

Development of a Regional Action Plan for the Sustainable Development Goals from a Religious Perspective (Insights from Buddhism) in the Bird's Head Region of PapuaSugiarto ^[1], Umi Yuminarti ^{[2]*}, Hendri ^[3], and Sri Hartini ^[4]^[1]Environmental Science of Doctoral Program,

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Abstract. The execution of the Sustainable Development Goals (SDGs) in Papua's Bird's Head has six years remaining until 2030, necessitating the involvement of stakeholders to enhance the already poor SDG ranking, which is at 27th with 81.62 points, while the Human Development Index ranks 32nd with 64.70 points. Consequently, Buddhists are urged to actively contribute to attaining the Sustainable Development Goals by formulating the Regional Action Plan from a Buddhist viewpoint. The methodology comprises structured interviews, focus group discussions (FGDs), and the Analytic Hierarchy Process (AHP) to ascertain the structure, criteria, priority, and consistency. The participants included Buddha Prabha Vihara in Manokwari Regency (36 respondents), Buddha Sorong Vihara in Sorong City (44 respondents), and Buddha Sasana Vihara in Sorong Regency (30 respondents), all situated in Southwest Papua Province. The AHP-derived priority values are as follows: Eco Dharma (0.214), Economic Governance (0.167), Social Governance (0.143), Environmental Governance (0.119), Institutional Governance (0.119), Food Governance (0.095), Waste Governance (0.071), Water Governance (0.048), and Energy Governance (0.024). The overall evaluation value is incorporated into the consistency category, enabling the criteria and implementation to inform the development of the SDGs Regional Action Plan based on the Buddhist perspective.

Keywords: Eco Vihara, SDGs, AHP, Buddhist perspective

Introduction

The Sustainable Development Goals (SDGs) agenda has six years remaining until its target year of 2030. According to the Sustainable Development Report, Indonesia's progress towards the SDGs in 2023 is ranked 75th, with a score of 70.16 (National Development Planning Agency, 2023). In the interim, attaining the Sustainable Development Goals (SDGs) in the Papua Bird's Head region, encompassing West Papua Province and Southwest Papua Province, reflects suboptimal economic and social performance. In September 2022, the poverty rate was recorded at 21.43%, coinciding with Indonesia's lowest economic growth rate of 2.01% and a Human Development Index of 65.89 (Tjolly et al., 2021; Central Bureau of Statistics, 2022; West Papua Central Bureau Statistics, 2022). According to an analysis of the Indonesian SDGs dashboard conducted in March 2022, Bird's head of Papua region exhibits a gap value of 21,330 people concerning its target, categorizing it as "poor" within the social pillar of the first goal indicator, which pertains to the percentage of the population living below the national poverty line (National Development Planning Agency, 2022).

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The obstacles encountered in implementing the SDGs are compounded by many issues that impede economic growth and social development. These barriers include disparities in development across different regions, which arise from variations in regional typology (such as coastal, lowland and highland), initial regional income levels, population dynamics, and the state of infrastructure development (Fauzi et al., 2019; Wakarmamu & Indrayono, 2019; Adriana & Suparyati, 2024). Numerous areas are classified as underdeveloped regions following Presidential Regulation Number 63 of 2020, these include Wondama Bay, Bintuni Bay, South Sorong, Sorong, Tambrau, Maybrat, South Manokwari, and the Arfak Mountains Regencies.

Initiatives to attain the SDGs in the Papua Bird's Head encompass the enactment of Special Regional Regulation Number 10 of 2019 of sustainable development. In 2019, its most notable accomplishment was attaining the highest position in Indonesia's environmental quality index with a score of 83.96 points. Conversely, the Papua Bird's Head sustainable development index was ranked 27th with 81.62 points, the human development index was 32nd with 64.70 points, and the democracy index was 33rd with 57.62 points (Leiwakabessy & Amaluddin, 2020; Saputra et al., 2020; Suparyati, 2022). Additional initiatives to expedite development in the Papua Bird's Head encompass Presidential Instruction Number 9 of 2020, which addresses the acceleration of welfare development as a strategic measure for attaining sustainable development in the region; the enactment of Special Autonomy via Law Number 21 of 2021; and the recent delineation of provincial boundaries into West Papua Province and Southwest Papua, based on Law Number 29 of 2022, aimed at enhancing governmental oversight and equitable development.

The SDGs cannot be achieved by one body or sector alone; it requires close coordination and collaboration among multiple stakeholders to create, implement, and monitor the necessary actions. Multi-stakeholder community involvement in the SDGs is critical to identifying and implementing comprehensive and sustainable solutions. The government requires constructive multi-stakeholder engagement to meet the 2030 Agenda for Sustainable Development Goals. Cross-sector collaboration and inclusive conversation are critical to developing solutions that promote sustainable and equitable development for all. Strengthening the ability of each stakeholder can help achieve the common goal of creating a more equitable and sustainable world for future generations (Okitasari et al., 2021; Sauvage et al., 2021).

Religious institutions have an important strategic role in achieving sustainable development goals. Religious organizations are important in promoting pro-environmental behavior (Zemo & Nigus, 2021). Religion can influence human behavior towards eco-development due to its sociological qualities of belief, faith, spirituality, and supernatural ideology (Omar et al., 2024). Religion can also serve as an educational tool, a savior, a source of peace, a transformational force, and societal control (Jacobs et al., 2020). Religious religiosity positively impacts environmentally conscious attitudes and behaviors (Singh et al., 2021). Religion is vital in promoting sustainable development by inspiring ethical principles, educating and instilling environmental awareness, mobilizing and engaging in social action, and advocating for and influencing legislation. (Ives & Kidwell, 2019; Tomalin et al., 2019; Orellano et al., 2020).

Islamic religious institutions have established eco-mosques and eco-boarding schools, thereby initiated practices and promoted environmental conservation principles within both religious and educational frameworks (Azmi & Kandar, 2019; Firmansyah et al., 2024). Furthermore, academic research has been undertaken in this domain. Concurrently, within Buddhist religious and educational institutions in Indonesia, there remains a notable deficiency in environmental conservation initiatives and scholarly research addressing the concept of eco-monasteries. Consequently, the Eco-Monastery design was developed as a framework for environmental conservation within Buddhist places of prayer (Vihara), facilitated by

formulating the Regional Action Plan for eco-vihara, aimed at advancing the Sustainable Development Goals (SDGs) in Papua Bird's Head.

Methodology

Study Area

According to data from the Ministry of Religion, the Buddhist population in Indonesia in 2023 was 2,016,564, accompanied by 9,402 viharas. In West Papua, the Buddhist population was 2,697, with 12 viharas distributed as follows: Manokwari (4), Bintuni (1), Fakfak (1), Sorong Regency (2), and Sorong City (4).

Meanwhile, the eco-vihara research sites include the Buddha Prabha Manokwari Buddhist Temple in the West Papua region and the Sorong Buddhist Temple and Sasana Aimas Buddhist Temple in the Southwest Papua region (Figure 1). The investigation concentrated on the three temples because of their attributes that exemplified eco-vihara. The field survey results indicated that the temples featured permanent structures, energy efficiency, gardens, and trees that classified them as eco-vihara. Other temples were excluded from the study as they did not fulfill the eco-vihara criteria; the structures were close to other edifices, located within commercial buildings, and some were under construction.



Figure 1. Research Locations to implement the SDGs Regional Action Plan from a Buddhist perspective

Method of Data Analysis

Respondents

The research sample of the SDGs Regional Action Plan based on the Buddhist perspective was conducted at three temples: the Buddha Prabha Manokwari Temple, the Buddha Sorong City Buddhist Temple, and the Buddha Sasana Buddhist Temple in Sorong Regency, due to their eco-vihara characteristics. The respondent's determination was conducted proportionally utilizing the Slovin formula (Ovharhe & Chukwuemeka, 2023):

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

where: n is the number of samples, N is the number of populations, and e is the maximum error limit tolerated in the sample, with a significance level of 0.05 (5%).

Analytical Hierarchy Process (AHP)

The operational principle of the Analytic Hierarchy Process (AHP) involves the deconstruction of a complex, unstructured, and dynamic problem into its constituent elements, subsequently organizing these elements into a hierarchical framework. Subsequently, the significance of each variable is assigned a value concerning the other variables. Through a comprehensive evaluation of the various factors, a synthesis is subsequently conducted to identify the high-priority variables that significantly influence the outcomes of the system (Darko et al., 2019; Leal, 2020). The subsequent stages of the compilation process in the AHP approach are as follows:

1. Establish a hierarchical structure

The issue at topic is deconstructed into its components, specifically criteria and options, and subsequently organized into a hierarchical framework as seen in Figure 2 below.

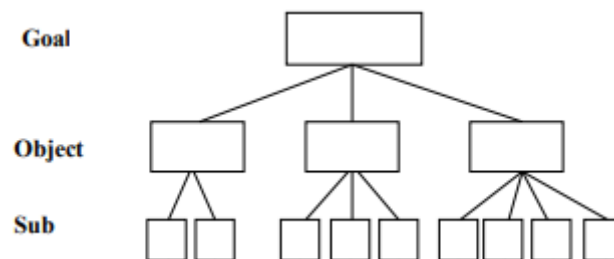


Figure 2. AHP Hierarchy Structure

2. Evaluation of criteria

Due to several prevailing concerns, a scale of 1 to 9 is the most effective means of articulating opinions. The significance and definition of qualitative assessments from this comparative scale are illustrated in Table 1.

Table 1. AHP scale and definition

Scale	Definition
1	Equal importance
3	Slightly more importance
5	Materially more importance
7	Significantly more importance
9	Absolutely more importance
2,4,6,8	Compromise values
Reciprocal	If activity i receives a certain value in relation to activity j, then j possesses the inverse value in relation to i.

3. Synthesis of priority

The phase of obtaining priority values by summing the values in each column of the previously constructed matrix. Subsequently, divide each value in the column by the sum of the corresponding column to achieve the normalizing of the matrix. The resultant data is normalized data. Sum the values from each row and divide by the number of elements to obtain the average value. The resultant data constitutes priority data for each criterion.

4. Logical consistency

The assessment of the matrix's consistency relies on the greatest eigenvalue. This is derived from the subsequent formula:

$$CI = \frac{\lambda_{\text{maximum}} - n}{n - 1} \quad (2)$$

where: CI is the Consistency Index, λ max is the maximum eigenvalue of an n-order matrix, and n is the matrix's order.

If the CR value equals zero, the pairwise comparison matrix is consistent. The inconsistency threshold established by Saaty (1980) is ascertained by the Consistency Ratio (CR), which compares the consistency index to the random index value (RI). The Consistency Ratio can be expressed mathematically as follows:

$$CR = \frac{CI}{RI} \quad (3)$$

where: CR is the Consistency Ratio, and R I is the Random Index obtained from Table 2.

Table 2. Random Index (RI)

Matrix size	RI
1,2	0.00
3	0.58
4	0.90
5	1.12
6	1.24
7	1.32
8	1.41
9	1.45
10	1.49
11	1.51
12	1.48
13	1.56
14	1.57
15	1.59

Results and Discussion

Respondents

The Buddha Prabha Manokwari Buddhist Temple has a population of 123, the Buddha Sorong Buddhist Temple in Sorong City has 149, and the Sasana Buddhist Temple in Sorong Regency has 102. Utilizing the Slovin formula, a sample with a significance level of 5% was derived for the Buddha Prabha Manokwari Buddhist Temple, including 36 individuals; the Buddha Sorong City Sorong Buddhist Temple, consisting of 44 individuals, and the Buddha Sasana Sorong Regency Buddhist Temple, encompassing 30 individuals. The respondents' assessment was based on the temple's management at the Regency and Provincial levels of West Papua and Southwest Papua. This ensures that they comprehend the Temple's circumstances and circumstances in implementing the SDGs from a Buddhist perspective. The specifics of sample determination from each monastery are presented in Table 3.

Table 3. Management Structure of the Temple

Temple	Location	Province	Organization
Buddha Prabha	Manokwari Regency	West Papua	- The Assembly of Monks, the Great Sangha of Indonesia, was represented by the Secretary of the Eastern Region (1) - Regional Administration of the Indonesian Buddhist Council, West Papua Province (7) - Branch Administration of the Indonesian Buddhist Council, Manokwari Regency (5)

Temple	Location	Province	Organization
			- Regional Administrators of the Indonesian Buddhist Women's Association, West Papua Province (5) - Branch Administration of the Indonesian Buddhist Women's Association, Manokwari Regency (5) - Buddha Prabha Foundation (5) - Buddha Prabha Buddhist Training Center (5) - The Brotherhood of Youth of the Buddhayana, West Papua (3) Total: 36
Buddha Sorong	Sorong City	Southwest Papua	- The Indonesian Pure Land Mahayana Sangha is represented by the Secretary of the Eastern Region (1) - Leadership of the Indonesian Buddhist Community in Southwest Papua Province (5) - Regional Executive Board of the Indonesian Mahayana Buddhist Council of the Pure Land, Southwest Papua Province (9) - Branch Administration of the Indonesian Mahayana Buddhist Council of the Pure Land, Sorong City (5) - Buddha Sorong Foundation (7) - Regional Administrators of the Indonesian Pure Land Buddhist Women, Southwest Papua (7) - Branch Administration of the Indonesian Pure Land Buddhist Women, Sorong City (5) - Buddha Sorong Education Foundation (5) Total: 44
Buddha Sasana	Sorong Regency	Southwest Papua	- The Secretary of the Eastern Region represented the Indonesian Theravada Sangha Monks Assembly (1) - Regional Executive Board of the Maghabudi, Southwest Papua Province (8) - Branch Administration of the Maghabudi, Sorong Regency (6) - Regional Administrators of the Wandani Buddhist Women, Southwest Papua Province (5) - Branch Administration of the Wandani Buddhist Women, Sorong Regency (5) - The management of Dayakasabha Vihara (5) Total: 30

Establishing a Hierarchical Structure

Hierarchy is an abstraction of a system's structure that examines the interactions among components and their effects on the system. Establishing a hierarchy or decision framework is conducted to delineate the components of the system or recognized choice options (Šostar & Ristanović, 2023).

The hierarchy aims to facilitate the formulation of the SDGs Regional Action Plan (Figure 3), categorized into nine criteria: energy governance (SDG 7); water governance (SDG 6); waste governance (SDG 12); food, vitamin, and mineral governance (SDG 2); environmental governance (SDG 15); institutional governance (SDG 16); social governance (SDG 3); economic governance (SDG 8); and eco dharma (SDG 16) (Greenship, 2016; Edelglass, 2021; Gusmão, 2021).

Energy governance (SDG 7) encompasses six applications: (1) the efficient utilization of electricity, (2) initiatives to promote mixed and renewable energy, (3) education and culture to

reduce electricity consumption, (4) natural lighting systems, (5) ventilation and air circulation systems, and (6) performance monitoring and measurement.

Water governance (SDG 6) incorporates five components: (1) water use efficiency; (2) education and cultural initiatives for water conservation; (3) water-efficient sanitary fixtures; (4) rainwater collecting; and (5) performance monitoring and measurement.

Waste governance (SDG 12) is separated into five applications: (1) wastewater treatment; (2) separate trash bins (recycle); (3) campaigns to encourage distinct waste sorting behavior; (4) a culture of minimizing waste and waste (reduce); and (5) converting organic waste into compost (reuse).

Food, vitamin, and mineral governance (SDG 2) is comprised of five applications: (1) local food development; (2) vegetable and fruit crops within the monastery; (3) food waste reduction; (4) food security (the majority of products for the congregation); and (5) performance monitoring and evaluation.

Environmental governance (SDG 15) refers to nine applications: (1) Green Open Space planning; (2) mitigation of greenhouse gas emissions through energy and food efficiency; (3) reduction of deforestation and degradation in temple areas; (4) regulation of hazardous material usage; (5) promotion of environmentally friendly materials (ISO & eco-labeling); (6) enhancement of ecological functions in temple areas to support wildlife habitats; (7) fostering environmentally conscious education and culture; (8) creation of aesthetically pleasing, comfortable, and tranquil temple environments; and (9) implementation of maintenance, monitoring, and periodic evaluation.

Institutional governance (SDG 16) refers to six applications: (1) collaboration among stakeholders to promote eco dharma; (2) engagement of stakeholders, including gender considerations; (3) efficiency and effectiveness of stakeholders in advancing eco dharma; (4) fostering collective awareness of environmental issues; (5) implementation of eco management within institutions; and (6) consistency in endorsing eco dharma.

Social governance (SDG 3) has been separated into six applications, including the following: (1) the temple conducts activities that are advantageous to the community; (2) the temple and its environment, as well as its green open space; (3) the temple has a consistent social care program; (4) our temple has a health program for the congregation and the community; (5) our temple organizes formal education programs; and (6) our temple conducts routine non-formal education programs.

Economic governance (SDG 8) covers six applications: (1) right livelihood; (2) right livelihood; (3) expenditure should not exceed income (economic principle); (4) green/blue economy; (5) sustainable and greed-free utilization of natural resources; and (6) circular economy.

Eco-dharma (SDG 16) is organized into the following five applications: (1) seeds and avoid damage. Bramajala Sutta, Digha Nikaya I: 5, Majjhima Nikaya 3:180; (2) consume food in moderation (Ditu Sutta, Samyutta Nikaya 1); (3) without greed (Digha Nikaya 1:157); (4) do not harm plants and water (Majjhima Nikaya 1: 13); (5) live in harmony with society and the environment (Digha Nikaya 3: 60); and (6) do not harm plants and the environment (Digha Nikaya 1: 143).

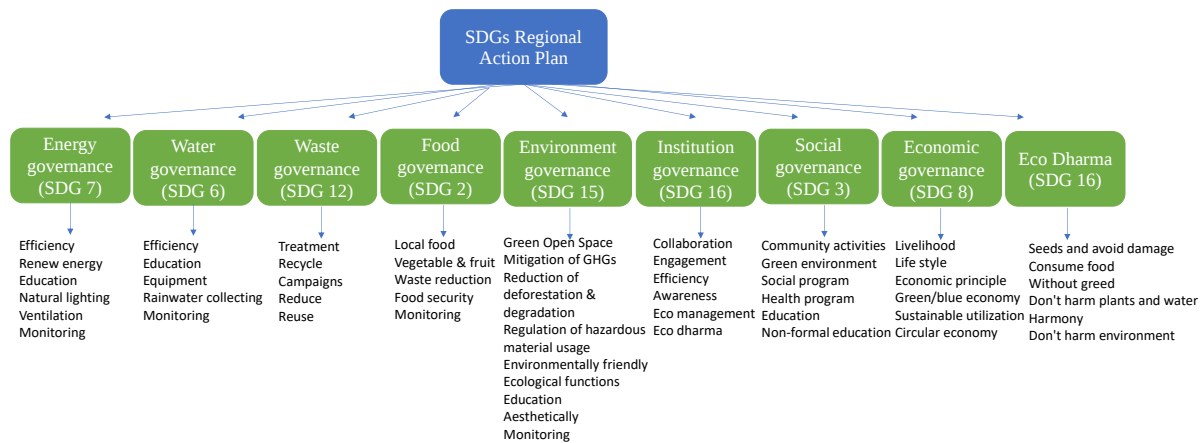


Figure 3. Hierarchical Structure of the SDGs Regional Action Plan

Evaluation of Criteria

The criteria for the SDGs Regional Action Plan, derived from the outcomes of the Focus Group Discussion with respondents (Table 4), are as follows:

1. A score of 1 in the Energy Governance criteria column and row indicates that both aspects hold equal significance, with their comparison being identical in the subsequent criterion.
2. A score of 2 in the Water Governance criteria column indicates that the consideration values of both aspects are closely aligned.
3. A value of 3 in the Waste Governance criteria column inside the Water Governance row indicates that both aspects possess consideration values that are more significant than the other factors.
4. A value of 4 in the Food Governance criteria column within the Water Governance row indicates that both values possess consideration values proximate to the subsequent criteria value.
5. A score of 5 in the Organizational Governance criteria column for Water Governance indicates that both factors are deemed one level more significant than the other elements.
6. A score of 6 in the Social Governance criteria column for Water Governance indicates that both values are nearly aligned with the subsequent criteria.
7. A score of 7 in the Economic Governance criteria for the Water Governance row indicates that factor one is more significant than the other aspects.
8. A score of 9 in the Eco Dharma criterion for Water Governance indicates that element one is much more critical than the other elements.
9. The subsequent row's matrix value corresponds to the filled column's inverse value.

The pairwise matrix of the derivatives for the implementation of each criterion of the SDGs Regional Action Plan adheres to the same methodology as outlined in Table 5 (energy governance, SDG 7); Table 6 (water governance, SDG 6); Table 7 (waste governance, SDG 12); Table 8 (food governance, SDG 2); Table 9 (environmental governance, SDG 15); Table 10 (institutional governance, SDG 16); Table 11 (social governance, SDG 3); Table 12 (economic governance, SDG 8); and Table 13 (eco dharma, SDG 16). The application of each criterion is determined through various literature and focus group talks with key respondents concerning the implementation and experiences generated at each study of Vihara/ Temple (Jana et al., 2022; Kurniawan et al., 2024; Suryani & Muslim, 2024).

Table 4. Pairwise matrix of criteria for the Regional Action Plan on SDGs

SDGs Regional Action Plan	EG	WaG	WtG	FG	EG	IG	SG	EG	ED
Energy Governance (EG)	1.00	0.50	0.33	0.25	0.20	0.20	0.17	0.14	0.11
Water Governance (WaG)	2.00	1.00	0.67	0.50	0.40	0.40	0.33	0.29	0.22
Waste Governance (WtG)	3.00	1.50	1.00	0.75	0.60	0.60	0.50	0.43	0.33
Food Governance (FG)	4.00	2.00	1.33	1.00	0.80	0.80	0.67	0.57	0.44
Environmental Governance (EG)	5.00	2.50	1.67	1.25	1.00	1.00	0.83	0.71	0.56
Institution Governance (IG)	5.00	2.50	1.67	1.25	1.00	1.00	0.83	0.71	0.56
Social Governance (SG)	6.00	3.00	2.00	1.50	1.20	1.20	1.00	0.86	0.67
Economic Governance (EG)	7.00	3.50	2.33	1.75	1.40	1.40	1.17	1.00	0.78
Eco Dharma (ED)	9.00	4.50	3.00	2.25	1.80	1.80	1.50	1.29	1.00
Total	42.00	21.00	14.00	10.50	8.40	8.40	7.00	6.00	4.67

Table 5. Pairwise matrix of energy governance

Energy Governance	Ef	RE	Ed	BL	V	M
Efficiency (Ef)	1.00	0.50	0.33	0.25	0.20	0.14
Renew Energy (RE)	2.00	1.00	0.67	0.67	0.67	0.67
Education (Ed)	3.00	1.50	1.00	0.75	0.75	0.75
Natural Lighting (NL)	4.00	2.00	1.33	1.00	0.80	0.80
Ventilation (V)	5.00	2.50	1.67	1.25	1.00	0.71
Monitoring (M)	7.00	3.50	2.33	1.75	1.40	1.00
Total	22.00	11.00	7.33	5.67	4.82	4.07

Table 6. Pairwise matrix of water governance

Water Governance	Ef	Ed	Eq	RC	M
Efficiency (Ef)	1.00	0.50	0.33	0.20	0.14
Education (Ed)	2.00	1.00	0.67	0.40	0.29
Equipment (Eq)	3.00	1.50	1.00	0.60	0.43
Rainwater Collecting (RC)	5.00	2.50	1.67	1.00	0.71
Monitoring (M)	7.00	3.50	2.33	1.40	1.00
Total	18.00	9.00	6.00	3.60	2.57

Table 7. Pairwise matrix of waste governance

Waste Governance	T	Rc	C	Rd	Rs
Treatment (T)	1.00	0.33	0.25	0.20	0.14
Recycle (Rc)	3.00	1.00	0.75	0.60	0.43
Campaigns (C)	4.00	1.33	1.00	0.80	0.57
Reduce (Rd)	5.00	1.67	1.25	1.00	0.71
Reuse (Rs)	7.00	2.33	1.75	1.40	1.00
Total	20.00	6.67	5.00	4.00	2.86

Table 8. Pairwise matrix of food, vitamin and mineral governance

Food Governance	LF	VF	WR	FS	M
Local Food (LF)	1.00	0.50	0.33	0.20	0.14
Vegetable & Fruit (VF)	2.00	1.00	0.67	0.40	0.29
Waste Reduction (WR)	3.00	1.50	1.00	0.60	0.60
Food Security (FS)	5.00	2.50	1.67	1.00	0.71
Monitoring (M)	7.00	3.50	2.33	1.40	1.00
Total	18.00	9.00	6.00	3.60	2.74

Table 9. Pairwise matrix of environmental governance

Environmental Governance	GOS	Mi	DD	R	EF	EcF	Ed	A	M
Green Open Space (GOS)	1.00	0.50	0.33	0.25	0.20	0.17	0.14	0.13	0.11
Mitigation of GHGs (Mi)	2.00	1.00	0.67	0.50	0.40	0.33	0.29	0.25	0.22
Reduction of Deforestation & Degradation (DD)	3.00	1.50	1.00	0.75	0.60	0.50	0.43	0.38	0.33
Regulation of hazardous material usage (R)	4.00	2.00	1.33	1.00	0.80	0.67	0.57	0.50	0.44
Environmentally Friendly (EF)	5.00	2.50	1.67	1.25	1.00	0.83	0.71	0.63	0.56
Ecological Functions (EcF)	6.00	3.00	2.00	1.50	1.20	1.00	0.86	0.75	0.67
Education (Ed)	7.00	3.50	2.33	1.75	1.40	1.17	1.00	0.88	0.78
Aesthetically (A)	8.00	4.00	2.67	2.00	1.60	1.33	1.14	1.00	0.89
Monitoring (M)	9.00	4.50	3.00	2.25	1.80	1.50	1.29	1.13	1.00
Total	45.00	22.50	15.00	11.25	9.00	7.50	6.43	5.63	5.00

Table 10. Pairwise matrix of institutional governance

Institution Governance	Co	Eg	Ef	Aw	EM	ET
Collaboration (Co)	1.00	0.50	0.33	0.25	0.20	0.14
Engagement (Eg)	2.00	1.00	0.67	0.50	0.40	0.29
Efficiency (Ef)	3.00	1.50	1.00	0.75	0.60	0.43
Awareness (Aw)	4.00	2.00	1.33	1.00	0.80	0.57
Eco Management (EM)	5.00	2.50	1.67	1.25	1.00	0.71
Eco Teaching (ET)	7.00	3.50	2.33	1.75	1.40	1.00
Total	22.00	11.00	7.33	5.50	4.40	3.14

Table 11. Pairwise matrix of social governance

Social Governance	CA	GE	SP	HP	Ed	NF
Community Activities (CA)	1.00	0.33	0.33	0.25	0.20	0.14
Green Environment (GE)	3.00	1.00	1.00	0.75	0.60	0.43
Social Program (SP)	3.00	1.00	1.00	0.75	0.60	0.43
Health Program (HP)	4.00	1.33	1.33	1.00	0.80	0.57
Education (Ed)	5.00	1.67	1.67	1.25	1.00	0.71
Non-formal education (NF)	7.00	2.33	2.33	1.75	1.40	1.00
Total	23.00	7.67	7.67	5.75	4.60	3.29

Table 12. Pairwise matrix of economic governance

Economic Governance	Lv	LS	EP	GBE	SU	CE
Livelihood (Lv)	1.00	0.33	0.25	0.20	0.17	0.14
Life Style (LS)	3.00	1.00	0.75	0.60	0.50	0.43
Economic Principle (EP)	4.00	1.33	1.00	0.80	0.67	0.57
Green/blue Economy (GBE)	5.00	1.67	1.25	1.00	0.83	0.71
Sustainable Utilization (SU)	6.00	2.00	1.50	1.20	1.00	0.86
Circular Economy (CE)	7.00	2.33	1.75	1.40	1.17	1.00
Total	26.00	8.67	6.50	5.20	4.33	3.71

Table 13. Pairwise matrix of eco dharma

Eco Dharma	Sd	CF	WG	DPW	H	DHE
Seeds (Sd)	1.00	0.33	0.20	0.14	0.13	0.11
Consume Food (CF)	3.00	1.00	0.60	0.43	0.38	0.33
Without Greed (WG)	5.00	1.67	1.00	0.71	0.63	0.56
Don't Harm Plants & Water (DPW)	7.00	2.33	1.40	1.00	0.88	0.78
Harmony (H)	8.00	2.67	1.60	1.14	1.00	0.89
Don't Harm Environment (DHE)	9.00	3.00	1.80	1.29	1.13	1.00
Total	33.00	11.00	6.60	4.71	4.13	3.67

Synthesis of Priority

The calculation of priority values, based on criteria established during discussions among the core administrators of each Vihara, revealed that eco dharma possesses the highest value, as it serves as a guiding principle for the application of Buddha's teachings within the SDGs Regional Action Plan in the Papua Bird's Head (Zielke, 2023; Kongsombut et al., 2024). The priority value is succeeded by economic governance to ensure the well-being of the populace, allowing them to engage in worship and various environmental, organizational, and social activities with tranquility (Van Zanten & van Tulder, 2021; D'Adamo et al., 2022). The subsequent priority value is social governance, emphasizing the importance of fostering relationships among other believers to promote good and achieve the SDGs Regional Action Plan collaboratively (Eichler & Schwarz, 2019; Sadiq et al., 2023). Environmental governance is the subsequent priority in the Vihara design, which comprises multiple components adhering to Eco-Vihara criteria (Elder & Olsen, 2019; Scharlemann et al., 2020). Institutional governance is a critical concern, as administrators are essential in successfully implementing Eco-Vihara and attaining the SDGs Regional Action Plan (Rosati & Faria, 2019; Bose & Khan, 2022). Food, waste, water, and energy governance are the final priorities to attain the Eco-Vihara objective. This has become problematic due to insufficient oversight by the guards and administrators. The implementation of this governance is anticipated to play a crucial role for Vihara in the successful execution of the SDGs Regional Action Plan (Slorach et al; 2020; Petrariu et al., 2021; Cudjoe et al., 2022).

The priority values of the SDGs regional action plan criteria for implementing Eco-Vihara in the Papua Bird's Head are presented in Table 14. The priority values for each application of the criteria are presented in Tables 15-23. This priority assessment is crucial for establishing the weights in formulating and assessing the SDGs Regional Action Plan in Vihara of the Papua Bird's Head (Baffoe, 2019; Londoño-Pineda et al., 2021).

Table 14. Priority values of criteria for the Regional Action Plan on SDGs

SDGs Regional Action Plan	Priority Values
Eco Dharma	0.214
Economic Governance	0.167
Social Governance	0.143
Environmental Governance	0.119
Institutional Governance	0.119
Food Governance	0.095
Waste Governance	0.071
Water Governance	0.048
Energy Governance	0.024

Table 15. Priority values of eco dharma

Eco Dharma	Priority Values
Don't harm the environment	0.273
Harmony	0.242
Don't harm plants and water	0.212
Without greed	0.152
Consume food	0.091
Seeds and avoid damage	0.030

Table 16. Priority values of economic governance

Economic Governance	Priority Values
Circular economy	0.269
Sustainable utilization	0.231
Green/blue economy	0.192
Economic principle	0.154
Life style	0.115
Livelihood	0.038

Table 17. Priority values of social governance

Social Governance	Priority Values
Non-formal education	0.304
Education	0.217
Health program	0.174
Social program	0.130
Green environment	0.130
Community activities	0.043

Table 18. Priority values of environmental governance

Environmental Governance	Priority Values
Monitoring	0.200
Aesthetically	0.178
Education	0.156
Ecological functions	0.133
Environmentally friendly	0.111

Regulation of hazardous material usage	0.089
Reduction of deforestation & degradation	0.067
Mitigation of GHGs	0.044
Green Open Space	0.022

Table 19. Priority values of institution governance

Institutional Governance	Priority Values
Eco teaching	0.318
Eco management	0.227
Awareness	0.182
Efficiency	0.136
Engagement	0.091
Collaboration	0.045

Table 20. Priority values of food governance

Food Governance	Priority Values
Monitoring	0.384
Food security	0.274
Waste reduction	0.177
Vegetable & fruit	0.110
Local food	0.055

Table 21. Priority values of waste governance

Waste Governance	Priority Values
Reuse	0.350
Reduce	0.250
Campaigns	0.200
Recycle	0.150
Treatment	0.050

Table 22. Priority values of water governance

Water Governance	Priority Values
Monitoring	0.389
Rainwater collecting	0.278
Equipment	0.167
Education	0.111
Efficiency	0.056

Table 23. Priority values of energy governance

Energy Governance	Priority Values
Monitoring	0.300
Ventilation	0.214
Natural lighting	0.181
Education	0.147
Renew energy	0.115
Efficiency	0.043

Logical Consistency

The logical coherence derived from the nine criteria and their respective implementations is illustrated in Table 24, where all evaluation results fall within the consistent category (Aguarón et al., 2019; Pant et al., 2022). Consequently, the priority values obtained can be utilized in the application of Eco-Vihara and in supporting the SDGs Regional Action Plan.

Table 24. Logical consistency of SDGs Regional Action Plan

SDGs Regional Action Plan	CI	RI	CR	Evaluation
Criteria	0.000	1.450	0.000	Consistency
Implementation of Eco Dharma	0.000	1.240	0.000	Consistency
Implementation of Economic Governance	0.000	1.240	0.000	Consistency
Implementation of Social Governance	0.000	1.240	0.000	Consistency
Implementation of Environmental Governance	0.000	1.450	0.000	Consistency
Implementation of Institutional Governance	0.000	1.240	0.000	Consistency
Implementation of Food Governance	0.020	1.120	0.017	Consistency
Implementation of Waste Governance	0.000	1.120	0.000	Consistency
Implementation of Water Governance	0.000	1.120	0.000	Consistency
Implementation of Energy Governance	0.113	1.240	0.091	Consistency

Conclusion

Eco Vihara's commitment to the SDGs Regional Action Plan commenced in collaboration with the principal management of the three Viharas located in Papua's Bird's Head region: Buddha Prabha Vihara in Manokwari Regency (36 respondents), Buddha Sorong Vihara in Sorong City (44 respondents), and Buddha Sasana Vihara in Sorong Regency (30 respondents), which are located in Southwest Papua Province.

The structure formulation of the AHP structure commenced developing the SDGs Regional Action Plan, predicated on the following nine criteria: energy governance (SDG 7), water governance (SDG 6), waste governance (SDG 12), food, vitamin, and mineral governance (SDG 2), environmental governance (SDG 15), institutional governance (SDG 16), social governance (SDG 3), economic governance (SDG 8), and eco dharma (SDG 16). Additionally, each criterion is detailed in its corresponding applications according to the outcomes of the FGD conducted by the Vihara core management.

The criteria are evaluated by assembling a paired matrix for each criterion and its execution. Additionally, a priority evaluation is conducted, yielding the subsequent ranking: Eco Dharma (0.214), Economic Governance (0.167), Social Governance (0.143), Environmental Governance (0.119), Institutional Governance (0.119), Food Governance (0.095), Waste Governance (0.071), Water Governance (0.048), and Energy Governance (0.024). Similarly, each implementation of every criterion is evaluated to determine its priority rating.

The consistency evaluation results for the nine criteria and their respective implementations yield a CR value of <0.10, indicating that all criteria and implementations are coherent and appropriate for guidelines in developing Eco-Vihara to support the SDGs Regional Action Plan from a Buddhist perspective.

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Disclosure of Conflict of Interest

There is no conflict of interest.

Statement of Informed Consent

Informed consent was obtained from all individual participants included in the study.

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