to other concepts found in the previous research, it is crucial to define poverty, literature review, and the poor's concept.

Synergy definition from the poor people and external groups (government, research institution and private business) can produce definition more specific to certain people in particular location holistically, systematically and dynamically. For instance, the poverty indicator in Maluku covers subsistence shifting agriculture cultivation, limited access to the capital and improved agriculture technology, along with the isolation due to high transportation costs (time and skill). Consequently, islanders still have low income and do not have access to education and health. After definition, commitment is required because poverty can only be tackled with learning by doing, not just collecting the data and talking about it (learning by talking).

Poverty among islanders can only be resolved by themselves with a bit of help from the government. One local owned wisdom is social capital. The people empowerment in the small island should start from the local knowledge.

Some examples of responsible marketing that has been practised from generation to generation in Maluku include *Sasi*, *Namlaikerne*, *Dusung* and *Tnyafar*. This local wisdom has been proved to impact the sustainable archipelago agriculture system in Maluku positively.

Responsible marketing incorporating local wisdom has been suggested to be one of the solutions in alleviating poverty in Maluku.

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