



World Tourism Organization
International Network
of Sustainable Tourism
Observatories

ANNUAL REPORT 2020
MONITORING CENTRE FOR SUSTAINABLE TOURISM
OBSERVATORIES INSTO AND WINSTO
UNIVERSITAS SUMATERA UTARA
LAKE TOBA – INDONESIA

1. Introduction

Since 2017, the Monitoring Center for Sustainable Tourism Observatories (MCSTO) of Universitas Sumatera Utara (USU) has been part of The UNWTO International Network of Sustainable Tourism Observatories (INSTO). MCSTO USU started the monitoring from the small area conducted 4 Villages (Lumban Suhi-suhi, Situngkir, Hota Bolon, Siopat Sosor) in Pangururan Subdistrict, Samosir, Sumatera Utara. Committed to supporting Sustainable Development Goals (SDGs), MCSTO USU annually conducts monitoring and reporting of the indicator of sustainable tourism development in Pangururan. In 2019, MCSTO USU expanded the monitoring area from 4 villages into 31 sub-district from the seven districts surrounding Lake Toba with a composition of 4 sub-districts Key Tourism Areas (KTA) and 27 sub-districts Non-Key Tourism Areas (non-KTA).

The COVID-19 pandemic hit the tourism industry hard in 2020; this also affected the sustainable tourism development monitoring activity carried out by MCSTO USU. Policies to restrict the mobility of the community from the Indonesian government become the base of MCSTO's decision to make a limitation the monitoring area. In 2020, MCSTO USU focused only on the four Key Tourism Areas (KTA), namely Girsang Sipangan Bolon, Simanindo, Pangururan, and Balige.

Our objective in 2020 was to (1) continue the annual monitoring; (2) develop the monitoring issue; (3) be active in INSTO-UNWTO by participating in the virtual activity; (4) strengthen the government approach; (5) support the increase of tourist destination to achieve sustainable tourism certification; (6) support the local community participation on tourism. In the previous year (2019), MCSTO USU focused on monitoring five main issues (wastewater management, solid waste management, water management, water quality, and tourism product diversity). Meanwhile, this year, we are developing the monitoring into ten issues, i.e. (1) Local satisfaction with tourism; (2) Destination economic benefits; (3) Employment; (4) Tourism seasonality; (5) Energy management; (6) Water management; (7) Wastewater management; (8) Solid waste management; (9) Governance; and (10) Community participation in tourism.

2. Destination Profile

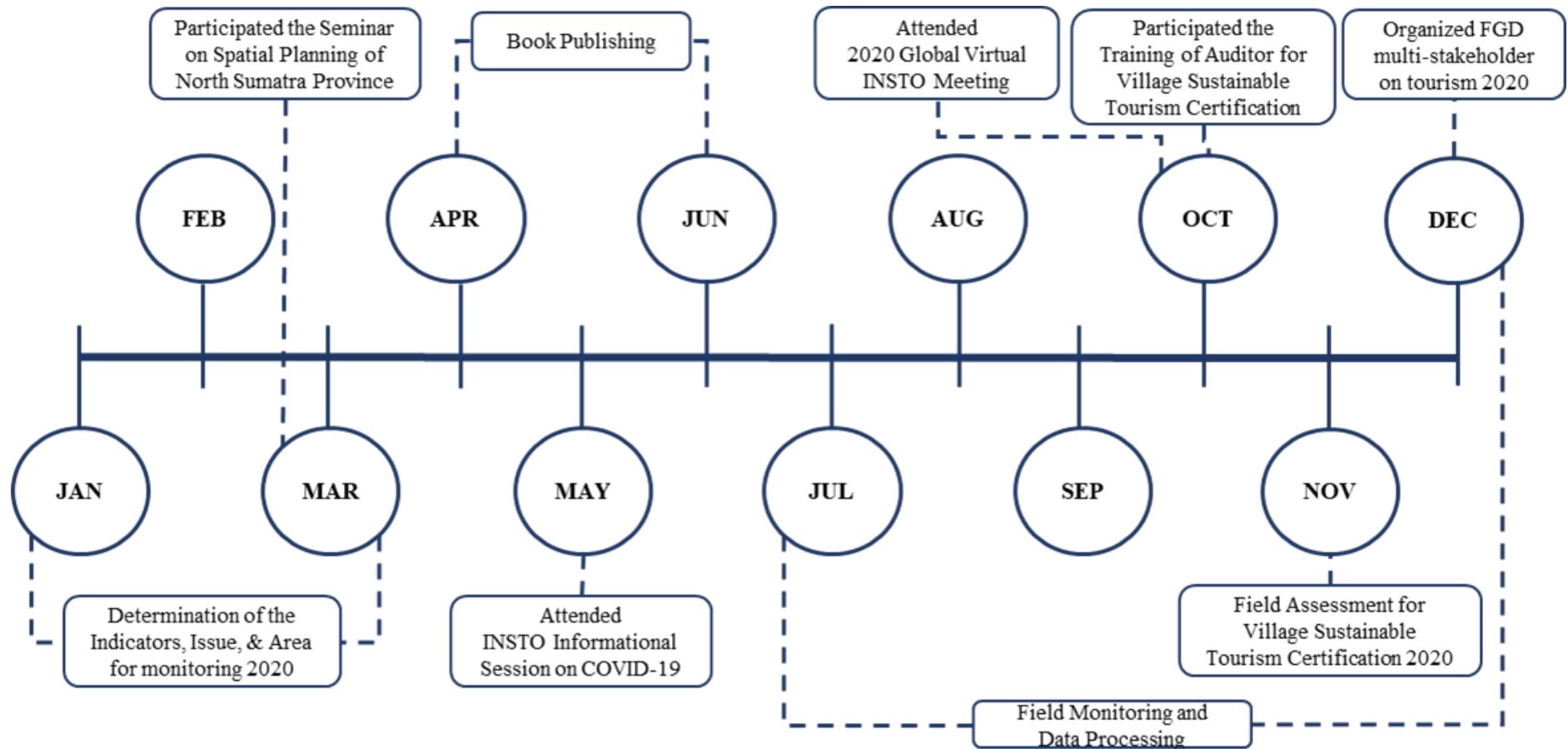
Indonesia's government officially confirmed the spread of the COVID-19 pandemic in this country on 2 March 2020. Since March 2020, the government has begun to limit the arrival of foreigners to Indonesia, and many regions have implemented strict lockdowns. This condition made a considerable change in the destination profile of the monitoring area. The most significant decrease can be seen in visitor arrival as shown in the following table.

DESTINATION PROFILE			
		2019	2020
1	Tourism Satellite Account/s (TSA) in the destination country	☒ YES Last time a TSA was conducted:	☒ 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 6% b) Agriculture 13.9% c) Industry 40.3%	a) Tourism 7,1% b) Agriculture 45,36% c) Industry 13,9%
3	Arrivals of inbound (non-resident) visitors for the last three years – Thousands	☒ YES North Sumatera 2019: 258.822 2018: 236.431 2017: 270.792 Lake Toba Region 2019: 258.822 2018: 77.844 2017: 117.323 Source: BPS of North Sumatera	☒ YES North Sumatera 2020: 44.400 2019: 258.822 2018: 236.431 Lake Toba Region 2020 : 2019: 258.822 2018: 77.844 Source: BPS of North Sumatera
3.1	Percentage of total annual arrivals of inbound (non-resident) visitors occurring in peak month and peak quarter (please indicate which month and quarter)	☒ YES 2018 = 6,74% (15.952) on January, 8,16% (19.286) on June, and 9,21% (21.787) on December. (Source: BPS of North Sumatera)	☒ YES 2019 = 46,7% (20.744) on January, 0,21% (95) on June, and 0,12% (54) on December. (Source: BPS of North Sumatera)
4	Trips of domestic visitors for the last three years – Thousands	☒ YES North Sumatera 2019: 2018: 12.100.000 2017: 14.000.000 Lake Toba Region 2019: 2018: 2.134.988 2017: 2.455.236 Source: BPS of North Sumatera	
5	Tourism industries: accommodation for visitors in hotels and similar establishments - Units	☒ YES North Sumatera Total rooms: 11.513 Total bed space: 48.571 Lake Toba Region Total rooms: 8.325 Total bed-places: 13.581	☒ YES North Sumatera Total rooms: 36.590 Total bed space: 52.224 Lake Toba Region Total rooms: 5143 Total bed-places: `10460

DESTINATION PROFILE			
		2019	2020
6	Current top 5 primary source markets for the destination	☒ YES Malaysia Singapore Tiongkok Germany French Netherlands	☒ YES Malaysia Singapore Belanda Australia Tiongkok Taiwan
7	Research & journal related to Sustainable Tourism	Lecture Research & Journal 2019: 30 Student Research & Thesis 2019: 43	Lecture Research & Journal 2020: 1 Student Research & Thesis 2020: 42
8	Please describe the destination's experience with other monitoring initiatives/systems	In 2019, the monitoring expanded into the whole lake's surroundings, consisting of 30 more sub-districts.	In 2020 the monitoring focused only on the four Key Tourism Areas (KTA), namely Girsang Sipangan Bolon, Simanindo, Pangururan, and Balige.
9	Are there strategies in place for the sustainable development of the destination?	☒ YES Name of those of relevance: STDev program of the Indonesian Ministry of Tourism.	☒ 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	☒ 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)	☒ 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)

3. Monitoring Activities on Issues

In 2020, more MCSTO USU monitoring activities will be carried out virtually. MCSTO USU conducted various activities on community empowerment and research concerning sustainable tourism in Lake Toba, as shown in the timeline below:



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

Local Satisfaction with Tourism

The performance of the satisfaction indicator in the Lake Toba area reaches 82%, and this grade shows an excellent upgrade in public perception from the previous year. Meanwhile, the local community dissatisfaction that emerged from tourism activities in their living environment worsened with the pandemic in 2020 (52.95%).

Indicators	Baseline Data	Target	Indicator Performance
Level of community satisfaction	The average value of community satisfaction was 4.1 from 5	The value of local community satisfaction reaches 4.5-5 from 5	82%
Problems or dissatisfaction	The number of complaints by local residents is 47%	None of the complaints from the local resident	47%

Increasing local satisfaction occurs due to improving the performance and results of tourism development in the Lake Toba area. Tourism's benefits have formed a positive image from the community's perspective. In general, people feel satisfied with tourism development around their homes. The increase in tourist visits also increases families' income involved in tourism activities. Based on the monitoring, the community significantly supports the tourism development in Lake Toba. The local community thought the lousy impact of tourism had not appeared in Lake Toba, and their dissatisfaction came from the un maximalized of its benefit on their life. The effect of the COVID19 pandemic and the government's involvement also decreased local satisfaction in Lake Toba.

Destination Economic Benefits

Tourism has a significant impact on the generated economy in Lake Toba. Generally, the tourism business becomes the primary income for many people surrounding the attraction. Due to the pandemic COVID19, the economic benefit of tourism hardly falls. The average family income from the tourism sector decreased by 28%. In line with that, the local government also significantly cut their spending on the annual operating expenditures for tourism (-85%).

Indicators	Baseline Data	Target	Indicator Performance
Number of tourism businesses in the community and owned locally	32% of tourism businesses owned locally	Half of the tourism businesses owned locally	32%
Number and type of business permits and licences issued	13% of businesses have permits and licences	All of the tourism businesses have permits and licences	13%
Revenues generated by tourism as % of total revenues generated in the community	Tourism generated 6% of the community's total revenues	30% of the community's total revenues generated by tourism	6%
Amount and % of infrastructure expenditures for tourism	Increase 18% of infrastructure expenditures for tourism	Increase 20% of infrastructure expenditures for tourism	18%
Amount and % of total annual operating expenditures for tourism	Decrease 85% of total annual operating expenditures for tourism	5% decrease in total annual operating expenditures for tourism	-85%
Changes in the cost of land and housing over time	Increase 23% of the land ad housing cost	3% increase in the land ad housing cost	23%
Changes in average family income	Decrease 28% of the average family income	5% increase in family income every year	-28%

The situation of COVID19 pandemic that began in early 2020 greatly affected the number of benefits for destinations. Most of the tourism actors in the area around Lake Toba are a source of family economic income from the tourism sector in the agricultural industry. There needs to be an effort to provide industrial skills from the government to local communities. There needs to be skills training for the community to increase creativity, which will directly impact their economy.

Employment

In line with the decline in economic benefits from tourism, employment quantity also decreased. Overall employment fell by 5% in the tourism sector, while a drop of 2% occurred in full-time workers. To support and motivate tourism employees during the COVID-19 pandemic, the government created various efforts to improve the skills of tourism sector workers. This improvement showed from the increasing allocation in worker training and the frequency of training programs.

Indicators	Baseline Data	Target	Indicator Performance
Total number employed in the tourism sector	Decreased 5% of the total number of employees	Annual 30% increase in employees number	-5%
Retention levels of employees	Retention levels of employees were 3%	Retention levels of employees are 90%	3%
Percentage of jobs that are full time	Decreased 2% of the full-time jobs	Annual 30% increase in full-time jobs	-2%
Number (%) of employees qualified/certified	28% of the employees have been qualified/certified	Half of the employees have been qualified/certified	28%
Training funds spent per employee	Increased 30% of employees' training fund	Annual 30% increase in employees training fund	30%
Frequency of training programmes	Increased 35% of employees' training program frequency	Annual 30% increase in employees training program frequency	35%
Tourist dissatisfaction	The average score of tourist dissatisfaction was 1.4 of 5	None of the tourist dissatisfaction	28%
Complaints (by employers, by tourists)	The average score of complaints by employers or tourists was 1 of 5	None of the complaints by employers or tourists	20%

Employment benefits the local community, who could have a job in Lake Toba's tourism sector. The number of visits dramatically affects the number of workers in the local community, and this opportunity significantly affects local satisfaction with tourism in their neighbourhood. The increase in skills and expertise of the workforce in the tourism sector is happening very significantly. The impact of tourism falling due to the pandemic COVID19 in Lake Toba also forced the employer to reduce the number of employees.

Tourism Seasonality

The number of tourist arrivals fell drastically after the spreading of Corona Virus at the beginning of the year (-92%). Indonesia and all the countries around the world limited their tourism activity and closed their borders. To avoid the crowd and maintain health protocols, tourists commonly spend their vacation in the low seasons (80%).

Indicators	Baseline Data	Target	Indicator Performance
Tourist arrivals	The number of tourist arrivals falling 92%	Annual 10% increase in tourist visits	-92%

Indicators	Baseline Data	Target	Indicator Performance
Tourism activity during shoulder and the low season	80% of tourism activity held during shoulder and the low season	Shoulder and low season support 50% of all tourism activity	80%
accommodation and services open all year	The number of accommodations and services that open all year decreased by 17%	80% of the accommodation and services are open all year	-17%

Based on the results of monitoring seasonal improvements in optimal performance. Social restrictions in 2020 are also a significant challenge to the sustainability of the tourism business. Tourists choose the low season in their tourism trips to avoid leaving. The CHSE (Cleanliness, Health, Safety, Environment Sustainability) protocol certification program developed by the Government of Indonesia is an effort to encourage tourist visits while still paying attention to the security and safety of tourists. Local tourists are the main target in tourism development during the COVID-19 pandemic.

Energy Management

Energy management is still newly issue for the community in Lake Toba. The energy supply that could meet the needs becomes why the community has not been aware of energy saving. Time by time, the energy supply-demand grew significantly in Lake Toba; in 2020, the capita consumption increased by 37%. Meanwhile, few businesses in the tourism sector have developed energy conservation programs (12%). The government also started to support using renewable energy resources by installing street lights with built-in solar panels in the destination.

Indicators	Baseline Data	Target	Indicator Performance
Per capita consumption of energy from all sources	Increase 37% of capita energy consumption	Annual 5% increase in capita energy consumption	37%
Percentage of businesses participating in energy conservation programs	Only 12% of establishment businesses participating in energy conservation programs	All establishment businesses participating in energy conservation programs	12%
Level of energy consumption from renewable resources	5% of energy consumption in tourism from renewable resources	Half of the energy consumption in tourism comes from renewable resources	5%

There is no government effort to encourage the development of new and renewable energy for tourism activities in the Lake Toba area. The application of energy conservation in the tourism industry must begin by urging business actors to implement energy conservation and energy-saving programs in managed businesses. Only one hotel has implemented the concept of energy conservation and energy-saving program in the Lake Toba area.

Water Management

The water conservation program in Lake Toba has not applied to the tourism sector. Some established businesses' acknowledgement of environmental sustainability started making guest policies to support water savings (6%). The general water use (14%) and tourism sector water use (2%) have increased their water supply needs. Overall, tourist still has a positive perception of the Lake Toba water image (70%).

Indicators	Baseline Data	Target	Indicator Performance
Water use	Increase 14% of water consumption	Annual 5% increase in water consumption	14%
Water savings	6% of water saving	All of the tourism activities involved in water saving	6%
Total use by the tourism sector	Increase 2% of total water use	Annual 5% increase in total water use	2%
Percentage of tourism establishments with water treated to international potable standards	45% of the tourism establishments have international standards treated water treated	All of the tourism establishments have international standards treated water treated	45%
Perception of cleanliness of food and water	The average value of water image from tourist perception was 3.5 from 5	Tourists have a good perception with a perfect score of 5	70%

Clean water availability is still a significant issue for the local community in the Toba Lake area, especially those on Samosir Island. Water pollution in Lake Toba comes from aquaculture activities or floating net cages. Meanwhile, the community's primary water source is direct from the lake. The government should handle the decrease in water quality in Toba Lake. Water management could not rely on one party; multi-stakeholder coordination is needed. Services from Water providers managed by the provincial government are still unable to meet the needs of the entire community. Other providers could support the existing companies in distributing water to residents and tourism establishments.

Wastewater Management Findings

The performance of the wastewater management indicator shows improvement in the local community and business establishment of tourism in Lake Toba. Four of the fifth indicators have excellent performance, which exceeds 80% of the target. In contrast, the number of reported pollution and contamination was not significant.

Indicators	Baseline Data	Target	Indicator Performance
Percentage of sewage from the destination/site receiving treatment	80% of sewage from the destination/site receiving treatment	All sewage from the destination/site receiving treatment	80%
Percentage of treated sewage recycled	86 of treated sewage recycled	100% of treated sewage recycled	86%
Percentage of tourism establishments (or accommodation) on treatment systems	87% of tourism establishments on treatment systems	100% of tourism establishments on treatment systems	87%
Percentage of the destination served by stormwater systems	83% of the destination served by stormwater systems	100% of the destination served by stormwater systems	83%
Number of reported pollution or contamination events per annum	22% of reported pollution or contamination events per annum	None of the pollution or contamination events needs to reports	22%

Even though the wastewater treatment management system has improved, Lake Toba's water quality is falling. Most wastewater generated from community activities is still channelled directly into Lake Toba. Meanwhile, sewage from the tourism activity, mainly the accommodation, has been managed through water treatment. There is a need for the government's wastewater management (WWTP) to protect the environment. So that waste from households and industry does not go directly to the lake.

Solid Waste Management

The solid waste collection program covered more than half of the tourism business establishments in Lake Toba (62%). Some tourism business management was aware of solid waste management and tried collecting and recycling their waste.

Indicators	Baseline Data (2019)	Target	Indicator Performance
The pattern of solid waste management	28% of waste transported	100% waste transported	28%

Indicators	Baseline Data (2019)	Target	Indicator Performance
The waste volume produced by the destination	Destination produced 8% more waste volume in 2020	5% decrease from the previous year in the waste volume	8%
The volume of waste recycled	8% of the solid waste was recycled	40% of the solid waste have recycled	8%
Number of tourism establishments collecting waste separately	33% of tourism establishments collecting waste separately	All tourism establishments collecting waste separately	33%
Number of tourism establishments recycling their waste	21% of tourism establishments recycle their waste	All tourism establishments recycle their waste	21%
Percentage of tourism establishments covered by waste collection programs	62% of tourism establishments are covered by waste collection programs	100% of tourism establishments are covered by waste collection programs	62%

Solid waste management has begun to be developed in tourist attractions in the Lake Toba region. The tourist attraction managers have provided trash cans that are easy for tourists to reach. Improvement of the collecting method of the solid waste occurs by the local government programme with the destination management. More concern for solid waste management is carried out by the community independently. Some local organizations have developed a "waste bank" system to encourage others' awareness of solid waste. It is necessary to improve solid waste management methods, for instance, sanitary landfills.

Governance

Some of the governance indicators in Lake Toba, such as local organization, tourism asset inventory, and promotion, were significantly well prepared. Those indicators are already considered in the management system and are almost perfect. On the contrary, some of the governance indicators are still half the target.

Indicators	Baseline Data	Target	Indicator Performance
Destination management strategy and action plan	Preparation of the strategy and action plan is still 50% for the destination	The destination has established and is implementing a multi-year destination management strategy and action plan	50%

Indicators	Baseline Data	Target	Indicator Performance
Presence and involvement of local organizations in managing the destination	The destination has local organizations that encourage tourism development in their area.	The destination has local organizations that encourage tourism development in their area.	96%
Up-to-date inventory and classification of tourism assets and attractions, including natural and cultural sites	The tourism assets have been inventory dan classified annually.	All of the tourism assets and attractions are classified and inventoried.	93%
Planning regulations and development control	The local government already processes planning guidelines for developing and controlling destinations.	The destination has planning guidelines, regulations and policies which control the location and nature of development	80%
Socialization of the planning regulation for the local community	Half of the community receives the socialization of the planning regulation	All of the local community is well educated in the planning regulation	50%
Public reports on destination safety and security	40% report of destination safety and security delivered to the public.	Destination safety and security have been reported transparently to the public.	40%
Financial and human resources for the implementation of crisis and emergency response plans	preparation of financial and human resources, half of the implementation of crisis and emergency response plans	Financial and human resources prepared crisis and emergency response plans	50%
Promotion and visitor information material present the local situation	Destination promotion gives visitors accurate information about the local culture and environment.	Accurate information for the visitor on the destination promotion also delivers local culture.	93%

The monitoring found an increase in performance on governance issues in the Lake Toba area. In this case, the Manpower Office's governance role needs to improve job training programs and expand employment opportunities by developing micro and medium enterprises. The Regional Tourism Development Master Plan (RIPPARDA) document contains a regional tourism development plan. There is a need for cross-departmental coordination to carry out excellent tourism management in the Lake Toba area.

Community Participation In Tourism.

Overall, community participation in the Lake Toba area is above 70%. This percentage almost reached the target of the indicators. Most people have understood the importance of sustainable tourism development. It is just that the community's understanding of the importance of planning and related information is only half of the total.

Indicators	Baseline Data	Target	Indicator Performance
The level of community that has a clear understanding of the role of sustainable tourism planning	52% have a clear understanding of the role of ST planning.	80% or more of percentage communities clearly understand the role of ST planning.	52%
The degree to which the community is satisfied with the quality and quantity of information it receives regarding tourism issues and sustainability	53.5% of communities are satisfied with the quality and quantity of information.	80% or more percentage communities are satisfied with the quality and quantity of information.	53.5%
The level of the community that supports sustainable tourism for their destination	78.5% of communities support sustainable tourism.	80% or more percentage communities support sustainable tourism.	78.5%
The level of the community who believes that they understand tourism and its impacts	77% of communities understand tourism and its impacts.	80% or more percentage communities understand tourism and its impacts.	77%

The people around Lake Toba have actively participated in developing tourism around their homes. The community has formed groups that support development and the environment. The land development process for projects carried out by Government is still a polemic to this day. There needs to be mediation and education quickly and effectively to the public regarding the programs planned by Government. There needs to be an encouragement for local heroes to motivate local community participation during the COVID19 pandemic.

5. Lessons Identified

Seven regencies surround Lake Toba with respective public policies and different governance types. This situation becomes one of the most significant challenges to Lake Toba's sustainable tourism monitoring activity. As mentioned before, In 2020, MCSTO USU will focus on four subdistricts divided into three regencies. The separated administration also

affected the data availability. The monitoring found that any data had been differently interpreted in each regency and made the data not in the same format. MCSTO USU has tried to build stakeholders' engagement and create partnerships with Lake Toba's seven regencies. All the Lake Toba authorities should build the same goals and perceptions to support sustainable tourism development. Other challenges are the lack of specific data regarding tourism toward the environmental issue, and the conventional data process in the region made it still not digitalized.

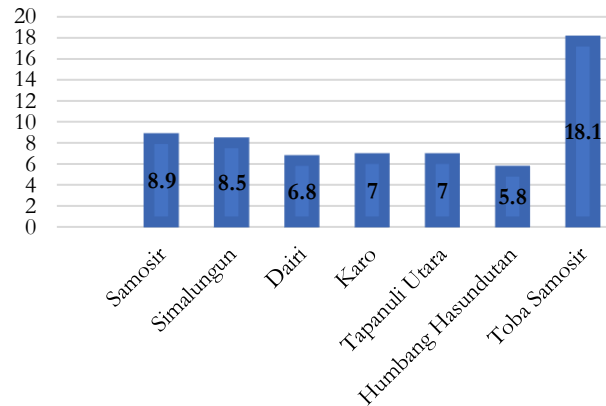
The sustainable tourism indicators from the ten issues of Toba Lake on tourism development need to be widely socialized. The annual multi-stakeholder meeting has been held to disseminate monitoring results for all of the destination's stakeholders. In further action, MCSTO USU needs to make the local stakeholder approach to strengthen the collaboration of the triple helix (Destination, University, and Government). To find the solution to improving the indicator's performance, encourage the implementation of research, and community service should be held more in Lake Toba. Government involvement in the discussion for the planning development government will formulate strategies to solve Lake Toba's sustainable tourism challenges.

Appendix A. Destination Infographics

Here is an infographic for destination profile update



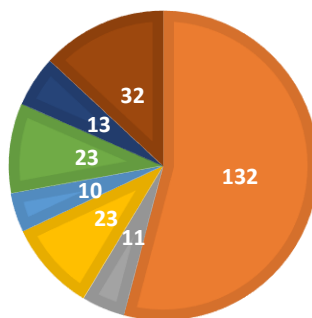
THE ECONOMIC GROWTH
2018



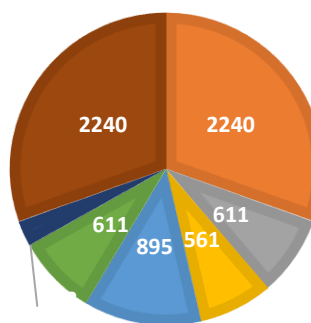
The Economic Growth in 7 Regencies, Lake Toba



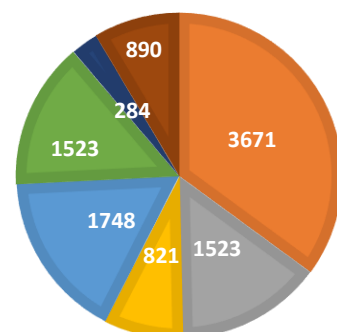
ACCOMODATION



ROOM



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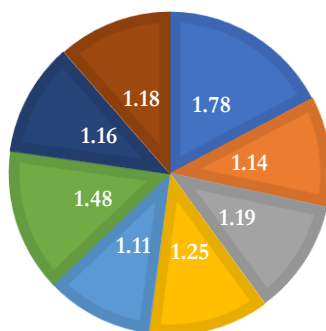


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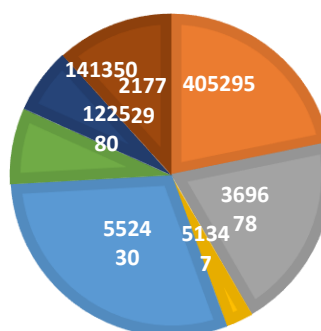
Percentage of Accommodation in 7 Regencies to Lake Toba Region



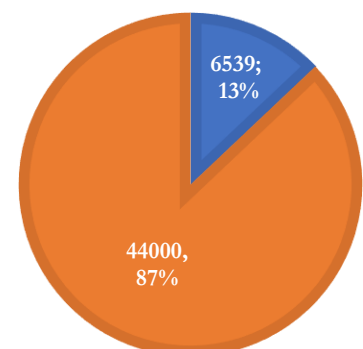
**AVERAGE
LENGHT OF STAY**



**TOURISTS
ARRIVAL**



**PERCENTAGE OF FOREIGN
TOURIST IN LAKE TOBA TO
SUMATERA UTARA**

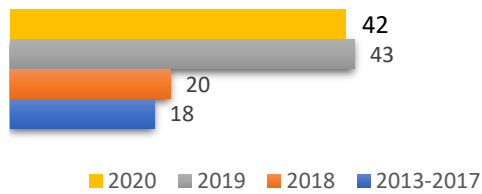


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Local Tourism in 7 Regencies, Lake Toba

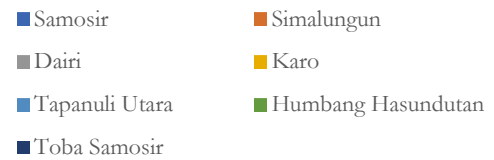
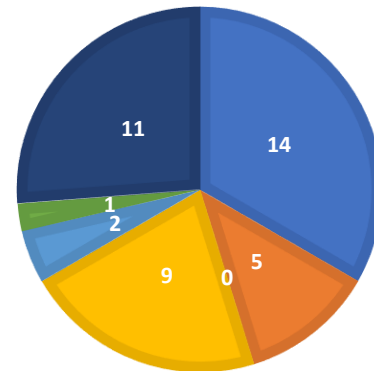


STUDENT RESEARCH & THESIS 2013-2019

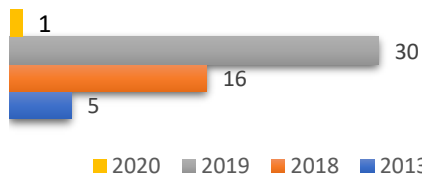


USU Student Research & Thesis in Lake Toba

STUDENT RESEARCH & THESIS 2020



PERCENTAGE LECTURE RESEARCH AND JOURNAL 2013-2019



USU Lecture Research & journal in Lake Toba

LECTURE RESEARCH & JOURNAL 2020

