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TRAVEL AND TOURISM DOMAIN (T&T-D)

## *Business Standards for Sustainable Tourism*

White Paper on the technical applications of Business Standards for Sustainable Tourism to  
United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)  
deliverables

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# 24 1. INTRODUCTION

25 The rapid growth of international tourism is quite remarkable. The 2016 Annual Report of the  
26 United Nations World Tourism Organization (UNWTO) says that international tourist arrivals  
27 reached 1,235 million in 2016, the result of a continuous growth of around 4 % a year during  
28 the past 7 years. Tourism is one of the most rapidly growing business domains and will,  
29 inevitably, need to make use of the most advanced technologies available at this time to  
30 accommodate the needs of this growing market.

31 There are four related business standards for sustainable tourism including with (1) GSTC, (2)  
32 ISO 21401:2018, (3) ISO/TC 228, (4) UN/CEFACT's Green Paper on Sustainable Tourism.  
33 After the Green Paper on Sustainable Tourism -Experience Programs was published by  
34 UN/CEFACT in April 2019, the working experts of Travel/ Tourism Domain found it necessary  
35 to develop the business standards for sustainable tourism. This white paper suggested ten  
36 categories according to the service content or products provided by the tourism sectors,  
37 including the core sectors food/ restaurant, accommodation, transportation, destination,  
38 shopping, entertainment, tour agency, local government, experience program and traveler.

39 And the concept of UN/SDGs (Sustainable Development Goals) will be and should be well  
40 considered when to develop the business standards for sustainable tourism. Necessary data  
41 on sustainability information will surely be communicated between trading parties, which  
42 necessitates new business data.

43 In achieving the UN/SDGs in 2030, this document discussed the sustainable planning and  
44 actions pertaining to the core service provided in tourism sectors. It's expected that more  
45 discussion on business standards of sustainable tourism can serve as a reference to foster  
46 the feasibility of building a future electronic exchange system database.

# 47 2. PURPOSE AND SCOPE

48 The UN sustainable development goals do not list sustainable tourism as a separate goal.  
49 However, several of the UN/SDGs have their applications in the tourism Industry. The  
50 definition of tourism industry is "the sum of the industrial and commercial activities that produce  
51 goods and services wholly or mainly for tourist consumption." (Weaver and Lawton, 2002,  
52 p.471). The main sectors are travel agencies, tour operators, transportation, accommodation,  
53 food services, attractions, entertainment and specialized merchandise (Weaver, 2006).

54 Tourism both globally and regional can have severe impact on local communities, natural  
55 resources, climate and economies. Tourism being linked to travel, there is also a link to  
56 sustainable travel and transportation. Globally we see the realization in the tourism Industry  
57 that changes are necessary to not only meet the demands of local communities to be able to  
58 receive tourists but also utilize tourism to achieve a positive impact on those communities.  
59 With the help of those standards, it should be possible to differentiate sustainable for non-  
60 sustainable tourism. These standards can assist buyers of tourism products and services to  
61 make choices with a certain amount of certainty that what they buy is regarded as sustainable.

62 This project is to produce definitions and guidelines on sustainable tourism. It does not deliver  
63 a certification system, but it provides elements upon which certification or labeling systems  
64 could be built. The project will not only deliver components of future recommendations to  
65 government to facilitate, promote sustainable tourism in their constituencies but also will take  
66 into consideration work which has been produced by UN/CEFACT on Experience Programs  
67 being a subset of sustainable tourism products. The use of these documents and relevant list  
68 developed in the project will surely be provided any system developers to trade sustainable  
69 tourism.

70 The sustainable tourism of business standards should be revised in response to environmental,  
71 societal, and policy changes in the future, and the comparability of revised versions should be  
72 also taking into consideration, to allow the cross-reference of sustainable tourism standards  
73 should be easily carried out between different versions to maintain the internal quality  
74 consistency of the indicators. Particularly to develop a pilot and foresight of rating system for  
75 sustainable tourism.

76 In addition, there are many future opportunities, challenges and risks in setting global  
77 sustainability standards including with (1) centralized unique id challenges, (2) multi-layer  
78 packaging travel product challenges, (2) centralized data storage challenges, (4) expose of  
79 detail sustainability information, (5) unified chapter and verse system, (6) supply chain  
80 challenges.

## 81 **3. RELATED BUSINESS STANDARDS** 82 **FOR SUSTAINABLE TOURISM**

### 83 **3.1 GSTC**

84 The Global Sustainable Tourism Council (GSTC) establishes the global standards for  
85 sustainable travel and tourism, known as the GSTC Criteria. The criteria include two sets: the  
86 Destination Criteria is for public policymakers and destination managers (the latest version is  
87 released in 2019), whereas the Industry Criteria is for hotels and tour operators (the latest  
88 version is released in 2016). The criteria are arranged in four pillars, Sustainable management,  
89 Socioeconomic impacts, Cultural impacts and Environmental impacts. The latest version of  
90 Destination criteria is updated to correspond to the 2030 Agenda for Sustainable Development  
91 and the 17 Sustainable Development Goals (SDGs) that is most closely relates.

### 92 **3.2 ISO 21401:2018**

93 ISO/TC 228 released the International standard ISO 21401 in 2018 — Sustainability  
94 management system for accommodation establishments. This document has been drafted to  
95 help accommodation establishments of all sizes, from different geographical, cultural and  
96 social backgrounds, to improve sustainability in their related activities. It specifies

97 environmental, social and economic requirements to implement a sustainability management  
98 system in accommodation establishments in the tourism sector.

99 ISO 21401 included four Annexes A, B and C refer to each of the three dimensions of  
100 sustainability (environmental, social and economic) and Annex D provides examples of  
101 sustainability practices.

### 102 **3.3 ISO/TC 228**

103 ISO/TC 228 is a technical committee of the International Organization for Standardization (ISO)  
104 responsible for developing internationally accepted standards for terminology and  
105 specifications of the services offered by tourism service providers, including related activities,  
106 touristic destinations and the requirements of facilities and equipment. Published standards in  
107 various tourism areas from diving, yacht, beach operation to sustainability management  
108 system for accommodation establishments and so on.

### 109 **3.4 UN/CEFACT's Green Paper on** 110 **Sustainable Tourism**

111 In 2019, UN/CEFACT released the Green Paper on sustainable tourism, which aims on the  
112 new trend in tourism called Experience Programs (EPs). EPs, specifically focused on local  
113 areas or regions within countries, could be provided by various agents such as tour agency,  
114 DMO, OTA, or etc. Tourists (domestic or international) tend to visit regions not only to see  
115 them, but also to experience the nature, events and activities of that region and to engage with  
116 the people and local culture in a meaningful way. EPs can be delivered in forms of cultural,  
117 medical, sports, nature, arts, community-based and etc. and emphasizes a large variety of  
118 information to be communicated and shared between participants (originators, operators,  
119 participating businesses, customers, etc.). This green paper proposes examples of  
120 Experience Programs which have had a positive impact on local economies as well as  
121 guidance on how local authorities can valorize such assets to attract tourism revenues to their  
122 regions and become more sustainable.

## 123 **4. SUGGESTED WAY FORWARD FOR** 124 **UN/CEFACT**

125 The literature and current existed standards related to sustainable tourism are reviewed and  
126 classified into ten categories according to the service content or products provided by the  
127 tourism sectors, including travel agency, accommodations, transportations, restaurant,  
128 destination, shopping, entertainment, local government, experience program, and traveler. In  
129 achieving the SDGs in 2030, this white paper discussed the sustainable planning and actions  
130 could be adopted across the above 10 tourism sectors. It's expected that more discussion on

131 business standards of ST can serve as a reference to foster the feasibility of building a future  
 132 electronic exchange system database in beneficial for sustainable development in the tourism  
 133 industry.



134  
 135 Figure 1. ST are reviewed and classified into ten categories  
 136

## 137 4.1 Food/ Restaurant

138 The food and restaurant experience are an important element associated with the tourism  
 139 experience, acting as a mediator between local producers and tourists, communicating with  
 140 each of them being mindful to focus on local sustainability. Additionally, eating primarily local  
 141 food can be an initiating part toward the immersing traditional travel experience, as it provides  
 142 entertainment and cultural context in exciting ways. Food can play an important role in  
 143 determining an individual's motivation to visit a particular destination. The sustainability  
 144 planning in the restaurant sector can be focused on the food service it provides led by the  
 145 corresponding SDGs target number.

- 146
- 147 3.9 Providing/ using/ encourage the source of organic food ingredients to avoid illnesses
- 148 caused by chemical contamination
- 149 3.5 Signs or guideline posted on menu for harmful use of alcohol
- 150 3.a Strictly reinforce the non-smoking environment inner space and surrounding area
- 151 6.3 Collected rainwater or recycled used water in activities where the use of drinking water
- 152 is not required (e.g. flushing, washing)

- 153 6.3 Action to build the wastewater system to reduce sewer water pollution and avoiding
- 154 wastewater dumping
- 155 6.4 Initiated water saving plan such as lower pressure of kitchen faucets, washbasins, and
- 156 the restrooms, and automatic activation of kitchen sinks or tap water
- 157 6.4 Has goals to reduced water consumption and monitor periodically
- 158 6.4 Has goals for the rational use of water such as the water use limit per activity (e.g.
- 159 10liters each meal>>great)
- 160 7.2 Percentage of use renewable energy (wind, solar or photovoltaic)
- 161 7.3 Adoption in efficiency energy management, has smart energy meters and
- 162 documentation for the assessment for energy conservation
- 163 8.5 Handicapped people are hired without any discrimination at Cashier Area or for any
- 164 other suitable jobs. (people with disabilities, jobless. etc.)
- 165 8.6 Create Job opportunities in the restaurant to youth and aged people for equal pay for
- 166 work of equal value.
- 167 8.8 Actions of protect labor rights and promote a safe and secure working environment
- 168 (safety and labor right check regularly)
- 169 12.3 Assesses its food waste during food preparation and distribution
- 170 12.3 Train employees to avoid food waste during all stages of meal production, from the
- 171 receipt of food to distribution
- 172 12.5 Adopt strategies to minimize the use of disposables materials as much as possible,
- 173 and documented in the records
- 174 12.5 Adopt strategies to reduce the use of plastic in the distribution of meals
- 175 12.5 Returns packaging boxes for suppliers to reuse
- 176 12.5 Uses lamps, accessories or furniture made from recovered or recycled material

## 177 **4.2 Accommodation**

178 Accommodation buildings require a significant amount of energy resources to operate and  
 179 provide appropriate service for visitors regardless the size of the entities. The majority of  
 180 electricity usage for operation is commercially purchased that indirectly leads to the release of  
 181 greenhouse gas (GHG) emissions and contributes to climate change. Companies in this sector  
 182 are strongly suggested to implement energy management system to reduce environmental  
 183 impacts and to improve their reputations with guests, who are increasingly concerned about  
 184 environmental sustainability. The sustainability focus of accommodation can be water  
 185 management, energy management, labor practice, climate change adaption and ecological  
 186 impacts.

- 187 6.1 Has plan for Water risk assessment
- 188 6.3 Do sewage treatment.
- 189 6.4 Ensuring sustainable freshwater supply and recycling.
- 190 6.4 monitor the Water used ex: per tourist/night per source
- 191 6.4 Water-saving equipment is used to minimize water consumption. Ex: Use water-saving
- 192 shower head and toilet.
- 193 6.4 Set goals for reducing water consumption and has regular checking records
- 194 6.4 Staff and guests are given guidance on minimizing water use. Ex: Promote reuse of
- 195 towels and sheets for multi-day stays to reduce cleaning water usage.

- 196 7.2 Renewable sources are favored and the share of renewable energy in total energy  
 197 supply is monitored and managed. Ex: solar panels on the roof.
- 198 7.3 Total energy used is monitored and managed.
- 199 7.3 Used the air circulation equipment to be ensures that the air will not be excessively  
 200 ventilated, and excessive energy is used for cooling.
- 201 7.3 Equipment and practices are used that minimize energy use, ex: Use LED lights to  
 202 reduce power consumption and purchase "Energy Star" appliances wherever possible.
- 203 8.5 Everyone can get equal pay for equal work.
- 204 8.5 Protecting the rights of disabled to work.
- 205 8.8 Protecting the rights of labor, child labor and women in industries and promoting a safe  
 206 working environment.
- 207 12.2 Buy organic, fair trade, eco-friendly toiletries and in room products.
- 208 12.4 Implements practices to minimize pollution from noise, light, runoff, erosion, ozone-  
 209 depleting substances, and air, water and soil contaminants.
- 210 12.5 Reduce the use of disposable spares inside the room and reward passengers for their  
 211 own spares.
- 212 12.5 Provide recycling bins in public areas. Ex: lobby and poolside
- 213 12.5 Donate leftover guest amenities, old furniture, and appliances to charities.
- 214 12.5 Buy previously used or recycled-content products whenever possible.
- 215 13.1 Has climate risk management plan and regularly monitor the negative impact of climate  
 216 change, ex: the flood, typhoon, and drought where the lodging facility located
- 217 13.3 Total direct and indirect greenhouse gas emissions are monitored and managed.
- 218 13.3 Carbon Footprint per tourist/night is monitored and managed.
- 219 13.3 Actions are taken to avoid and reduce significant annual emissions from all sources  
 220 controlled by the lodging facility.
- 221 14.1 Wastewater and solid waste are disposed of to a municipal or government approved  
 222 treatment system, ex: island resort never dumped waste directly on the beachside to  
 223 reduce marine pollution
- 224 15.2 Preserve and cultivate of local planting tree species, strengthening green landscaping  
 225 and plant maintenance operations.
- 226 15.4 Ensure the conservation of mountain ecosystems and increase ecological diversity.
- 227 15.5 Being aware of, and mitigates, activity with potential to disturb wildlife and habitats.
- 228 15.7 Educate tourists prohibition against poaching and trafficking in conservation animals and  
 229 plants.  
 230

## 231 **4.3 Transportation**

232 Transport service in the tourism industry carry tourist to and from destination, majorly rely on  
 233 fuel transport vehicles ex: cars, tour bus, inland railway, aircraft, ferry, cruise and so on. As a  
 234 result of its heavy reliance on hydrocarbon fuels, the transportation industry generates a  
 235 significant amount of carbon dioxide (CO<sub>2</sub>) emissions. This sector is thus subject to  
 236 compliance costs and risks associated with climate change mitigation policies. Fuel  
 237 management become the critical part of reducing emissions in sustainable tourism planning.  
 238 Management of the environmental impacts of fuel usage includes increasing fuel efficiency

- 239 through vehicle and carrier design as well as and incorporating alternative and sustainable  
240 fuels.
- 241 3.6 Implemented the safety management plan to decrease the injury from transportation  
242 accidents, ex: tour bus, airline and cruise line
- 243 3.9 Significantly reduce air and water pollution from cars and all transportation systems
- 244 3.a Strengthen the implementation of the World Health Organization Framework Convention  
245 on Tobacco Control as appropriate, ex: non-smoking transportation through the journey
- 246 6.3 Cruise pollution should be taken into account including sewage or black water, gray  
247 water, oily bilge water. ballast water, solid waste, and hazardous waste.
- 248 7.2 Significantly expand and apply the proportion of renewable energy from the energy  
249 system to transportation
- 250 7.3 Avoid transporting tourist in highly polluting, outdated vehicles. Adopt green, low-carbon  
251 emission environment-friendly transportation vehicles
- 252 7.3 Double energy efficiency by enabling clean energy supply for transportation
- 253 7.b Combine with Smart City network to facilitate information exchange in increasing energy  
254 efficiency monitoring and management
- 255 11.2 Public and private transport should enable safe, affordable and easy-to-use sustainable  
256 transportation for all the needs of women, children, persons with disabilities and the  
257 elderly tourists, (e.g. MM Mobility Management Scheme)
- 258 12.4 Implements practices to minimize pollution from noise, light, runoff, erosion, ozone-  
259 depleting substances, and air, water and soil contaminants on all tour related  
260 transportation, ex: cruise line, tour bus, railway, airline and etc.
- 261 12.c Efforts to rationalize fossil fuel inefficient subsidies and accelerate the transition to  
262 efficient clean energy for massive tour transportation
- 263 13.3 Total direct and indirect greenhouse gas emissions are monitored and managed  
264 especially aircraft and cruise line.
- 265 14.1 Wastewater and solid waste are disposed of to a municipal or government approved  
266 treatment system, ex: cruise line never dumped wastewater directly into the ocean to  
267 reduce marine pollution
- 268 15.2 Reduce usage of fossil fuel vehicles to the natural habitats to lower the impacts or  
269 damage to forests and soils.  
270

## 271 4.4 Destination

272 A destination is more than a place with heritage resources (cultural and natural),  
273 infrastructures and services that attract tourists which also serves the local residents and  
274 governments on the basis of economic growth. Destinations are subject to a wide variety of  
275 economic, social, and environmental changes over time and in highly different stages of  
276 development. Managing sustainable tourism should be a long-term scope and undertake a  
277 strategic plan for desirable results for the community, city and the nation.

- 278 1.4 Employ local residents to develop, maintain and protect tourism resources and increase  
279 employment opportunities for local residents



- 280 2.3 Increase the market and high added value of land and local production resources, work  
 281 on equal access to employment opportunities and double income
- 282 2.4 Sustain ecosystems, adapt to climate change, extreme weather events, droughts, floods  
 283 and other disasters improve responsiveness and promote sustainable food production  
 284 systems
- 285 2.c Ability to obtain timely market information, such as food stocks, in response to  
 286 emergencies and disasters
- 287 3.3 Passengers should be reminded to protect themselves during an epidemic.
- 288 3.4 Promote LOHAS travels to advance the quality of life of the elderly.
- 289 3.6 Thoroughly implement the prevention of traffic accidents during travel, educate tourists  
 290 about tourism safety protection matters to reduce the occurrence of tourism accidents  
 291
- 292 4.4 Address aging and declining populations in tourist areas, and reward sustainable  
 293 tourism vocational skills and entrepreneurship to increase the proportion of youth and  
 294 adults with the necessary skills for sustainable tourism.
- 295 6.2 Assist in the establishment of public-use sewage and sanitation facilities to maintain the  
 296 hygiene for all and advocate for reducing open defecation in the communities.
- 297 6.3 Encourage travelers to bring their own environmentally friendly water bottles and not buy  
 298 overly packaged items, so as to reduce regional tourist waste dumping and pollution  
 299 from toxic chemicals
- 300 7.3 Avoid long-distance travel by vehicles and encourage in-depth tours in the local area.
- 301 7.3 Increase the use of electric vehicle or transportation such as electric tour bus or railway  
 302 system, to reduce carbon emissions to and from the destination.
- 303 8.5 Non-discrimination of destination tourism hiring and wage provided, including men and  
 304 women, young people and persons with disabilities, and provide equal pay for equal  
 305 work
- 306 8.9 Promote sustainable tourism that creates job opportunities, promotes local culture  
 307 awareness and economic development.
- 308 10.2 Take care of the economic weakness in the industry, strengthen employability, promote  
 309 salary growth, and continuously improve income distribution.
- 310 11.2 Promote Mobility management (MM) and Mobility as a service (MaaS) that take into  
 311 account the needs of vulnerable groups, women, children, the disabled, and the elderly,  
 312 and build public transportation as social infrastructure aiming for public traffic safety and  
 313 accessibility
- 314 11.4 Promote local tours and activities to protect and safeguard cultural and natural heritage
- 315 11.b Develop comprehensive disaster risk management at all levels in the region for climate  
 316 change mitigation · adaptation and resilience for sustainable development.
- 317 12.5 Promote Use the unpackaged sales model for local purchase.
- 318 12.5 Promote to live in a green and sustainable hotel.
- 319 12.8 Raise awareness of people in tourist areas about sustainable lifestyles and quality of life  
 320 in harmony with nature
- 321 13.3 Education of climate change mitigation, adaptation and reduce gas emission in all tourist  
 322 areas
- 323 14.1 Reduce marine pollution events and activities at all kinds, such as call for sunscreen-ban  
 324 for water sports activities in the tourism area.
- 325 14.c Strengthen conservation education events and experience tours on topics of sustainable  
 326 use of marine resources

- 327 15.4 Education tours to raise awareness of the conservation of mountain ecosystems and  
328 increase ecological diversity.  
329 15.7 Educate tourists against poaching and trafficking in conservation animals and plants on  
330 land.

## 331 **4.5 Shopping**

332 Shopping has become a relevant part of the tourist value chain in tourism, tourist visits  
333 destination outside their place of residence to shop for goods is also considered to be a  
334 determining factor for travel decision and prime motivation in some cases. Shopping is also  
335 one of the major categories in the tourism sector in representing a significant source of income  
336 for national economies both directly and through the many linkages to other sectors in the  
337 economy according to UNWTO. Shopping stations have become the intermediary role of local  
338 products and tourists, conveying local characteristics to tourists through authentic layout of  
339 local products, advocating local consumption in contributing to local economy growth.

- 340 .
- 341 6.5 Make sure the shop is located in an area with good drainage system and implements a  
342 shunt processing system for drinking water and sewage treatment.
- 343 7.3 Installed energy saving management system (such as IoT sensors) for lighting devices,  
344 air-conditioning equipment, cleaning supplies, etc.
- 345 12.5 No more plastic shopping bags are provided by the shop/shopping mall.
- 346 12.5 No more merchandise with plastic packaging materials are displayed and sold in the  
347 shop/shopping mall.
- 348 12.8 The IoT and other types of innovative digital technologies are implemented to increase  
349 the awareness of sustainability and efficiency of customer relationship management.
- 350 12.b Encourage the merchandise of the shop or shopping mall are purchased from local  
351 suppliers and manufactured by the local factories.
- 352 14.4 Stop selling products in the shop/shopping mall made from endangered marine animals  
353 and plants.
- 354 15.5 Stop selling products in the shop/shopping mall made from endangered animals and  
355 plants on land.

## 356 **4.6 Entertainment**

357 Entertainment in the tourism industry is comprised business that operate entertainment, travel,  
358 and recreation facilities and provide related service to visitors. Business in this industry  
359 operate theme parks, ski resorts, sports stadiums, golf course and other venues that providing  
360 entertainment or experience to millions of visitors annually across various locations indoors  
361 and outdoors.

- 362 3.6 Corrective actions implemented in response to the serious fatalities and injuries while  
363 entering, riding or interacting with any of the facilities and features therein.

- 364 3.6 Conduct routine inspection of risk plan to assuring facility safety such as the amusement  
 365 park rides, ski slopes as well as venues where large crowds of people may be present,  
 366 such as indoor water parks, sports and concert venues.
- 367 3.a Creating smoke-free facilities (casinos) to attract more non-smoking tourists and prevent  
 368 the employees exposed to secondhand smoke related to respiratory illness.
- 369 6.4 Reduce artificial snow making in skiing resorts, such as snow cannons which heavily  
 370 rely on water during snow making.
- 371 7.3 Large outdoor (sports venues) and indoor entertainment facilities (casinos) that may  
 372 consume a significant amount of energy for heating, ventilation, air-conditioning (HVAC),  
 373 and lighting, which indirectly leads to the release of greenhouse gas (GHG) emissions,  
 374 are advised to implement energy management system to reduce environmental impacts  
 375 and to improve energy efficiency.
- 376 7.3 Installed energy saving management system (such as IoT sensors) for lighting devices,  
 377 air-conditioning equipment, cleaning supplies, etc.
- 378 8.8 Protect labor rights and promote safe and secure working environments for all worker in  
 379 theme parks, casino, and cruise ship in the tourism related entertainment industry to  
 380 reduce low-wage environment, and long-hour work duties.
- 381 12.4 Promote less energy-intensive golf course to reduce water, pesticide, fertilizer and fossil  
 382 fuel use to minimize the adverse impact on human health and environment
- 383 13.3 Actions should be taken to reduce significant annual emissions from all diesel generators  
 384 in the highly demand entertainment industry to run power supply which produce high  
 385 levels of nitrous oxide and other air pollution.
- 386 15.2 Limited skiing resort growth and expansion around the environment fragile natural  
 387 habitats
- 388 15.2 Encourage habitat restoration, reseeding of exposed runs in the skiing industry to attract  
 389 skiers support sustainable development.

## 390 **4.7 Tour Agency**

391 Tour Agency help tourist in planning and booking reservations for their itinerary,  
 392 accommodation, and transportation to and from the destination. Many tour agencies may have  
 393 been in different pace to adopt the environmental and social goals varied by scale of firms.  
 394 Smaller firms do not have a great deal of money to instituting environmental management  
 395 standards and often use philanthropy as a means to give back to local people and destination  
 396 whereas the environmental goals are more embedded in the DNA of the larger firm with  
 397 comprehensive plan to achieve environmental efficiencies. As for the travel experience, tour  
 398 agency could also involve the sustainable concepts into the itinerary planning in a way to  
 399 improve the welfare of local people, minimize negative environment impacts, and help to  
 400 conserve heritage cultures and all kinds of habitats in a long run.

- 401 1.4 All men and women have access to basic services, ownership and control of land and  
 402 other forms of property. In addition, tourists are allowed to have equal rights and services  
 403 in natural resources, economic resources and tourism resources
- 404 1.5 Develop travel itinerary that take into account climate change issues and economic, social  
 405 and environmental disasters in tourist areas.

- 406 3.3 In response to various infectious diseases, travel agencies should strive to foresee the  
407 epidemic situation in the region and ensure the safety and security of travelers in the  
408 region
- 409 3.5 Remind tourists of drug abuse and excessive alcohol intake according to local policy.
- 410 3.6 Strive to ensure the safety of all passengers during transportation based on past traffic  
411 accident cases and causes
- 412 3.8 Help all travelers to prevent and obtain adequate health care plan at an affordable cost
- 413 3.9 Make travel itinerary to avoid hazardous chemicals and various types of pollution
- 414 4.4 Increase the proportion of young people and adults with technical and professional skills  
415 required for sustainable tourism practices
- 416 4.7 Ensuring tourists acquire knowledge and skills for sustainable tourism to facilitate cultural  
417 diversity and sustainable cultural development
- 418 4.7 Travel agencies should teach all employees the concept of environmental protection and  
419 humanistic conservation, and best practice during the trip.
- 420 6.4 Reduce the use of bottled water and reward travelers with their own water bottles.
- 421 8.6 Travel agencies can provide a certain percentage of employment opportunities and  
422 training for young people.
- 423 8.7 A set of audit documents of DMC can be prepared in assist of tour agency during the  
424 itinerary planning process to confirm whether there is any illegal employment of child  
425 labor or job opportunities for people at all society and economic status were provided.
- 426 11.4 Respect the traditional culture and the privacy of local residents and communities.
- 427 11.6 Travel on a sustainable transportation system.
- 428 12.2 Provide E-tourism brochure to reduce paper waste.
- 429 12.2 The company can reduce paper production through technology and artificial intelligence.  
430 Also, through the operation of cloud systems and data analysis to better understand  
431 visitors' preferences.
- 432 12.5 Travel agency should encourage travelers to bring their own environmentally friendly  
433 tableware or straws during the trip.
- 434 12.6 Arrange travel choices according to sustainability factors such as sustainable affiliate or  
435 self-report of sustainability hotel properties, food-beverages services, and transport  
436 company
- 437 14.1 Do not arrange tourism activities that will affect marine resources and ecology
- 438 15.1 Promote green tourism that can reduce environmental pollution and resource  
439 consumption.
- 440 15.1 Encourage an environmentally friendly model and low-carbon emission tour.
- 441 15.1 Take the responsibility of restraining tourists, implement the concept of green tourism  
442 and conservation, and formulate relevant punishment and penalties for violations.
- 443 15.2 Promote responsible tourism practices by arranging leave no trace tours.

## 444 **4.8 Local Government**

445 While national government of tourism is in charge of regulations and develop major socio-  
446 economic activities to promote tourism within and outside the country, the local government  
447 served as an official local authority which provide the infrastructure, policy and planning  
448 procedures to maximize the benefit for local communities by creating linkages between

449 government and its residents and businesses. Effective local governance has been identified  
450 as one of the most influencing factors in sustainable tourism development.

451

452 9.1 Has planning guidelines, regulations and/or policies which control the location and nature  
453 of development, require environmental, economic, and socio-cultural impact  
454 assessment and integrate sustainable land use, design, construction, and demolition.

455 11.a Local communities' aspirations, concerns and satisfaction with tourism sustainability and  
456 destination management are regularly monitored and publicly reported, and action is  
457 taken in response to them.

458 12.8 Making guideline for visitors about sustainability issues in the destination and the part  
459 that they can play or contribute to the local communities.

460 12.b Regularly monitor and publicly report visitor satisfaction with the quality and sustainability  
461 of the destination experience and take action in response.

462 12.b Action is taken to monitor and manage the volume and activities of visitors, and to reduce  
463 or increase them as necessary at certain locations varied by seasonality, working to  
464 balance the needs of the local economy, community, cultural heritage and environment.

465 17.14 Promote policy or strategic planning in supporting specific destinations being certified  
466 sustainable

467 17.14 Making policy in establishing targets for private sector hotel and tour operator  
468 certification

469 17.14 Sustainability principles and an assessment of assets, issues and risks should be  
470 contained in the governance strategy and action plan.

471 17.14 Implementing a system to monitor and respond to socio-economic, cultural and  
472 environmental issues and impacts arising from tourism.

473 17.14 Actions and outcomes towards sustainable tourism are regularly monitored, evaluated  
474 and publicly reported.

475 17.17 Adoption of national or provincial policy frameworks that encourage actual practice and  
476 implementation with local tourism business or institutions

477 17.17 Promote the collaboration between public and private sector in making the destination  
478 being certified as sustainable

## 479 **4.9 Experience Programs**

480 Experience programs (EPs), specifically focused on local areas or regions within countries,  
481 are a growing global trend. From the perspective of regional vitalization, environmental  
482 sustainability, and the promotion of Quality of Life for visitors and residents has generated  
483 more attention. With experience program, the travelers could gain authentic, local  
484 experiences; and in the meantime to help promote the Quality of Life of both visitors (who  
485 experience the variety of EPs in the region) mentally or physically, and the inhabitants of  
486 regions (who earn a living by working in EP-related businesses).

487

488 1.4 Employ local residents to develop, maintain and protect tourism resources and increase  
489 employment opportunities for local residents

490 3.4 Promote LOHAS travels to advance the quality of life of the elderly

- 491 3.5 Remind tourists of drug abuse and excessive alcohol intake according to local policy.
- 492 3.6 Strive to ensure the safety of all passengers during transportation when it's provided and
- 493 educate tourists about tourism safety protection matters to reduce the occurrence of
- 494 tourism accidents
- 495 4.4 Address aging and declining populations in tourist areas, and reward sustainable
- 496 tourism vocational skills and entrepreneurship to increase the proportion of youth and
- 497 adults with the necessary skills for sustainable tourism.
- 498 4.7 Ensuring tourists acquire knowledge and skills for sustainable tourism to facilitate cultural
- 499 diversity and sustainable cultural development
- 500 4.7 Program provider should teach all employees the concept of environmental protection
- 501 and humanistic conservation, and best sustainable practice during the program
- 502 6.3 Encourage travelers to bring their own environmentally friendly water bottles
- 503 6.4 Reduce the use of bottled water and reward travelers with their own water bottles.
- 504 7.3 Encourage in-depth tours in experiencing the cultural value in the local area.
- 505 8.5 Non-discrimination of program hiring and wage provided, including men and women,
- 506 young people and persons with disabilities, and provide equal pay for equal work
- 507 8.9 Promote sustainable tourism that creates job opportunities, promotes local culture
- 508 awareness and economic development.
- 509 11.4 Promote local tours and activities to protect and safeguard cultural and natural heritage
- 510 12.2 Using E-platform or apps to share program information or photos to reduce paper waste.
- 511 12.5 Travel agency should encourage travelers to bring their own environmentally friendly
- 512 tableware or straws during the trip.
- 513 12.6 Arrange travel choices according to sustainability factors such as sustainable affiliate or
- 514 self-report of sustainability hotel properties, food-beverages services, and transport
- 515 company
- 516 13.3 Education of climate change mitigation, adaptation and reduce gas emission in the
- 517 related experience program
- 518 14.1 Reduce marine pollution events and activities at all kinds, such as call for sunscreen-ban
- 519 for water sports activities in the tourism area.
- 520 14.1 Do not arrange tourism activities that will affect marine resources and ecology
- 521 15.1 Promote green tourism that can reduce environmental pollution and resource
- 522 consumption.
- 523 15.1 Encourage an environmentally friendly model and low-carbon emission tour.
- 524 15.1 Take the responsibility of restraining tourists, implement the concept of green tourism
- 525 and conservation, and formulate relevant punishment and penalties for violations.
- 526 15.2 Promote responsible tourism practices by arranging leave no trace tours.

## 527 **4.10 Traveler**

528 Travelers are closely related to the tourism industry and the total number of travelers in the  
 529 world has been increasing year by year, exceeding 1.3 billion in 2017 and is expected to  
 530 increase after the coronavirus. Traveler's behavior has grown into a new form of travel to  
 531 experience programs (EPs) with a variety of forms and subjects, which can be seen as a shift  
 532 to travel-sustainable tourism.

533

- 534 1.4: Interact equally with the people of the areas you visit, pay appropriate compensation when  
535 using local resources, etc., and take action to contribute to the enrichment and  
536 sustainability of the region through travel.
- 537 3.5: Act with strict prohibition of ingestion to drug abuse, alcoholic beverages and other  
538 substances during travel.
- 539 3.6: Follow local traffic rules for using transportation, automobiles, etc. and prioritize the  
540 prevention of traffic jams, over tourism and accidents.
- 541 3.9: Make efforts to prohibit or minimize conduct of all hazardous substances which will lead  
542 to air, water and soil contamination at the destination.
- 543 3.a: In principle, to strictly obey the tobacco regulations when traveling.
- 544 4.7: Consider cultural diversity and cultural sustainability in the travel destination, and as a  
545 traveler contribute to sustainable development, and make understanding, cooperation  
546 and support so that all learners in the community acquire the necessary knowledge and  
547 skills.
- 548 5.1 End all forms of discrimination against all women and girls everywhere.
- 549 6.2: Do not defecate in the open air. Request cooperation as a traveler to install safe and  
550 hygienic public toilets in the right place for everyone's needs. Consideration shall be  
551 given to environmental maintenance.
- 552 6.4: All people cooperate in the availability and sustainable management of water and  
553 sanitation
- 554 7.1: Avoid CO2 emissions and other air pollution by ensuring universal access, including the  
555 use of affordable and reliable modern energy services and natural energy. Travel and  
556 transportation plans shall be carried out with these considerations in mind.
- 557 11.4: Cooperate in the sustainable continuation of tourism resources through actions that take  
558 into account the protection and conservation of local cultural and natural heritage in all  
559 areas of travel.
- 560 12.8 Ensure to have information and awareness about sustainable development and  
561 lifestyles in harmony with nature wherever in traveling.
- 562 14.1: Prevent marine pollution of all kinds, in particular from land activities, including marine  
563 litter and eutrophication, and do not pollute the ocean of any kind.
- 564 16.1: Do not engage in all forms of violence everywhere.
- 565 16.2: Abuse, exploitation, trade and all forms of violence against children and work from the  
566 perspective of a traveler to eradicate torture.

## 567 **5. RATING SYSTEM**

568 (1) Rating method in the self-rating system

569

570 This Business Standards feature the introduction of the self-rating system of the  
571 practitioners' practices.

572 When introducing it, it is necessary to first think about what is a good initiative.

573 In carrying out the practices, it is necessary to ensure that they are surely carried out within  
574 the budget by the set deadline, and we think this can be called a good initiative.

575 This corresponds to the quality control requirements in manufacturing, etc., but it also can be  
576 seemed valid in the rating of the human conduct.

577

578 Therefore, in rating, we apply CMMI (Integrated Capability Maturity Model), which was  
579 initiated for software development process evaluation and improvement activities and later  
580 adopted by government agencies and private organizations, to practices for sustainable  
581 tourism, and it will rate the object higher as the practice matures proceed.

582 In other words, high ratings in performance represent high maturity.

583

584 (2) CMMI Concept

585

586 CMM<sup>[1]</sup>, which is the basis of CMMI, focuses on the importance of processes among the  
587 three main elements related to quality, reliability, and productivity: "people - technology -  
588 processes". CMM assumes that "the quality is greatly influenced by the quality of the  
589 processes used to develop and maintain it." So, it focuses on process improvement in  
590 organizations, presents the key elements of a process, and presents improvement pathways  
591 for evolving from ad hoc and immature activities to orderly and mature processes.

592

593 Here we define the following key CMMI concepts as they are applied to the tourism practice:

594

595 Process: A set of steps carried out for a given purpose, defined as a set of activities,  
596 methods, exercises, outcomes, etc. in carrying out a practice. As an organization matures,  
597 processes become well defined and consistently implemented throughout the  
598 organization.

599

600 Process Maturity: It indicates the extent to which a particular process is explicitly defined,  
601 managed, monitored, and effective. Maturity signifies the potential for improvement and  
602 indicates both the richness of an organization's processes and the consistency applied in  
603 execution throughout the organization. In the mature organizations, the process is well  
604 understood throughout the organization, usually through documentation and training.

605

606 (3) Each stage of the maturity level

607

608 CMMI generally uses a staged representation to indicate improvement paths to mature  
609 processes.

610 The staged representation, which provides an improvement path focused on organizational  
611 maturity, is outlined below and its application to tourism is also shown.

612 Figure 1 also shows maturity levels and their application to tourism.

613

614 Level 1 *Initial* : The software process is characterized as ad hoc and occasionally even  
615 chaotic. Few processes are defined, and success depends on  
616 individual effort.

617 Application to tourism:

618 There is no awareness of the SDGs, and there is a lack of awareness  
619 for the prioritized sustainable tourism items. There is no formalized  
620 method for executing the practices, but they are dealt according to the  
621 situation.

622

623 Level 2 *Repeatable* : Basic project management processes are established to track cost,  
624 schedule, and functionality. The necessary process discipline is in  
625 place to repeat earlier successes on projects with similar applications.



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Application to tourism:

Although the SDGs are recognized to some extent, only limited items are taken up and implemented in a limited manner in response to prioritized sustainable tourism items. As for similar implementation processes, the approach is to follow the example of previous successful practices.

Level 3 *Defined* ; The software process for both management and engineering activities is documented, standardized, and integrated into a standard software process for the organization. All projects use an approved, tailored version of the organization's standard software process for developing and maintaining software.

Application to tourism:

A standard performance process approved in the organization is established. Sufficient awareness of the SDGs is recognized, and priority consideration has been given to the prioritized sustainable tourism items, some of which are being implemented.

Level 4 *Managed* : Detailed measures of the software process and product quality are collected. Both the software process and products are quantitatively understood and controlled.

Application to tourism:

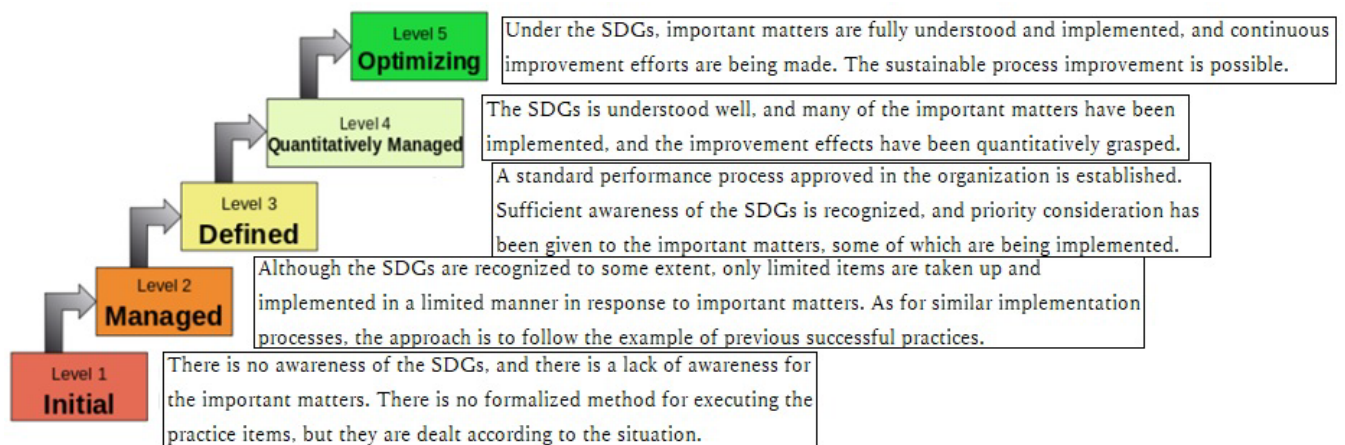
The SDGs is understood well, and many of the prioritized sustainable tourism items have been implemented, and the improvement effects have been quantitatively grasped.

Level 5 *Optimizing* : Continuous process improvement is enabled by quantitative feedback from the process and from piloting innovative ideas and technologies.

Application to tourism:

Under the SDGs, prioritized sustainable tourism items are fully understood and implemented, and continuous improvement efforts are being made. The sustainable process improvement is possible.

Figure 1 shows levels of tourism-related maturity based on the SDGs. [2]



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660  
661  
662

Figure. 1 Levels of tourism-related maturity based on the SDGs

[1] Capability Maturity Model for Software(R), Version 1.1 (CMU/SEI-93-TR-24) 1993

663 [2] Sally Godfrey (2008) [software.gsfc.nasa.gov/docs/What%20is%20CMMI.ppt What is  
 664 CMMI?]. NASA presentation. Accessed 8 December 2008.

665

666 (4) Indication of self-rating results by practitioners on prioritized sustainable tourism items

667

668 The prioritized sustainable tourism items are extracted from the requirements for tourism in  
 669 the SDGs and set as follows.

670

671 ✓ From Target 8.9, we can take “job creation and products promotion” to promote  
 672 sustainable tourism.

673 ✓ From Target 11.4 and 14.7, we can take “cultural and natural heritage protection and  
 674 natural environment conservation”.

675 ✓ From Target 12.b, we can take “to monitor sustainable development impacts for  
 676 sustainable tourism”. It can be regarded as "destination management".

677

678 Based on the above, we believe that the practices of each category can be arranged  
 679 according to the following prioritized sustainable tourism items with which the practitioners  
 680 should comply preferentially.

681 A. “Job creation and products promotion”

682 B. “Natural environment conservation”

683 C. "Cultural heritage conservation"

684 D. “Destination management”

685 E. "Other prioritized sustainable tourism item"

686

687 Table 1 shows an example of indicating the self-rating results by the practitioners.

688 The numbers in the table indicate the maturity level on each prioritized sustainable tourism  
 689 item.

690 A rating of 0 indicates that there is the practice to be taken, but the practitioner has not yet  
 691 taken action.

692 A blank column indicates that there is no practice that corresponds to the prioritized  
 693 sustainable tourism item. For example, the restaurant does not contribute to the cultural  
 694 heritage conservation and the destination management.

695

Classification Category num. Practitioner	A. Job creation and products promotion	B. Natural environment conservation	C. Cultural heritage conservation	D. Destination managemen t	E. Other prioritized sustainable tourism item
4.1 Restaurant ABC	1	2			1
4.2 Hotel ABC	2	1			1
4.3 ABC Railway		2			0
4.4 Destination ABC	2	3	1		1
4.5 Souvenir shop ABC	1	2			
4.6 Leisure Hall ABC	2	1			0
4.7 Agency ABC	1	2	2		1
4.8 Municipality ABC	1			3	
4.9 Experience program ABC	1	2	2		1
4.10 Traveler ABC		2	1		0

696

697 Table 1 An example of indicating the self-rating results by the practitioners

698

699 (5) Utilization of self-rating system

700

701 By publishing the practices and self-rating information of the travel related organization and  
702 traveler (hereinafter the practitioner), which are the results of this project, through the  
703 network, the consumers will be able to identify sustainable tourism when purchasing EPs.

704 In other words, we intend that in the future, this result will be delivered to the consumers as  
705 significant information in electronic transactions using EPs artifacts.

706 Here, the practitioner's self-rating is indicated in the framework of prioritized sustainable  
707 tourism items, but if the self-rating information can include the practices that the practitioner  
708 has worked on, by searching for the SDGs expression, the consumer will be able to know  
709 the situation of the practitioner's initiatives.

710 For example, if the consumer wants to access to clean energy in a destination, it will be  
711 possible to find out about tourism operators that are working to use clean energy.

## 712 **6. FUTURE OPPORTUNITIES AND RISKS**

713

714 After having standard to define sustainable tourism, a standard of exchanging sustainable  
715 tourism data is still missing. Travelers are not able to collect the sustainable data from all  
716 suppliers' website. Travel agencies are not able to collect all sustainable indicators form all  
717 different types of travel suppliers of each travel sector to consolidate them in order to indicate  
718 the sustainability of a package tour. Therefore, a data exchange standard for sustainable  
719 tourism could be the key turning point for tourism industry. But tourism industry is a very big  
720 industry including of many different types of suppliers, making this data exchanging standard,  
721 we still need to overcome several challenges.

### 722 **6.1 Centralized Unique ID Challenges**

723 In the traditional way of data exchange, every business entity needs to have a unique ID to be  
724 the primary key of database. Nationally, Tax ID is the best unique ID for business entities.  
725 Internationally, industry based centralized organizations are acting the role of delivering  
726 Unique IDs for business entities within the industry. For example, ISBN for books, IATA for  
727 airline, IMO for ships. To establish an organization for the whole travel industry would be a  
728 mission impossible challenge.

729 There are 2 functions of Centralized Unique ID Controlling Organization, the first one is to  
730 make sure there are no multiple business identity using the same ID, the second one is to  
731 verify the business identity actually exist.

732 In the Decentralized generation, adopting UUID (Universal Unique Identifier) technology into  
733 the new Sustainable Tourism data exchange standard, can solve the first function, the second  
734 function of verify the existence of business entity, can be solved by "local verification body",

735 or need to develop a mechanism for verified business entities to verify each other, and this  
736 mechanism can be used by every working group, not only for TT domain, and this can be a  
737 stand along project.

738

## 739 **6.2 Multi-Layer Packaging Travel** 740 **Product Challenges**

741 Different from other industry, travel products often been packaged and resold between multi-  
742 layer middle man, traveler are difficult to know the real supplier before travel, it is not possible  
743 for traveler to track the sustainability data without knowing the detail supplier of travel  
744 packages, in order to solve this problem, the packager of travel product will have the  
745 responsibility to package “sustainability indicator data” attach to the product itself to resale it,  
746 thus we will need to develop a “multi-layer sustainability data packing mechanism”.

## 747 **6.3 Centralized Data Storage** 748 **Challenges**

749 The other big problem of travel industry is now data must controlled by big-techs, GDS, social  
750 media platforms, big-techs and platforms will not able to exist forever, thus data will not exist  
751 forever either, and these data are used to generate profit for big-techs, although these data  
752 are contributed by the whole world and should be used to benefit for the whole world, this is  
753 not possible at old time, but after blockchain is invented, it created the whole new possibility.  
754 If a standard way of structuring tourism sustainability data can be created, it can be stored in  
755 decentralized blockchain, not a specific chain but any chain, then this problem can be solved.

## 756 **6.4 Expose of Detail Sustainability** 757 **Information**

758 Currently, travel sustainability often verified by different “certification bodies”, traveler are only  
759 able to know a travel business player or a travel product is either “passed” or “not passed”, we  
760 are not able to know detail sustainability information from different perspective of views. One  
761 Hotel might have done a great job of using Green Energy, but doing lousy work of waste  
762 management, Indicating a airline company have not caused any damage to live under water  
763 doesn’t mean anything, thus our Sustainable Tourism data exchange standard certainly need  
764 to include the ability to exchange the “detail information” of sustainability.

765

## 6.5 Unified Chapter and Verse System

766

767 In the future, sustainable tourism standard will be translated into different language and use  
768 in different places in the world. Traveler will need to under sustainable data from traveler  
769 supplier without understanding their language, thus we may have to make a system to  
770 standardize the Chapter and Verse, no matter how this document is translated, the Chapter  
771 and Verse have to stay the same just like Bible.

772 In order to solve the challenges above, the development of Sustainable Tourism Data  
773 Exchange Standard is suggested to be divided into 3 stages.

774 Stage 1, after this white paper, Sustainable Tourism API standardization process must be  
775 started, data fields need to be decided, using this API standard, travel business entries like  
776 hotels and travel agencies can start writing programs to exchange data each other.

777 Stage 2, in travel industry, most business entities are small companies, developing software  
778 and connecting APIs with other business entity could be way difficult task, thus there might be  
779 profit or non-profit organizations established to store sustainable tourism data and connecting  
780 each other by API, travel business entities only need to register to these organizations and fill  
781 out forms, at this stage, traveler only need to connect to these organizations to get sustainable  
782 tourism data, no need to read hundreds of travel supplier's website to collect data, of  
783 connecting to each travel suppliers API to gather data, but at this stage, data is getting more  
784 centralized, and the problem of Unique ID have to be solved.

785 Stage 3, a decentralized way of storing sustainable tourism standard should be created, at  
786 this stage, every travel business entity, OTAs, local verification bodies, travel agencies, should  
787 have a standard way of storing data into any blockchain. This project is not going to propose  
788 to create a public block chain, because every public block chain is still controlled by a  
789 centralized development team, not to mention public chains are getting way too competitive,  
790 also chains are comes and goes while development team have not enough budget to sustain  
791 itself. By theory data saved on Blockchain can sustain forever, by reality chains are  
792 disappearing while developing team dismissed and miners are not interesting on this chain  
793 anymore. So, the true decentralize way of data storage is not to create a block chain, but to  
794 create a way to storing data on every different chain. A way of formatting data into standard  
795 JSON format, to store into every block chain and to read out from every block chain. At this  
796 stage, Sustainable Tourism data will not be used by any companies for profit purpose. Data  
797 will be able to be used by everyone in the world and owned by everyone in the world.

## 6.6 Supply Chain Challenges

798

### 799 1. Supply chain is not easy to require fulfillment, it is difficult to set boundaries

800 A travel itinerary is composed of a complex chain of services that complement each other.  
801 Every aspect of service and material provision, including flights, dining, transportation, and  
802 lodging, involves a complex supply chain. For example, Taiwan's Leave No Trace (LNT)  
803 campaign encourages the public to restore the footprints, campfires, and cooking of their

804 camps as much as possible after climbing, rather than just bringing down items that did not  
805 originally belong to the mountain. This is an example of the concept of sustainability. But  
806 climbing activities involve transportation to and from the mountain, lodging, and access to food,  
807 all of which are opportunities to implement sustainable tourism. Therefore, in the development  
808 of sustainable tourism standards, we should adopt an ecosystem perspective to standardize  
809 sustainable tourism standards. Rather than focusing on a single entity. As for a single entity,  
810 the evaluation should be based on the continuity of the entire service chain, rather than the  
811 evaluation of a single object, location, product, or venue. The evaluation mechanism of the  
812 ecosystem, that is, the supply chain, should focus on the overall score, rather than the  
813 outstanding performance or score of individual economies. However, how to define the scope  
814 of ecosystem or supply chain, and how to evaluate different suppliers in the ecosystem may  
815 be different, and how to have common quantitative results will be the issues that must be  
816 overcome in the future implementation.

## 817 **2. Obtaining a sustainable tourism label limits the diversity of products**

818 After an individual operator obtains the Sustainable Tourism Certification, due to the  
819 interdependent nature of the supply chain, it is possible that other supply chains may not be  
820 able to follow through on obtaining the certification or supplying goods and conditions that  
821 meet sustainable standards, and may drop out of the supply chain, resulting in services that  
822 cannot be constituted, the scarcity of products, or higher supply costs. As sustainability  
823 education in the travel market is difficult to spread, the visibility of low price over quality in the  
824 travel market is more likely to be perceived as more important by consumers, and meeting  
825 sustainability standards is naturally difficult for industry players to be motivated to participate.

## 826 **3. Although there are large operators to drive the trend, it only stops at the first level of 827 supply chain relationship**

828 Although large tour operators are driving the trend of sustainable certification from a supply  
829 chain perspective across countries and in the transportation, lodging, food and beverage, and  
830 attractions industries, it is difficult to demand or create the motivation to participate in  
831 sustainable tourism beyond the first level of the supply chain. However, in a business-to-  
832 business environment, it is difficult to ask for or contract further motivation to participate in  
833 sustainable tourism beyond the first level of the supply chain. Sustainability has not yet  
834 become a socially responsible concept that is not driven by commercial interests. In the future,  
835 when it comes to promoting sustainable standards or certifications, government civic  
836 education, coupled with the cooperation of international organizations, will be the fundamental  
837 driving force for companies to actively participate in sustainable standards and certifications  
838 in the future.

839

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