

# FITE BUSINESS SOLUTION COMPETITION 2017



## Ecological Footprint Digital Calculator

We can't manage what we can't measure

**One bright solution to solves :**

**Tourist mass consumption**

**Climate changes issues**

**Natural resources replacement**

**Carbon production**

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## 1. Business Practices Models

### Introducing to Ecological Footprint Digital Calculator

Tourism is one of most fast growing industry that emerges globally. As this grows continues, it brings a large effects towards the environmental condition. It is assured that the biggest contributor of this effect comes from human, as we consumes the natural resources which take effect on environmental condition (O'Connor,2009). Tourist more likely causes these effects when traveling through their destination. One of solution to measures this environmental effect is Ecological Footprint(EF), which one of the key to environmental indicator for sustainable tourism (Hunter&Shaw,2007). That is why we adapt (EF) methods as a solution to prevent, manage and control land use and waste caused by tourists outside Indonesia.

Ecological Footprint Calculator is a tool to measures the resources consumes by calculating the number of resouces depletion by human in every action we do everyday. I adapt this model to calculate the consumes level by tourists who comes to Indonesia, and it will summarize their Carbon Dioxide (CO2) production and land use (Gha) footprints. This is how i pictures the app. will run :

1. When tourist arrived and connect their gadget to the International airport/ports wi-fi, pop up application will appear and asking confirmation to download and registrating, in this step tourist will guided by officers.
2. This app will frequently calculating numbers of CO2 & Gha by tourist. It will also interactively communicate tourists destination area, and gives recomendation of available tourist attraction near the area. This will prevent the number of mass tourism.
3. The app will automatically appear when tourist connect with destination wi-fi such as hotel, restaurant, and tourist attraction. The concept of this app similiar to path, instagram etc. Using check-in model.
4. When tourist about to end the trip at the airport/ports, the app will ask for confirmation to summary the total of their consumes, and it will give the minimum wages of donation to be paid, it also giving choice plant they want to grow. After payments done, the app will give the photo of plant they choosed labelled by their name.

## 2. Environmental Problems and Challenge

### Land use and Carbon production effects towards Indonesia's Environment

In every travels activity, tourist consumes resources to fulfill their needs. If this continues uncontrolled, it will give negative effect to the environment in Indonesia especially tourism industry. This environmental problem not only caused a carbon production, it also caused the depletion of natural resources and land uses. These causes will affect the climate changes, disadvantage of food sources, and land sources, forest sources, etc.

Carbon production, resource and land uses by tourist is one of main focus had to be prevent and solved in tourism industry. If this problems not solved immediately, it will widely cause negative effect to the other sector. As a research shows the average number of land uses in Indonesia, it reaches 0,3 gha per-percapita. It means, average number of person uses 0,3 gha land for doing their activity in Indonesia, this number grows same as the carbon produces by one person (Global Footprint Network, 2016). This number is multiplied by the number of tourist that comes to Indonesia. The Ministry of Tourism of Indonesia counts that there is 1.040.651 tourist came to Indonesia from around the world, giving the number that they had spent 312195.3 gha, it is more gha than Indonesia had (which is only 19902.5 gha). This mean that Indonesia needs 15 more land countries as large as it in order to replace the lost of resources in agriculture, livestock, fishery, and forest sector. The grows of land uses proportional to the mass produce of carbon dioxide which drastically affect the climate changes. This is why we need to measure our land use and carbon footprint.

### 3. How Is The Proposal Solve The Problem Managing and the Environmental Issues

As the following problems given, i strongly believe The Ecological Footprint Calculator could effectively maintain the balance of the land use and environment sustainability in Indonesia's tourism industry. The application of the model based on a digital computerizing system program that interconnected with various stakeholders related in order to support the systems. This app will educate tourists to manage, control, and reduce their carbon production and land use. This app also believed will raise the consciousness level of tourists as the effect from energy use, resources consumed and waste productions. This program will be supporting donation program to renewing the agriculture, livestock, fishery, and forest sectors.

"we can't manage what we can't measure", this concept is the basic believe that the ecological footprint calculator will give the positive changes for the environmental system in Indonesia, and if this business practice is implemented widely, it will give other amount of benefits such as :

- This application will give donation in order to renewing the natural resources, energy, food resources, carbon reduction etc, and it can create balance in Indonesia Cropland, Grazing land, Forest land, Fishing ground, built up land sectors.
- It will determine tourists habits and will be used demographic data and it can be suppress consumption of tourist.
- This app will reduce the mass tourism effect in one tourist attraction and gradually can reduce climate change in Indonesia.
- This model will promote globally that Indonesia is concern about the environment problem.

The interactivity of the application is believed will bring a new experience in traveling ecology. Awareness of the impact of human activities on the environment are also expected to emerge from the tourists. If this business practice is implemented consistently and globally, it will bring Indonesia as a pioneer of ecological tourism world.

#### 4. Cost and Barriers to The Business

##### Budgeting and needs to implement the Business

Ecological Footprint Calculator is an application based on digital and statistic data. So, i predict the biggest cost need to be prepared for this project will be focused on app and web building and also additional cost for statistic data researcher in order to support the database calculation of the application. Below given the cost allocation :

No	Needs	Design cost	Source
Digital Application			
1	Cost of the server Computer	Rp 10.000.000,00	Professional Developer
2	Creating Web + Design	Rp 5.000.000,00	Professional Developer
3	Creating ecological footprint calculator application	Rp 25.000.000,00	Professional Developer
Data Input count (Ecological Footprint Calculator)			
4	Statistical Data Support (ex: amount of food in Indonesia	Rp 50.000.000,00	BPS(Badan Pusat Statistik) + Private institutions related
Legality and cooperation			
5	Legality and regulation of transportation and airline	-	Badan Imigrasi Indonesia + Airlines + International Airport in Indonesia
6	Legality of other parties supporting directions donation	-	(Greenpiece,WWF,NGO,etc)
7	Legality and standardization from Global Footprint Network	-	GlobalFootprint Network
Maintenance			
8	System	Rp 5.000.000,00 / 1,5 tahun	Professional Developer

Sources : author's budget plan, 2016

The cost could be cut off as the condition when this business model is settled following the development of the technology every year. However, there are some other problems in order to run this model smoothly such as :

- Research process to find the accurate data as a resources factors.
- Legality and regulation practice of this model to the Indonesian government and Associations.
- Mutual cooperation system with the associations and travel companies in order to arranges of which direction will be the aim to give the donation.
- Overall, the main barrier of this business model is focused on legality, standarisasi, and statistic data research. But i believe this practices will applicated effectively because it's main focused is based on digital technology.

## 5. Potential alternative solution

### The short term solution

The main problem of this business practices is to solves the carbons production, the imbalance of natural resources consumes and replacing it, and climate changes. The main purpose of this business practices is how to resolves this problems in travels activity. If the ecological footprint calculator is way to far to being implemented in short time period, there is another small concept idea to resolve this problems, it's to obligate the alien tourists to plants one crop every time they're visiting Indonesia.

Plant is the most effective carbon absorption media to overcomes the problems caused by land uses, and carbon production. Therefore, by planting a tree considered one of the way to surpress this problems.

Planting the tree will be very effectives if it is done massively by all of the alien tourist that comes to Indonesia. Every tourists is required to buy an unfully growing plant provided in every international port/airport. This activity will bring profit which later will be used as a donation to develop the renewal caused by land use in other sectors and as a supporting fund in order to keep this program running.

This solution is considered unique and easier because tourist will given choices of what tree they're willing to plant, and the plant is featured by plant's pot so thatit will be easily placed anywhere and everywhere, with the provision of it will only be placed in city park, hotels, tourist attraction and botany garden.

But this solution would be calculated not enough, because without counting the number of land use and accumulation of carbon by the tourists is not necessarily equivalent to planting one tree by one tourist. Since counting function is as an

indicator of equalizing the amount of land use by tourists and how much they have to replace it. In other word, the absence of this calculation, Indonesia can't regulate the amount of land use, because I believe that "we can not manage what we can not measure".

## Reference

**Data Kunjungan Wisatawan Mancanegara Bulan November Tahun 2016** [Online] / auth. KEMENTERIAN PARIWISATA RI // Kementerian Pariwisata Republik Indonesia. - November 2016. - December 21, 2016. - <http://www.kemenpar.go.id/asp/ringkasan.asp?c=110>.

**National Footprint Accounts** [Report] / auth. Global Footprint Network. - California : Global Footprint Network, 2016.

**Our Ecological Footprint: Reducing Human Impact on the earth** [Book] / auth. Wackernagel M. and Rees W.. - [s.l.] : New Society Publishers, 1996. - <https://books.google.co.id/books?id=WVNEAQAQBAJ&dq=our+ecological+footprint+reducing+human+impact+on+the+earth+google+book+read&q=ecological#v=snippet&q=ecological&f=false>.

**The Ecological Footprint as a Key indicator of Sustainable Tourism** [Journal] / auth. Hunter Colin and Shaw Jon // Tourism management. - Aberdeen : Elsevier Ltd., July 26, 2005. - Vol. 28. - pp. 46-57. - doi: 10.1016/j.tourman.2005.07.016.

**The Ecological Footprint of International Tourist in New Zealand** [Book] / auth. O'Connor Katrina Marie. - Palmerston North : Massey University, 2009.