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Preface

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**5th INTERNATIONAL SEMINAR
ON SUSTAINABLE URBAN DEVELOPMENT
(5th ISoSUD) 2020**

PREFACE

International Seminar on Sustainable Urban Development (ISoSUD) is an International Seminar held by the Faculty of Landscape Architecture and Environmental Technology, Universitas Trisakti, Jakarta Indonesia. The 5th ISoSUD in 2020 carried the theme “**THE SUSTAINABLE DEVELOPMENT GOALS: INNOVATIONS IN ENVIRONMENTAL SUSTAINABILITY FOR BETTER WORLD**”. The ISoSUD has been conducted regularly every 3 years since 2008, and this year is very special because even though we are all facing a global pandemic, the enthusiasm of researchers and academics in Indonesia and around the world to participate is still high so that this seminar could be carried out virtually.

Due to the Covid-19 pandemic condition since early 2020 that does not allow the committee to gather many people in one place, this year ISoSUD could not be conducted like the four previous ISoSUD in the auditorium for 1-2 days. Thus the 5th ISoSUD was held virtually in 1 day, on Wednesday, August 5, 2020, using the zoom meeting facility. Although virtually, there were 200 participants in the plenary session. The call paper system that has been used since the first ISoSUD in 2008 succeeded in inviting 150 papers that selected into 100 papers were presented using digital technology via video recording. Those 100 papers were selected further to be published in IOP Proceedings Indexed by Scopus. As for the papers that do not pass the selection, they will be published in a national journal.

5th ISoSUD was also special because it involved co-hosting universities consist of eight from within the country and three from abroad: Universitas Tridinanti Palembang; STT Pekanbaru Baru; Universitas Fajar, Makasar; IT Del, Sitoulama, Sumatra Utara; Universitas Pasundan, Bandung; Universitas Negeri Manado; IT PLN, Jakarta; Universitas Pembangunan Jaya; Institute for Spatial Planning and Environment Research, India; University Putra Malaysia and University of Baghdad. Besides that, it was supported as well by professional association Ikatan Ahli Teknik Penyehatan Indonesia (IATPI), study program cooperation body (Badan Kerja Sama Teknik Lingkungan, BAKERMA-TL) and Global Water Partnership Southeast Asia (GWP-SEA).

The advisory board consists of prominent people in the 5th ISoSUD filed. The advisory board acts as ambassadors for the 5th ISoSUD. To some extent the quality of the 5th ISoSUD is approved by the members and academic credentials of its advisory boards.

In the plenary session, there were main speakers who delivered more focused seminar themes, they were:

Welcoming Speaker:

Prof. Dr. Agus Setyo Budi, M.Sc – Head of Service Institutions of Higher Education 3rd Region, Jakarta

Keynote speaker:



Prof. dr. Ali Ghuftron Mukti M.Sc., Ph.D. – Rector of Universitas Trisakti, Jakarta

Invited speakers:

1. Fany Wedahuditama ST, MT, MA – Regional Coordinator of Global Water Partnership Southeast Asia
2. Prof. Madya Lar. Dr. Suhardi Maulan – Dean of Faculty of Architectural Design of Universiti Putra Malaysia, Malaysia
3. Prof. Dr. Kareem Hasan Alwan – Centre of Urban Regional Planning University of Baghdad, Iraq

While during the class presentation session, a presentation from the participants representing the 5th ISoSUD co-host was carried out. The number of seminar participants was around 200 people consist of academics, researchers, professionals that are from universities, government, private sector, industrial practitioner and other related institutions. The origin of seminar participants came from New Delhi-India, Baghdad-Iraq, Malaysia, Japan, USA and several provinces in Indonesia.

There were increasing in number of participants and speakers from various countries every time the ISoSUD was held. Several papers were co-authored by authors from Indonesia and other countries.

Hopefully the Covid-19 pandemic will pass soon. The committee hopes that the 6th ISoSUD in 2023 could be carried out under normal conditions, involving more speakers from different countries interact each other in the seminar room. In addition, the network for conducting seminars between several universities in Indonesia and abroad as co-hosts could also be improved.

Until we meet again in the 6th ISoSUD in 2023.

Jakarta, September, 2020

Chair person

5th International Seminar on Urban and Sustainable Development 2020

Dr. Ir. Diana Irvindiaty Hendrawan, MSi

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All papers published in this volume of IOP Conference Series: Earth and Environmental Science have been peer reviewed through processes administered by the Editors. Reviews were conducted by expert referees to the professional and scientific standards expected of a proceedings journal published by IOP Publishing.

- **Type of peer review:** Triple-blind
- **Conference submission management system:** CMT Site Submission System
- **Number of submissions received:** 92
- **Number of submissions sent for review:** 53
- **Number of submissions accepted:** 34
- **Acceptance Rate (Number of Submissions Accepted / Number of Submissions Received X 100):**36.9%
- **Average number of reviews per paper:** 3
- **Total number of reviewers involved:** 73
- **Any additional info on review process:** there are 26 papers were received for publishing in the Journal of the Urban and Regional Planning Center, and 92 papers for publishing in the IOP, so the total paper submitted in the conference are 118 papers.
- **Contact person for queries:**
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Affiliation: center of urban and regional planning
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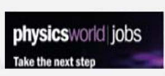
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Jl Kyai Tapa No 1, Sunday, 28 June 2020

Letter of Acceptance

Dear Authors: Inesia Melati¹, Silia Yuslim^{2*} and Etty Indrawati³

We are pleased to inform you that your abstract (ABT-469 Oral Presentation), entitled:

"Stakeholders involvement in the Successful Development of Ecovillage Cibodas, Bandung - Indonesia"

has been reviewed and accepted to be presented at The 5th International Seminar on Sustainable Urban Development conference to be held on 5th August 2020 in Indonesia

Please submit your full paper not more than 7th July 2020. We will send an invoice registration fee after the paper is reviewed and the conference series indexed by scopus or publication journal is determined
Thank You.

Best regards,

Dr. Ir. Diana Irwindiaty Hendrawan, MS.
5th ISoSUD 2020 Chairperson



International Seminar on
Sustainable Urban Development



Faculty of Landscape Architecture and Environmental Technology
Universitas Trisakti, Jakarta, Indonesia

Certificate

Awarded to:

Inesia Melati, Silia Yuslim, and Etty Indrawati

We express our sincerest gratitude for your contribution as

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Stakeholder's involvement in the successful development of ecovillage Cibodas, Bandung - Indonesia

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Stakeholder's involvement in the successful development of ecovillage Cibodas, Bandung - Indonesia

I Melati, S Yuslim* and E Indrawati

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*siliayuslim@trisakti.ac.id

Abstract. The success of sustainable development, especially in rural areas, is strongly influenced by the involvement of stakeholders from the early stages (planning). Several studies in Europe show that stakeholder participation can be relied on in further management by facilitating the fulfillment of stakeholder expectations or needs. The acceleration of rural development by the government in Cibodas Village, Bandung towards an Eco-village requires stakeholder involvement. The purpose of this research is to provide a reference on the expectations/expectations of the facilities and infrastructure needed by stakeholders and the involvement of stakeholders for efforts to improve the village economy through Eco-village development. Location of research, in the area of "Rukun Warga" (RW) 12. This research uses qualitative observational and descriptive methods. Then quantified on a Likert scale. The data collection instrument used a questionnaire through purposive sampling. The results showed that stakeholder expectations were very high, as seen from the number of responses that demanded infrastructure improvements related to the development of an Eco-village in RW 12. These findings could become the basis for the design and development framework of the Eco-village in RW 12, Cibodas Village, Bandung.

1. Introduction

Law No. 32 of 2009 on Environmental Protection and Management, which states that the environment is a spatial unit with all objects, power, conditions and living things, including humans and their behavior that affect nature itself, the continuity of life and the welfare of humans and other living creatures, giving birth to thoughts on effective environmental management actions. The effectiveness of an environmental management is greatly influenced by the efforts and behavior of the community towards the environment. One of the Indonesian government's efforts in this regard, is to organize the Eco-village program, which is a government program that develops villages with an environment culture, with the aim of creating an environmentally friendly society that is sustainable, ecologically intelligent, cooperative, and independent. Eco-village is also an alternative settlement with a lifestyle that is healthier, friendly to nature and in line with the needs of ecological life [1].

The first program carried out in Indonesia in 2015, is a concept of village development and development that pays attention to the environment through efforts to reduce damage that occurs in the environment [2]. In addition, Eco-villages helps strengthen the idea of increasing individual and collective well-being based on emotional involvement that creates closeness, sharing and creative expression of environmental and ecological sensitivity to be able to achieve food sustainability [3], because through it citizens become more appreciative of the practice as a community that is together



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participate, discipline individuals and independently manage their village [4]. Therefore, the Eco-village program should involve all stakeholders, which can be grouped into [5]: 1) key stakeholders, who have legal authority in terms of decision making (local government officials); 2) primary stakeholders, are stakeholders who are directly affected by the development plan and have direct interest links (religious leaders, youth and local communities); and 3) supporting stakeholders, are stakeholders who do not have a direct interest in the development plan, but have great concern for the development process (academics, non-governmental organizations (NGOs), entrepreneurs, and humanists), to jointly participate in its management [6].

The involvement of stakeholders to participate in development aims so that stakeholders, especially local communities can be actively involved in identifying problems, formulating plans and implementing decisions for their own lives [7]. Involving more people in the planning process provides access to multiple perspectives and ideas. With the active involvement of stakeholders, the utilization of the village environment can be in accordance with the expectations of the desired Eco-village form, in line with prevailing cultural norms and the ideals of a living space that is beneficial to the community [8].

Cibodas Village, West Java plans to develop a village with an ecovillage program, in accordance with the 2016-2036 Bandung Regency Spatial Plan which plans Cibodas Village as a center for home industry areas, trade in services and the environment, nature and cultural tourism, forest conservation, and agriculture and the farm. This village has an integrated agricultural system with a management system that combines agricultural components, such as plants and animals, in one unit which is managed by the local community to produce products and improve the community's economy [9].

Currently, the management system is managed by a community group in coordination with the local government (Village Head). Its existence is a potential for Eco-village development and will be focused on RW 12. The direction of development is adjusted to cultural norms and landscape characteristics and local wisdom, namely the Sundanese cultural tradition with four categories [10] the relationship between the Sundanese people and God, the relationship with nature, the relationship with society and relationships with individuals (Table 1).

Table 1. Relationship of Sundanese with vessels [10].

Relationship of Sundanese with Life	Vessels	Vessels Description
Human and God	Ritual vessel aspect	Stilt house, mosque, black rock, cemetery
Human and Nature	Production-reproduction vessel aspect	Field, ricefield, pond, <i>lewit</i> , <i>saung lisung</i> , <i>jemur</i>
Human and Society	Social vessel aspect	Contour, footpath, pavement, moor, yard, field, bamboo fence, trees, hall, <i>pancurian</i>
Human and Himself	Daily vessel aspect	Pantry, <i>parako</i> , the house center, <i>golodog</i> , <i>bilik</i> , hall, stage, room.

This action involves the placement of facilities and infrastructure, circulation patterns, forms and materials of buildings/structures, selection of vegetation, and utilization of views or vistas in a village spatial organization to meet the needs of an Eco-village. This research views it as a project, so stakeholder involvement must be done early on. Stakeholders must be identified before the project starts, plan their management/involvement with good communication skills and can be done through meetings / meetings, interviews, or through Focus Group Discussion (FGD) to obtain expert judgment [11].

This series of activities is to evaluate existing facilities and infrastructure against the needs of an Eco-village. The result is a description of the needs, expectations / expectations of stakeholders related to Eco-village development which will be further analyzed to be used as a basis for an Eco-village development design framework for RW 12, Cibodas Village, Bandung.

2. Methods

This study used descriptive qualitative method. This method is complemented by distributing quantitative questionnaires by determining the score for each answer based on a Likert scale with a range of rating scales: Strongly Disagree: 1, Disagree: 2, Doubt: 3, Agree: 4, and Strongly Agree: 5 [12]. The sequence of steps taken regarding the use of stakeholder involvement is as follows: 1) Socialization of the ecovillage program to stakeholders, especially to primary stakeholders from RW 12, which is then followed by distributing questionnaires; 2) In-depth interviews with key stakeholders and representatives of primary stakeholders; and 3) Focus Group Discussion (FGD) with key stakeholders, representatives of primary stakeholders and representatives of supporting stakeholders to obtain expert judgment regarding the preparation of development plans. The operational variables of this study are shown in Table 2.

Table 2. Research operational variables.

Ecovillage Aspects	Dependent Variables	Independent Variables	Indicators
Ecological Aspect	Ritual Vessel, Production-Reproduction Vessel, and Social Vessel	Circulation	View, movement, and space impression
		Vegetation	Vegetation type and function suitabilities
		Building/Structure	Space formation and function
		Cultural Tradition	Assessment of local tradition
Social Cultural and Economic Aspects	Ritual Vessel, Production-Reproduction Vessel, and Social Vessel	Space Organization	Shape and function of space, space impression, and inter-field relationship
		View and Vista	Road shape, scoping degree, trees on the roadside, architectural pattern, and activity pattern
		Circulation	View, movement, and space impression
		Vegetation	Vegetation type and function suitabilities
		Building/Structure	Space formation and function

The distribution of questionnaires was carried out using purposive sampling technique to a number of respondents who were determined based on calculations by the Slovin formula [13]:

$$n = \frac{N}{1 + N \alpha^2} \quad (1)$$

n is the specified sample size, N is the population size, and α is the level of significance. With a population (N) of the total population of RW 12 Cibodas Village of 8,391 people and the significance level (α) used so that the results of the study can be generalized with very minimal errors of 0.1%, the number of samples is:

$$n = \frac{N}{1 + N \alpha^2} = \frac{8,391}{1 + 8,392 (0,1)^2} = 98,82 \quad (2)$$

Based on the calculation results, the total sample who will fill out the questionnaire is 100 respondents, with the following criteria: 1) RW 12 residents who are active in social, environmental, socio-cultural and economic activities in their RW, can be community leaders, youths, who take part in the event outreach (primary stakeholders); 2) RW 12 village officials who have an inventory of data and knowledge about environmental, socio-cultural and economic developments (key stakeholders); 3) Entrepreneurs, non-governmental organizations (NGOs), and academics who are interested in or have been involved in the chain of economic activities in Cibodas Village (supporting stakeholders). The assessment analysis was carried out using calculations on each questionnaire question based on the number of participants who answered with a certain score.

3. Results and discussion

The results of the analysis from interviews and distributing questionnaires to stakeholders provide input for the design framework for ecovillage development, especially on ecological aspects as well as socio-cultural and economic aspects. Indicators from these two aspects combined with the cultural foundation of Sundanese village will become a reference for measuring the existence of ecovillage that has been developed in RW 12, Cibodas Bandung.

Three containers in the Sundanese village as a foundation according to the RW 12 environment, namely: 1) Ritual containers, in the form of an imah (housing area), a mosque (an area of worship), and a grave (burial area); 2) Production-Reproduction Containers, in the form of an area in the Sundanese village, consisting of a garden (plantation area), rice field (rice field area), and balong (fish pond or swamp) which if matched in RW 12 is an integrated agricultural system area that already exists there, consisting of plantation areas, livestock areas, and rice fields; and 3) Social Containers, in the form of areas in the Sundanese village which are used as places for residents to conduct social interactions, consisting of footpaths, fields, and bales.

Table 3. Recapitulation of questionnaire filling results.

Sundanese Village Culture			Indicator										
	Vessels	Shaping Elements	Sundanese architectural building style and ornaments	Materials used provided locally	The clearly and orderly vehicle circulation flow	The clearly and orderly pedestrian circulation flow	The scale of circulation according to standardization	Well maintained and comfortable circulation	Vegetation selection according to the requirement and pictures Sundanese characteristics	The existence of facilities and infrastructures that support the activities	The activities of ritualistic	Optimum area utilization	
Ecologi	Ritual	Imah (house)											
		Mosque (worship place)											
		Cemetery											
	Production-Reproduction	Integrated Farming System (Farming, Ricefield, and Cattling areas)											
	Social	Footpath											
		Field											
Hall													
Social Cultural and Economic	Ritual	Imah (house)											
		Mosque (worship place)											
		Cemetery											
	Production-Reproduction	Integrated Farming System (Farming, Ricefield, and Cattling areas)											
	Social	Footpath											
		Field											
Hall													

^a Vehicle circulation as director, pedestrian as director and shade, and activity vessels as areal functions

^b The existence of facility and infrastructure is related to activities in each area, especially for:

Farming Area: balong (fish pond or marsh), Ricefield Area: balong (fish pond or marsh), Cutting Area: Waste recycling facility

^c Area utilization adjusted with the existing function and activities

84,1% - 100% Highly agree, 68,1% - 84% Agree, 52,1% - 68% Neutral/doubtful, 36,1% - 52% disagree

20% - 36% Highly disagree

Based on the results of the interview, stakeholders wanted RW 12 to become an Eco-village model for villages around Cibodas Village, as well as an ecotourism area which is one of the tourist destinations. However, based on the Focus Group Discussion (FGD) [1], the important thing to remember is that Eco-village is based on three basic activities, namely organic agriculture, ecological architecture, and renewable energy, which are aimed at making villagers' lives independent and friendly nature. That in the end the village developed into a tourist destination is another potential that can be developed after the three activities above have been carried out. Eco-village that develops into ecotourism will spur increased local community participation. Furthermore, ecotourism can be further developed into tourism. This development is expected to provide information to the government as the key stakeholder present at the FGD to make policies that support these activities for the welfare of the community [14].

In its further development, the principles of ecotourism must be widely promoted and socialized, including about environmental awareness and education on conservation, culture, and economic benefits [15]. The questionnaire was distributed to 100 respondents. Ecotourism is natural tourism and a man-made environment integrated with an informative and participatory culture. Ecological village development in RW 12 must also focus on natural or ecological sustainability, provide economic benefits, and be psychologically acceptable in the social life of the community [16]. A recapitulation of the results of distributing questionnaires is in table 3. From the results of the recapitulation, there is still much that needs to be improved and perfected for the development of Eco-village at RW 12, Cibodas Village, Bandung. Nearly 80% of respondents answered between doubt and disagreement that the Eco-village program was in line with local wisdom (Sundanese culture). The main activities required are repairing and improving infrastructure arrangement to support the existing integrated agricultural system.

Table 4. Activities related with stakeholders authority and responsibility.

Stakeholders Group		Roles	Activities
Key	Local Government	Coordinator	Hold a meeting between stakeholders regarding Eco-village development to evaluate existing and activities implementation.
		Facilitator	1. Supporting funding for Eco-village development efforts 2. Support facilities providing and infrastructure to ecovillage development.
		Implementation	1. Empowering local farmer group and society 2. Filing ideas and inputs to the central government regarding Eco-village development
Primary	Village Community	Executor	1. Providing land to develop related facilities and infrastructures regarding integrated farming system 2. Involved in Eco-village activities development leading to tourism attraction provision based on daily life that reflects Eco-village implementation. 3. Homestay formed to provide accommodation in the form of homestay for tourists or researchers. 4. Developing businesses that utilize products produced by the integrated farming system
Supporting	Academician (Community Service Grant)	Coordinator	Coordinating with other stakeholders, such as the society, local government, farmers group, and farm, curling, and waste recycling owners.
		Facilitator	1. Facilitate stakeholder to conduct a study on ecovillage development effort in RW 12 to obtain a picture of their hope/expectation 2. Providing inputs on Eco-village development framework design 3. Propose a design model to facilitate Eco-village development in RW 12
	Related Agencies	Facilitator	Provide training regarding information requirements about Eco-village development effort in RW 12.

An integrated agricultural system that is well organized, supported by the understanding of the people who use it, provides optimal management and good product yields. This can improve the community

and village economy. Furthermore, it can be used for improved management or other efforts to make RW 12 a tourist destination. Stakeholders can also be involved according to their respective authorities and responsibilities in supporting the development of the Eco-village in RW 12. An overview of the powers and duties of each stakeholder group is shown in table 4. The results of distributing questionnaires and elaborating activities from stakeholders related to Eco-village development are expected to realize the success of the overall life structure of RW 12 as a model for Eco-village to be used as a tourist destination.

4. Conclusion

The expectations of stakeholders regarding the development of Eco-village in RW 12, Cibodas-Bandung, West Java are generally to make improvements and increase the completeness of infrastructure that can support the implementation of the independence of the local community in managing their environment. Through this research, it is hoped that it can provide input for the design framework for improvement and improvement, so that the management of an integrated agricultural system which is the potential of Cibodas Village can be optimized. The authority and responsibility of the stakeholders give rise to suggestions on roles and activities to support this framework, so that assistance and guidance to the implementation of this development can ensure the achievement of the goal of making RW 12 an Eco-village pilot.

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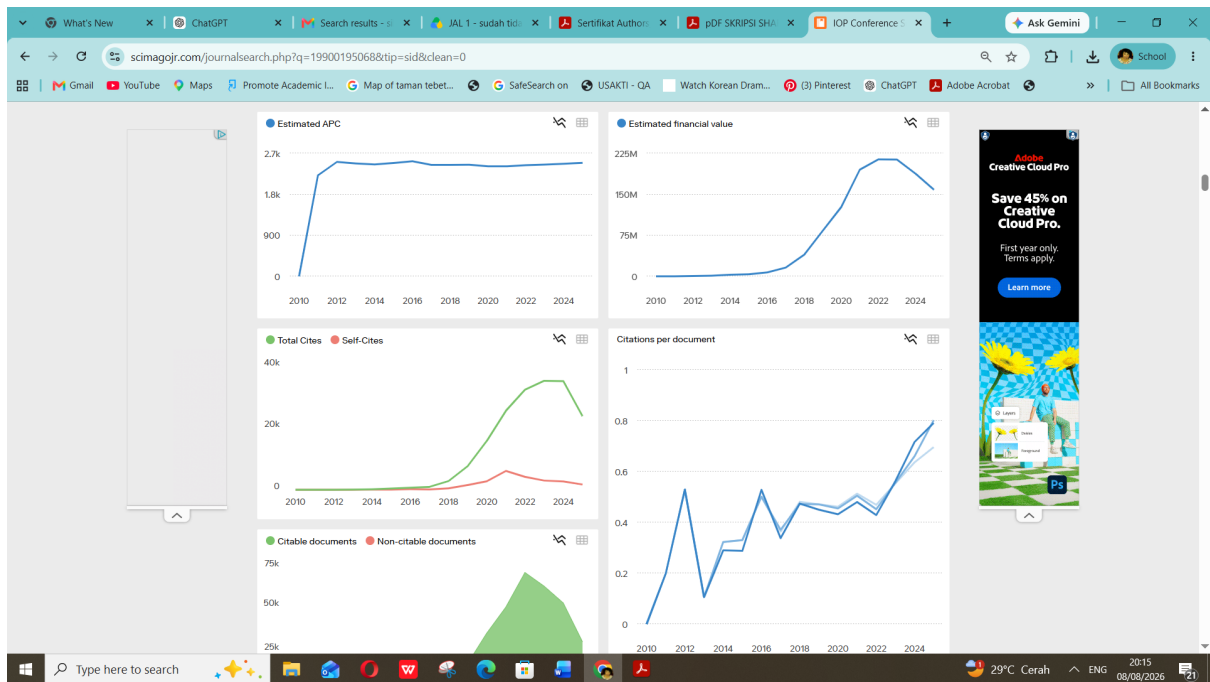
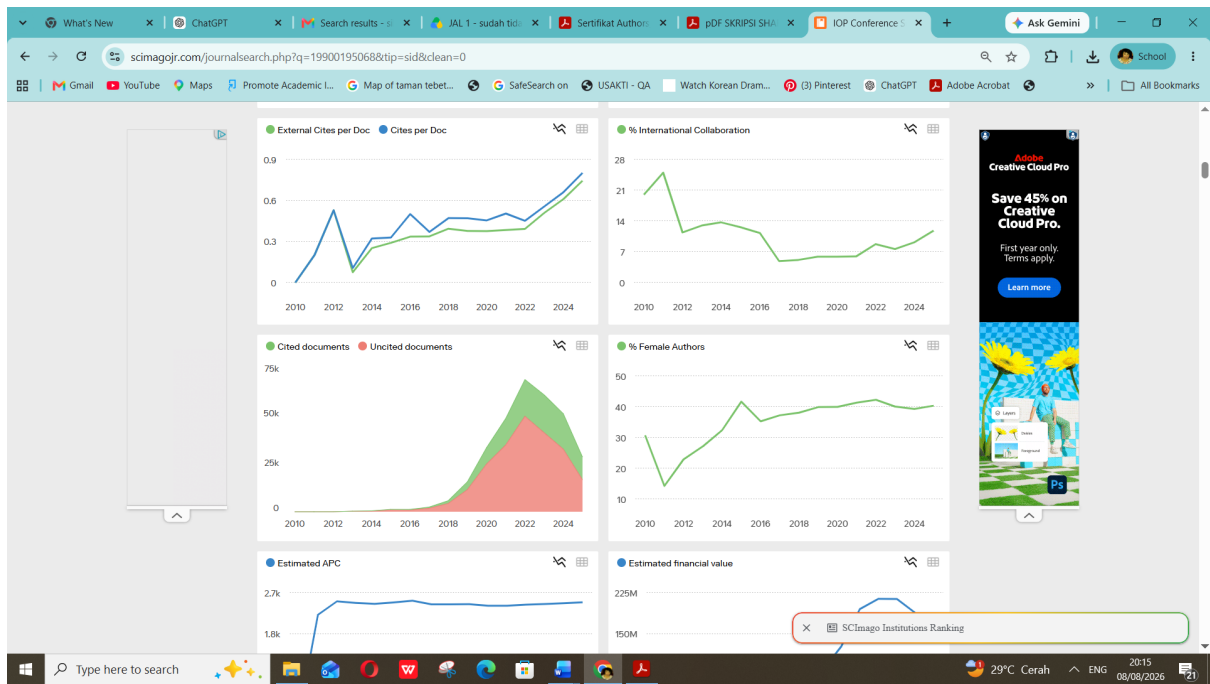
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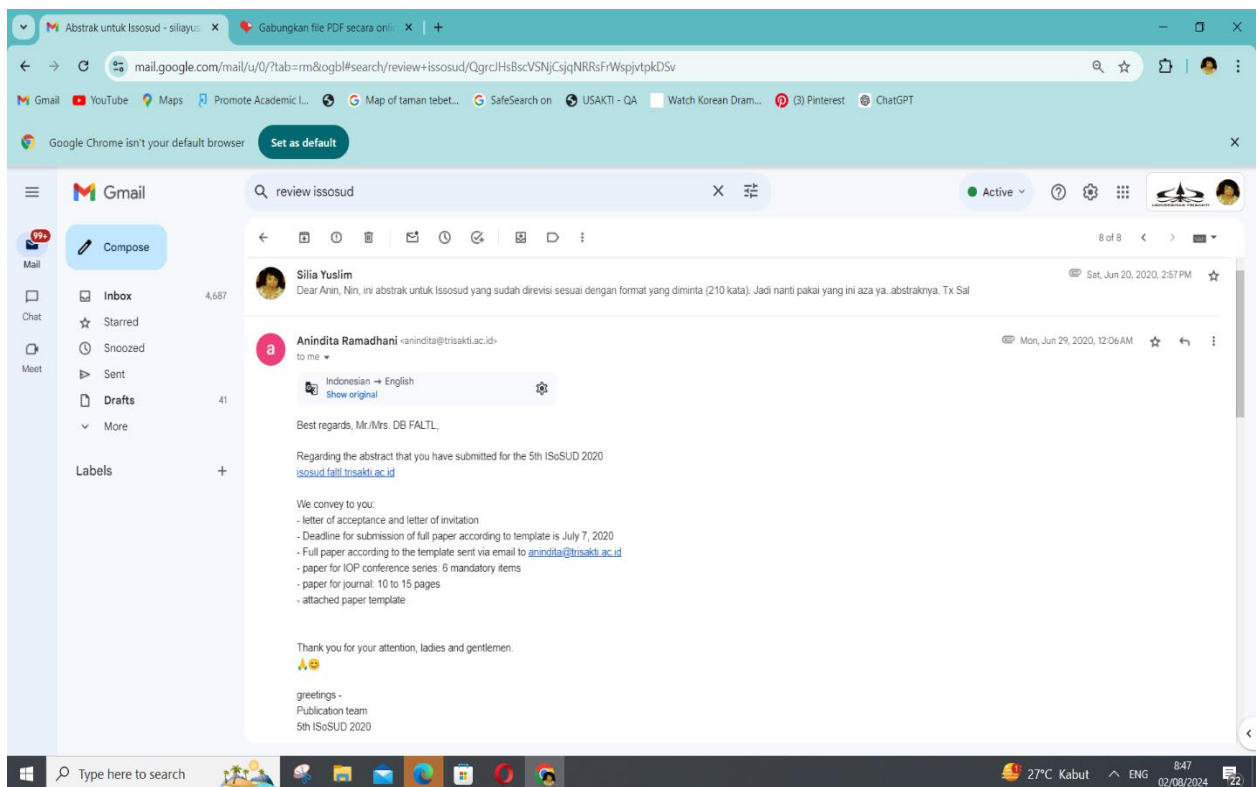
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Penerimaan Abstrak



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Stakeholder's involvement in the successful development of ecovillage Cibodas, Bandung - Indonesia

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Abstract. The successes of sustainable developments, especially in village areas are very much influenced by the involvement of stakeholders starting from the initial stage (planning). Because of that, the required facilities and infrastructure related to the ultimate goal of a development can be more anticipated. Several studies in Europe show that stakeholder participation can be relied upon in further management, if the fulfillment of stakeholder expectations or needs is facilitated / accommodated. The acceleration of rural development by the government in Cibodas Village, Bandung towards Ecovillage urgently requires stakeholder involvement. The purpose of this study is to provide a reference to the expectations/ expectations of the facilities and infrastructure required by stakeholders to be able to improve the village economy through the development of Ecovillage. The location used as a reference in this study is RW 12 area. This study uses qualitative observational and descriptive methods which are quantified on a Likert scale. Required data is collected by utilizing questionnaires through purposive sampling. The results showed that the expectations of stakeholders were very high, seen from the many responses that demanded infrastructure improvement related to the development of RW 12 as Ecovillage. Based on that finding, the results of this study can be utilized as a basis for the Ecovillage design and development framework at RW 12, Cibodas Village in Bandung.

Keywords: *Stakeholder involvement, Eco-village, Sustainable Development*

1. Introduction

Law No. 32 Year 2009 regarding Environmental Protection and Management states that the environment is a unitary space with all objects, power, conditions and living things, including humans and their behavior that affect the nature itself, the survival of the life and welfare of humans and other living creatures, gave birth to ideas of effective environmental management actions. The effectiveness of an environmental management effort is strongly influenced by the actions and behaviors of the community towards the environment. One of the efforts of the Indonesian government in this regard is by issuing Ecovillage program, which is a program that develops an environmentally cultured village, with the aim of creating an sustainable, ecologically intelligent, collaborative and independent environmentally friendly community. Ecovillage is also a healthier and a friendlier alternative lifestyle settlement to the nature that and in parallel with the requirements of ecological life [1].

The program that was firstly initiated in Indonesia in 2015 is a village development concept that focuses on efforts to diminish environmental damage [11]. Besides that, Ecovillages can strengthen individual and collective prosperity improvement based on emotional involvement that produces relatedness, mutual sharing, and creative expression on environmental and ecological sensitivities to achieve food sustainability [2]. Because by doing is, the people will appreciate community practice which collectively participating to create discipline and independent individuals that would be able to optimize the village management [15]. Because of that, ecovillage program should involve every stakeholder that can be categorized as [6]: 1) key stakeholder, which is stakeholders that possess legal

authority to produce decision for example the local government; 2) primary stakeholder, which receive direct impacts of development planning and has direct interest link, for example religious figure, local youth and the society; 3) supporting stakeholder, which do not possess direct interest on a development planning, but possesses large concerns on the development process, for example the academician, non-governmental organizations (NGOs), businessmen, culture practitioner, by participating together in the management process [13]. The involvement of stakeholders to participate in the development is important so that the stakeholders, especially local society can actively involved to identify the problems, formulating planning and implementing decisions on their own lives [14]. Involving a larger community into the planning process can provide access to various perspectives and ideas. By actively involving the stakeholders, village environment utilization can produce results parallel with the expected ecovillage formation based on the existing norms and future goals of a large living space that brings benefits for the society [5].

Cibodas Village in West Java has begun planning village development by running ecovillage program. This plan is in accordance with Bandung Regency Regional Spatial Plan of 2016-2036 that ponted Cibodas Village as a central home industry area, services trading and environment, natural and cultural tourism, forest conservation, also agriculture and animal husbandry. The village already possesses an integrated farming system, which is a (business) management system that combines agricultural components, such as plants and animals in a unified whole, managed by the local community to optimally produce quality products, which in turn, will increases the economic level of the community [8]. At present time, the management system applied on livestock, plants, and fish as an integrated part of its environment is managed by a community group coordinating with the local government (Village Head). Its existence has become a potential for ecovillage development which will be focused on RW (*Rukun Warga*) 12, in Cibodas Village, Bandung, West Java. The direction of development is adjusted to cultural norms and the characteristics of local landscape and local wisdom, namely Sundanese cultural traditions with four categories of relations between Sundanese people and their environment [9], namely relations with God, relations with nature, relations with society and relations with individuals (Table 1).

This act will influence village layout organization management, especially on facility and infrastructure placements, circulation patter, building shape and materials/structure, vegetation selection, and view or vista utilization to fulfil the requirements of ecovillage realization. In this research, these activities will be viewed as an implemented project. Based on that, stakeholder involvement should be started at early stages. Stakeholders should be identified before the projects are initiated. The involvement should be planned by applying good communication skill through meetings, interview, or focus group discussion (FGD) to obtain expert judgments [10]. These series of activities are conducted to evaluate the existing facilities and infrastructures to fulfil ecovillage requirements. The result will provide a picture of stakeholders' needs and expectations regarding ecovillage development that would be further analyzed and utilized as a base of ecovillage development framework for RW 12, Cibodas Village in Bandung.

Table 1. Relationship of Sundanese with Vessels [9]

Relationship of Sundanese with Life	Vessels	Vessels Description	Vessel Function Description
Human and God	Ritual vessel aspect	Stilt house, mosque, black rock, cemetery	Birth, naming, thanksgiving, praying, reciting, offerings, marriage, death, pilgrimage
Human and Nature	Production-reproduction vessel aspect	Field, ricefield, pond, <i>leuit</i> , <i>saung lisung</i> , <i>jemur</i>	Farming, rice pounding, rice reserving, rice drying, fishery, cattling, raising chicken, planting coconut

Human and Society	Social vessel aspect	Contour, footpath, pavement, moor, yard, field, bamboo fence, trees, hall, <i>pancurian</i>	Playing, gathering, plaster repairing, house repairing, replacing fence, draining pond, cleaning the house
Human and Himself	Daily vessel aspect	Pantry, <i>parako</i> , center of the house, <i>golodog</i> , <i>bilik</i> , hall, stage, room.	Sleeping, resting, taking a bath, eating, learning, cooking, drying clothes.

2. Method

This study utilizes a descriptive qualitative method. This method is complemented by the distribution of questionnaires which are quantified by determining the score on each answer based on a Likert scale with a range of rating scales, namely: Strongly Disagree: 1, Disagree: 2, Doubtful: 3, Agree: 4, and Strongly Agree: 5 [3]. The sequence of steps taken related to the use of stakeholder involvement is as follows: 1) Socialization of the ecovillage program to stakeholders, especially to primary stakeholders from RW 12, Cibodas Village, Bandung, which was then continued with the distribution of questionnaires; 2) In-depth interviews with key stakeholders and representatives of primary stakeholders; and 3) Focus Group Discussion (FGD) with key stakeholders, representatives of primary stakeholders and representatives of supporting stakeholders to obtain expert judgment related to the development plan. Operational variables in this study can be seen in table 2.

Table 2. Research Operational Variables

Ecovillage Aspects	Dependent Variables	Independent Variables	Indicators
Ecological Aspect	Ritual Vessel, Production-Reproduction Vessel, and Social Vessel	Circulation	View, movement, and space impression
		Vegetation	Vegetation type and function suitabilities
		Building and Structure	Space formation and function
Social Cultural and Economical Aspects	Ritual Vessel, Production-Reproduction Vessel, and Social Vessel	Cultural Tradition	Assessment on local tradition
		Space	Shape and function of space, space impression, and inter-field relationship
		Organization	Road shape, scoping degree, trees on the road side, architectural pattern, and activity pattern
		View and Vista	View, movement, and space impression
		Circulation	Vegetation type and function suitabilities
		Vegetation	Space formation and function
		Building and Structure	

Questionnaire distribution is conducted by applying a purposive sampling technique on a number of respondent predetermined by using Slovin formulation [12]:

$$n = \frac{N}{1 + N\alpha^2}$$

n is the determined sample size

N is the size of population

α is significancy rate

With population (N) of total citizen of RW 12 Cibodas Village as much as 8,391 people and significancy rate (α) utilized so that this research can be generalized with minimum deviation rate is 0.1%, the number of sample is:

$$n = \frac{N}{1 + \frac{1}{2}} = \frac{8391}{1 + 0,1} = 98,82$$

Based on the calculation results, the total sample aimed to fill the questionnaire is 100 respondents, with the following criteria: 1) Citizens of RW 12 Cibodas Village who are active in social activities, possess knowledge and are involved in environmental, socio-cultural and economic development in their area, they can be community leaders, youth, and villagers participating in the socialization event (representative of primary stakeholders); 2) Village officials who possess inventory of data and knowledge about environmental, socio-cultural and economic developments in RW 12 Cibodas Village (key stakeholders); 3) Entrepreneurs, Non-Government Organizations (NGOs), and Academics who are interested in or have been involved in the chain of economic activities in the Cibodas Village (supporting stakeholders). Measurement analysis conducted by using calculation on every questions in the questionnaire based on dominating answers with certain scoring can be seen on Table 3.

Percentage = (Choosing respondent : total respondent) x 100%

Value = Valuation Criteria x Frequency

Table 3. Examples of Percentage and Valuation Calculation

No.	Answers	Frequency	Percentage	Value
1.	Strongly Agree	35	35%	175
2.	Agree	45	45%	180
3.	Neutral/Doubtful	10	10%	30
4.	Disagree	6	6%	12
5.	Strongly disagree	4	4%	4
Total Score				401

Next, valuation interval class is determined (tabel 4) by conducting the following calculation [13]:

Data Area = Highest Score – Lowers Score

Highest Score = Total Respondent x Highest Valuation

Lowest Score = Total Respondent x Lowest Valuation

Interval = Data Area / Number of Class

Interval will be modified in a form of percentage range (Table 4)

Table 4. Interval Class for Categorization on Socialization and Training Benefit Level

No.	Category	Interval Class	Percentage Range
1.	Strongly disagree	100 – 180	20% – 36%
2.	Disagree	181 – 260	36,1% – 52%
3.	Neutral / Doubtful	261 – 340	52,1% – 68%
4.	Agree	341 – 420	68,1% – 84%
5.	Strongly Agree	421 – 500	84,1% – 100%

Score Percentage = 401 : 500 x 100% = 80,2%, included in agreeing category.

3. Result and Discussion

The results of the analysis from interviews and the distribution of questionnaires to stakeholders provide input to the ecovillage development planning framework, especially on ecological aspects as

well as socio-cultural and economic aspects. Indicators from both aspects will be a reference for the measurement of the existence of ecovillage that has been developed in RW 12, Cibodas Bandung, which is based on the culture of Sundanese village.

Tabel 5. Rekapitulasi Hasil Pengisian Kuesioner

Sundanese Village Culture			Indicator											
			Vessels	Shaping Elements	Sundanese architectural building style and ornaments	Materials used provided locally	Clear and orderly vehicle circulation flow	Clear and orderly pedestrian circulation flow	Scale of circulation according to standardization	Well maintained and comfortable circulation	Vegetation selection according to the requirement and pictures Sundanese characteristics	The existence of facilities and infrastructures that support the activities	The existence of ritualistic activities	Optimum area utilization
Ecology	Ritual	Imah (house)												
		Mosque (worship place)												
		Cemetery												
	Production-Reproduction	Integrated Farming System (Farming, Ricefield, and Cattling areas)												
	Social	Footpath												
		Field												
		Hall												
Social Cultural and Economic Aspects	Ritual	Imah (house)												
		Mosque (worship place)												
		Cemetery												
	Production-Reproduction	Integrated Farming System (Farming, Ricefield, and Cattling areas)												
	Social	Footpath												
		Field												
		Hall												

^a Vehicle circulation as director, pedestrian as director and shade, , and activity vessles as areal functions

^b The existence of facility and infrastructure is related with activities on each area, especially for:

Farming Area: *balong* (fish pond or marsh)

Ricefield Area: *balong* (fish pond or marsh)

Cattling Area: Waste recycling facility

^c Area utilization must be adjusted with the existing function and activities

84,1% - 100% Highly agree

68,1% - 84% Agree

52,1% - 68% Neutral/doubtful

36,1% - 52% disagree

20% - 36% Highly disagree

Three Vessels in the Sundanese village that will be used as a foundation in accordance with RW 12 environment, namely: 1) Ritual Vessels, in the form of imah (residential area), mosque (worship place), and tomb (cemetery area) .; 2) Production-Reproduction Vessels, in the form of areas in the Sunda village which consist of Kebon (plantation area), paddy fields (paddy fields), and balong (fish ponds or swamps) which if paired in RW 12 are in the form of integrated agricultural system areas that already exist there, consisting of plantation areas, livestock areas, and rice fields; and 3) Social Vessels, in the form of an area in the Sundanese village which is used as a place for residents to do social interaction with one another consists of footpaths, fields and bale.

Based on interviews results, stakeholders demanded RW 12 to be an example of ecovillage development for villages around Cibodas area, as well as being an ecotourism area which is one of the tourist destinations. However, based on the Focus Group Discussion (FGD) and in line with [1], the important thing to remember is that ecovillage is based on three basic activities, namely organic agriculture, ecological architecture, and renewable energy, which are intended to make the lives of villagers become independent and friendly with nature. That in the end the village developed into a tourist destination is another potential that can be developed after the three activities above are done. Ecovillage that develops as ecotourism will also accelerate participation improvement of local communities and as a consequence various ecovillage activities can be further developed as tourist attractions. Ecovillage development that leads to sustainable ecotourism is expected to provide information to the government as key stakeholders presented at the FGD, so that they would be able to produce policies that support and improve community welfare [4]. In further development, clear ecotourism principles must be widely promoted and promoted, including on environmental awareness and conservation education, cultural preservation, and economic benefits [7].

Related to the description above, the preparation of a questionnaire that has been carried out and distributed to 100 respondents as stakeholders in the development process of ecovillage realization has also been directed at the need for further development, namely making RW 12 Cibodas Village as a tourist destination. Ecotourism offers a trip to natural and artificial environments integrated with an informative and participatory culture. That is why ecovillage development in RW 12 must also focus on natural or ecological sustainability, provide economic benefits, and be psychologically acceptable in the social life of the community [16]. Recapitulation of questionnaire distribution results is presented in Table 5.

From the recapitulation results, it appears that there is still much to be improved and refined to develop ecovillage in RW 12, Cibodas Village, Bandung. This is evident by the answers of respondents who are dominated by hesitated and disagreed respondents as much as 80% that the ecovillage program was in line with local local wisdom (Sundanese culture). The basic main activity must be carried out is to improve the establishment of infrastructure facilities that can support existing integrated farming systems because a well-integrated integrated farming system is supported by a good understanding of the people who use it, so that its management can be carried out optimally and the produce a better quality products. This situation can certainly improve the economy of the community and the villages, which can then be utilized to improve management capacity or to build other businesses related as a mean to shape RW 12 as a tourist destination.

Related to the efforts above, the involvement of stakeholders can also applied based on their respective authorities and responsibilities in supporting the development of ecovillage in RW 12, Cibodas Village Bandung West Java. An overview of the authorities and duties of each stakeholder group is shown in Table 6.

Table 6. Activities Related with Stakeholders Authority and Responsibility

Stakeholders Group		Roles	Activities
Key	Local Government	Coordinator	Hold a meeting between stakeholders regarding ecovillage development to evaluate existing and implemented activities
		Facilitator	1. Supporting funding for ecovillage development

			efforts
		Implementator	2. Providing support facilities and infrastructure to develop ecovillage
			1. Empowering local farmer group and society
			2. Filing ideas and inputs to central government regarding ecovillage development
Primary	Village Community	Executor	1. Providing land to develop related facilities and infrastructures regarding integrated farming system
			2. Involved in ecovillage development activities leading to tourism attraction provision based on the village daily life that reflects ecovillage implementation.
			3. Providing accommodation in form of homestay for the tourists or researchers.
			4. Developing businesses that utilize products produced by integrated farming system
Supporting	Academician (Community Service Grant)	Coordinator	Coordinating with other stakeholders for example the society, local government, farmers group, and farm, cattling, and waste recycling owners.
		Facilitator	1. Facilitate stakeholder to conduct study on ecovillage development effort in RW 12 to obtain a picture of their hope/expectation
			2. Providing inputs on ecovillage development framework design
			3. Propose a design model to facilitate ecovillage development in RW 12
	Related Agencies	Facilitator	Providing trainings regarding information requirement about ecovillage development effort in RW 12.

With the input generated from questionnaire distribution and activity description of the stakeholders regarding ecovillage development, the success of whole life order of RW 12 development as ecovillage example can be directed into tourism destination.

4. Conclusion

The expectation of stakeholders related to ecovillage development in RW 12, Cibodas-Bandung, West Java in general is to create an improvements and increase infrastructure completeness that can support local community independence in managing their environment. The result of this research is expected to provide input to the design framework for improvements, so that integrated farming systems as the largest potential of Cibodas Village can be optimally managed. In addition, the authorities and responsibilities of stakeholders who produce the proposals for available roles and activities that can be carried out are also expected to support the process of ecovillage development optimally. The assistance and guidance on the implementation of this development must consistently carried out to ensure the realization of RW 12 as an ecovillage model.

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Stakeholder's involvement in the successful development of ecovillage Cibodas, Bandung - Indonesia

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Abstract. The success of sustainable development, especially in rural areas, is strongly influenced by the involvement of stakeholders from the early stages (planning). Several studies in Europe show that stakeholder participation can be relied on in further management by facilitating the fulfillment of stakeholder expectations or needs. The acceleration of rural development by the government in Cibodas Village, Bandung towards an Eco-village requires stakeholder involvement. The purpose of this research is to provide a reference on the expectations / expectations of the facilities and infrastructure needed by stakeholders and the involvement of stakeholders for efforts to improve the village economy through Eco-village development. Location of research, in the area of "Rukun Warga" (RW) 12. This research uses qualitative observational and descriptive methods. Then quantified on a Likert scale. The data collection instrument used a questionnaire through purposive sampling. The results showed that stakeholder expectations were very high, as seen from the number of responses that demanded infrastructure improvements related to the development of an Eco-village in RW 12. These findings could become the basis for the design and development framework of the Eco-village in RW 12, Cibodas Village, Bandung.

Keywords: *Stakeholder involvement, Eco-village, Sustainable Development*

1. Introduction

Law No. 32 of 2009 on Environmental Protection and Management, which states that the environment is a spatial unit with all objects, power, conditions and living things, including humans and their behavior that affect nature itself, the continuity of life and the welfare of humans and other living creatures. , giving birth to thoughts on effective environmental management actions. The effectiveness of an environmental management is greatly influenced by the efforts and behavior of the community towards the environment. One of the Indonesian government's efforts in this regard, is to organize the Eco-village program, which is a government program that develops villages with an environment culture, with the aim of creating an environmentally friendly society that is sustainable, ecologically intelligent, cooperative, and independent. Eco-village is also an alternative settlement with a lifestyle that is healthier, friendly to nature and in line with the needs of ecological life [1].

The first program carried out in Indonesia in 2015, is a concept of village development and development that pays attention to the environment through efforts to reduce damage that occurs in the environment [11]. In addition, Eco-villages helps strengthen the idea of increasing individual and collective well-being based on emotional involvement that creates closeness, sharing and creative expression of environmental and ecological sensitivity to be able to achieve food sustainability [2], because through it citizens become more appreciative of the practice as a community that is together participate, discipline individuals and independently manage their village [15]. Therefore, the Eco-village program should involve all stakeholders, which can be grouped into [6]: 1) key stakeholders, who have legal authority in terms of decision making (local government officials); 2) primary

stakeholders, are stakeholders who are directly affected by the development plan and have direct interest links (religious leaders, youth and local communities); and 3) supporting stakeholders, are stakeholders who do not have a direct interest in the development plan, but have great concern for the development process (academics, non-governmental organizations (NGOs), entrepreneurs, and humanists), to jointly participate in its management [13]. The involvement of stakeholders to participate in development aims so that stakeholders, especially local communities can be actively involved in identifying problems, formulating plans and implementing decisions for their own lives [14]. Involving more people in the planning process provides access to multiple perspectives and ideas. With the active involvement of stakeholders, the utilization of the village environment can be in accordance with the expectations of the desired Eco-village form, in line with prevailing cultural norms and the ideals of a living space that is beneficial to the community. [5].

Cibodas Village, West Java plans to develop a village with an ecovillage program, in accordance with the 2016-2036 Bandung Regency Spatial Plan which plans Cibodas Village as a center for home industry areas, trade in services and the environment, nature and cultural tourism, forest conservation, and agriculture and the farm. This village has an integrated agricultural system with a management system that combines agricultural components, such as plants and animals, in one unit which is managed by the local community to produce products and improve the community's economy [8]. Currently the management system is managed by a community group in coordination with the local government (Village Head). Its existence is a potential for Eco-village development and will be focused on RW 12. The direction of development is adjusted to cultural norms and landscape characteristics and local wisdom, namely the Sundanese cultural tradition with four categories [9] the relationship between the Sundanese people and God, the relationship with nature, the relationship with society and relationships with individuals (table 1).

Table 1. Relationship of Sundanese with Vessels [9]

Relationship of Sundanese with Life	Vessels	Vessels Description
Human and God	Ritual vessel aspect	Stilt house, mosque, black rock, cemetery
Human and Nature	Production-reproduction vessel aspect	Field, ricefield, pond, <i>lewit</i> , <i>saung lisung</i> , <i>jemur</i>
Human and Society	Social vessel aspect	Contour, footpath, pavement, moor, yard, field, bamboo fence, trees, hall, <i>pancurian</i>
Human and Himself	Daily vessel aspect	Pantry, <i>parako</i> , the house center, <i>golodog</i> , <i>bilik</i> , hall, stage, room.

This action involves the placement of facilities and infrastructure, circulation patterns, forms and materials of buildings/structures, selection of vegetation, and utilization of views or vistas in a village spatial organization to meet the needs of an Eco-village. This research views it as a project, so stakeholder involvement must be done early on. Stakeholders must be identified before the project starts, plan their management/involvement with good communication skills and can be done through meetings / meetings, interviews, or through Focus Group Discussion (FGD) to obtain expert judgment [10]. This series of activities is to evaluate existing facilities and infrastructure against the needs of an Eco-village. The result is a description of the needs, expectations / expectations of stakeholders related to Eco-village development which will be further analyzed to be used as a basis for an Eco-village development design framework for RW 12, Cibodas Village, Bandung.

2. Method

This study used descriptive qualitative method. This method is complemented by distributing quantitative questionnaires by determining the score for each answer based on a Likert scale with a

range of rating scales: Strongly Disagree: 1, Disagree: 2, Doubt: 3, Agree: 4, and Strongly Agree: 5 3]. The sequence of steps taken regarding the use of stakeholder involvement is as follows: 1) Socialization of the ecovillage program to stakeholders, especially to primary stakeholders from RW 12, which is then followed by distributing questionnaires; 2) In-depth interviews with key stakeholders and representatives of primary stakeholders; and 3) Focus Group Discussion (FGD) with key stakeholders, representatives of primary stakeholders and representatives of supporting stakeholders to obtain expert judgment regarding the preparation of development plans. The operational variables of this study are shown in table 2.

Table 2. Research Operational Variables

Ecovillage Aspects	Dependent Variables	Independent Variables	Indicators
Ecological Aspect	Ritual Vessel, Production-Reproduction Vessel, and Social Vessel	Circulation	View, movement, and space impression
		Vegetation	Vegetation type and function suitabilities
		Building/Structure	Space formation and function
Social Cultural and Economic Aspects	Ritual Vessel, Production-Reproduction Vessel, and Social Vessel	Cultural Tradition	Assessment of local tradition
		Space Organization	Shape and function of space, space impression, and inter-field relationship
		View and Vista	Road shape, scoping degree, trees on the roadside, architectural pattern, and activity pattern
		Circulation	View, movement, and space impression
		Vegetation	Vegetation type and function suitabilities
		Building/Structure	Space formation and function

The distribution of questionnaires was carried out using purposive sampling technique to a number of respondents who were determined based on calculations by the Slovin formula [12]:

$$n = \frac{N}{1+N\alpha^2}$$

n is the specified sample size, N is the population size, and α is the level of significance. With a population (N) of the total population of RW 12 Cibodas Village of 8,391 people and the significance level (α) used so that the results of the study can be generalized with very minimal errors of 0.1%, the number of samples is:

$$n = \frac{N}{1+N\alpha^2} = \frac{8391}{1+8391(0,1)^2} = 98,82$$

Based on the calculation results, the total sample who will fill out the questionnaire is 100 respondents, with the following criteria: 1) RW 12 residents who are active in social, environmental, socio-cultural and economic activities in their RW, can be community leaders, youths, who take part in the event outreach (primary stakeholders); 2) RW 12 village officials who have an inventory of data and knowledge about environmental, socio-cultural and economic developments (key stakeholders); 3) Entrepreneurs, non-governmental organizations (NGOs), and academics who are interested in or have been involved in the chain of economic activities in Cibodas Village (supporting stakeholders). The assessment analysis was carried out using calculations on each questionnaire question based on the number of participants who answered with a certain score.

3. Result and Discussion

The results of the analysis from interviews and distributing questionnaires to stakeholders provide input for the design framework for ecovillage development, especially on ecological aspects as well as socio-cultural and economic aspects. Indicators from these two aspects combined with the cultural

foundation of Sundanese village will become a reference for measuring the existence of ecovillage that has been developed in RW 12, Cibodas Bandung. Three containers in the Sundanese village as a foundation according to the RW 12 environment, namely: 1) Ritual containers, in the form of an imah (housing area), a mosque (an area of worship), and a grave (burial area); 2) Production-Reproduction Containers, in the form of an area in the Sundanese village, consisting of a garden (plantation area), rice field (rice field area), and balong (fish pond or swamp) which if matched in RW 12 is an integrated agricultural system area that already exists there, consisting of plantation areas, livestock areas, and rice fields; and 3) Social Containers, in the form of areas in the Sundanese village which are used as places for residents to conduct social interactions, consisting of footpaths, fields, and bales.

Table 3. Recapitulation of Questionnaire Filling Results

Sundanese Village Culture			Indicator									
	Vessels	Shaping Elements										
			Sundanese architectural building style and ornaments	Materials used provided locally	The clearly and orderly vehicle circulation flow	The clearly and orderly pedestrian circulation flow	The scale of circulation according to standardization	Well maintained and comfortable circulation	Vegetation selection according to the requirement and pictures Sundanese characteristics	The existence of facilities and infrastructures that support the activities	The activities of ritualistic	Optimum area utilization
Ecologi	Ritual	Imah (house)										
		Mosque (worship place)										
		Cemetery										
	Production-Reproduction Social	Integrated Farming System (Farming, Ricefield, and Cattling areas)										
		Footpath										
		Field Hall										
Social Cultural and Economic	Ritual	Imah (house)										
		Mosque (worship place)										
		Cemetery										
	Production-Reproduction Social	Integrated Farming System (Farming, Ricefield, and Cattling areas)										
		Footpath										
		Field Hall										

^a Vehicle circulation as director, pedestrian as director and shade, and activity vessels as areal functions

^b The existence of facility and infrastructure is related to activities in each area, especially for:

Farming Area: *balong* (fish pond or marsh), Ricefield Area: *balong* (fish pond or marsh), Cutting Area: Waste recycling facility

^c Area utilization adjusted with the existing function and activities

84,1% - 100% Highly agree, 68,1% - 84% Agree, 52,1% - 68% Neutral/doubtful, 36,1% - 52% disagree
 20% - 36% Highly disagree

Based on the results of the interview, stakeholders wanted RW 12 to become an Eco-village model for villages around Cibodas Village, as well as an ecotourism area which is one of the tourist destinations. However, based on the Focus Group Discussion (FGD) [1], the important thing to remember is that Eco-village is based on three basic activities, namely organic agriculture, ecological architecture, and renewable energy, which are aimed at making villagers' lives independent and friendly. nature. That in the end the village developed into a tourist destination is another potential that can be developed after the three activities above have been carried out. Eco-village that develops into ecotourism will spur increased local community participation. Furthermore, ecotourism can be further developed into tourism. This development is expected to provide information to the government as the key stakeholder present at the FGD to make policies that support these activities for the welfare of the community[4]. In its further development, the principles of ecotourism must be widely promoted and socialized, including about environmental awareness and education on conservation, culture, and economic benefits [7]. The questionnaire was distributed to 100 respondents. Ecotourism is natural tourism and a man-made environment integrated with an informative and participatory culture. Ecological village development in RW 12 must also focus on natural or ecological sustainability, provide economic benefits, and be psychologically acceptable in the social life of the community [16]. A recapitulation of the results of distributing questionnaires is in table 3. From the results of the recapitulation, there is still much that needs to be improved and perfected for the development of Eco-village at RW 12, Cibodas Village, Bandung. Nearly 80% of respondents answered between doubt and disagreement that the Eco-village program was in line with local local wisdom (Sundanese culture). The main activities required are repairing and improving infrastructure arrangement to support the existing integrated agricultural system.

Table 4. Activities Related with Stakeholders Authority and Responsibility

Stakeholders Group		Roles	Activities
Key	Local Government	Coordinator	Hold a meeting between stakeholders regarding Eco-village development to evaluate existing and activities implementation.
		Facilitator	1. Supporting funding for Eco-village development efforts 2. Support facilities providing and infrastructure to ecovillage development.
		Implementation	1. Empowering local farmer group and society 2. Filing ideas and inputs to the central government regarding Eco-village development
Primary	Village Community	Executor	1. Providing land to develop related facilities and infrastructures regarding integrated farming system 2. Involved in Eco-village activities development leading to tourism attraction provision based on daily life that reflects Eco-village implementation. 3. Homestay formed to provide accommodation in the form of homestay for tourists or researchers. 4. Developing businesses that utilize products produced by the integrated farming system
Supporting	Academician (Community Service Grant)	Coordinator	Coordinating with other stakeholders, such as the society, local government, farmers group, and farm, curling, and waste recycling owners.
		Facilitator	1. Facilitate stakeholder to conduct a study on ecovillage development effort in RW 12 to obtain a picture of their hope/expectation 2. Providing inputs on Eco-village development framework design 3. Propose a design model to facilitate Eco-village development in RW 12
	Related Agencies	Facilitator	Provide training regarding information requirements about Eco-village development effort in RW 12.

An integrated agricultural system that is well organized, supported by the understanding of the people who use it, provides optimal management and good product yields. This can improve the community and village economy. Furthermore, it can be used for improved management or other efforts to make

RW 12 a tourist destination. Stakeholders can also be involved according to their respective authorities and responsibilities in supporting the development of the Eco-village in RW 12. An overview of the powers and duties of each stakeholder group is shown in table 4. The results of distributing questionnaires and elaborating activities from stakeholders related to Eco-village development are expected to realize the success of the overall life structure of RW 12 as a model for Eco-village to be used as a tourist destination.

4. Conclusion

The expectations of stakeholders regarding the development of Eco-village in RW 12, Cibodas-Bandung, West Java are generally to make improvements and increase the completeness of infrastructure that can support the implementation of the independence of the local community in managing their environment. Through this research, it is hoped that it can provide input for the design framework for improvement and improvement, so that the management of an integrated agricultural system which is the potential of Cibodas Village can be optimized. The authority and responsibility of the stakeholders give rise to suggestions on roles and activities to support this framework, so that assistance and guidance to the implementation of this development can ensure the achievement of the goal of making RW 12 an Eco-village pilot.

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Stakeholder's involvement in the successful development of ecovillage Cibodas, Bandung - Indonesia

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Abstract. The success of sustainable development, especially in rural areas, is strongly influenced by the involvement of stakeholders from the early stages (planning). Several studies in Europe show that stakeholder participation can be relied on in further management by facilitating the fulfillment of stakeholder expectations or needs. The acceleration of rural development by the government in Cibodas Village, Bandung towards an Eco-village requires stakeholder involvement. The purpose of this research is to provide a reference on the expectations/expectations of the facilities and infrastructure needed by stakeholders and the involvement of stakeholders for efforts to improve the village economy through Eco-village development. Location of research, in the area of "Rukun Warga" (RW) 12. This research uses qualitative observational and descriptive methods. Then quantified on a Likert scale. The data collection instrument used a questionnaire through purposive sampling. The results showed that stakeholder expectations were very high, as seen from the number of responses that demanded infrastructure improvements related to the development of an Eco-village in RW 12. These findings could become the basis for the design and development framework of the Eco-village in RW 12, Cibodas Village, Bandung.

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participate, discipline individuals and independently manage their village [4]. Therefore, the Eco-village program should involve all stakeholders, which can be grouped into [5]: 1) key stakeholders, who have legal authority in terms of decision making (local government officials); 2) primary stakeholders, are stakeholders who are directly affected by the development plan and have direct interest links (religious leaders, youth and local communities); and 3) supporting stakeholders, are stakeholders who do not have a direct interest in the development plan, but have great concern for the development process (academics, non-governmental organizations (NGOs), entrepreneurs, and humanists), to jointly participate in its management [6].

The involvement of stakeholders to participate in development aims so that stakeholders, especially local communities can be actively involved in identifying problems, formulating plans and implementing decisions for their own lives [7]. Involving more people in the planning process provides access to multiple perspectives and ideas. With the active involvement of stakeholders, the utilization of the village environment can be in accordance with the expectations of the desired Eco-village form, in line with prevailing cultural norms and the ideals of a living space that is beneficial to the community [8].

Cibodas Village, West Java plans to develop a village with an ecovillage program, in accordance with the 2016-2036 Bandung Regency Spatial Plan which plans Cibodas Village as a center for home industry areas, trade in services and the environment, nature and cultural tourism, forest conservation, and agriculture and the farm. This village has an integrated agricultural system with a management system that combines agricultural components, such as plants and animals, in one unit which is managed by the local community to produce products and improve the community's economy [9].

Currently, the management system is managed by a community group in coordination with the local government (Village Head). Its existence is a potential for Eco-village development and will be focused on RW 12. The direction of development is adjusted to cultural norms and landscape characteristics and local wisdom, namely the Sundanese cultural tradition with four categories [10] the relationship between the Sundanese people and God, the relationship with nature, the relationship with society and relationships with individuals (Table 1).

Table 1. Relationship of Sundanese with vessels [10].

Relationship of Sundanese with Life	Vessels	Vessels Description
Human and God	Ritual vessel aspect	Stilt house, mosque, black rock, cemetery
Human and Nature	Production-reproduction vessel aspect	Field, ricefield, pond, <i>lewit</i> , <i>saung lisung</i> , <i>jemur</i>
Human and Society	Social vessel aspect	Contour, footpath, pavement, moor, yard, field, bamboo fence, trees, hall, <i>pancurian</i>
Human and Himself	Daily vessel aspect	Pantry, <i>parako</i> , the house center, <i>golodog</i> , <i>bilik</i> , hall, stage, room.

This action involves the placement of facilities and infrastructure, circulation patterns, forms and materials of buildings/structures, selection of vegetation, and utilization of views or vistas in a village spatial organization to meet the needs of an Eco-village. This research views it as a project, so stakeholder involvement must be done early on. Stakeholders must be identified before the project starts, plan their management/involvement with good communication skills and can be done through meetings / meetings, interviews, or through Focus Group Discussion (FGD) to obtain expert judgment [11].

This series of activities is to evaluate existing facilities and infrastructure against the needs of an Eco-village. The result is a description of the needs, expectations / expectations of stakeholders related to Eco-village development which will be further analyzed to be used as a basis for an Eco-village development design framework for RW 12, Cibodas Village, Bandung.

2. Methods

This study used descriptive qualitative method. This method is complemented by distributing quantitative questionnaires by determining the score for each answer based on a Likert scale with a range of rating scales: Strongly Disagree: 1, Disagree: 2, Doubt: 3, Agree: 4, and Strongly Agree: 5 [12]. The sequence of steps taken regarding the use of stakeholder involvement is as follows: 1) Socialization of the ecovillage program to stakeholders, especially to primary stakeholders from RW 12, which is then followed by distributing questionnaires; 2) In-depth interviews with key stakeholders and representatives of primary stakeholders; and 3) Focus Group Discussion (FGD) with key stakeholders, representatives of primary stakeholders and representatives of supporting stakeholders to obtain expert judgment regarding the preparation of development plans. The operational variables of this study are shown in Table 2.

Table 2. Research operational variables.

Ecovillage Aspects	Dependent Variables	Independent Variables	Indicators
Ecological Aspect	Ritual Vessel, Production-Reproduction Vessel, and Social Vessel	Circulation	View, movement, and space impression
		Vegetation	Vegetation type and function suitabilities
		Building/Structure	Space formation and function
		Cultural Tradition	Assessment of local tradition
Social Cultural and Economic Aspects	Ritual Vessel, Production-Reproduction Vessel, and Social Vessel	Space Organization	Shape and function of space, space impression, and inter-field relationship
		View and Vista	Road shape, scoping degree, trees on the roadside, architectural pattern, and activity pattern
		Circulation	View, movement, and space impression
		Vegetation	Vegetation type and function suitabilities
		Building/Structure	Space formation and function

The distribution of questionnaires was carried out using purposive sampling technique to a number of respondents who were determined based on calculations by the Slovin formula [13]:

$$n = \frac{N}{1 + N \alpha^2} \quad (1)$$

n is the specified sample size, N is the population size, and α is the level of significance. With a population (N) of the total population of RW 12 Cibodas Village of 8,391 people and the significance level (α) used so that the results of the study can be generalized with very minimal errors of 0.1%, the number of samples is:

$$n = \frac{N}{1 + N \alpha^2} = \frac{8,391}{1 + 8,392 (0,1)^2} = 98,82 \quad (2)$$

Based on the calculation results, the total sample who will fill out the questionnaire is 100 respondents, with the following criteria: 1) RW 12 residents who are active in social, environmental, socio-cultural and economic activities in their RW, can be community leaders, youths, who take part in the event outreach (primary stakeholders); 2) RW 12 village officials who have an inventory of data and knowledge about environmental, socio-cultural and economic developments (key stakeholders); 3) Entrepreneurs, non-governmental organizations (NGOs), and academics who are interested in or have been involved in the chain of economic activities in Cibodas Village (supporting stakeholders). The assessment analysis was carried out using calculations on each questionnaire question based on the number of participants who answered with a certain score.

3. Results and discussion

The results of the analysis from interviews and distributing questionnaires to stakeholders provide input for the design framework for ecovillage development, especially on ecological aspects as well as socio-cultural and economic aspects. Indicators from these two aspects combined with the cultural foundation of Sundanese village will become a reference for measuring the existence of ecovillage that has been developed in RW 12, Cibodas Bandung.

Three containers in the Sundanese village as a foundation according to the RW 12 environment, namely: 1) Ritual containers, in the form of an imah (housing area), a mosque (an area of worship), and a grave (burial area); 2) Production-Reproduction Containers, in the form of an area in the Sundanese village, consisting of a garden (plantation area), rice field (rice field area), and balong (fish pond or swamp) which if matched in RW 12 is an integrated agricultural system area that already exists there, consisting of plantation areas, livestock areas, and rice fields; and 3) Social Containers, in the form of areas in the Sundanese village which are used as places for residents to conduct social interactions, consisting of footpaths, fields, and bales.

Table 3. Recapitulation of questionnaire filling results.

Sundanese Village Culture			Indicator										
			Vessels	Shaping Elements									
				Sundanese architectural building style and ornaments	Materials used provided locally	The clearly and orderly vehicle circulation flow	The clearly and orderly pedestrian circulation flow	The scale of circulation according to standardization	Well maintained and comfortable circulation	Vegetation selection according to the requirement and pictures Sundanese characteristics	The existence of facilities and infrastructures that support the activities	The activities of ritualistic	Optimum area utilization
Ecologi	Ritual	<i>Imah</i> (house)											
		Mosque (worship place)											
		Cemetery											
	Production-Reproduction	Integrated Farming System (Farming, Ricefield, and Cattling areas)											
	Social	Footpath											
		Field											
		Hall											
Social Cultural and Economic	Ritual	<i>Imah</i> (house)											
		Mosque (worship place)											
		Cemetery											
	Production-Reproduction	Integrated Farming System (Farming, Ricefield, and Cattling areas)											
	Social	Footpath											
		Field											
		Hall											

^a Vehicle circulation as director, pedestrian as director and shade, and activity vessels as areal functions

^b The existence of facility and infrastructure is related to activities in each area, especially for:

Farming Area: balong (fish pond or marsh), Ricefield Area: balong (fish pond or marsh), Cutting Area: Waste recycling facility

^c Area utilization adjusted with the existing function and activities

84,1% - 100% Highly agree, 68,1% - 84% Agree, 52,1% - 68% Neutral/doubtful, 36,1% - 52% disagree
 20% - 36% Highly disagree

Based on the results of the interview, stakeholders wanted RW 12 to become an Eco-village model for villages around Cibodas Village, as well as an ecotourism area which is one of the tourist destinations. However, based on the Focus Group Discussion (FGD) [1], the important thing to remember is that Eco-village is based on three basic activities, namely organic agriculture, ecological architecture, and renewable energy, which are aimed at making villagers' lives independent and friendly nature. That in the end the village developed into a tourist destination is another potential that can be developed after the three activities above have been carried out. Eco-village that develops into ecotourism will spur increased local community participation. Furthermore, ecotourism can be further developed into tourism. This development is expected to provide information to the government as the key stakeholder present at the FGD to make policies that support these activities for the welfare of the community [14].

In its further development, the principles of ecotourism must be widely promoted and socialized, including about environmental awareness and education on conservation, culture, and economic benefits [15]. The questionnaire was distributed to 100 respondents. Ecotourism is natural tourism and a man-made environment integrated with an informative and participatory culture. Ecological village development in RW 12 must also focus on natural or ecological sustainability, provide economic benefits, and be psychologically acceptable in the social life of the community [16]. A recapitulation of the results of distributing questionnaires is in table 3. From the results of the recapitulation, there is still much that needs to be improved and perfected for the development of Eco-village at RW 12, Cibodas Village, Bandung. Nearly 80% of respondents answered between doubt and disagreement that the Eco-village program was in line with local wisdom (Sundanese culture). The main activities required are repairing and improving infrastructure arrangement to support the existing integrated agricultural system.

Table 4. Activities related with stakeholders authority and responsibility.

Stakeholders Group		Roles	Activities
Key	Local Government	Coordinator	Hold a meeting between stakeholders regarding Eco-village development to evaluate existing and activities implementation.
		Facilitator	1. Supporting funding for Eco-village development efforts 2. Support facilities providing and infrastructure to ecovillage development.
		Implementation	1. Empowering local farmer group and society 2. Filing ideas and inputs to the central government regarding Eco-village development
Primary	Village Community	Executor	1. Providing land to develop related facilities and infrastructures regarding integrated farming system 2. Involved in Eco-village activities development leading to tourism attraction provision based on daily life that reflects Eco-village implementation. 3. Homestay formed to provide accommodation in the form of homestay for tourists or researchers. 4. Developing businesses that utilize products produced by the integrated farming system
Supporting	Academician (Community Service Grant)	Coordinator	Coordinating with other stakeholders, such as the society, local government, farmers group, and farm, curling, and waste recycling owners.
		Facilitator	1. Facilitate stakeholder to conduct a study on ecovillage development effort in RW 12 to obtain a picture of their hope/expectation 2. Providing inputs on Eco-village development framework design 3. Propose a design model to facilitate Eco-village development in RW 12
	Related Agencies	Facilitator	Provide training regarding information requirements about Eco-village development effort in RW 12.

An integrated agricultural system that is well organized, supported by the understanding of the people who use it, provides optimal management and good product yields. This can improve the community

and village economy. Furthermore, it can be used for improved management or other efforts to make RW 12 a tourist destination. Stakeholders can also be involved according to their respective authorities and responsibilities in supporting the development of the Eco-village in RW 12. An overview of the powers and duties of each stakeholder group is shown in table 4. The results of distributing questionnaires and elaborating activities from stakeholders related to Eco-village development are expected to realize the success of the overall life structure of RW 12 as a model for Eco-village to be used as a tourist destination.

4. Conclusion

The expectations of stakeholders regarding the development of Eco-village in RW 12, Cibodas-Bandung, West Java are generally to make improvements and increase the completeness of infrastructure that can support the implementation of the independence of the local community in managing their environment. Through this research, it is hoped that it can provide input for the design framework for improvement and improvement, so that the management of an integrated agricultural system which is the potential of Cibodas Village can be optimized. The authority and responsibility of the stakeholders give rise to suggestions on roles and activities to support this framework, so that assistance and guidance to the implementation of this development can ensure the achievement of the goal of making RW 12 an Eco-village pilot.

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