

Dr. Ir. Sherly Asriany, S.T., M.T.
Architecture
sherly@unkhair.ac.id
Khairun University



Dr. Ir. Anthonius F. Raffel, S.T., M.T.
Architecture
anthoniusraffel412@gmail.com
Khairun University



Utdin Furqon Amali, S.T., M.Sc.
Architecture
utdinfurqon@gmail.com
Khairun University

SOCIALIZATION OF THE *ECO-FRIENDLY-HOUSE* PROGRAM TO SUPPORT ENVIRONMENTAL HEALTH IN KAYU MERAH VILLAGE, TERNATE CITY

Sherly Asriany¹, Anthonius F. Raffel², Utdin Furqon Amali³

^{1,2,3}Architecture Study Program, Khairun University, Ternate, North Maluku, Indonesia

Correspondence Author: sherly@unkhair.ac.id.

Abstrak: Ternate City is classified as having a moderate to low poverty level. Education level in the Kayu Merah of Ternate neighborhood is as follows: 884 people have completed primary school, 1,161 have done secondary school, and 502 have a university degree. We're working with the community in Kayu Merah on this PKM Programme. PKM method involves identifying the issues that need to be addressed. PKM activities include awareness-raising, training, and active

involvement in planned activities, such as fostering critical awareness among the community about the importance of active participation in environmental management and increasing knowledge and understanding of eco-friendly-house. We've seen the formation of community groups capable of managing environmental health, a rise in awareness about eco-friendly-house, and the early stages of a professional, organised community of environmentally conscious individuals. PKM was carried out as planned, with the aim of providing understanding of the eco-friendly-house programme and promoting environmental health.

Keyword: Socialization, Eco-friendly-House, Health, Environment.

INTRODUCTION

Kayu Merah Village is located in the South Ternate District of Ternate city. The population of Kayu Merah Village is 6,058 people or 1,237 families in 2023. Administratively, the Kayu Merah Village area is divided into 5 (five) RW and 14 (fourteen) RT. The administrative boundaries of Kayu Merah Village are to the north, bordered by Ubo-ubo Village and Bastiong Karance, to the south by Kalumata, to the east by the Ternate Sea, and to the west by Tabona Village. Geographically, Merah Village is low-lying, the distance to the center of Ternate city is 20 km with an area of 49 hectares.

In general, the social environment of the community in Kayu Merah Village, South Ternate District, Ternate City is still classified as a middle to lower class neighborhood. This can be seen from the large number of poor families. This condition results in the community not being environmentally productive. The high level of poverty among the people of Kayu Merah Village, South Ternate District, Ternate City is caused by their livelihoods, which are generally as employees, small traders and other odd-job workers.

This condition is exacerbated by the low level of education. This can be seen from the level of education in Kayu Merah Village, South Ternate District, Ternate City, namely the elementary and junior high school education level of 549 people, the high school level of 3,703 people, and the undergraduate level of 832 people. This certainly has an impact on the welfare of the community, such as the high level of unemployment in the productive community group (18-50 years old). The number of unemployed people in Kayu Merah Village, South Ternate District, Ternate City at present is: 3,404 out of 6,058 people or 56.19% of the total population. The following is a visualization of the condition of the community in Kayu Merah Village, South Ternate District, Ternate City, North Maluku Province.



Figure 1. The condition of the community in Kayu Merah Village, South Ternate District, Ternate City

The condition of the community as seen in the picture above shows that they are classified as middle and lower middle society. For this reason, it is necessary to increase

the knowledge and technology of *eco-friendly houses*. In the concept of designing an environmentally friendly house that deserves attention at the initial stage is the problem of the design of the house itself, how to arrange the space (plan), layout, and shape of the building, how to be in harmony with nature and the surrounding environment. The problems of Partners, in this case the entire community, including the Kayu Merah Village apparatus, South Ternate district, among others, can be explained in table 1 below. Through the Community Service Program (PPM), the community service team tries to socialize the concept of environmentally friendly houses in Kayu Merah Village.

Table 1. Aspects of Partner/Community Problems

Environmental Health Aspects	Technical Aspects
Dense and slum settlements	There is no empowerment for the community in environmental health management from the government
Behavior of building a house that is not in accordance with the concept of an environmentally friendly house	There are no organizations or community groups that provide education about the technology of building environmentally friendly houses

METHOD

General Concepts

The implementation of this Community Partnership Program (PKM) was carried out with community partners in Kayu Merah Village, South Ternate District, Ternate City. Some things that need to be considered to involve the community in this activity are:

- a. agreement and understanding with the local government (Kelurahan) in the implementation of planning.
- b. Planning adjustments based on aspirations from the community.
- c. Implementation of activities by the community.

Approach Methods Used

The approach method of the Community Partnership Program (PKM) that will be carried out on community groups begins by identifying the problems faced. The activity will be carried out by the PKM team, not only providing counseling and training to partners but also involving partners to play an active role in all planned activities. The PKM team as a facilitator and partners as a group will be empowered so that partners will be involved in every activity planning and decision taken. This is done to narrow the gap that may be felt by partners so that PKM teams and partners can work together and synergize for the success of the program. The steps to be implemented are as follows:

- a. Approach to local community leaders and permission from regional leaders (sub-districts, RW, RT)
- b. Approach to residents who have the willingness, concern, and ability to carry out programs and can be a driving force in their environment.
- c. Problem mapping from various aspects, including data collection on the number of houses.
- d. Establishment of environmental committees or working groups, preparation of work plans, and agreement on citizen contributions in the form of material and non-material.
- e. Socialization, and dissemination of information on activity programs.

- f. The evaluation was carried out through questions and answers to see the participants' ability to understand the socialization material.

RESULTS AND DISCUSSION

Below are photos of service activities with the title "Socialization of the *Eco-Friendly-House Program* to Support Environmental Health in Kayu Merah Village, South Ternate District, Ternate City". By participating in this socialization process, it is hoped that the community will gain knowledge about environmentally friendly homes and environmental health. After participating in this service program, it is hoped that the community will be able to:

- a. Reveal and explain the characteristics of an eco-friendly home
- b. Able to disclose the requirements of environmental health
- c. Able to implement environmentally friendly homes in their lives.

Implementation of Activities

A. Preparation

- a. Location Survey

The location survey was carried out in an effort to determine the place and time of implementation and adjust to the readiness of the local community. In addition, location surveys are also used to coordinate with village officials and do things related to licensing community service activities. The results obtained from the location survey are preliminary data on human resources in Kayu Merah Village, South Ternate District, Ternate City who will be directly involved in the socialization process. From the results of the survey, it was identified that the ladies and gentlemen were the main targets of the environmentally friendly housing program.

- b. Service Team Meeting

The preparatory meeting for community service activities was held before the implementation of the activity. The results of the meeting were technical preparations for implementation, the person in charge of each activity, and the formulation of cost estimates as previously determined.

B. Implementation

The implementation of community service in Kayu Merah Village, South Ternate District, Ternate City is focused on strengthening institutional and community capacity in environmental management. In particular, the activity is prioritized on providing socialization of environmentally friendly houses. The details of the implementation of the activity are carried out through several stages, as follows:

- a. Meeting with village officials and representatives of community leaders. The meeting with village officials, RW heads, and representatives of community leaders, was carried out to provide information and take care of permits for the series of service activities that will be carried out.
- b. Program Socialization. It was carried out with the people of Kayu Merah Village, South Ternate District, Ternate City, community leaders, and local administrators. This meeting was given to convey more detailed information about the activities to be carried out. Along with the socialization stage to the community, it also analyzes the potential condition of the area. The results of the analysis then concluded that Kayu Merah Village, South Ternate District, Ternate

- c. City has the potential to implement an environmentally friendly house program. This is based on several indicators, including the number of residents' houses, especially those in coastal areas in the Kayu Merah Village, South Ternate District, Ternate City, have not met the requirements as eco-friendly houses.



Figure 2. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

C. Program Assistance

Program assistance is carried out by the team not only limited to monitoring and evaluation but also maintains the sustainability of activities that have been started in the community. Sustainability of environmental management through the eco-friendly house program is important to be monitored. The sustainability of this program is one of the indicators of the success of the program which shows that there has been a critical awareness in the community of the importance of starting to actively participate in protecting the surrounding environment.



Figure 3. Socialization of Community Service Programs Attended by the Village Head and the Community of Kayu Merah Village, Ternate City

D. Results Achieved

The results achieved from Community Service (PKM) activities in Kayu Merah Village, South Ternate District, Ternate City are as follows:

- The formation of critical awareness in the community regarding the importance of passive participation in managing the environment.
- Increasing public knowledge and understanding of environmentally friendly houses.
- The formation of a community that is able to manage environmental health.
- The creation of a community that has awareness of the environmentally friendly home program.

- e. The formation of an initial survey of an environmentally conscious community that is organized and has professional management.

E. Socialization Materials

The implementation of the activity was carried out on June 11, 2024, in the meeting room of the Kayu Merah Village office, South Ternate District, Ternate City. The activity started at 09.30-11.30 WIT. The socialization materials during the implementation of the activity are as follows:

Sosialisasi Program Rumah Ramah Lingkungan (*Eco-Friendly-House*) Untuk Mendukung Kesehatan Lingkungan Di Kelurahan Kayu Merah, Kota Ternate

Tim Sosialisasi:
Dr.Ir. Sherly Asriany, S.T., M.T.
Utdin Furqon Amali, S.T., M.Sc.
Dr.Ir. Anthonius F.Raffel, S.T., M.T.

Ternate, 11 Juni 2024

Figure 4. Slide 1. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

ECO-FRIENDLY-HOUSE



**RUMAH
RAMAH
LINGKUNGAN**

Figure 5. Slide 2. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

Healthy House

- Dengan adanya pandemic Covid-19 → Manusia menyadari bahwa Kesehatan adalah asset yang paling berharga dibandingkan Harta, Uang, Kedudukan, Energy dan lainnya. Semua harta, Uang, kedudukan dan lainnya tidak bisa menggantikan Kesehatan seseorang.
- Bangunan didirikan bukan untuk menghemat Energy, Air, Material dll tetapi untuk manusia yang menghuninya agar lebih Sehat, lebih Produktif dan lebih sejahtera (**Healthy, Productive and Well Being**) secara Jasmani, Pikiran, Emosional, Spiritual dan sosial.

Figure 6. Slide 3. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

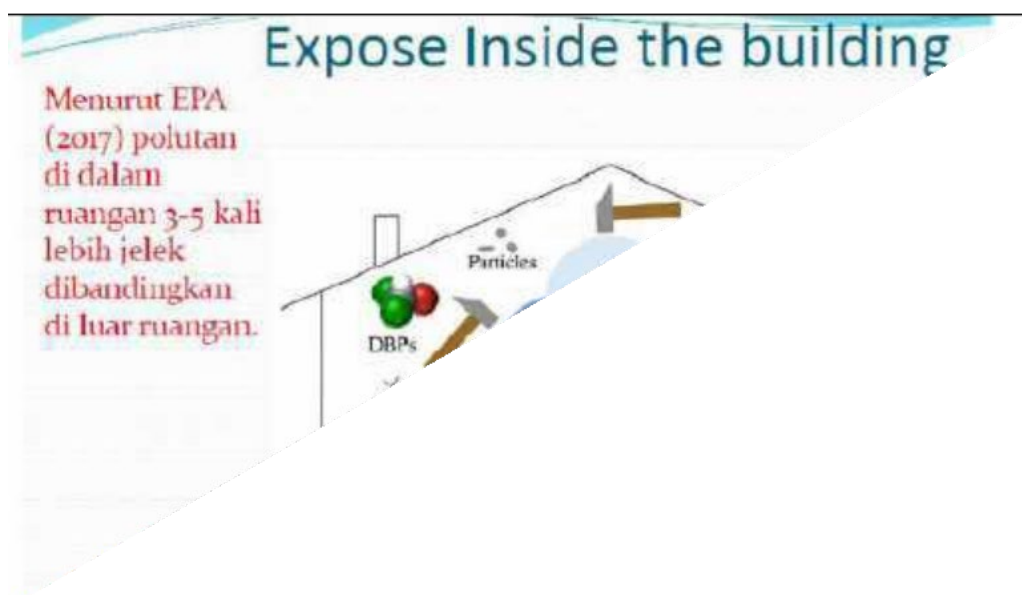


Figure 7. Slide 4. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

SELAMAT DATANG DI RUMAH RAMAH LINGKUNGAN

Rumah yang pembangunannya memperhatikan kelestarian lingkungan dan mengurangi dampak kerusakan lingkungan



Figure 8. Slide 5. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

CIRI RUMAH RAMAH LINGKUNGAN

1. HEMAT & EFISIEN ENERGI

- Cahaya matahari untuk penerangan ruangan di siang hari
- Sirkulasi udara yang baik dapat menghilangkan kelembaban ruangan (panas)
- Penggunaan peralatan yang hemat energi



Figure 9. Slide 6. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

2. MATERIAL BANGUNAN RAMAH LINGKUNGAN

- Pemanfaatan material bangunan yang dapat diperbaharui oleh alam
- Pemanfaatan material bangunan yang dapat di daur ulang



Figure 10. Slide 7. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

3. PEMANFAATAN TEKNOLOGI HIJAU

Pengumpulan, penghematan dan pemanfaatan air hujan untuk pemenuhan kebutuhan air sehari-hari

Mempunyai sistem drainase yang baik

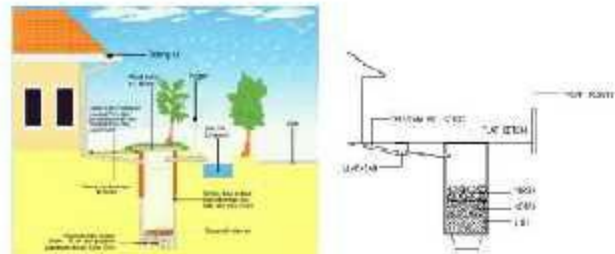


Figure 11. Slide 8. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

4. SISTEM PENGELOLAAN LIMBAH (SAMPAH)

- a) Pengurangan limbah/sampah
- b) Daur ulang limbah/sampah
- c) Pakai Ulang limbah/sampah



Figure 12. Slide 9. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

5. RUANG TERBUKA HIJAU

Ruang terbuka hijau berfungsi sebagai pembersih kualitas udara di sekitarnya

Sebagai area resapan air



Figure 13. Slide 10. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

KESIMPULAN

Mari kita bersama-sama berkontribusi dalam menjaga kelestarian lingkungan dengan membangun rumah yang berwawasan lingkungan

Diperlukan kerjasama yang erat antara lembaga pendidikan, lembaga penelitian, masyarakat, arsitek, pengembang, kontraktor, pemerintah pusat, pemerintah propinsi, pemerintah daerah agar konsep rumah ramah lingkungan lebih disebarluaskan dan dijadikan pedoman untuk pembangunan rumah dan gedung di seluruh Indonesia



Figure 14. Slide 11. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City



Figure 15. Slide 12. Socialization of Community Service Programs Kayu Merah Village, South Ternate District, Ternate City

" SOSIALISASI RUMAH RAMAH LINGKUNGAN (ECO FRIENDLY HOUSES) UNTUK
MENDUKUNG KESEHATAN LINGKUNGAN DI KELURAHAN KAYU MERAH,
KOTA TERNATE

Waktu/Tanggal : Sabtu, 31 Juni 2023

NO	NAMA	PEKERJAAN	TANDA TANGAN
1	MHR MUHAMMAD	IRT	[Signature]
2	HADISA HI LUOSI	IRT	[Signature]
3	RAGMANI SALIMES	KERUS BUKU	[Signature]
4	ATIKA ALI	IRT	[Signature]
5	FATMA RAMEE	IRT	[Signature]
6	NARSA UJASAT	IRT	[Signature]
7	ICA-IBRAHIM	BAJUAL	[Signature]
8	SACE HAJOHAN	IRT	[Signature]
9	LILY SAGAH	KATUARJOSIA	[Signature]
10	TANI ABDULLAH	IRT	[Signature]
11	GENA PANDORA	IRT	[Signature]
12	NURSAH DO SAID	KUDUS BUKU	[Signature]
13	MURQAN TAMARA	RT 10 BUKU	[Signature]
14	ARCA KUBILAU	IRT	[Signature]
15	HABIBA NANA FI	BAJUAL	[Signature]
16	MURQAN TAMARA	RT 10 BUKU	[Signature]

KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI UNIVERSITAS KHAIRUN			
Kampus Gajah Putih Pas 55 Ternate Kota Pas 57119 Ternate Selatan Telp. (0921) 3119003, 3119004, Fax. (0921) 3119001, 3119002			
17	H. LUKMAN SUCOS	RT 02	[Signature]
18	MEIDIANA ABD RAHM	IRT	[Signature]
19	UTISANTI ABDULLAH	IRT	[Signature]
20	MURQAN KHAIRUNORRIZ	GURU	[Signature]
21	SATIA YULIF	IRT	[Signature]
22	TITIPANI HAFEL	IRT	[Signature]
23	MUHLILA MAJALA	IRT	[Signature]
24	MUTOMA LILIANA	COX DE OKUM	[Signature]
25	HADISAN KAMBI	IRT BUKU	[Signature]
26	RUBRI HASRI	IRT	[Signature]

Figure 16. List of Attendees for Community Service Program Socialization in Kayu Merah Village, Ternate City

F. Next Stage Plan

Community assistance in sustainable environmental management has been successfully initiated through a community service program carried out by the community service team. The implementation process has gone as planned and the residents who are participants are enthusiastically involved in maintaining the sustainability of the program. The assistance area that is still in the Ternate City area has the potential for program development. As a follow-up to the programs that have been implemented, the following are the targets of community activities that will be carried out next:

- a. Maintaining the sustainability of the eco-friendly home program
- b. Focusing the program on eco-friendly homes and environmental health.
- c. Assistance for the sustainability of the program is always maintained.
- d. Initiation of community assistance in establishing cooperation with partners who have the potential to develop activities that have been built to develop community activities, especially those that can improve environmental health.

CONCLUSION

The implementation of community service (PKM) carried out by the PKM team has been running as planned, not only limited to providing an understanding of the environmentally friendly house program, but also by providing socialization about environmental health. From all the activities that have been carried out, it can be concluded as follows:

- a. The community service program in Kayu Merah Village, South Ternate District, Ternate City still needs to be followed up to maintain the sustainability of the program.
- b. Developing the potential of the region is by initiating the eco-friendly-house movement.
- c. The need to expand the cooperation network that can carry out sustainable productive programs.

Acknowledgement:

Thank you to the Village Head, the staff of Kayu Merah Village and the residents of Kayu Merah Village who attended the Eco-Friendly-House Socialization event so that this socialization program could be carried out properly.

BIBLIOGRAPHY

- Anugrah, Paras, Rahayu, Elis Sri, dan Sanitha, Onie Dian, 2023, *Pendekatan Arsitektur Ramah Lingkungan Sebagai Prinsip Bangunan Sekolah Berbasis Alam*, Jurnal Prespektif Arsitektur, Volume 18, No.1.
- Apsari, J., 2007. *Kajian Pengembangan Roof Garden Di Metropolitan Dalam Upaya Mengatasi Fenomena Urban Heat Island*, Skripsi. Intitut Pertanian Bogor.
- Danita, R., dan Sutrisno, S., 2014, *Analisa Pemilihan Material bangunan Dalam Mewujudkan Green Building (Studi Kasus: Gedung Kantor Perwakilan Bank Indonesia Solo)*, Pendidikan Teknik Bangunan.
- Ermadani, Bahar, Fetty Febriasti, dkk., 2023, *Pelatihan Pembangunan Rumah Ramah Lingkungan Ditinjau Dari Aspek Pemanfaatan Cahaya Alami Di Desa Nyogan*, Jurnal Karya Abdi Masyarakat, Volume 7, No.1, Juni.
- Frick, H., dan Suskiyatno, F.B., 1998, *Dasar-dasar Eko-Arsitektur: Konsep Arsitektur Berwawasan Lingkungan Serta Kualitas Konstruksi dan Bahan Bangunan Untuk Rumah sehat dan Dampaknya Atas Kesehatan Manusia*, Yogyakarta, Kanisius.
- Frick, H., 2008, *Pedoman Karya Ilmiah*, Yogyakarta, Kanisius.
- Hanum, M., dan Murod, C., 2011, *Efisiensi Energi Pada 'Smart Building' Untuk Arsitektur Masa Depan*, Prosiding Seminar Nasional AVoER 3, Palembang, 26-27 Oktober 2011, ISBN: 979-587-395-4.
- Husnan, Ifan, dan Prayogi, Lutfi, 2017, *Kajian Konsep Arsitektur Ramah Lingkungan Pada Kawasan Kampung Vertikal Di Kampung Cingised*, Jurnal Purwarupa, Volume 01, No.1.
- Jatmiko, Ary Dwi, dan Angkoso, Agustinus, 2018, *Desain Denah Rumah Tinggal Untuk Kebutuhan Rumah Ramah Lingkungan, Studi Kasus: Rumah Tinggal Di Pondok Candra, Sidoarjo*, Jurnal Iptek: Media Komunikasi dan Teknologi, Volume 22, No.1
- Mediastika, C.E., 2013, *Hemat Energi dan Lestari Lingkungan Melalui Bangunan*, Yogyakarta, ANDI.
- Naura, Yasintha Rahma, dan Larasati, Dewi, 2021, *Isu-isu Prioritas Dalam Penerapan Eco-House Berdasarkan Gaya Hidup Hemat Energi dan Ramah Lingkungan*, Jurnal Nature: National Academic, Journal of Architecture, Volume 9, No.1.
- Prianto, E., 2012, *Strategi Desain Fasad Rumah Tinggal Hemat Energi*, Jurnal Pembangunan Kota Semarang RIPTEK, 6(1), 55-65.
- Prianto, E., 2013, *Aplikasi Green Wall pada Gedung Pemerintah dalam Menciptakan Kenyamanan di Kota Semarang: Sebuah Studi Awal*, Jurnal Pembangunan Kota Semarang Riptek, 1-16.
- Purwanto, E., 2007, *Ruang Terbuka Hijau Di Perumahan Graha Estetika Semarang*, ENCLOSURE, 6(1), 49-58.

- Putranto, A.D., 2014, *Pengembangan Rumah Sederhana Sehat (RSH) Menjadi Rumah Sederhana Sehat Berwawasan Lingkungan Di Kabupaten Malang*, Jurnal Ruas, 11(2), 60-74.
- Puarada, Alifah M.I., dan Nirwansjah, Rullan, 2015, *Konsep Ramah Lingkungan Dalam Hunian Dengan Memperhatikan Faktor Iklim Di Daerah Tropis*, Jurnal Sains dan Seni ITS, Volume 1, No.1.
- Simbolon, Hendra, dan Nasution, Irma Novrianty, 2017, *Desain Rumah Tinggal yang Ramah Lingkungan Untuk Iklim Tropis*, Jurnal Education Building, Volume 3, No.1.
- Wahyudi, A., 2013, *Perancangan Bangunan Tradisional Sunda sebagai Pendekatan Kearifan Lokal, Ramah Lingkungan dan Hemat Energi*, Prosiding PESAT, 5.
- Wibowo, Andi Prasetyo, 2017, *Kriteria Rumah Ramah Lingkungan (Eco-Friendly-House)*, Jurnal Muara: Sains, Teknologi, Kedokteran, dan Ilmu Kesehatan, Volume 1, No.1.