Model of local wisdom values as an independent and cultured-environment village in bantar karet community, cijalingan village, cicantayan district, sukabumi regency

M Hidayat1*, M D Kembara2, H Mulyani3; P H Sewu4
1,2,4 General Education, Universitas Pendidikan Indonesia
3 UIN Sunan Gunung Djati Bandung
*mupidhidayat@upi.edu

Abstract. Human beings are highly dependent on nature as a means of fulfilling their needs. However, nature is no longer able to fulfill human needs nowadays due to the environmental degradation caused by humans’ hands. Therefore, we attempt to answer the existing challenges by implementing the ecovillage model as previously implemented in Cimaung Village. Similarly, the implementation was also rerun in a different village called Cijalingan Village, Cicantayan District, Sukabumi Regency. This ecovillage model was then implemented by the means of socialization, group formation, group guidance, and group empowerment. The results of the ecovillage model implementation in Cicantayan Village showed that the community was given an understanding and could know the importance of protecting the environment. Besides, this implementation in fact could also change people's views regarding inorganic and rubber waste. In the same time, people would become more aware of the importance of creating a good life in harmony with nature as a means of building independent individuals in accordance with the ecovillage principles.

1. Introduction

Daily, human beings in fact have a very close dependence on their environment. Like other living creatures, humans, every time on the face of the Earth, are influenced and influence the surrounding environment, both living and non-living environments. On the other hand, humans also must fulfill their primary and biological needs in the form of air to breathe, water for drinking, and types of plants and animals as a means of food sources. As for the non-primary needs, humans are in demand for the satisfaction in terms of material objects or wealth exploited from nature, recreation, and entertainment to enjoy the beauty of nature.

In order to achieve their welfare, human beings attempt to use existing environmental resources. Some people have a wrong perspective on resources so that their actions can cause environmental damages. On the other hand, there are also groups of people who try to initiate the development. They concern on pursuing the rate of economic growth by making a great deal number of productions so that the exploitation of the natural environment as a result cannot be avoided [1]
On occasion, human beings are unaware of where they live and stay, as if human life is free and apart from the support of the environment. Therefore, human beings are frequently not wise in managing nature and environment. Such unwise human behavior can be observed when they do deforestation which causes forest fires and forest ecosystems disruption. In addition, they also frequently throw the household waste into the river that causes river siltation and river pollution. Furthermore, the flow of urbanization also contributes to make the rural lands unprocessed. As a matter of, the way people interact with the environment has promoted a great number of issues in the world and the majority of the world community believed that this series of issues can cause unsustainable life on the face of the Earth for a long time [2].

In principle, humans unsupported by environments such as air, water, plant species, and animals cannot actually live their lives. Therefore, it is humans’ duty to maintain and manage the environment. In particular, it is also humans’ responsibility for maintaining and preserving various development programs mainly aimed at enhancing the level of welfare of human life and it in fact should be supported by economic, social, natural, and environmental or ecosystem means.

Although the concerns on the environmental issues began to emerge, it does not make those issues solved automatically. In fact, environmental problems undeniably continue to emerge and develop, and even tend to move in an increasingly alarming direction. In the same time, the efforts used to prevent and overcome environmental problems are overwhelmed by the environmental damage actions. As a result, the environmental problems continuously occur and increasingly develop out of control [3]

The leaders of countries in the world have agreed that the development paradigm no longer emphasizes only on economic growth, but also integrates social, cultural and environmental factors. Basically, the development paradigm is known as sustainable development. The concept of sustainable development has become a popular concept and an international world focus since it was confirmed at the Earth Summit in Rio de Janeiro in 1992 [4].

Sustainable development is regarded as a new perspective of development that is committed to contributing to the future [5]. In the 2000, the concept of sustainable development was firstly popularized as the notion of development in which it did not only emphasize the fulfillment of short-term needs but also considered the fulfillment of the future needs [6]. The sustainable development on the basis of insightful environment is considered as a conscious and planned effort which integrates the environment, including resources, into the development process in order to ensure the ability, welfare, and quality of life of present and future generations (Law No. 23 of 1997).

In general, development can be viewed as planned efforts to change human cultures in order to increase the to-be-fulfilled type, quality, quantity for satisfying primary or primary needs as a means of improving the welfare of human life. In particular, sustainable development is considered as an idea of fundamental development patterns in the consideration of the sustainability of environmental resources. Therefore, the resources can still be used optimally by the future generation to survive. In other words, sustainable development is also defined as the way people nowadays build for the present needs and provide the foundation and opportunity to fulfill future needs and achieve social justice from generation to generation [1].

In accordance with sustainable development policies in Indonesia as outlined in agenda 21, sustainable development essentially should pay attention to poverty reduction. In fact, it is obvious that poverty is indeed regarded as one of the causes of degradation in the environmental quality and the negative impact of development. Similarly, the environment degradation can be the cause of the
emergence and development of poverty. In other words, the maintenance of natural resources is crucial as a means of development and providing guarantees for the poor whose lives are still dependent on natural resources or biophysical environment.

One of the concepts regarding the sustainable development is ecovillage (an independent and cultured village). Ecovillage was introduced by Diane and Robert Gilman of the Context Institute in September 1991 at a Gaia Trust seminar in Thy, Denmark. This concept was developed as an option and responsibility to restructure the divisions of cultural or social structures and the increase of deteriorating practices towards the environment on the face of the Earth. Gilman and Diane defined ecovillage as a condition that has five principles covering human scales, settlements along with the facilities, human activities integrated with nature, health supports, and sustainable human development [7].

In addition, ecovillage is also defined as an ideal concept regarding the balance between social, ecological and spiritual aspects in the interactions between humans and environment for the sustainability of life on the Earth as a solution for various major environmental issues. Then, it functions to ensure human welfare, health, and safety. In this case, the ecovillage proponents assume that traditional life has fairly good policies to realize this concept. With respect to Indonesian people who have diversity in culture and customs, they certainly have various local wisoms reflected through their natural and social environments [8].

More and more, ecovillage development is considered to be important for it has various objectives and benefits. First, ecovillage development is regarded as a way out of inequality and imbalance in urban-rural development in this region by restoring comfortable rural life and providing business opportunities as a means of fulfilling the basic needs and the growing needs of people. Second, it functions to reduce urban density, lower urbanization, and consequences through the equitable development and improvement of the quality of life in rural areas. Third, it is used to optimize resources and efficient the use of fuel. Therefore, it also can encourage the energy independence of rural communities. Consequently, the implementation of this concept can be seen as an effort to improve the quality of life of individuals, families and communities, especially those living in rural areas [8].

The scope of ecovillage covers: 1) developing spatial and landscape models of rural areas in providing space to support the fulfillment of basic needs of the people; 2) developing transformation model of optimization and transactional materials and energy as a means of fulfilling the basic needs of individuals, families, and communities; 3) formulating an appropriate and effective strategy in solving the poverty problems in rural areas by developing regional economic models that support work and business opportunities (especially for poor families), both through increasing productivity and exploring the potential of local natural resources, increasing economic activities of added value, applying appropriate technology to increase the added value of primary products and its derivatives, developing institutional systems, facilities and infrastructure, and rural infrastructure and supports for sustainable agricultural development, developing models for increasing resilience and family empowerment and community empowerment, including through the fostering and the mentoring systems for developing independent rural areas in terms of economy, technology, social and culture, and agriculture, animal husbandry, fisheries and industry; 4) designing thermal systems that meet requirements that support comfort (temperature-resistance, water resistance, soundproofing, and ergonomic aspects) of individual and family life, and save household energy; 5) designing optimization of natural resources as a means of providing recorded rural capacity of materials and energy to the community through adequate technology and infrastructure [8].
The ecovillage unit is viewed as a scale where everyone can identify and recognize the community, and the extent to which everyone can have influence on other opportunities [7]. The ecovillage community members are united by ecological, social, economic, spiritual, and cultural values. A village is categorized as ecovillage in the moment when people care about the environment and attempt to optimize material and energy transactions with the environment. The village of ecovillage is populated by people who strive to save energy by choosing alternative systems for managing waste, water, and electricity independently as an example. Conversely, a consumptive lifestyle community does certain actions that affect the degradation of natural habitats, and they over-rely on fossil fuels (oil, gas, and coal).

With respect to the local wisdom and sustainable development through the ecovillage concept, it aims at changing the community mindset in behavioral changes. Hence, they can more concern on the environment. In order to realize the independence of rural communities, it can be done by paying attention to the sustainability of the resource availability in the village and it is the main objective of the ecovillage development. Therefore, the ecovillage development must be supported by all members of the village community. Thus, the ecovillage development will turn good when it is initialed by the village community itself. Ecovillage community members are united by ecological, socio-economic, spiritual, and cultural similarities. An ecovillage city or village is usually populated by the people or communities who care about the environmental sustainability. As one of their efforts, they attempt to optimize material and energy transactions with their environment.

Indonesia is well-known by its cultural diversity. Local wisdom in environmental management is one form of community cultures regarded as a result of adaptation to the environment in which they live for a long period of time. Although, at the present time, some of the local wisdom has disappeared along with the era of globalization, it is not too late to re-explore the local wisdoms and develop them in a new and more modern concept in the form of ecovillage [8].

The environmental empowerment carried out in Bantarkaret Village is a follow-up of the study conducted in Cimaung Village. The empowerment of independent villages that cares about the environment in Cijalingan Village is needed by the community. In fact, it can be a means of managing the waste from the sandals industry. This independent village empowerment project was firstly initiated due to the community unrest looking at the 7 trucks full of sandal waste in a week. The sandals industry wastes in Bantarkaret Village polluted the environment and caused discomfort to the community. Unfortunately, the waste could not be processed by the community due to the inability of the people and unavailability of the needed equipments. As a result, the wastes were only placed on the riverbank and burned by the community. The material needs to finance and support life which caused unresolved waste problems led to the increasing number of waste. This major issue in fact will continuously undergo environmental losses and people cannot live healthily when the waste management is not well-established. Therefore, the community is in great demand on having waste processing skills. Through this framework of thinking, the researcher plans to empower the community through independent villages based on the existing local wisdoms and spiritual values in the community.

2. Methods

This present study was conducted in Cijalingan Village, Cicantayan District, Sukabumi Regency. The descriptive method was employed in this study and also applied a series of steps such as, socialization, group formation, group guidance, implementation of ecovillage empowerment.
The socialization activity was commenced by approaching the community leaders and the sandal craftsperson community as the empowerment object in this study. Additionally, the survey of the objects and the objects’ environment was also conducted and it was also regarded as another approach. With respect to this stage, this approach was carried out by implementing the empowerment in order to directly observe the environmental conditions covering lands, water, a huge number of garbage, people living in the environment, people managing the waste and pollution in the environment, waste management officers, individuals or groups who disposed waste and littered in the environment carelessly.

The second stage is group formation. This stage was carried out based on figure and public awareness in the community. The selection of the figures participating in the empowerment was based on the regions with high level of awareness of the importance of protecting the environment. The related RT and RW as the leaders in this initial stage were then chosen as the participants in this empowerment activity and the community was as well given a chance to get involved as the participants in this activity. This group formation was carried out by means of persuasion from the empowerment executors to one of the community leaders. Then, these invited leaders were encouraged to invite other community leaders. As a matter of fact, this persuasive action was assumed to be effective because it in principle helped instill the community awareness in regard to the importance of managing waste in order not to pollute the environment.

The third stage is group guidance. This stage was carried out by providing information in the form of a concern for the environment based on the existing local wisdom and approach of spiritual values in the community. The giving of values is based on the principle of ecovillage which carries out the environment through the values of local and spiritual wisdom so that it is more easily accepted by the community. In addition, this group guidance was also conducted by intensively approaching the figures in the community. Then, it further aimed at providing them with more in-depth and direct information on the basic objectives of the groups in order to preserve the environment.

The fourth stage is the implementation of ecovillage empowerment. The empowerment by means of bringing speakers together with community groups who are responsible for managing the waste from the sandal industries was the initial stage in this empowerment. In this stage, the activity was carried out in the form of exchange of experiences between presenters and community groups, the re-implementation of the local wisdom and spiritual values that supported the maintenance of a beautiful environment. In fact, it promoted a series of benefits as a means of instilling the community awareness persuasively and reflecting the conditions of people who were already empowered with those who have not been empowered. As a result, the empowered community groups would automatically think independently to manage for the betterment of their environment.

In addition to the execution of the four stages above, the direct survey was also carried out in this study. In this regard, it was employed to assess the ecovillage elements with the ecological, social, economic, and spiritual parameters in the daily lives of the residents in Cijalingan Village.

3. Results and Discussion

The study on the potentials of Cijalingan Village, Cicantayan District, Sukabumi Regency resulted in the establishment of independent village based on environmental insight. Based on the issues discovered in Cijalingan Village, it is obvious that the people are not fully aware of the importance of
environmental cleanliness. In addition, the existence of a home-based business, such as a sandal-making business has also triggered environmental damage due to the large amount of slippery waste thrown into the riverbanks and burned there. As a result, it undeniably promoted environmental pollution. Then, these various environmental problems, soil damage, and air pollution will continuously occur when they are neglected.

The activity was commenced by inviting community leaders from Cijalingan Village to get involved in the socialization on environmental empowerment. This program focused on community independence and local wisdoms. In addition, this socialization activity aimed at establishing the community awareness on the importance of the environment and dealing with the environment wisely. Most importantly, they were also given an explanation of the ecovillage insight. This activity was held for 5 months and the service activities were held every Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday at 08.00-12.00 WIB at Kang Iwan’s house. During the socialization, opinions or input of the community were warmly welcomed in order to carry out the data collection process and mutual agreement.

After the empowerment activities targeted to the community, the following elaborations were the results of the activities during the implementation process: 1) the community could know the importance of protecting the environment for it was undeniable that humans were very dependent on nature as a means of fulfilling their needs, such as eating, drinking, and shelter. In fact, all these aforesaid things were provided in the nature, 2) the explanation given during the socialization activity in fact had transformed the people's points of view regarding inorganic waste and rubber waste. The waste and rubber waste in Cijalingan Village could be made use of in accordance with the needs of Cijalingan Village community, 3) creating the life in harmony with nature was crucial in building sense of independence in accordance with the ecovillage principles. Thus, in the future, the environment should become one of the considerations in carrying out development since development is carried out not only to meet the necessities of life at the time, but development is also carried out to fulfill the needs of the community in the future.

In principle, ecovillage is built on the integration of four factors consisting of social, economic, ecological, and religious factors. These four factors must be interpreted into several more operational parameters so that the ecovillage characteristics can be implemented in the chosen areas, in this case, Cijalingan Village [10].

Ecovillage must reflect the activities of the communities closely related to the spiritual, social and ecological values. Besides these three things, there are also more important things to identify related to the division of territories for agricultural management, buying and selling (markets), and settlements. Additionally, it is important to ensure the availability of various facilities that can be shared collectively by the whole community, such as meeting halls and recreation areas. It is undeniable that these things are important to increase the employment opportunities and social interaction within the community. For the purposes of empowerment, ecovillage is viewed as a part of human with the environment, especially all things closely related to socio-economic factors [11]. In more detail, Ecovillage in fact must have 21 main elements [12], as clearly displayed in the following Figure 1.
As portrayed in the Figure above, the 21 elements are hardly found in the industrial areas, urban areas, and even residence. Therefore, these elements were used to observe the ecovillage conditions in Cijalingan Village, and they were depended on the fulfillment or the unfulfillment of the 21 elements. As a result, if the 21 elements are completely fulfilled, Cijalingan Village can be then included as an ecovillage.

3.1 Ecological Parameters in the Ecovillage Implementation in Cijalingan Village, Cicantayan District, Sukabumi Regency

Cijalingan village is considered as a rural area. The ecovillage is not only as a place to live but rather as a unity of the system of life. In other words, the community can live in their village and how their village can live the principle of its inhabitants. In this regard, it can be concluded that an ecovillage as a place to live must have one or a set of potentials that can be used to support the community naturally. Cijalingan Village has more than 80% of agricultural area and 7,415 inhabitants that were directly related to agriculture. The results of the study on the ecological parameters in Cijalingan Village can be seen as follows:

The majority of the Cijalingan Village community were considered as the people who regularly consumed healthy food and claimed themselves as environmental activists. However, the Cijalingan Village community was assumed to not be closely related to the nature as they more frequently had interactions with home industry work rather than job-based nature. With respect to the issue of environment-friendly, the Cijalingan Village community admitted that the majority of their recent life activities were not yet environmentally friendly. In fact, one of the reasons was that they have not found the right methods in processing industrial waste.

Table 1. Eco-village Elements for Ecological Parameters in Cijalingan Village
3.2. Social Parameters in the Ecovillage Implementation in Cijalingan Village, Cicantayan District, Sukabumi Regency

It is obvious that there were a huge number of uneducated residents followed by the number of educated residents in the middle level with a total of 3,236 people working in the non-agricultural sector. It undeniably affected the social conditions of the Cijalingan Village community [13]. The results of the study based on the ecovillage elements in the social factors can be seen in the following data in Table 2 below:

Table 2. Ecovillage Elements for the Social Parameters in Cijalingan Village

| No | Ecovillage Elements                              | Yes   | No   | Information |
|----|-------------------------------------------------|-------|------|-------------|
| 1  | Healthy Food                                    | √     |      |             |
| 2  | Closeness with Nature                           | √     |      | Partial     |
| 3  | Environmental Activities                        | √     |      |             |
| 4  | Environment-Friendly (ERB)                      | √     |      | Partial     |

| 5  | Shared Work (Gotong royong)                     | √     |      |             |
| 6  | Volunteer                                       | √     |      |             |
| 7  | Consensus                                       | √     |      |             |
| 8  | Conflict Minimization                           | √     |      |             |
| 9  | Celebration                                     | √     |      |             |
| 10 | Value and Norm Maintenance                      | √     |      |             |
| 11 | Good Personal Relation with Openness            | √     |      |             |
| 12 | Physical Conflict between Individual and Groups | √     |      |             |
| 13 | Dominant Parent and Children                    | √     |      | Partial     |
| 14 | Self-Development                                | √     |      |             |
| 15 | Inclusive                                       | √     |      |             |
| 16 | Local Cultural Arts                             | √     |      |             |
| 17 | Physical Activities (sport)                     | √     |      |             |
The results of the ecovillage element study in the social parameters showed that from the 13 evaluation parameters, it is obvious that the nine social elements were frequently implemented by the Cijalingan Village community. These parameters covered the implementation of cooperation for the sake of public interest, the use of consensus in determining decisions related to the public interests, and the minimization of conflicts even though the disagreement in terms of different opinions occurred on occasion. In addition, Cijalingan Village community intensively involved themselves in the direct interaction, especially among individuals and individuals, individuals and groups, and groups and groups. The Cijalingan Village community was considered as the residents who highly uphold the prevailing values and norms, both written and unwritten norms. Therefore, social relations among the residents were considered as the open and well-established relationships. In the field of arts and culture and physical activities, there were some programs such as sports and it was done in the moment of celebrating Indonesia's Independence Day.

The social parameters in the ecovillage elements that have not been implemented by the Cijalingan Village community are self-development, volunteering, dominant relationships with children, and inclusiveness. It occurred since the residents have not yet understood the concepts and they still assumed that those things have no benefits for their social life.

Economic Parameters in the Ecovillage Implementation in Cijalingan Village, Cicantayan District, Sukabumi Regency

The extensive agricultural lands were not followed by the number of farmers of agricultural practitioners working agricultural sector. Consequently, it resulted in the growth in terms of livelihoods but tended to lose its agrarian style. The results of the study based on the ecovillage elements in the economic factors can be seen in the following data:

| No | Ecovillage Elements                  | Yes | No | Information |
|----|-------------------------------------|-----|----|-------------|
| 1  | Pooled Economy                      | ✔   |    |             |
| 2  | Shared Work (Gotong royong)         | ✔   |    |             |
| 3  | Minimum Work Time                   |    | ✔  |             |
| 4  | Volunteer                           |    | ✔  |             |
| 5  | Paid work                           |    | ✔  |             |

80% of the Cijalingan Village areas are agricultural areas [13]. The results of the study on ecovillage elements in economic parameters showed that the Cijalingan Village community worked to get paid for long working hours rather than volunteering. However, they also still continued to work together on occasion and help one another for the sake of mutual interests.
Spiritual Parameters in the Ecovillage Implementation in Cijalingan Village, Cicantayan District, Sukabumi Regency

In the spiritual aspect, the Cijalingan Village community was closely related to religious activities or worships. The development of religion-based organizations in fact promoted high intensity of religious activities. In the same time, this high intensity of religious activities fortunately did not affect their tolerance for non-Muslim community. The results of the study in the spiritual parameters can be seen in Table 4 below:

| No | Ecovillage Elements                  | Yes | No | Information |
|----|--------------------------------------|-----|----|-------------|
| 1  | Celebration                          | √   |    |             |
| 2  | Value and Norm Maintenance           | √   |    |             |

The results of the study on the ecovillage elements in the spiritual parameters indicated that the Cijalingan Village community was regarded as a religious community and viewed that the religious activities well-practiced and applied in the daily life. As an illustration, the Cijalingan Village community still celebrates religious holidays. In addition, they not only uphold the written values and norms issued by the government but also uphold the religious-based values and norms, especially the Islamic teachings as the majority of the Cijalingan Village community are Muslims.

4. Conclusion

As a bottom line, with respect to the implementation of ecovillage in rural areas, it in fact uncovers a high diversity. Therefore, it is expected that this ecovillage model can be applied in other villages. Besides, the shape of the village area and its ecology can support the village in providing a high and low linkage with the activities of the people who have ability to apply the ecovillage principles. The implementation of ecovillage principles in Cijalingan Village in fact has not been able to integrate all parameters of the ecovillage principles. As a result, the implementation is still centered on one single factor, such as river cleaning.

Hence, this study should be continuously followed up by more specific studies, especially in relation to the economic, psychological, and cultural potentials of the ecovillage in Cijalingan Village. Besides, the results of the implementation of this ecovillage can be followed by conducting routine services to every household that does not have a settled job using the right use of technology related to the ecovillage materials. As for this activity, the residents of Cijalingan Village should continue the program and collaborate with the formal institutions, such as UPI. Therefore, the institution has full involvement to participate in village development programs.

References
[1] Hadi B S 2006 Membangun Etika Lingkungan Sebagai Basis Pembangunan Berkelanjutan Geomedia vol 4 no 2 pp 117-136.

[2] Widyart M 2011 Kajian dan Rekonstruksi Konsep Eco-Village dan Eco-House pada Permukiman Baduy Dalam Berdasarkan Community Sustainability Assessment Disertasi Institut Pertanian Bogor

[3] Setiawan I 2007 Upaya Mewujudkan Pembangunan Berkelanjutan Melalui Pendidikan Lingkungan Jurnal Geografi Gea vol 7 no 1 pp 1-7

[4] Fauzi A and Oktavianus A 2014 Pengukuran Pembangunan Berkelanjutan di Indonesia Jurnal MIMBAR vol 30 no 1 pp 42-52

[5] Walkowiak E 1996 Sustainable Development as an Economic Development Strategy Economic Development Review pp 75-77

[6] Pratiwi N, Santoso D B, Ashar K 2018 Analisis Implementasi Pembangunan Berkelanjutan di Jawa Timur. Jurnal Ekonomi dan Ilmu Pembangunan vol 18 no 1 pp 1-14

[7] Nurlaelih E E, and Rachmansyah A 2012 Ecovillage Berbasis Kearifan Lokal Sebagai Konsep Alternatif Pengelolaan Desa Berkelanjutan Prosiding Konferensi dan Seminar Nasional Badan Kerjasama Pusat Studi Lingkungan Hidup Indonesia (BKPSL) ke 21 pp 117-124 (Mataram: Pusat Penelitian Lingkungan Hidup Universitas Mataram)

[8] E Ningrum, et al. 2018. The Impact of Local Wisdom-Based Learning Model on Students’ Understanding on The Land Ethic. IOP Conf. Ser. Earth Environ. Sci 145 012086

[9] Sunarti E 2015 Pengembangan Model Ecovillage: Jalan Mewujudkan Kehidupan Penduduk Serta Lingkungan Yang Berkualitas (Bogor: LPPM IPB)

[10] Gaia Education 2015 Ecovillage Design Education (The GEESE)

[11] Kasper D V 2008 Redefining Community in The Ecovillage Research in Human Ecology vol 15 no 1 pp 12-24

[12] Hall R 2015 The Ecovillage Experience as an Evidence Base For National Wellbeing Strategies Intellectual Economics vol 9 no 1 pp 30-42

[13] BPS 2015 Kecamatan Cijalingan Dalam Angka Tahun 2015 (Sukabumi: Badan Pusat Statistik Kabupaten Sukabumi)