
**GREEN TOURISM SUPPLY CHAIN MANAGEMENT IN
INDONESIA: TAKING INTO ACCOUNT DISASTER
MANAGEMENT IN A SUSTAINABLE SOCIETY TO IMPROVE
2015 TRAVEL AND TOURISM COMPETITIVENESS INDEX**

Judith Marilyn Tomasowa

Universitas Ciputra, Surabaya, judith.tomasowa@ciputra.ac.id

ABSTRACT:

Tourism and hospitality industry is a resilient contribution to national development, as it is mentioned in 2015 World Economic Forum Report, which evaluates 141 economies, including Indonesia and ASEAN, through the Travel & Tourism Competitiveness Index (TTCI) and explores how the T&T sector has responded to economic, security and health shocks over recent decades.

Indonesia ranks 50th overall in TTCI and it is being visited by 8.8 million international visitors in 2014 due to national prioritization and continued investment in infrastructure. Indonesia's main competitive advantages are price competitiveness and rich natural resources, including biodiversity and several heritage sites. But, Environmental sustainability is not yet as the major concerned in Indonesia, in terms of deforestation and the treatment of used water. Add to these, safety and security are also concerning, specifically the terrorism.

Green tourism supply chain management that considers more on disaster management into sustainable society will create a sustainable society in human wellbeing, environmental wellbeing and economic wellbeing. Competitiveness is close integrated with these three aspects of sustainable society.

This article is based on 2015 The World Economic Forum Report, tourism statistic of tourist arrivals, includes other tourism indicators or development rates; also environmental and socio-economics statistics. The purpose of this article is the presentation of the concepts of sustainable development and competitiveness are close related and need to be supported by the tourism and hospitality stakeholders in Indonesia in order to improve Indonesia's Travel and Tourism Competitiveness in the future.

Keywords: *World Economic Forum Report, Travel and Tourism Competitiveness Index, Green tourism supply chain management, disaster management, sustainable society*

ABSTRAK:

Industri pariwisata dan perhotelan merupakan kontribusi tetap dalam pembangunan nasional, seperti yang dinyatakan dalam Laporan Forum Ekonomi Dunia tahun 2015, yang mengevaluasi 141 negara, termasuk Indonesia dan ASEAN, dengan Travel & Tourism Competitiveness Index (TTCI) dan eksplorasi sejauh mana sektor pariwisata dan perhotelan merespon keadaan ekonomi, keamanan dan kesehatan dalam beberapa dekade terakhir.

Berdasarkan TTCI, Indonesia menduduki peringkat ke-50, dan di tahun 2014 dikunjungi oleh 8,8 juta wisatawan internasional, yang dimungkinkan karena prioritas nasional dan investasi berkelanjutan dalam infrastruktur. Keunggulan kompetitif utama daya saing Indonesia adalah harga dan sumber daya alam yang kaya, termasuk keanekaragaman hayati dan beberapa situs warisan. Namun, perihal ketahanan lingkungan belum diperhatikan dengan seksama di Indonesia, terutama dalam hal pembabatan hutan dan pengelolaan air limbah. Selain itu, keselamatan dan keamanan juga memprihatikan, khususnya terorisme.

Manajemen rantai pasokan pariwisata "hijau" yang lebih menitikberatkan pada manajemen bencana di dalam masyarakat berkelanjutan akan menciptakan ketahanan masyarakat berupa kesejahteraan manusia, lingkungan dan ekonomi. Daya saing sektor pariwisata dan perhotelan berkaitan erat dengan tiga aspek tersebut.

Artikel ini didasarkan pada Forum Ekonomi Dunia tahun 2015, statistik pariwisata seperti kedatangan wisatawan, termasuk indikator pariwisata lainnya atau rasio pembangunan; juga statistik lingkungan dan sosial - ekonomi. Tujuan artikel ini adalah menunjukkan bahwa konsep pembangunan berkelanjutan dan daya saing saling berhubungan dan perlu didukung oleh pemangku kepentingan di sektor pariwisata

dan perhotelan di Indonesia dalam rangka meningkatkan daya saing travel dan turisme Indonesia di masa depan .

***Kata Kunci:** Forum Ekonomi Dunia, Index Daya Saing Travel dan Turisme, Manajemen Rantai Pasokan Turisme Hijau, Manajemen Bencana , Masyarakat yang berkelanjutan*

INTRODUCTION

The World Economic Forum just issued 2015 Travel & Tourism Competitive Report, which ranks Indonesia globally in the 50th, due to several weakness in travel and tourism sector. If Indonesia wants to improve its positioning in travel and tourism, then the government must set up the right improvement program based on the levels of priorities. These travel and tourism drivers were used to measure the current condition.

Travel and Tourism sector has great contribution towards the economics. It also involves other influencing factors. Drivers used in the Travel and Tourism Competitive index stress out sustainable development and environmental issues, that at the end it touches Supply Chain Management in travel and tourism. The current development of Supply Chain Management is Green Supply Chain Management that integrated in a sustainable society, which it sustains human wellbeing, environmental wellbeing and economic wellbeing.

Just like other countries, Indonesia is also prompt to have potential disasters, that might occur in travel and tourism sector, which will impact the Supply Chain Management and sustainable development. In order to manage disasters, it is essential to consider Disaster Management as a way to reduce the negative impacts of disaster towards human wellbeing, economic wellbeing and environmental wellbeing (Tomasowa, 2016).

LITERATURE REVIEW

The Travel & Tourism Competitiveness Index (TTCI)

The World Economic Forum produces the Travel & Tourism Competitive Report every two years. Its recent edition analyzes 141 economies by using the Travel and Tourism Competitiveness Index, a index that measures the set of factors and policies that enable the sustainable development of the Travel & Tourism sector that it will contribute to the development and competitiveness of a country. It compares the cross-country drivers of T&T competitiveness, for benchmarking countries' policy progress and making investment decisions related to business and industry development, so that it became resilient to the shocks in economic, security and health.

TTCI is based on 14 pillars or drivers, that are categorized into 4 groups. The first group is enabling environment that is essentials for business operation, such as business environment, safety and security, health and hygiene, human resources and labour market, and ICT Readiness. The second group is T&T policy and enabling conditions, which is closely correlated with strategic aspect, such as prioritization of travel and tourism, international openness, price competitiveness, environmental sustainability. The next group is availability and quality of infrastructure in air transport, ground and port, and tourist service infrastructures. The last group is natural and cultural resources, as the principal "reason to travel". (World Economic Forum, 2015)



Figure 1: The Travel and Tourism Competitiveness Index

Source: World Economic Forum, 2015

Green Supply Chain Management

The strategy fit in Supply Chain Management requires that a supply chain achieve the balance between responsiveness and efficiency that best meets the need of business entities' competitive strategy. Therefore a business entities' must manage its drivers of supply chain performance, logistical drivers and cross-functional drivers such as (Chopra & Meindl, 2013):

1. Logistical facilities drivers are facilities, inventories, and transportation.
2. Cross-functional drivers: Information, sourcing, pricing

2012 Sustainable Society Index

It is an Index developed by the Sustainable Society Foundation in the Netherland. The latest Index measures 3 dimensions of well-being: human wellbeing, environmental wellbeing, and economic wellbeing. The Human wellbeing covers the development in basic needs, health, personal and social development. This development must be also in in the environmental wellbeing and economic wellbeing, as the way of sustainable development impact. (Radu & Podasca, 2014)

Table 1: 2012 Sustainable Society Index

SUSTAINABLE SOCIETY INDEX		
Human Wellbeing	Environmental Wellbeing	Economic Wellbeing
Basic Need Health Personal and Social Development	Nature and Environment Natural Resources Climate and Energy	Transition Economy

Source: Radu & Podasca, 2014

The Tourism Disaster Vulnerability Framework

According to the Act Number 24 of 2007 of Indonesian Government, Disaster is an event or a series of events that threaten and disrupt the lives and livelihoods. Natural factors and/or non-natural factors and human factors may cause a disaster. Disaster can

lead to the emergence of human casualties, environmental damage, loss of property, and psychological impacts. (BNPB)

Disaster factors in travel and tourism sector, as follows:

1. Natural disaster: earthquakes, tsunamis, volcanic eruptions, floods, droughts, hurricanes, and landslides.
2. Non-natural disaster: failure of technology, modernization; epidemics, outbreaks of disease.
3. Social disaster or humans, such as social conflict and terror in inter-community, inter-group or people.

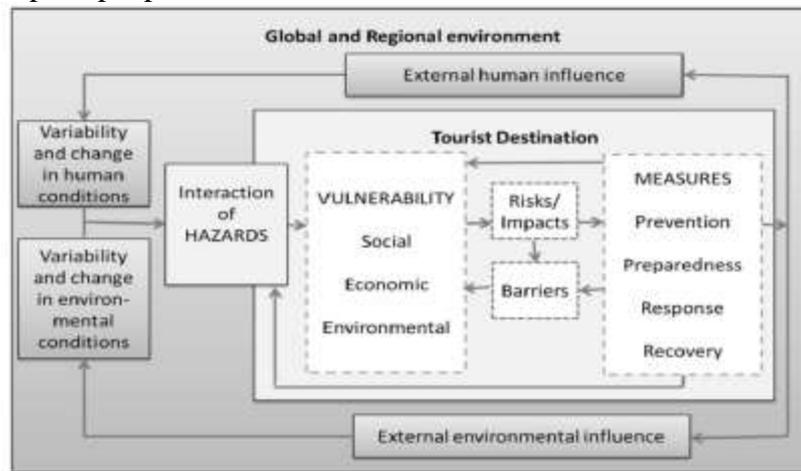


Figure 2: The Tourism Disaster Vulnerability

Source: Becken *et al.* 2014

Disasters that take place in global and regional travel and tourism are threatening the society, economy and environmental, which are also the main focused in the Sustainable Society Index. Disasters are influenced by external human influence and external environmental influence. Each of tourist destination must be studied within Disaster Management for identifying the risks or impacts and its barriers. (Becken, Mahon, Rennie, & Shakeela, 2014)

Disaster Management is an integrated effective process of planning, organising, coordinating and implementing measures, that divided into phases of mitigation/preparedness, relief and long-term reconstruction in related to disaster impact to people.(Pathirage, 2012)

RESEARCH METHODS

Data Collection Technique

Data used are secondary data taken from 2015 Travel and Tourism Competitive Report, 2014 Sustainable Society Index, BPS Indonesian National Agency for Statistic.

Data Analysis Technique

The data is analysed qualitatively by using corssing drivers of The Travel and Tourism Competitive Drivers and the Sustainable Society Drivers wiht in the strategic analysis related to the supply chain management on current economy and potential disasters in Indonesia.

FINDINGS

Improvement Priorities of Indonesian Travel and Tourism Competitiveness Index

Table 2. Indonesian & ASEAN Countries' 2015 T&TCI and Priorities

		Singapore	Malaysia	Thailand	Indonesia	Phillipines
Asia-Pacific Rank		3	7	10	11	14
Global Rank		11	25	35	50	74
Enabling Environment	Business Environment	6.13	5.60	4.78	4.48	4.54
	Safety & Security	6.40	5.79	3.75	5.16	3.84
	Health & Hygiene	5.44	5.18	4.87	4.24	4.79
	Human Resources & Labour Market	5.49	4.98	4.98	4.70	4.59
	ICT Readiness	5.98	4.52	4.34	3.73	3.71
T&T Policy & Enabling Conditions	Prioritization of Travel & Tourism	5.95	4.71	4.95	5.61	5.26
	International openness	5.25	3.85	3.70	3.55	4.05
	Price Competitiveness	3.82	5.76	5.06	6.11	5.28
	Environmental Sustainability	4.31	3.42	3.46	3.11	3.41
Infrastructure	Air Transport Infrastructure	5.26	4.46	4.57	3.81	2.77
	Ground & Port Infrastructure	6.44	4.50	3.41	3.27	3.02
	Tourist Service Infrastructure	5.17	4.43	5.70	3.07	3.77
Natural & Cultural	Natural Resources	2.87	4.09	4.47	4.36	3.39
	Cultural Resources & Business Travel	3.30	2.95	2.79	3.12	1.71

Red = 1st Priority Yellow = 2nd Priority Green = 3rd Priority

Source: World Economic Forum, 2015 and being categorized in 3 improvement priorities by the writer.

Based on 2015 T&T Competitiveness Index in order to improve Indonesian 50th globally rank and regionally 11th ranks, then this article stresses 3 levels of need for improvements as follows:

1. 1st Priority in Improvement, whose values are $3.00 < x < 4.00$. These drivers are still in the beginning process of improvement and in critical stake. It demands urgent attention for improvement. It consists of 7 drivers, as follows:
 - a. ICT Readiness
The government of Indonesia should deal with the improvement in mobile coverage, quality of electricity supply, the capacity to use and to provide online services.
 - b. International Openess
The government of Indonesia should deal with the improvement in travel facilitation and openness through regional trade agreement so that visa requirement, air connection for the flights are possible to be access and easiner to be earned.
 - c. Environmental Sustainability

The government of Indonesia should deal with the improvement in government's environmental regulations related to water, forest resources and seabeds, as an integrated sustainable development in travel and tourism industry.

d. Air Transport Infrastructure

The government of Indonesia should deal with the improvement in quality of domestic and international transport infrastructure and air transport, such as available seat, the number of departures, airport density and the number of operating airlines.

e. Ground and Port Infrastructure

The government of Indonesia should deal with the improvement in international standardized efficient and accessible transportation to key business centres and tourist attraction, such as extensive road and railroad network.

f. Tourist Service Infrastructure

The government of Indonesia should deal with the improvement in the availability of quality accommodations and entertainment facilities, such as upper level hotel rooms, ATMs and car rentals.

g. Cultural resources and business travel

The government of Indonesia should deal with the improvement in cultural heritage, cultural digital demand in order to increase the level of interest and association meetings occurred in Indonesia.

2. 2nd Priority in Improvement, whose values are $4.00 < x < 5.00$. These drivers are not yet matured in development. It consists of 4 drivers, as follows:

a. Business environment

The government of Indonesia should deal with the improvement in conducive environment for business activities, such as property rights, legal framework in the society, clear taxation system, regulation related with Foreign Direct Investment.

b. Health and Hygiene

The government of Indonesia should deal with the improvement in access to drinking water and sanitation, the availability of physicians and hospital beds. Added to this matters, illness influences the labour productivity, such as high prevalence of HIV and malaria.

c. Human Resources and Labour Market

The government of Indonesia should deal with the improvement in skills development through education and trainings, including flexible, open and efficient human resources allocation, that respect for gender equality. Business is demanded in training services and customer care.

d. Natural Resources

The government of Indonesia should deal with the improvement in natural heritage, quality of natural environment, the richness of fauna, national parks and nature reserves.

3. 3rd Priority in Improvement, whose values are $5.00 < x < 6.00$. These drivers are already well developed. These drivers need to be maintained. It consists of 3 drivers, as follows:

a. Safety and security

The government of Indonesia should deal with the improvement in police protection service and decreasing the level of crime and violence, including terrorism. Add to this, disaster management and disaster reduction are supporting the safety and security driver.

b. Travel & Tourism Prioritization

The government of Indonesia should deal with the improvement in national branding and marketing campaigns that funded by government spending through international organizations, so that more tourists are coming to Indonesia.

c. Price Competitiveness

The government of Indonesia should deal with the improvement in increasing Indonesian attractiveness for more tourists and travel and tourism investment, such as economics airfare tickets and its taxes, the cost of living, the cost of traveling.

Supply Chain Management in Travel and Tourism

Supply Chain Drivers are related to Travel and Tourism Competitiveness Index and Drivers, such as:

- Facilities: the supply chain performance key drivers of responsiveness and efficiency. It includes infrastructures related to airport, port, ICT, etc.
- information: it can improve utilization of supply chain assets and the coordination flows to increase and reduce costs. It supports the market openness to the international level.
- transportation: it influences the decision of inventory and facility location in order to create the balance of responsiveness and efficiency.
- Pricing: it can be as a tool to match the demand and supply such as short-term discount to eliminate supply surplus.
- Sourcing: its aimed to have efficient responsiveness towards the customers' demand by having supplier selection based on supply quality, reliability, etc.
- Inventory: related to the possible and prompt disasters, that may influence travel and tourism sector, such as terrorism, strikes, natural disasters, etc, may disturb the cycle inventory and create the seasonal inventory.

Infrastructure Improvement Priorities in Transportation Mode to enter Indonesia

The transportation mode most often used in 2013 and 2014 by the foreign tourists to enter Indonesia based on BPS Report was airplanes for 73,04% and 73.95%, the second was by ships for 26.41% and 25.42%, and the third was by cars/trains for 0.55% and 0.63%. The total foreign tourists that used airplanes increase for 0.91% in 2014 and the usage of ships has decreased for 0.99%. Due to cost efficiency and effectiveness, the first priority in infrastructure improvement should be infrastructure related to Airplanes, and the second priority is infrastructures related to car/trains., and the last is infrastructures related to ships.

Table 3. 2013 and 2014 Transportation Mode entering Indonesia

Transportation Mode	2013 (%)	2014 (%)	Increase (Decrease) (%)
Airplanes	73,04	73,95	+ 0.91
Ships	26,41	25,42	(0.99)
Cars / Trains	0,55	0,63	+ 0.08

Source: BPS, 2014 and being identified for increase or decrease in 2014 by the writer.

2014 Indonesian Sustainable Society Index

Indonesian Drivers of 2014 Sustainable Society Index is close related with the Travel and Tourism Competitive Drivers. Indonesia has not been as a Sustainable Society. Indonesia has weakness in (The Sustainable Society Foundation, 2014):

- human wellbeing: safe sanitation, education, income distribution, gender equality
- environment wellbeing: renewable energy, energy saving, biodiversity
- economic wellbeing: organic farming, GDP, employment



Figure 3: Indonesian 2014 Sustainable Society Index

Source: The Sustainable Society Foundation, 2014

Potential Disaster Mapping in Indonesia

Based on 2012 All Disaster Potential Map issued by BNPB, only the Papua Island is less likely to have the least possibility to have disasters. Other Islands are having high possibility to have disasters. (BNPB Indonesian National Agency for Disaster Management, 2012). By considering the Indonesian stake as non-sustainable society, if the disasters actually are happening in Indonesia, then so Indonesian economy recovery ability is more like in the less developed level. In this case, the travel and tourism in Indonesia is not sustainable.



Red = high risk Yellow = medium risk green = low risk

Figure 4: 2012 Indonesian Disaster Potential Threat

Source: BNPB Indonesian National Agency for Disaster Management, 2012

CONCLUSION

- Indonesia has 3 levels of priority for travel and tourism drivers improvement based on 2015 Travel and Tourism Competitiveness Index.
- Supply Chain Drivers are close related with Travel and Tourism Competitive Drivers.
- The best infrastructure improvement related to entry to Indonesia transportation that mostly used by foreign tourists is infrastructure related to airplanes.
- Indonesia is not a well developed sustainable society based on 2014 Sustainable Society Index. Indonesia has great weakness in human wellbeing, environment wellbeing, and economic wellbeing.
- Indonesia has high risk of all type disasters. The only island with low risk is Papua Island. Sumatra, Java, Sulawesi, Bali, NTB, NTT, Maluku have high risk.

RECOMMENDATION

The government of Indonesia should implement 3 priorities of travel and tourism drivers improvement in short, medium and long periods. This program should consider 3 stake wellbeing of human, environmental and economic so that the Indonesian community will be well developed as a sustainable society in facing future challenges and possible disasters, in term of natural and non-natural risks and barriers. Disaster Management is a tool to reduce the risks and barriers of possible disasters in Indonesia. By doing so, Indonesian Travel and Tourism Competitive Index can be improved for the following years in the future.

Bibliography

- Becken, S., Mahon, R., Rennie, H., & Shakeela, A. (2014). The Tourism Disaster Vulnerability Framework: An Application To Tourism in Small Island Destination. *Natural Hazards* , 71, 955-972.
- BNPB. (n.d.). *Definition and Type of Disaster*. Retrieved September 2016, 2016, from <http://www.bnpb.go.id/>: <http://www.bnpb.go.id/pengetahuan-bencana/definisi-dan-jenis-bencana>
- BNPB Indonesian National Agency for Disaster Management. (2012). *Disaster Potential Threat*. Retrieved September 22, 2016, from BNPB: <http://www.bnpb.go.id/pengetahuan-bencana/potensi-ancaman-bencana>
- BPS. (2014). *Foreign Tourists Profile*. Jakarta: BPS.
- Chopra, S., & Meindl, P. (2013). *Supply Chain Management: Strategy, Planning and Operation* (5th Global Edition ed.). Harlow, England, Essex: Pearson.
- Pathirage, C. S. (2012). Managing Disaster Knowledge: Identification of knowledge factors and challenges. *International Journal of Disaster Resilience in the Built Environment* , 3 (3), 237-252.
- Radu, I., & Podasca, R. (2014). Study of the Interdependence. *Calitatea* , 15, 98-102. <http://search.proquest.com/docview/1509436002?accountid=180371> <http://search.proquest.com/docview/1509436002?accountid=180371>
- The Sustainable Society Foundation. (2014). *Indonesian 2014 Sustainable Society Foundation*. The Hague: The Sustainable Society Foundation.
- Tomasowa, J. M. (2016). Green Economy and Sustainable Development in Indonesia: Considering Disaster Management and Knowledge Management into Entrepreneurship. *The 3rd International Conference on Entrepreneurship 2016* (pp. 146-163). Surabaya: Universitas Ciputra.
- World Economic Forum. (2015). *The Travel & Tourism Competitiveness Report 2015: Insight Report Growth through Shocks*. Geneva: The World Economic Forum.

BIODATA

- **Name:** Judith Marilyn Tomasowa, S.E. M.Si
- **Education:**
 - ✓ 2014: IRCA ISO 9001 Lead-Auditor, Certified Food Retailer dan Food Safety Expert - TUV Rheinland ; CORE in Emergency Response- European Commission for Humanitarian Office
 - ✓ 2005-2007: Master.Degree M.Si at Graduate School of European Studies, Economics majoring, Universitas Indonesia & at Freie Universitaet Berlin, Jean Monnet Center for European Integration Excellence.
 - ✓ 1998-2002: Bachelor Degree in Economics & Accounting at Universitas Tarumanagara.
- **Thesis Research Scholarship:**
 - ✓ 2006: at Freie Universitaet Berlin and EC HQ Brussels by DAAD & EC
- **Working Experiences:**
 - ✓ Juli 2016 - current, Lecturer, International Business Management – International Class, Universitas Ciputra, Surabaya
 - ✓ Jan 2013 – current, ISO 9001 Trainee Auditor, Technical Expert for Governmental, Public Administration and National Defense at TUV Rheinland Indonesia

Conference on Management and Behavioral Studies

Universitas Tarumanagara, Jakarta, 27 Oktober 2016

ISSN NO: 2541-3400

e-ISSN NO: 2541-2850

- ✓ Sep 2013 – June 2014, Capacity Development BNPB Consultant and Executive Assistant Co-Director AIFDR – AustralianAid.
- ✓ 2009 – Jan 2011, Business Studies dan Economics Coordinator, BPK Penabur International Schools, Jakarta.
- ✓ 2008 – 2009, Exhibition and social officer, Kirchengemeinde am Hohenzollernplatz, Berlin.
- ✓ 2006, Speaker at Brown Bag Lunch Seminar and a visiting researcher, Jean Monnet Center, Freie Universitaet Berlin, Germany & European Union, Brussels.
- ✓ 2006, Exe. Assistant for Trade Department, the South Africa Embassy, Jakarta.
- ✓ 2002-2005, Exe. Assistant to the Ambassador for protocols and politics affairs, the Venezuelan Embassy, Jakarta.