



World Tourism Organization
International Network
of Sustainable Tourism
Observatories

ANNUAL REPORT 2023
MONITORING CENTRE FOR SUSTAINABLE TOURISM
OBSERVATORIES INSTO AND WINSTO
UNIVERSITAS SUMATERA UTARA
LAKE TOBA – Indonesia

1. Introduction

The Universitas Sumatera Utara (USU) Monitoring Centre for Sustainable Tourism Observatories (MCSTO) has been actively contributing to the sustainable development of tourism in Lake Toba since becoming a member of the UNWTO International Network of Sustainable Tourism Observatories (INSTO) in 2017. Initially, MCSTO USU focused its monitoring efforts on four villages in Pangururan Subdistrict, Samosir, before expanding in 2019 to cover thirty-one sub-districts, including both non-Key Tourism Areas (non-KTA) and Key Tourism Areas (KTA). This initiative aims to provide data-driven insights to support the achievement of Sustainable Development Goals (SDGs) and ensure that tourism development in the region remains sustainable and beneficial for local communities.

The COVID-19 pandemic significantly impacted tourism in Indonesia, necessitating adjustments to MCSTO USU's monitoring activities. Government-imposed restrictions on mobility in 2020 led to a temporary limitation of monitoring efforts to four Key Tourism Areas (Girsang Sipangan Bolon, Simanindo, Pangururan, and Balige). Despite these challenges, MCSTO USU continued to assess the sustainability of tourism in the region, adapting its methodologies to ensure reliable and consistent data collection during the pandemic period.

In 2023, MCSTO USU remains committed to enhancing its monitoring capabilities and contributing to global sustainable tourism initiatives. This year, the observatory expanded its focus from five primary sustainability indicators—wastewater management, solid waste management, water management, water quality, and tourism product diversity—to a broader set of eleven indicators, including local satisfaction, economic benefits, employment, energy management, governance, accessibility, and climate action. These efforts align with UNWTO's sustainability framework and support government strategies in fostering a more resilient and responsible tourism sector in Lake Toba.

2. Destination Profile

DESTINATION PROFILE			
		2022	2023
1	Tourism Satellite Account/s (TSA) in the destination country	<input checked="" type="checkbox"/> YES Last time a TSA was conducted:	<input checked="" type="checkbox"/> YES Last time a TSA was conducted:
2	Sector relevance: Contribution of (a) tourism and (b) other economic sectors to the local GDP (%) – latest figures	a) Tourism 2,04% b) Agriculture 22,98% c) Industry 19,13%	a) Tourism 3,12% b) Agriculture 31,07% c) Industry 29,73%
3	Arrivals of inbound (non-resident) visitors for last three years – Thousands	<input checked="" type="checkbox"/> YES North Sumatera 2022 : 74.498 2021: 230 2020: 44.400 Lake Toba Region 2022 : - 2021: - 2020: 297 Source: BPS of North Sumatera	<input checked="" type="checkbox"/> YES North Sumatera 2023 : 93.312 2022: 74.498 2021: 230 Lake Toba Region 2023 : - 2022: - 2021: - Source: BPS of North Sumatera
3.1	Percentage of total annual arrivals of inbound (non-resident) visitors occurring in peak month and in peak quarter (please indicate which month and quarter)	<input checked="" type="checkbox"/> YES 2022 = 3.214 on January, 6.317 on June, and 19.198 on December. (Source: BPS of North Sumatera)	<input checked="" type="checkbox"/> YES 2023 = 14.195 on January, 16.667 on June, and 18.440 on December. (Source: BPS of North Sumatera)
4	Trips of domestic visitors for the last three years – Thousands	<input checked="" type="checkbox"/> YES Lake Toba Region 2022 : 1.031.594 2021: 201.335 2020: 217.462 Source: BPS of Toba Region	<input checked="" type="checkbox"/> YES Lake Toba Region 2023 : 2.197.015 2022 : 1.031.594 2021 : 201.335 Source: BPS of Toba Region
5	Tourism industries: accommodation for visitors in hotel and similar establishments - Units	<input checked="" type="checkbox"/> YES North Sumatera Total rooms: 33.580 Total bed-space: 48.164 Lake Toba Region Total rooms: 818 Total bed-places: 1.350	<input checked="" type="checkbox"/> YES North Sumatera Total rooms: 47.012 Total bed-space: 67.429 Lake Toba Region Total rooms: 1,636 Total bed-places: 2.700

DESTINATION PROFILE

		2022	2023
6	Current top 5 primary source markets for the destination	<input checked="" type="checkbox"/> YES Malaysia Singapore Belanda Australia Tiongkok Taiwan	<input checked="" type="checkbox"/> YES Malaysia Singapore Tiongkok Thailand Amerika Serikat Australia
7	Research & Journal related to Sustainable Tourism	Research & Journal : 26	Research & Journal : 46
8	Please describe the destination's experience with other monitoring initiatives/systems	In 2022, the monitoring will be expanded into the whole lake's surrounding, consists of 4 sub-districts.	In 2023, the monitoring will be expanded into the whole lake's surrounding, consists of 4 sub-districts.
9	Are there strategies in place for sustainable development of the destination?	<input checked="" type="checkbox"/> YES Name of those of relevance: STDev program of the Indonesian Ministry of Tourism.	<input checked="" type="checkbox"/> YES Name of those of relevance: STDev program of the Indonesian Ministry of Tourism.
10	DMO(s) in monitoring area: Yes/No and year of establishment	<input checked="" type="checkbox"/> YES Year of establishment: Badan Pelaksana Otorita Danau Toba / The Agency of Lake Toba Authority (2017); Badan Pengelola Geopark Kaldera Toba / The Management Board of Toba Caldera Geopark (2017)	<input checked="" type="checkbox"/> YES Year of establishment: Badan Pelaksana Otorita Danau Toba / The Agency of Lake Toba Authority (2023); Badan Pengelola Geopark Kaldera Toba / The Management Board of Toba Caldera Geopark (2023)

3. Findings, Reviews, and Performances of Issues and Indicators

In the current academic year, the MCSTO of USU has undertaken a comprehensive examination of eleven distinct domains through socialization/FGD, monitoring, observation, and observation: Accessibility, Economic Benefits to the Destination, Employment, Seasonal Tourism, Governance, Local Satisfaction, Climate Action, Energy Management, Water Management, Liquid Waste Management, Solid Waste Management. The completed activities and the upcoming action plan for nine sustainable tourism concerns are listed below.

1. Local satisfaction with tourism

The level of local community satisfaction was monitored in 2022 and 2023 across four districts. In general, satisfaction levels showed an increase, as observed in Simanindo and Girsang Sipanganbolon. However, a significant change was recorded in Balige, with a decline of 5.2%. Overall, the local communities in each district remain satisfied with tourism in their respective areas.

Simanindo

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
1	Local Satisfaction	Level of satisfaction of local people with tourism	Likert scale average	2023	3,95
				2022	3,93

Girsang Sipangan Bolon

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
1	Local Satisfaction	Level of satisfaction of local people with tourism	Likert scale average	2023	3,93
				2022	3,8

Pangururan

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
1	Local Satisfaction	Level of satisfaction of local people with tourism	Likert scale average	2023	3,56
				2022	3,97

Balige

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
1	Local Satisfaction	Level of satisfaction of local people with tourism	Likert scale average	2023	3,75
				2022	4,27

2. Economic Benefits to the Destination

The economic benefits of the tourism sector in the four main regions surrounding Lake Toba exhibit variations in growth and challenges. In Simanindo, the number of tourism services, such as travel agencies, increased by 18%, whereas accommodation facilities declined by 3%, with the total number of rented rooms decreasing by 4%. Nevertheless, the local GDP grew by 9%, with the tourism sector contributing 67%. Girsang Sipangan Bolon experienced significant growth in the number of travel agencies (44%) and food establishments (623 units), despite a sharp decline in accommodations by 48%. Pangururan demonstrated economic progress with 15 travel agencies, 11 non-government-managed tourist attractions, and a 68% increase in food establishments. However, the number of rented rooms saw a slight decline (-1%). The local GDP increased by 8%, with 40% of the total development budget allocated to the tourism sector. Meanwhile, Balige recorded growth in accommodation, with the number of lodging facilities increasing by 17% and rented rooms rising by 29%. The culinary sector also expanded, with a 57% increase in food establishments. Overall, the tourism sector continues to generate varying economic impacts across each region, presenting unique challenges and opportunities in destination management.

Sustainability Indicator	Simanindo	Girsang Sipangan Bolon	Pangururan	Balige
Number of Tourism Services (Bureau/Travel Agent)	18%	44%	15 units	20 units
Number of Tourism Objects managed by Non-Government	0%	0%	11 units	18 units
Number of Lodging (Hotel, Cottage, Guesthouse, Villa Motel)	326	375	172units	289
Total number of rooms for rent (room)	-4%	11%	-1%	29%
The number of Food Business Places (restaurants, Café, etc.)	0%	623 units	68%	57%
Number of certified/licensed Lodging, Dining, and Tourist Attractions	188 units	-	86%	-
Local Gross Regional Domestic Product (GDP)	9%	-	8%	-
Total local development budget	5%	-	Rp 898.067.490.574	-
Gross Regional Domestic Product (GDP) from the Tourism sector	67%	-	40%	-

3. Employment

Employment trends in the tourism sector vary across the monitored regions. In Simanindo, the workforce increased by 16%, but the number of female workers declined by 19%, and tourists' perception of labor services also decreased by 23%. Girsang Sipangan Bolon exhibited higher workforce growth, with an overall increase of 28% and a 10% rise in female workers. Meanwhile, in Pangururan, tourists' perception of labor services declined by 17.61%, indicating a need for improved service quality. Balige saw a 9% increase in the workforce; however, the number of female workers decreased by 10%. These data indicate that while there is an increase in the workforce in some areas, challenges persist in maintaining female worker participation and enhancing the quality of labor services in the tourism sector.

Sustainability Indicator	Simanindo	Girsang sipanganbolon	Pangururan	Balige
Total number of workers in the tourism sector	16%	28%	-	9%
Number of female workers in the tourism sector	-19%	10%	-	-10%
Tourist perceptions of worker services in the tourism sector	-23%	-	-17.61%	

4. Seasonal Tourism

Seasonal tourism trends across various regions exhibit diverse visitation patterns. Simanindo experienced a 23% increase in domestic tourist visits and a remarkable 100% surge in international tourists. The average hotel room occupancy rate reached 58% per month, with tourist perceptions of seasonal tourism recorded at 3.29%. Girsang Sipangan Bolon showed a higher growth rate in domestic tourist visits, at 56%, but hotel room occupancy remained low at only 14% per month. In Pangururan, domestic tourist numbers rose by 23%, while international tourist visits saw a significant increase of 100%. Despite an average room occupancy rate of 58%, tourist perceptions of seasonal tourism declined by 10%. Meanwhile, Balige recorded a 49% increase in domestic tourists but did not register any international tourist visits. The room occupancy rate in the region stood at 21% per month. Overall, these data highlight differences in tourist visitation patterns across regions, with some areas experiencing a surge in international tourists, while others remain more reliant on domestic visitors.

Sustainability Indicator	Simanindo	Girsang sipanganbolon	Pangururan	Balige
Domestic tourists visit	23%	56%	23%	49%
Number of foreign tourist visits	100%	-	100%	0
The average number of rooms occupied by tourists per month	58%	14%	58%	21%
Tourist perception of seasonal tourism	3.29%	-	-10%	-

5. Governance

Sustainable tourism governance across various regions reflects the implementation of long-term destination development strategies, despite challenges in execution. Simanindo has established a long-term development plan; however, the number of organizations responsible for sustainable tourism management remains at 0%. Tourism monitoring decreased by 40%, while climate change education activities increased by 40%. Asset and tourist attraction inventories remained stagnant, whereas tourism promotion activities grew by 19%. Girsang Sipangan Bolon also has a destination management strategy, with a significant increase in climate change education activities (80%). However, tourism monitoring declined sharply, and asset inventorying saw a significant drop of 77%. Pangururan follows a similar trend, with a long-term development strategy in place but no coordinating organizations for tourism management. Tourism monitoring declined by 17%, while climate change education increased by 67%, and tourism promotion rose by 72%. Balige, on the other hand, has a well-defined management strategy supported by seven organizations responsible for coordinating sustainable tourism efforts. These data indicate that while efforts in tourism governance are evident, challenges such as organizational coordination, continuous monitoring, and asset inventorying still require improvement.

Sustainability Indicator	Simanindo	Girsang Sipanganbolon	Pangururan	Balige
Multi-year destination development plan or strategy	Yes	Yes	Yes	Yes
Number of organisations responsible for coordinating the management of sustainable tourism	0%	-	0%	7
Number of tourism monitoring in one year	-40%	<100%	-17%	
Number of climate change education activities in one year	40%	80%	67%	
Number of assets and tourist attractions inventoried	0%	-77%	0%	
Number of tourism promotion activities in one year	19%		72%	

6. Climate Action

Climate action and the impact of extreme weather on tourist destinations across various regions show varying levels of damage. Simanindo recorded seven cases of damage caused by extreme weather, with five instances of storms or flooding occurring annually. Girsang Sipangan Bolon experienced nine cases of damage to tourist destinations, with four occurrences of storms or floods per year. Pangururan reported the highest level of damage, with 19 cases attributed to climate change, despite a lower annual frequency of storms or floods, totaling three incidents. Meanwhile, Balige had the lowest number of damage cases, recording four incidents, with four storms or floods occurring annually. These data indicate that climate change and extreme weather significantly impact the sustainability of tourist destinations around Lake Toba. Therefore, enhanced mitigation and adaptation strategies are essential to minimize their effects.

Sustainability Indicator	Simanindo	Girsang Sipangan bolon	Pangururan	Balige
Damage to tourist destinations due to climate extremes	7 case	9 case	19 case	4 case
damage every year due to storm/flood events	5 case	4 case	3 case	4 case

7. Energy Management

Energy management in the tourism sector across various regions exhibits relatively uniform consumption patterns, with limited adoption of renewable energy. Simanindo and Pangururan have a daily energy consumption rate of 3.54 kWh per person per hour, with two and one business units utilizing renewable energy, respectively. Girsang Sipangan Bolon has a slightly lower daily energy consumption of 3.29 kWh per person per hour, but the number of businesses using renewable energy remains at two units. Meanwhile, Balige records the same daily energy consumption as Simanindo and Pangururan (3.54 kWh per person per hour), yet no business units have transitioned to renewable energy. These data indicate that while energy consumption remains stable across all regions, the use of renewable energy is still very limited. Therefore, further efforts are needed to promote the adoption of environmentally friendly energy sources in the tourism sector.

Simanindo

Sustainability Indicator	Simanindo	Girsang Sipangan bolon	Pangururan	Balige
Energy Consumption in a day	3,54 kWh/Org/Hr	3,29 kWh/Org/Hr	3,54 kWh/Org/Hr	3,54 kWh/Org/Hr
Number of business units in the tourism sector that use energy from renewable resources	2 units	2 unit	1 unit	0

8. Water Management

Water management in the tourism sector across various regions exhibits variations in consumption, access to clean water, and the utilization of recycled water. Simanindo recorded a 1% increase in clean water usage; however, no tourism facilities have access to clean drinking water or water recycling systems. Girsang Sipangan Bolon experienced a slight decrease in clean water consumption by -3%, with 53 tourism facilities having access to clean drinking water, although none have implemented water recycling systems. Pangururan reported a daily clean water consumption of 131 liters, while Balige recorded a slightly lower usage of 129 liters per day. However, Balige has made significant progress in water management, with 112 tourism facilities implementing water recycling systems. These data indicate that while some regions have improved access to clean water, the implementation of water recycling systems remains very limited and needs to be further enhanced to support environmental sustainability in the tourism sector.

Sustainability Indicator	Simanindo	Girsang Sipangan bolon	Pangururan	Balige
Daily use of clean water	1%	-3%	131 liters	129 liters
Percentage of recycled water use	0%	0%	-	-
Number of tourism facilities that have recycled water	0%	0%	-	-
Number of tourism facilities that already have access to clean drinking water	0%	53 units	-	112 units

9. Liquid Waste Management

Water management in the tourism sector across various regions exhibits variations in consumption, access to clean water, and the utilization of recycled water. Simanindo recorded a 1% increase in clean water usage; however, no tourism facilities have access to clean drinking water or water recycling systems. Girsang Sipangan Bolon experienced a slight decrease in clean water consumption by -3%, with 53 tourism facilities having access to clean drinking water, although none have implemented water recycling systems. Pangururan reported a daily clean water consumption of 131 liters, while Balige recorded a slightly lower usage of 129 liters per day. However, Balige has made significant progress in water management, with 112 tourism facilities implementing water recycling systems. These data indicate that while some regions have improved access to clean water, the implementation of water recycling systems remains very limited and needs to be further enhanced to support environmental sustainability in the tourism sector.

Sustainability Indicator	Simanindo	Girsang Sipangan bolon	Pangururan	Balige
The amount of liquid waste from the tourism sector receiving treatment (liquid waste treatment)	639,39 liters/day	0	656,64 liters/day	0.084 liters/day
Number of business units in the tourism sector that implement a water treatment system	37 units	4 units	38 units	1 unit

10. Solid Waste Management

Solid waste management in the tourism sector continues to face challenges in implementing waste segregation and recycling systems. Simanindo has two tourism-related businesses that practice waste segregation, but none have adopted waste recycling. Girsang Sipangan Bolon shows a more proactive approach, with six businesses implementing waste segregation; however, no businesses have engaged in recycling efforts. Pangururan has only one business practicing waste segregation, with tourist perceptions of destination cleanliness remaining stagnant at 0%, indicating a lack of progress in waste management. Balige, despite having only one business practicing waste segregation, has made more significant strides, with ten businesses implementing waste recycling systems. These data indicate that while some efforts in waste segregation are in place, recycling practices remain highly limited and require further improvements to enhance environmental sustainability in the tourism sector.

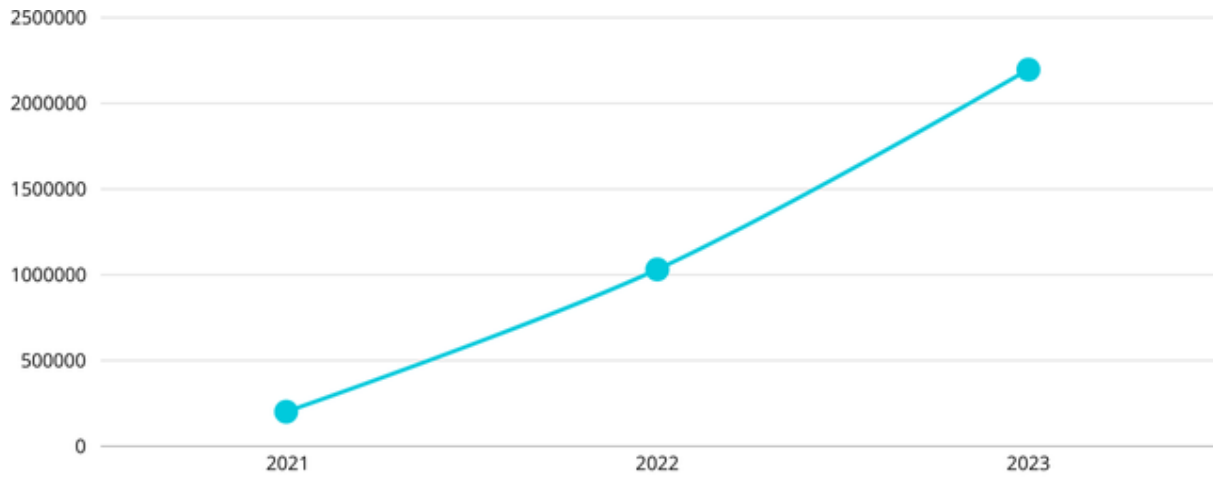
Sustainability Indicator	Simanindo	Girsang Sipangan bolon	Pangururan	Balige
Number of business units in the tourism sector that implement waste type segregation	2 units	6 units	1 units	1 unit
Number of tourism sector business units that recycle waste	0	0	0%	10 units

11. Accessibility

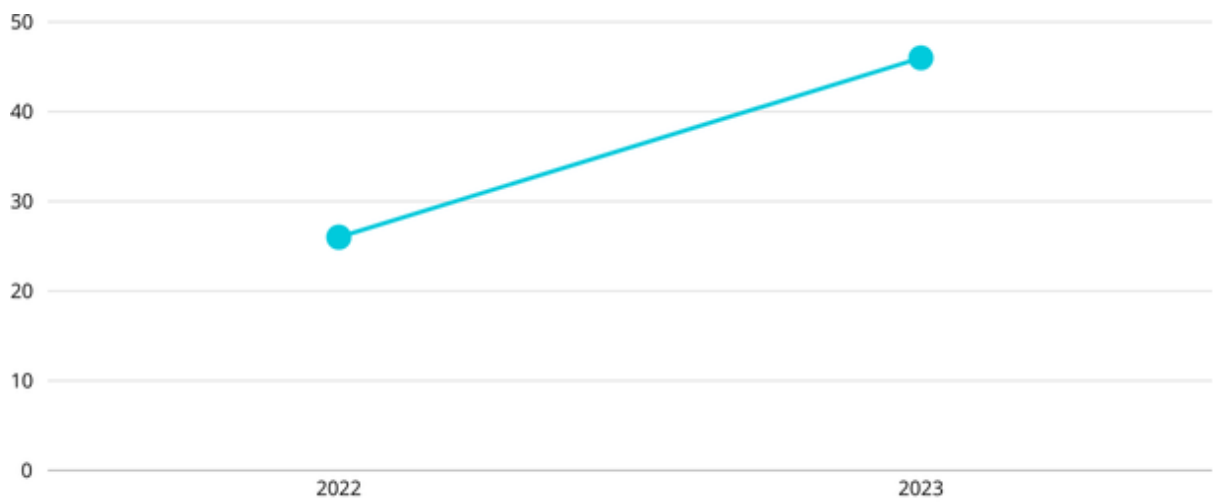
Accessibility in the tourism sector across various regions reflects the implementation of disability-friendly policies, although differences remain in the availability of medical facilities and healthcare services. Simanindo, Pangururan, and Balige have established inclusive policies for people with disabilities and ensure the presence of medical personnel in tourist transportation. However, the number of available medical facilities varies across regions, with 8 units in Simanindo, 28 units in Girsang Sipangan Bolon, 78 units in Pangururan, and 108 units in Balige. While Girsang Sipangan Bolon has adopted disability-friendly policies, it has yet to provide medical personnel in tourist transportation. These data indicate that while awareness of accessibility is present in all regions, there are still disparities in infrastructure and healthcare services that support tourists, particularly those requiring medical assistance.

Sustainability Indicator	Simanindo	Girsang Sipangan bolon	Pangururan	Balige
The existence of policies that are friendly to people with disabilities	Yes	Yes	Yes	Yes
number of associated hospital or medical facilities	8 units	28	78 units	108 units
presence of medical personnel in tourist transportation	Yes	-	Yes	Yes

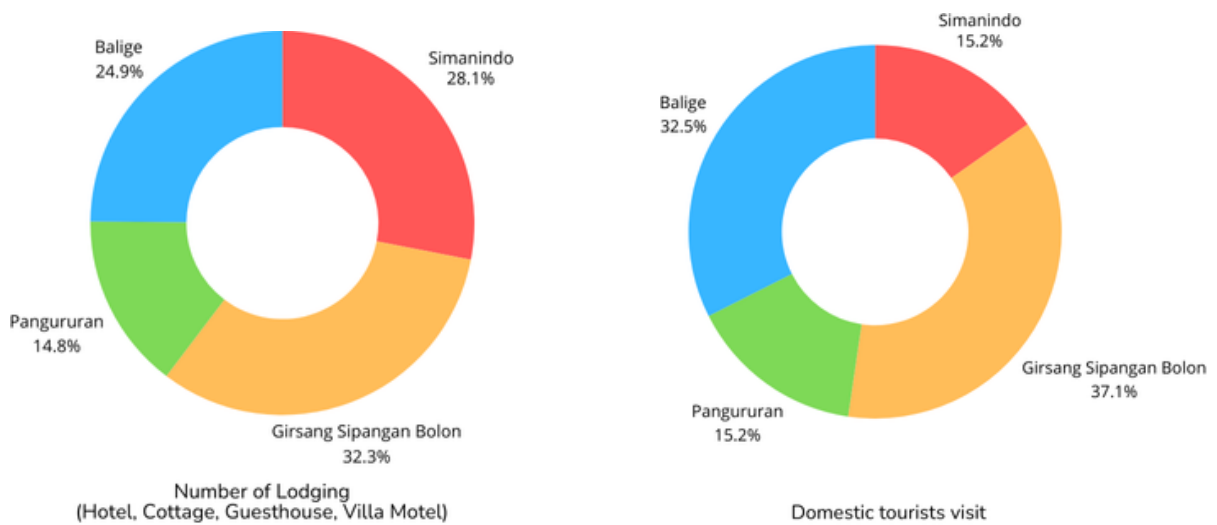
INFOGRAPHICS



Trips of domestic visitors for the last three years



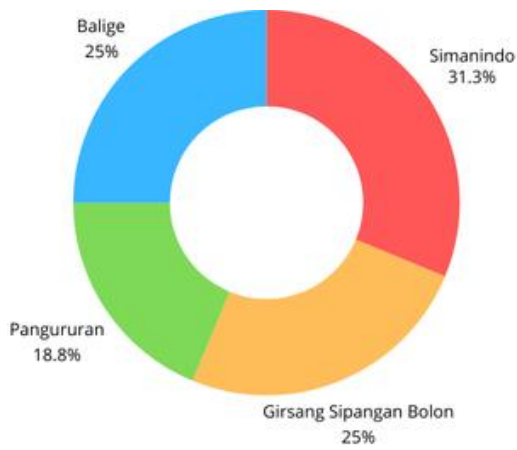
Thesis & Dissertation



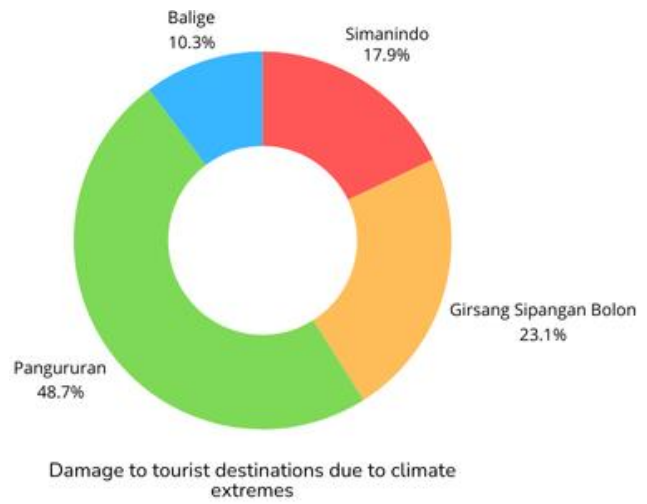


Total number of rooms for rent (room)

Climate Action

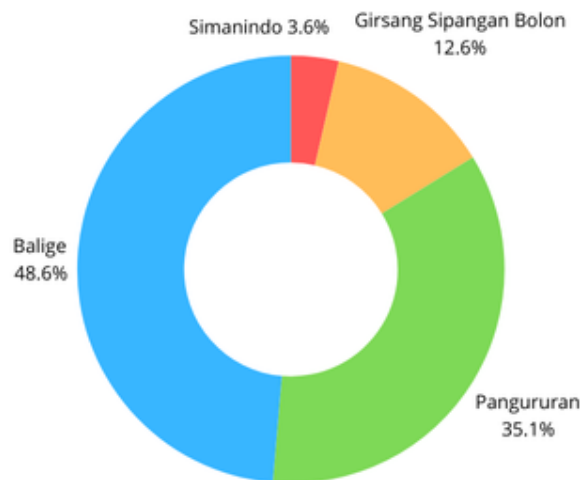


Damage every year due to storm/flood events

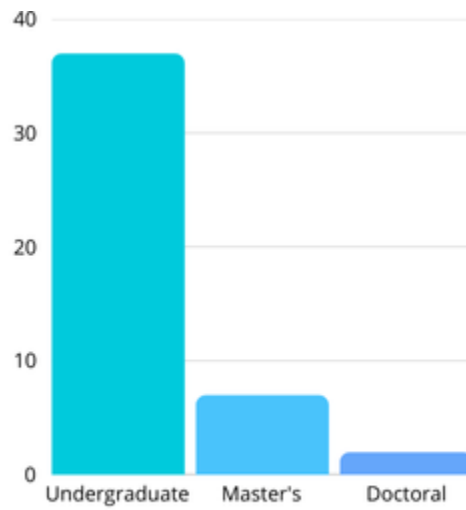


Damage to tourist destinations due to climate extremes

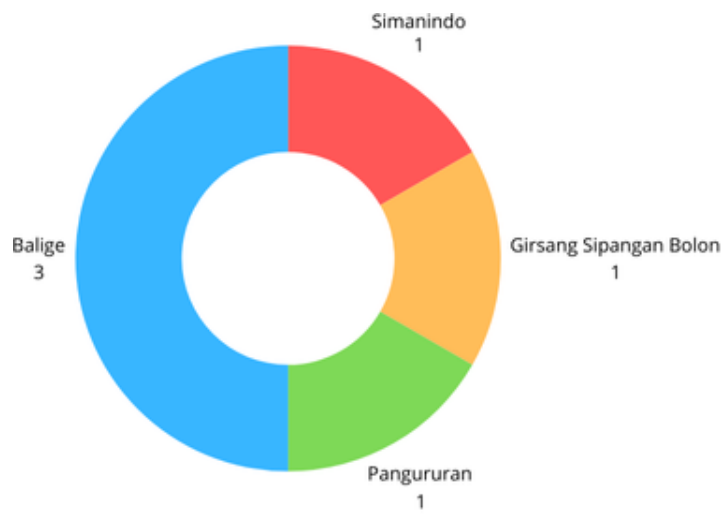
Accessibility



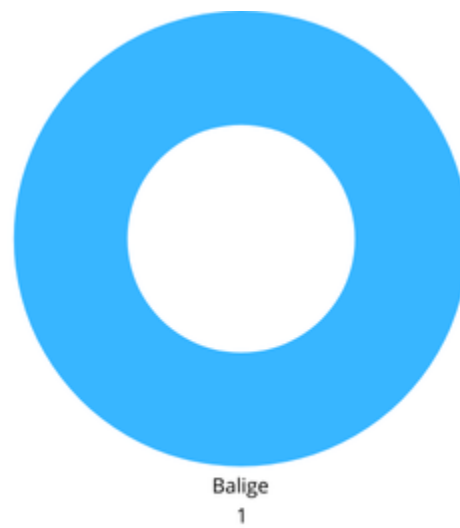
Number of associated hospital or medical facilities



Student Research & Thesis



Student Research & Thesis



Lecturer Research & Journal

ATTACHMENT

1. Local satisfaction with tourism

Simanindo

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
1	Local Satisfaction	Level of satisfaction of local people with tourism	Likert scale average	2023	3,95
				2022	3,93

Girsang Sipangan Bolon

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
1	Local Satisfaction	Level of satisfaction of local people with tourism	Likert scale average	2023	3,93
				2022	3,8

Pangururan

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
1	Local Satisfaction	Level of satisfaction of local people with tourism	Likert scale average	2023	3,56
				2022	3,97

Balige

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
1	Local Satisfaction	Level of satisfaction of local people with tourism	Likert scale average	2023	3,75
				2022	4,27

2. Economic Benefits to the Destination

Simanindo

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Economic Benefits for Destinations	Number of Tourism Services (Bureau/Travel Agent)	Business unit	2021-2023	54
		Number of Tourism Objects managed by Non-Government	Business unit	2021-2023	72
		Number of Lodging (Hotel, Cottage, Guesthouse, Villa Motel)	Business unit	2021-2023	263
		Total number of rooms for rent (room)	Room	2021-2023	5.128
		The number of Food Business Places (restaurants, Café, etc.)	Business unit	2021-2023	231
		Number of certified/licensed Lodging, Dining, and Tourist Attractions	Business unit	2021-2023	566
		Local Gross Regional Domestic Product (GDP)	Rp	2021-2023	14.464.330.000
		Gross Regional Domestic Product (GDP) from the Tourism sector	Rp	2021-2023	-
		Total local development budget	Rp	2021-2023	2.633.410.468.179
		Development budget in support of the tourism sector	Rp	2021-2023	15.152.896.869

Girsang Sipangan Bolon

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Economic Benefits for Destinations	Number of Tourism Services (Bureau/Travel Agent)	Business unit	2021-2023	19
		Number of Tourism Objects managed by Non-Government	Business unit	2021-2023	42
		Number of Lodging (Hotel, Cottage, Guesthouse, Villa)	Business unit	2021-2023	213

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
		Motel)			
		Total number of rooms for rent (room)	Room	2021-2023	5,541
		The number of Food Business Places (restaurants, Café, etc.)	Business unit	2021-2023	623
		Number of certified/licensed Lodging, Dining, and Tourist Attractions	Business unit	2021-2023	213
		Local Gross Regional Domestic Product (GDP)	Rp	2021-2023	89.862,77
		Gross Regional Domestic Product (GDP) from the Tourism sector	Rp	2021-2023	695,27
		Total local development budget	Rp	2021-2023	0
		Development budget in support of the tourism sector	Rp	2021-2023	0

Pangurusan

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Economic Benefits for Destinations	Number of Tourism Services (Bureau/Travel Agent)	Business unit	2021-2023	33
		Number of Tourism Objects managed by Non-Government	Business unit	2021-2023	33
		Number of Lodging (Hotel, Cottage, Guesthouse, Villa Motel)	Business unit	2021-2023	296
		Total number of rooms for rent (room)	Room	2021-2023	1.644
		The number of Food Business Places (restaurants, Café, etc.)	Business unit	2021-2023	800
		Number of certified/licensed Lodging, Dining, and Tourist Attractions	Business unit	2021-2023	766
		Local Gross Regional	Rp	2021-2023	14.464.330.000

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
		Domestic Product (GDP)			
		Gross Regional Domestic Product (GDP) from the Tourism sector	Rp	2021-2023	-
		Total local development budget	Rp	2021-2023	2.633.410.468.179
		Development budget in support of the tourism sector	Rp	2021-2023	15.152.896.869

Balige

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Economic Benefits for Destinations	Number of Tourism Services (Bureau/Travel Agent)	Business unit	2021-2023	50
		Number of Tourism Objects managed by Non-Government	Business unit	2021-2023	54
		Number of Lodging (Hotel, Cottage, Guesthouse, Villa Motel)	Business unit	2021-2023	118
		Total number of rooms for rent (room)	Room	2021-2023	1722
		The number of Food Business Places (restaurants, Café, etc.)	Business unit	2021-2023	374
		Number of certified/licensed Lodging, Dining, and Tourist Attractions	Business unit	2021-2023	0
		Local Gross Regional Domestic Product (GDP)	Rp	2021-2023	0
		Gross Regional Domestic Product (GDP) from the Tourism sector	Rp	2021-2023	0
		Total local development budget	Rp	2021-2023	0
		Development budget in support of the tourism sector	Rp	2021-2023	0

3. Employment

Simanindo

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
3	Employment	Total number of workers in the tourism sector	Person	2021-2023	65.227
		Number of local people working in the tourism sector	Person	2021-2023	0
		Number of female workers in the tourism sector	Person	2021-2023	32.098
		Tourist perceptions of worker services in the tourism sector	Likert scale average	2021-2023	7

Girsang Sipangan Bolon

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
3	Employment	Total number of workers in the tourism sector	Person	2021-2023	1.540.657
		Number of local people working in the tourism sector	Person	2021-2023	0
		Number of female workers in the tourism sector	Person	2021-2023	593.625
		Tourist perceptions of worker services in the tourism sector	Likert scale average	2021-2023	0

Pangururan

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
3	Employment	Total number of workers in the tourism sector	Person	2021-2023	0
		Number of local people working in the tourism sector	Person	2021-2023	0
		Number of female workers in the tourism sector	Person	2021-2023	0
		Tourist perceptions of worker services in the tourism sector	Likert scale average	2021-2023	4.6

Balige

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
3	Employment	Total number of workers in the tourism sector	Person	2021-2023	105.214
		Number of local people working in the tourism sector	Person	2021-2023	67.297
		Number of female workers in the tourism sector	Person	2021-2023	68.471
		Tourist perceptions of worker services in the tourism sector	Likert scale average	2021-2023	0

4. Seasonal Tourism

Simanindo

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Seasonal Tourism	Domestic tourists visit	Person	2021-2023	1.924.082
		Number of foreign tourist visits	Person	2021-2023	5.861
		The average number of rooms occupied by tourists per month	Room/month	2021-2023	37
		Tourist perception of seasonal tourism	Likert scale average	2021-2023	

Girsang Sipangan Bolon

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Seasonal Tourism	Domestic tourists visit	Person	2021-2023	717.714
		Number of foreign tourist visits	Person	2021-2023	44.746
		The average number of rooms occupied by tourists per month	Room/month	2021-2023	98
		Tourist perception of seasonal tourism	Likert scale average	2021-2023	0

Pangururan

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Seasonal Tourism	Domestic tourists visit	Person	2021-2023	1.924.082
		Number of foreign tourist visits	Person	2021-2023	5.861
		The average number of rooms occupied by tourists per month	Room/month	2021-2023	37
		Tourist perception of seasonal tourism	Likert scale average	2021-2023	8

Balige

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Seasonal Tourism	Domestic tourists visit	Person	2021-2023	100.667
		Number of foreign tourist visits	Person	2021-2023	0
		The average number of rooms occupied by tourists per month	Room/month	2021-2023	135
		Tourist perception of seasonal tourism	Likert scale average	2021-2023	0

5. Governance

Simanindo

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
5	Governance	Multi-year destination development plan or strategy	Yes/No	2021-2023	Yes
		Number of organisations responsible for coordinating the management of sustainable tourism	organisation	2021-2023	126
		Number of tourism monitoring in one year	Activity	2021-2023	19
		Number of climate change education activities in one year	Activity	2021-2023	11
		Number of assets and tourist attractions inventoried	Object	2021-2023	15
		Number of tourism promotion activities in one year	Activity	2021-2023	59

Girsang Sipangan Bolon

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
5	Governance	Multi-year destination development plan or strategy	Yes/No	2021-2023	Yes
		Number of organisations responsible for coordinating the management of sustainable tourism	organisation	2021-2023	8
		Number of tourism monitoring in one year	Activity	2021-2023	9
		Number of climate change education activities in one year	Activity	2021-2023	6
		Number of assets and tourist attractions inventoried	Object	2021-2023	59
		Number of tourism promotion activities in one year	Activity	2021-2023	12

Pangururan

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
5	Governance	Multi-year destination development plan or strategy	Yes/No	2021-2023	Yes
		Number of organisations responsible for coordinating the management of sustainable tourism	organisation	2021-2023	126
		Number of tourism monitoring in one year	Activity	2021-2023	20
		Number of climate change education activities in one year	Activity	2021-2023	4
		Number of assets and tourist attractions inventoried	Object	2021-2023	15
		Number of tourism promotion activities in one year	Activity	2021-2023	42

Balige

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
5	Governance	Multi-year destination development plan or strategy	Yes/No	2021-2023	Yes
		Number of organisations responsible for coordinating the management of sustainable tourism	organisation	2021-2023	21
		Number of tourism monitoring in one year	Activity	2021-2023	0
		Number of climate change education activities in one year	Activity	2021-2023	0
		Number of assets and tourist attractions inventoried	Object	2021-2023	13
		Number of tourism promotion activities in one year	Activity	2021-2023	0

6. Climate Action

Simanindo

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Community participation in tourism	Damage to tourist destinations due to climate extremes	Activity	2021-2023	7
		damage every year due to storm/flood events	%	2021-2023	5

Girsang Sipangan Bolon

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Community participation in tourism	Damage to tourist destinations due to climate extremes	Activity	2021-2023	9
		damage every year due to storm/flood events	%	2021-2023	4

Pangururan

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Community participation in tourism	Damage to tourist destinations due to climate extremes	Activity	2021-2023	46
		damage every year due to storm/flood events	%	2021-2023	3

Balige

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Community participation in tourism	Damage to tourist destinations due to climate extremes	Activity	2021-2023	4
		damage every year due to storm/flood events	%	2021-2023	4

7. Energy Management

Simanindo

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
7	Energy Management	Energy Consumption in a day	kWh/Org/Hr	2021-2023	4.252.697
		Number of business units participating in energy conservation programs	Business Unit	2021-2023	0
		Number of business units in the tourism sector that use energy from renewable resources	Business Unit	2021-2023	6

Girsang Sipangan Bolon

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
7	Energy Management	Energy Consumption in a day	kWh/Org/Hr	2021-2023	3,29
		Number of business units participating in energy conservation programs	Business Unit	2021-2023	0
		Number of business units in the tourism sector that use energy from renewable resources	Business Unit	2021-2023	5

Pangururan

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
7	Energy Management	Energy Consumption in a day	kWh/Org/Hr	2021-2023	12.181.787
		Number of business units in the tourism sector that use energy from renewable resources	Business Unit	2021-2023	3

Balige

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
7	Energy Management	Energy Consumption in a day	kWh/Org/Hr	2021-2023	3,68

		Number of business units participating in energy conservation programs	Business Unit	2021-2023	0
		Number of business units in the tourism sector that use energy from renewable resources	Business Unit	2021-2023	0

8. Water Management

Simanindo

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
8	Water Management	Daily use of clean water	Litres/Person/Day	2021-2023	3,68
		Percentage of recycled water use	%	2021-2023	0
		Number of tourism facilities that have recycled water	Business unit	2021-2023	3,68
		Number of tourism facilities that already have access to clean drinking water	Business unit	2021-2023	0
		Travellers' Perceptions of Water Quality	Likert scale average	2021-2023	

Girsang Sipangan Bolon

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
8	Water Management	Daily use of clean water	Litres/Person/Day	2021-2023	360
		Percentage of recycled water use	%	2021-2023	0
		Number of tourism facilities that have recycled water	Business unit	2021-2023	0
		Number of tourism facilities that already have access to clean drinking water	Business unit	2021-2023	159
		Travellers' Perceptions of Water Quality	Likert scale average	2021-2023	

Pangururan

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
8	Water Management	Daily use of clean water	Litres/Person/Day	2021-2023	386
		Percentage of recycled water use	%	2021-2023	
		Number of tourism facilities that have recycled water	Business unit	2021-2023	

		Number of tourism facilities that already have access to clean drinking water	Business unit	2021-2023	
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Balige

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
8	Water Management	Daily use of clean water	Litres/Person/Day	2020	392
		Percentage of recycled water use	%	2020	
		Number of tourism facilities that have recycled water	Business unit	2020-2022	336
		Number of tourism facilities that already have access to clean drinking water	Business unit	2020	
		Travellers' Perceptions of Water Quality	Likert scale average	2020	

9. Liquid Waste Management

Simanindo

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
9	Liquid waste Management	The amount of liquid waste from the tourism sector	Litres/Day	2021-2023	0
		The amount of liquid waste from the tourism sector receiving treatment (liquid waste treatment)	Litres/Day	2021-2023	1918,08
		Number of business units in the tourism sector that implement a water treatment system	Business unit	2021-2023	111

Girsang Sipangan Bolon

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
9	Liquid waste Management	The amount of liquid waste from the tourism sector	Litres/Day	2021-2023	0
		The amount of liquid waste from the tourism sector receiving treatment (liquid waste treatment)	Litres/Day	2021-2023	0
		Number of business units in the tourism sector that implement a water treatment system	Business unit	2021-2023	12

Pangururan

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
9	Liquid waste Management	The amount of liquid waste from the tourism sector	Litres/Day	2021-2023	0
		The amount of liquid waste from the tourism sector receiving treatment (liquid waste treatment)	Litres/Day	2021-2023	1969,92
		Number of business units in the tourism sector that implement a water treatment system	Business unit	2021-2023	114

Balige

No	Monitoring Issue	Baseline Indicator	Unit	Year	Value
9	Liquid waste Management	The amount of liquid waste from the tourism sector	Litres/Day	2020	0
		The amount of liquid waste from the tourism sector receiving treatment (liquid waste treatment)	Litres/Day	2020-2022	0

		Number of business units in the tourism sector that implement a water treatment system	Business unit	2020-2022	3
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10. Solid Waste Management

Simanindo

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
10	Solid Waste Management	The volume of waste generated by the destination	Tons/ Month	2021-2023	0
		Number of business units in the tourism sector that implement waste type segregation	Business unit	2021-2023	6
		Number of tourism sector business units that recycle waste	Business unit	2021-2023	0
		Tourist perceptions of the image of the cleanliness of the destination	Likert scale average	2021-2023	0

Girsang Sipangan Bolon

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
10	Solid Waste Management	The volume of waste generated by the destination	Tons/ Month	2021-2023	0
		Number of business units in the tourism sector that implement waste type segregation	Business unit	2021-2023	18
		Number of tourism sector business units that recycle waste	Business unit	2021-2023	0
		Tourist perceptions of the image of the cleanliness of the destination	Likert scale average	2021-2023	0

Pangururan

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
10	Solid Waste Management	The volume of waste generated by the destination	Tons/ Month	2021-2023	5
		Number of business units in the tourism sector that implement waste type segregation	Business unit	2021-2023	0
		Tourist perceptions of the image of the cleanliness of the destination	Likert scale average	2021-2023	

Balige

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
10	Solid Waste Management	The volume of waste generated by the destination	Tons/ Month	2021-2023	0
		Number of business units in the tourism sector that implement waste type segregation	Business unit	2021-2023	3
		Number of tourism sector business units that recycle waste	Business unit	2021-2023	30
		Tourist perceptions of the image of the cleanliness of the destination	Likert scale average	2021-2023	

11. Accessibility

Simanindo

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Accessibility	The existence of policies that are friendly to people with disabilities	Yes/No	2021-2023	Yes
		number of associated hospital or medical facilities	Business unit	2021-2023	0
		number of facilities/attractions that offer alternative access for those with disabilities	people	2021-2023	0
		number of people with disabilities who visited the tourist destination	Business unit	2021-2023	32
		presence of medical personnel in tourist transportation	Yes/No	2021-2023	Yes

Girsang Sipangan Bolon

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Accessibility	The existence of policies that are friendly to people with disabilities	Yes/No	2021-2023	Yes
		number of associated hospital or medical facilities	Business unit	2021-2023	0
		number of facilities/attractions that offer alternative access for those with disabilities	people	2021-2023	0

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
		number of people with disabilities who visited the tourist destination	Business unit	2021-2023	31
		presence of medical personnel in tourist transportation	Yes/No	2021-2023	Yes

Pangururan

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Accessibility	The existence of policies that are friendly to people with disabilities	Yes/No	2021-2023	Yes
		number of associated hospital or medical facilities	Business unit	2021-2023	0
		number of facilities/attractions that offer alternative access for those with disabilities	people	2021-2023	0
		number of people with disabilities who visited the tourist destination	Business unit	2021-2023	233
		presence of medical personnel in tourist transportation	Yes/No	2021-2023	Yes

Balige

No.	Monitoring Issue	Baseline Indicator	Unit	Year	Value
	Accessibility	The existence of policies that are friendly to people with disabilities	Yes/No	2021-2023	Yes
		number of associated hospital or medical facilities	Business unit	2021-2023	0
		number of facilities/attractions that offer alternative access for those with disabilities	people	2021-2023	0
		number of people with disabilities who visited the tourist destination	Business unit	2021-2023	322
		presence of medical personnel in tourist transportation	Yes/No	2021-2023	Yes