

インドネシアの伝統的建築の保存と活用の研究

—ニース島バウォマタルオ村保存の事例

Appropriate Use and Conservation Methodology of Cultural Architecture in Indonesia :
case Study of Nias Bawömataluo Conservation Project

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1. Introduction

Bawömataluo village which is located in Nias Island, Indonesia is among the most important National Cultural Properties. The village has most number of traditional houses left in one village in Indonesia. The architecture is considered to be the most finest artistic masterpiece in Indonesia.

Although 53% of the traditional houses in Bawömataluo village are still preserved, the number might be decreasing in the following year. The vast improvement of infrastructure in the 21st century causes the poverty which brings difficulties in sustaining the cultural property. The mass emigration from traditional homelands into urban centers also change their lifestyle. Villagers modify their house by replacing some of building materials that are more economical in price but these affects to the destruction of the original structure. Most of the villagers still want to stay in their traditional houses. Due to the maintenance funding problem and did not receive financial support from the national and local government, many villagers can not afford the maintenance activity.

As for the official law for the protection of the cultural property, Indonesia has a national regulation under *UU No. 11 Tahun 2010* but the law is mostly dedicated to the archaeological sites. Local government of Nias Island has not yet developed local policy to protect the living heritage and the wooden architectural cultural property. The other problems appearing in the conservation field in Indonesia is that there are only few experts in cultural property and the conservation of wooden cultural property has rarely been discussed.

This research attempts to record and analyze the current condition and modification of traditional house in

Bawömataluo village to find the proper way to do the conservation activities. References from the previous research about Bawömataluo village and also sample of homestay program in other traditional village have also been studied in order to give an idea about what kind of conservation methodology that can be applied to this living heritage. Recommendation for the reuse of traditional house Omo Hada will also be given in order for us to preserve its cultural property and its society for a long period of time. This research wishes to contribute to the preservation of Indonesia's living heritage and wishes to enrich the academic data for Indonesia's heritage conservation field.

2. Case Study Bawömataluo Village

Nias is a small island located in the western side of Sumatera Island, surrounded by vast Indian Ocean and is far from the hustle of big cities in Indonesia.



Figure 1 The Location Map of Nias Island in Indonesia.

Source : Matthew Teismann

The island covers an area of 5,121.3 km² and about 150 km long, 50 km wide and has three division areas –the North, the Centre and the South. The capital of Nias is Gunungsitoli, while the largest town in the South is called Teluk Dalam. Nias island is a part of North Sumatra Province which has 756,763 inhabitants, according to

2010 census including the indigenous inhabitants (*ono niha*). On January 2014 the number had risen into 788,132 inhabitants. Traditional villages in Nias island were usually built away from the sea. Inland, high and inaccessible places and locations were favored. Each area has its own traditional villages, but the South area has the most number of traditional villages. One of the great character and traditional architecture are still remained in the Southern region called Bawömataluo village which also mean “the hill of the sun”. The village covers an area of 5 hectares with an altitude of 270 m above the sea. The majority of the villagers are farmer and the other are civil servants, carpenters, teachers, and fishermen. The total population of this village has recorded a total of 6.200 people which consist of 1.310 family heads (2014). The population growth makes the villagers built new houses which is located on the outside of the traditional village.

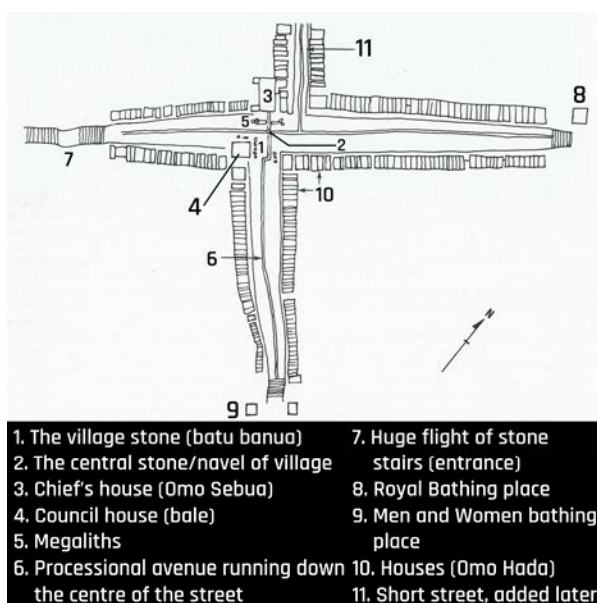


Figure 2 Sketch plan of Bawömataluo village. Source : After Feldman (1977:237), from an original by Aileen Matsuyama-Feldman)

The village is structured from the *raya* direction (refers to the higher area or the mountain and the sunrise) to *löu* direction (refers to the lower area, the seaside and the sunset). The village has wooden and stilt house which stand in a row. The houses face toward the straight of the streets and create harmonious landscape of the village. The village has some special component such as: village's stone (*batu banua*), the navel stone (*fusö newali*), stone jumping (*hombo batu*), traditional house (*omo hada*), king's house (*omo sebua*), traditional stone bathing

place, huge flight of stone as entrance (*bawagöli*), traditional street. Nias traditional house use ironwood piles with huge diameter to form the substructure of the house. *Omo hada* which means *rumah adat* (traditional house), uses special diagonal and vertical V-shaped pair piles, which added resistance to earthquake stresses as well as stability to the structure as a whole. The house has many details in the wood joints and use two kinds of hard woods originally from Nias Island called *manawadanö* and *berua*. *Omo hada* has three main parts which are the substructure, the main structure, and the superstructure. Until 2017, 53% of the houses still traditional and the three main parts still remain although some functions have been modified and developed.

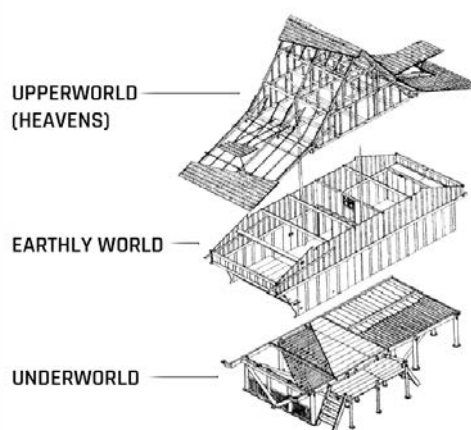


Figure 3 Sketch of three level of structure in Omo Hada's Architecture. Source : Inoue K. Univ.of Tokyo 1983

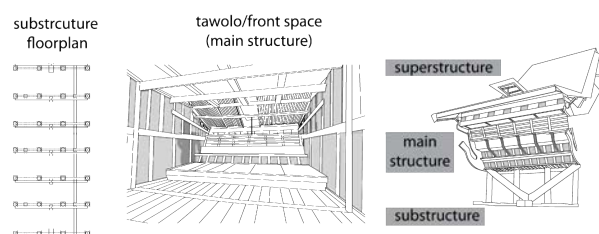


Figure 4 Left to right : floorplan of substructure, view of tawolo in main structure, Omo Hada's facade. Source : Author

3. The Utilization and Modification of Omo Hada

As it mentioned in previous references that homestay idea might be one good option to preserve the traditional

house because it raises the possibility to receive more income and it will be useful for house maintenance. To know whether homestay program might suitable or not for Bawömataluo Village, site survey and questionnaire were held. The survey was held twice in Bawömataluo Village on September 19th-26th 2016 and September 12th-14th 2017. The survey is expected to record the current housing type, current condition, new construction and modification activities of *omo hada*. Bawömataluo Village is located in two areas: up hill and down hill. Most traditional housing are located in up hill (original area of the traditional village) while the downhill (expansion from the up hill) are filled with modern concrete housings. The survey was conducted only in the up hill because there are still many wooden traditional houses left. Based on Indonesia's Statistic Data, Bawömataluo Village is inhabited 6200 people or 1310 family heads in total. But this survey only recorded the up hill part of Bawömataluo village which is inhabited by 1559 people and has 255 houses in total with one *bale* (traditional council house).



Figure 5 From left to right : house type A, B and C. Source : Author, photographed on 2016

The first survey (September 19th-26th 2017) recorded that there are three types of houses in Bawömataluo Village: type A (traditional and original), type B (traditional with various modification especially in façade), and type C (different style of housing). Type A is where the traditional *omo hada* still has full components of v-brace column, sago palm roof, and horizontal lattice ventilation (*zarazara*). Type B shows the modified traditional *omo hada*, with modification on the foundation part by adding new wooden or concrete material and changing the roof material into metal zinc. Type C is a different style of housing. Some houses are built with concrete materials and some are still using wooden materials but the shape is completely different from *omo hada*.

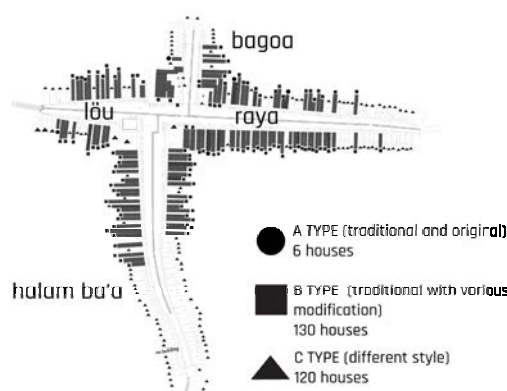


Figure 6. Illustration of the housing type. Source : Author

Among the 255 houses, there are 6 houses of type A houses, 130 houses of type B houses and 120 type C houses. This means that 53% of the houses are still traditional with some modifications and 47% of them are modern houses with different style of housing. From the above map, containing the number and locations of different housing types, it is clear to understand that most traditional preserved houses are located in the center of settlement. The *raya* area has the most traditional house among all aisles in Bawömataluo Village. There are 4 of type A houses and 51 house of type B in the *raya* area. The first survey also recorded that there are many new construction activities for building new houses, new facilities, and modifying the interior of the traditional houses. In *löu* area the new building was built on the vacant land near the entrance. It has been planned to provide accommodation for tourist who visit *Teluk Dalam*. The new building use the same style of *omo hada* but use one *ndriwa* or v-brace for two traditional houses. The other house in *halam ba'a* area is modified because new family member come to stay, so the house needs to add more space. They made new split-level space near the attic for new family members. The additional space near the attic needed more room, so the additional vertical space was made. The house owner also changed the sago palm roof into red plastic tile. The reason of material change is also because of the financial problems. The other house in *raya* area was renovated the house floor by changing the old material with new wooden material. The old wooden floors were damaged by the termites and weather condition. The old material had not been changed since more than fifty years ago and the house owner thought the damage would harm the users later. They still use the same wood as the old one. They also built a new

wooden wall covering the semi open space on the ground level.



Figure 7 New Construction and modification in Omo Hada.

Source : Author, photographed on 2016

The second survey was held on September 12th- 14th 2017. This survey was held in order to understand the utilization, condition, reason of modification and current activities inside *omo hada*. It is mentioned before that this thesis tries to find appropriate use and conservation methodology for *omo hada* and this survey might be one of the tools to find the appropriate use of *omo hada*. The result of this survey wishes to understand the suitable function for the reuse the *omo hada* and to solve the current problems which were mentioned in the first chapter of this thesis.

The second survey is the questionnaire and measurement method of selected *omo hada* in Bawömataluo Village's up hill area. The questionnaire was done in 30 traditional houses (10 houses in *löu* area, 2 houses in *bagoa* area, 9 houses in *raya* area, and 9 houses in *halam ba'a* area). The criteria of the chosen 30 houses as questionnaire are:

- 1) Type A (traditional house) and type B (traditional modified house),
- 2) House with maximum 5 inhabitants.

The questionnaire only choose the traditional type because the traditional house is the main purpose of the conservation activity and the minimum number of inhabitant will have the possibility to receive guest. The dotted area marked on the map (figure 8) refers to the

location of the questionnaire activity.

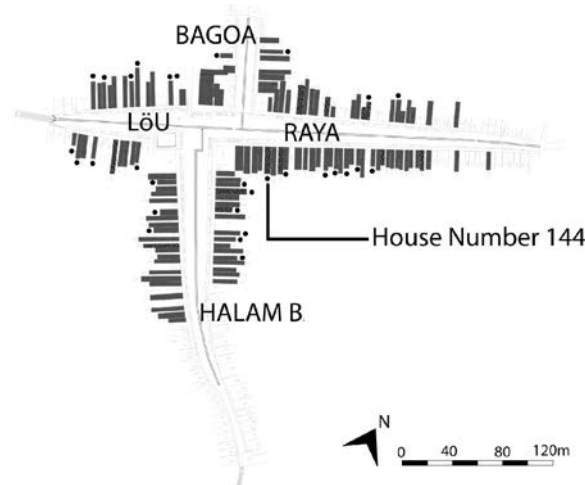


Figure 8 Questionnaire village map. Source : Author

The result of the questionnaire shows that among 30 houses, 29 are inherited land. They are mostly work as farmer and the rest : Teacher, Fisherman, Entrepreneur, and pension. Half of the questionnaire have less than 10 million rupiah annual income, while highest annual income is more than 30 million rupiah. The income is considered as low because the usual annual salary in Nias is 24.5 million rupiah. Many people are in active age because they are in their 23-40 years old (24 people) and 41-60 years old, (34 people). Then 15 houses answered that they use *tawolo* (front space) as most frequently used space while 9 houses thought that *foroma* area are least frequently used space. Most activities inside *omo hada* are sleep, eat, cook, study, traditional ceremony (wedding, funeral, *famalaho'o*, hygiene, laundry. While additional activities are *orahu/meeting*, *carving*, *play music*, *weaving*, *religious event*. Among 30 houses, 13 houses has ever received guest whom come from Indonesia and abroad. The visiting purposes are holiday and research activity. Then the among 30 houses, 1 house is not interested to guesthouse program because of the privacy reason. The most modification of *omo hada* is making additional space on *foroma* (back of the house).

The result of the questionnaire also show the importance and possibility of homestay program because the annual salary of most questionnaire participant are low compare to other Nias people, many people who lived in the village are in active age so they are possible to actively engaged in homestay's activity, they have ever received guest and most house are really interested to homestay

program, the *foroma* (back of the house) is the least frequently used space so it is possible to modify the space division for guest and house owner, and *tawolo* (front space) is the most frequently used space and used for communal room, so it's possible to mix the activity between house owner and guest during the homestay program.



Figure 9 House number 144 in raya area. Source : Author

After analyzing the questionnaire, one representative *omo hada* is selected for the home stay program idea. The selected *omo hada* is a house number 144. After the measurement survey, the space inside house number 144 can be observed clearly.

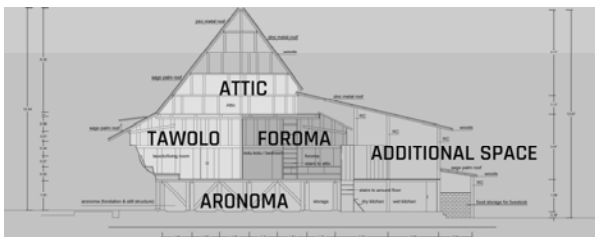


Figure 10 Section of house number 144. Source : Author

Here are some of the reason to choose house number 144 to become the sample model of the home stay program: *Arönoma* (the ground level area) is still original. Some *ndriwa* (v-brace structure) were damaged by the termite. *Kolukolu* (the middle private room) is still being used as bed room. *Tawolo* (the front area) is the most frequently used space while *föröma* is the least frequently used space. The house owner has the initiative to receive more guests from outside the family and they make additional space in order to provide enough accommodation. *Omo hada* still use *bulu zagu* (sago palm material) roof for the front façade because the sago palm material provide better air temperature for the interior. The back of the house uses zinc metal roof material because the back of the house is used as kitchen, and might have some activities related to

fire. The house owner thought that concrete and zinc material will be safe for some activities using fire.



Figure 11 The three level structure of house number 144.

Source : Author

The three main structures of this house are still clearly seen such as the substructure, main structure and substructure which means that the originality of the house is stronger than the other *omo hada* houses in Bawömataluo Village. The pictures below show the three main traditional structures are still preserved in the house number 144.

4. Appropriate Use and Conservation Method in Omo Hada

Homestay program will be one of the idea to reuse the traditional *omo hada* in order to receive benefit that can be used for the preservation activity and funding. In *Undang-Undang No.11 Tahun 2010* article 78 number 3, it is mentioned that the development of National Cultural Property is possible for improving the quality of life of the inhabitants and for preserving the cultural property. The development might be adding new space and function which should be harmonized with the local activities in the cultural property area.

The idea of the homestay are to make separate access between house owner and guest, to add new space behind the *foroma* (back of the house) using concrete as material because to show the clear distinction between the new and old building and concrete material will save the building from the fire activity, to use attic only for storage and do not use attic for rest area because it is dark and receive less fresh air, to modify the space division in *foroma* (back of the house) area such as use *kolukolu* for guest room and build toilet on second floor for guest's facility, while house owner will stay in the second level which is located behind *foroma* and can access the ground level using special stairs.

Different material in the back of the house such as

concrete, is exposed for the clear distinction between the new and old building.

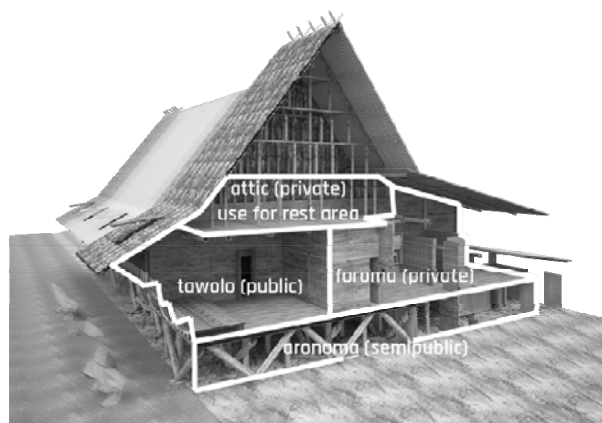


Figure 12 The current space program in house number 144.

Source : Author

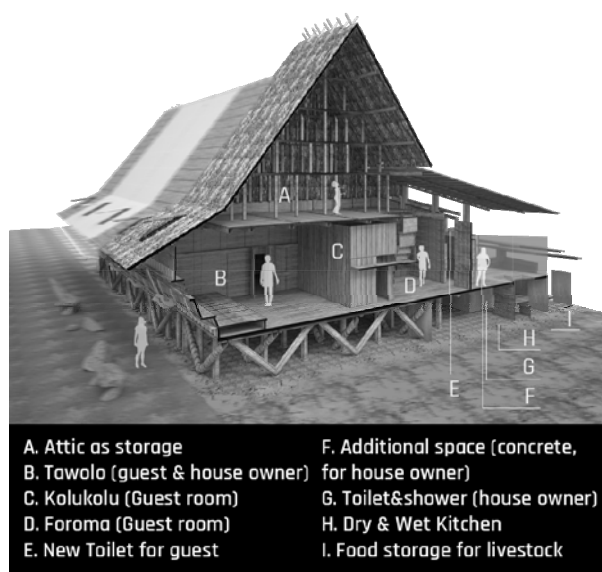


Figure 13 The new space for homestay in house number 144. Source : Author

5. Conclusion

Indonesia which is comprised of 14,000 islands and 300 ethnic groups has shown diverse native cultures. It is an important source for Indonesia's future generation and identity. With the continuous rapid economic growth since the 21st century, economic disparity between central region and other small island is becoming larger while at the same time, infrastructure is vastly improved. The local and national government also do not support the financial for the preservation of their cultural property. This phenomenon brings poverty and difficulties in sustaining

the native culture that has been preserved.

The appropriate use in the traditional house *omo hada*, modifying *omo hada* for new function is possible to continue their living and preserve the cultural property. One idea is the homestay program, which allows the villagers to receive money for maintenance activity and at the same time to preserve the daily life and tradition. The homestay program keeps the basic concept of *omo hada* where there are three important structure in a building such as substructure, main structure and superstructure. New space and facilities are added in order to provide the modern living necessities.

This conservation activities should also create sustainable impact to the local (the involvement of local community will create new spirit to keep the tradition), social (the conservation activity will engage many experts and the awareness of local wisdom will be raised), policy (the conservation activity should also create conservation master plan and building guideline where it will enrich the policy for traditional wooden building and environment (the material usage activity should be controlled and use efficiently to keep the environment sustained).

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