

Conceptualising Carbon Footprint and Offset Measures for Rural Tourism Destinations:

A Possible Plan for Himalaya?



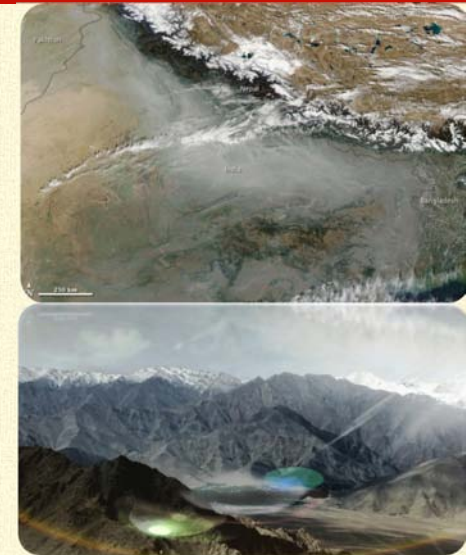
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Agenda

- T Rural tourism
- T Payment for Environmental Services (PES).
- T Carbon Footprint.
- T Tourism SMEs & CO2 Emissions.
- T Carbon Offset Awareness.
- T Carbon Offset Tools.
- T Carbon Offset Plans.
- T Project by Responsible Rural Tourism Network.
- T Conclusion.



Rural Tourism

- Rural tourism - opportunity for **rural development**.
- Local tourism impact - vary from one rural region to another.
- In a rural tourism setting, **all service providers to tourists, may contribute to the deterioration** of the environment in the course of their tourism activities.
- When **consumption** (operational practices and activities of tourists) **supersedes carbon offset initiatives**, mitigation approaches are needed.
- These approaches can be easily adopted by local businesses in a rural setting to be included as **environmentally friendly value-add activities** that involve the tourists and other tourism services providers.
- This is important in the ultimate aim of the tourism industry to integrate workable policies in order to **sustain businesses (profitability) and the environment** in which they operate.



Niche tourism → Mass tourism

- **Ecotourism and rural tourism** is an important sector.
- Many World Class destinations are set in the **rural landscape** including in India.
- Hence, the development of **sustainable rural tourism destinations** is essential
- In the last decade, the concept of ecotourism and rural tourism has melded with mainstream tourism.
- **Niche tourism → Mass tourism**
- Creating more stress economically, socially & environmentally.
- Hence, relationship among all the stakeholders in the management of rural tourism destinations is needed.
- **Multidimensional dynamic data** is needed to find the right sustainable balance for decision making.

Malaysia eyes niche tourism

Several areas may be developed to attract tourists

By STEPHEN THEN

ADELAIDE. Malaysia wants to develop niche tourism programmes to enhance bilateral ties and get more Australians to visit, said Minister of Tourism Datuk Seri Dr Ng Yen Yen.

Several new niche areas could be developed in Malaysia specifically catering to Australians. They include: > SANDAKAN RANAU heros' trail for former Australian soldiers and their families in remembrance of the 2,000 soldiers who died in the death march during the Japanese Occupation during World War Two.

> VOLUNTEERISM TOURISM for students from Australia, where one-year visas will be issued to 100 Australian students to do volunteer work in Malaysia.

> "GOLDEN third age" packages to attract Australian retirees and their families to visit and even live in Malaysia.

> ESTABLISHING link with heritage associations in Australia, and > SETTING up a Malaysia Living Arts Tourism package to attract Australian artists to Malaysia and turn Malaysia into Asoa's very first live art tourism destinations.

»We need to explain ... that Malaysia has policies in place to protect, preserve and conserve our forests and our eco assets«

DATUK SERI DR NG YEN YEN

visiting the Adelaide Arts Museum. Dr Ng is on a 10-day promotion mission to Australia and New Zealand.

However, the minister expressed concern that there were still negative perceptions about issues regarding Malaysia's alleged deforestation and destruction of orang utan habitats due to oil palm projects. "We need to clear the air over these issues. We need to explain to people here that Malaysia has

What are we selling?

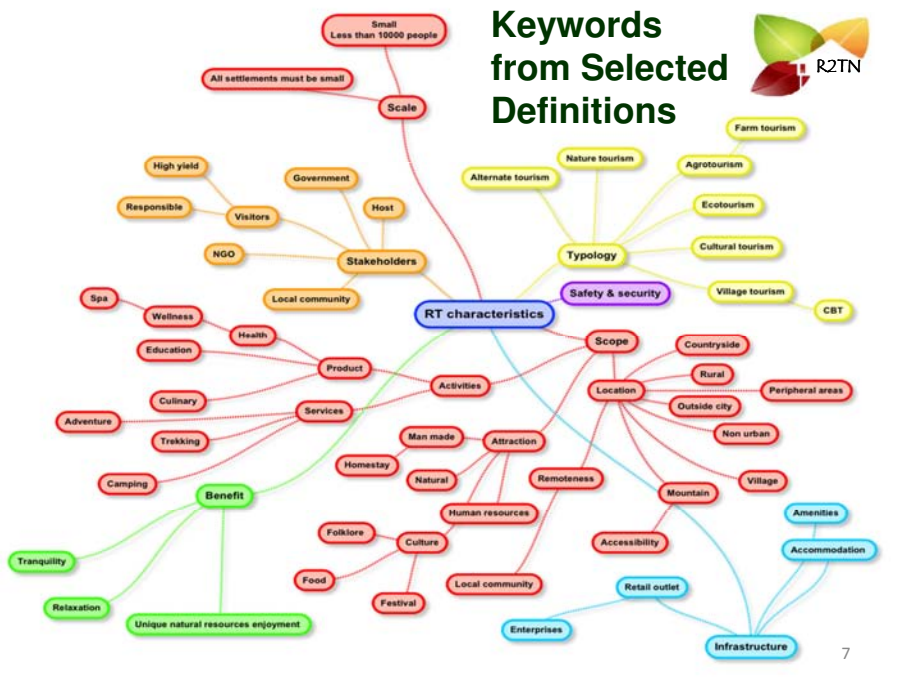
Adventure Tourism	Nature Tourism/ Wildlife Tourism	Ecotourism
		
Tourism "in" the environment	Tourism "about" the environment, flora & fauna	Tourism "for" the environment, flora, fauna & communities
MOUNTAIN / GEO TOURISM		
RURAL TOURISM		

Defining Rural Tourism

- Globally the concept of rural tourism is confused
 - too many general definitions and diversified models to achieve specific measurements that ensure the compliance
 - developing vs developed nation
- Various tourism models have been developed in the past in Malaysia with **no holistic understanding** of the impact to the natural, social and economic environment.

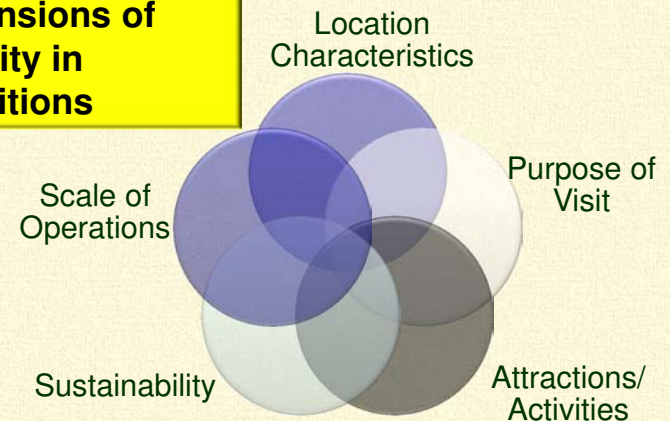


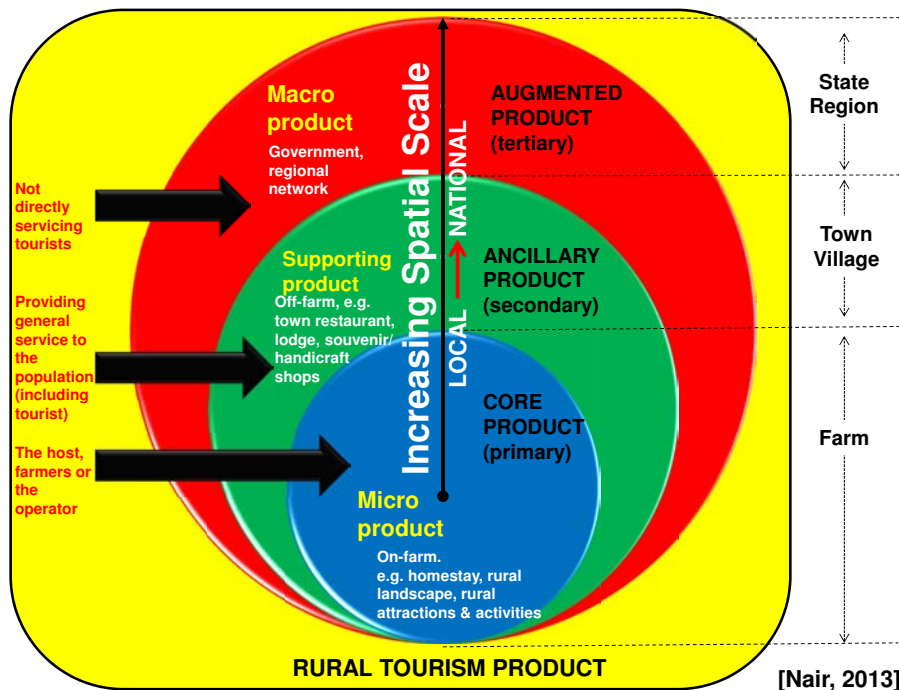
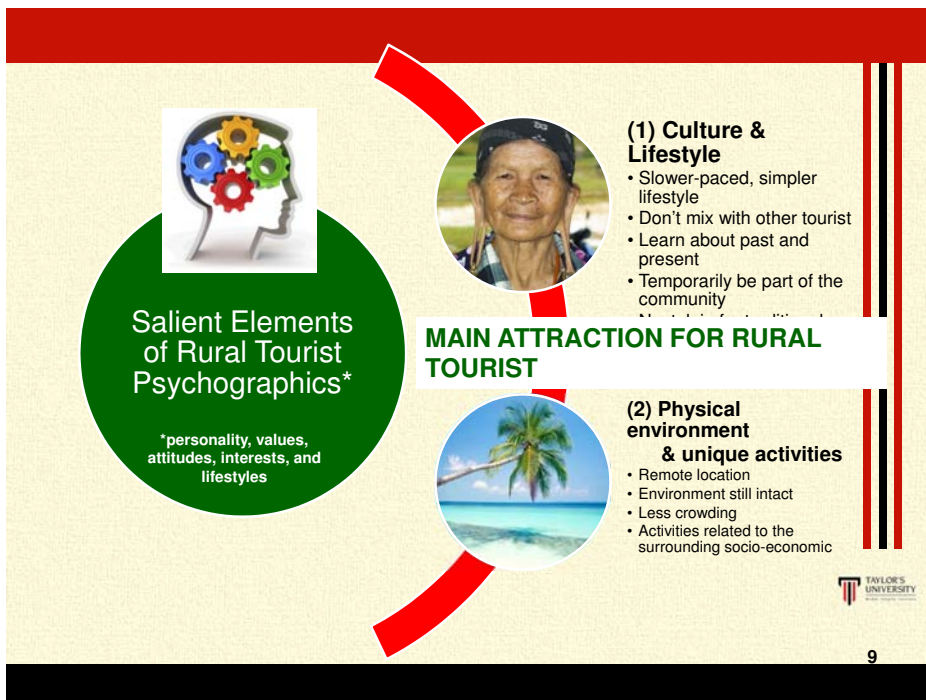
Keywords from Selected Definitions



Defining Rural Tourism

5 Common Core Dimensions of Rurality in Definitions





Payment for Environmental Services (PES)

- The concept of **PES** in the form of carbon offset plans has been popularised to attract increasing interest in the industry to develop a **mechanism to translate external, non-market values of the environment into real financial incentives** for the local actors to provide their services.
- Based on relevant measures, tourists and tourism services providers should work towards creating **mutually agreed upon carbon offset measures** that will help conserve and protect the environment.

But we're offsetting all this carbon!

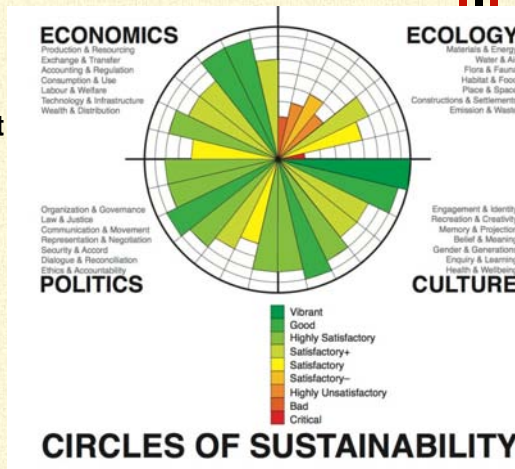
So why's this carbon still setting me off?

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Payment for Environmental Services (PES)

- PES is a crucial **trade off between users of the environment and nature under a voluntary contract** to manage the issue of conservation of natural resources.
- It consist of **payments** (monetary or in-kind) to **natural resource users, based on a voluntary contract** dealing with the provision of a given environmental service.



Aim of this presentation

- To identify relevant **concepts** in the area of **carbon offset measures and PES.**
- To identify common **framework for carbon footprint measures and offsets** in rural tourism destinations, especially in highly terrain destination.

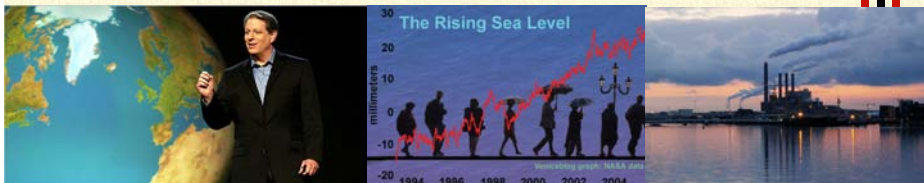
Counting your profitability by reducing your operational costs but hiding your greenhouse gas emissions is certainly a false economy.



Aim of this presentation

- Hence, tourist and the service providers need to **measure, monitor and reduce their harmful emissions** for the benefit of the destination and the planet.
- By having an efficient and effective PES mechanism in place, **tourists are educated on their travel impact** and have the opportunity to **contribute towards rehabilitation projects** that will reduce their negative impacts to the environment.

Target: As advocated by Al Gore in 'An Inconvenient Truth' whereby he estimates each individual could easily reduce their carbon footprint by 20 per cent.



Carbon Footprint

- Ecological Footprint is a common baseline for Carbon Footprint - **emission of gases contributing to climate change, associated with human production or consumption activities.**
- The use of the term "footprint" to describe the impact of human production or consumption activities was first developed by planners at the University of British Columbia, (Rees & Wackernagel, 1996).
- Carbon footprint focuses on **processes and practices related to the emission of CO₂** (and other greenhouse gases such as methane and nitrous oxide).
- **Tourism is a significant contributor** to greenhouse gas emissions (Scott *et al.*, 2008) in general and CO₂ emissions in particular.
- **Real world activities such as energy consumption, waste disposal and transportation** contribute towards carbon footprint as these activities contribute towards CO₂ emission to the environment.

Emerging Themes from the Definitions of Carbon Footprint

	Definition of carbon footprint	Themes within each definition
BP (2007)	"The carbon footprint is the amount of carbon dioxide emitted due to your daily activities – from washing a load of laundry to driving a carload of kids to school."	carbon dioxide emitted due to daily activities
Carbon Trust (2007)	"... a methodology to estimate the total emission of greenhouse gases (GHG) in carbon equivalents from a product across its life cycle from the production of raw material used in its manufacture, to disposal of the finished product (excluding in-use emissions)." "... a technique for identifying and measuring the individual greenhouse gas emissions from each activity within a supply chain process step and the framework for attributing these to each output product (we [The Carbon Trust] will refer to this as the product's 'carbon footprint')."	Greenhouse gases (GHG) in product across its life cycle
Energetics (2007)	"... the full extent of direct and indirect CO2 emissions caused by business activities."	direct and indirect CO2 emissions caused by business activities."
ETAP (2007)	"...the 'Carbon Footprint' is a measure of the impact human activities have on the environment in terms of the amount of greenhouse gases produced, measured in tonnes of carbon dioxide."	impact of human activities on the environment
Global Footprint Network (2007)	"The demand on bio-capacity required to sequester (through photosynthesis) the carbon dioxide (CO2) emissions from fossil fuel combustion."	emissions from fossil fuel combustion.
Grub & Ellis 2007	"A carbon footprint is a measure of the amount of carbon dioxide emitted through the combustion of fossil fuels. In the case of a business organization, it is the amount of CO2 emitted either directly or indirectly as a result of its everyday operations. It also might reflect the fossil energy represented in a product or commodity reaching market."	business organizations emission of CO2 directly or indirectly in daily operations.
Parliamentary Office of Science and Technology (POST 2006)	"A 'carbon footprint' is the total amount of CO2 and other greenhouse gases, emitted over the full life cycle of a process or product. It is expressed as grams of CO2 equivalent per kilowatt hour of generation (gCO2eq/kWh), which accounts for the different global warming effects of other greenhouse gases."	lifecycle of a process or product.

Tourism SMEs and CO2 Emission

- In the tourism sector, **SMEs do make up 75 per cent of the business.**
- According to the UNSD Millennium Development Goals Indicators database (2009), China and United States are the biggest contributors to the global CO2 emissions followed by India, the Russian Federation and Japan.

Rank	Country	CO2 emissions (mio. tonnes)
1	China	6 538.37
2	United States	6 094.39
3	India	1 610.00
4	Russian Federation	1 579.82
5	Japan	1 303.78
6	Germany	841.15
7	Canada	590.2
8	United Kingdom	546.43
9	Korea, Republic of	503.32
10	Iran (Islamic Republic of)	495.99
11	Italy	475.3
12	Mexico	471.46
13	South Africa	433.53
14	Saudi Arabia	402.45
15	France	401.01
16	Indonesia	397
17	Australia	396.28
18	Brazil	368.32
19	Spain	366
20	Ukraine	340.15
.....
27.	Malaysia	194.48

Top 20 Nations Contributing to the Global CO2 Emissions (UNSD, 2009)

Tourism SMEs and CO2 Emission

- Nonetheless, the **per capita contribution** is another important statistics that needs to be considered.
- The 2009 data showed that Qatar, Netherlands and United Arab Emirates leading followed by the other Gulf countries – Kuwait and Bahrain.

Rank	Country	CO2 emissions per capita
1	Qatar	55.43
2	Netherlands	32.47
3	United Arab Emirates	31.06
4	Kuwait	30.21
5	Bahrain	29.58
6	Trinidad and Tobago	27.88
7	Luxembourg	24.93
8	Aruba	23.02
9	Brunei Darussalam	19.80
10	United States	19.74
11	Falkland Islands (Malvinas)	19.68
12	Australia	19.00
13	Canada	17.91
14	Saudi Arabia	16.31
15	Kazakhstan	14.76
16	Estonia	14.22
17	Faeroe Islands	14.12
18	Nauru	14.09
19	Oman	13.69
20	Gibraltar	13.13
.....
61	Malaysia	7.32

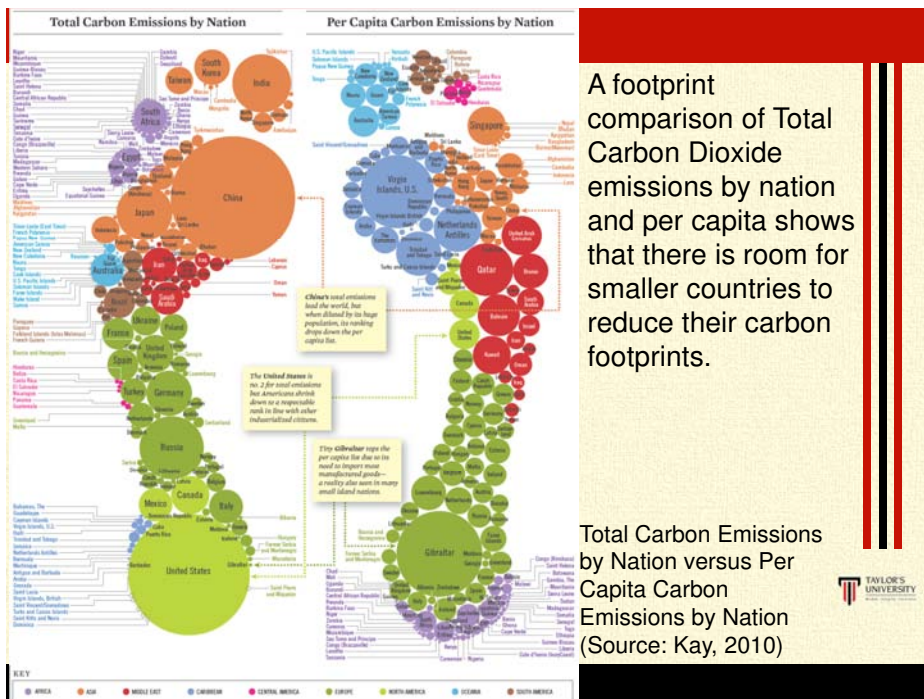
Top 20 Nations Contributing to the Global CO2 Emissions per Capita (UNSD, 2009)

Tourism SMEs and CO2 Emission

- Comparing the countries with **high CO2 emission and high CO2 emission per capita**, it is obvious that countries like USA, Russia, Japan, Germany, Canada and UK are creating more damage to the environment, than countries like China, India and Brazil.
- That explains why the latter countries protested for being unfairly treated by the more developed countries in all the recent environmental summits.

Country	CO2 emissions (mio. tonnes)	Rank	CO2 emissions per capita	Rank
China	6 538.37	1	4.92	82
United States	6 094.39	2	19.74	10
India	1 610.00	3	1.38	143
Russian Federation	1 579.82	4	11.13	26
Japan	1 303.78	5	10.23	34
Germany	841.15	6	10.22	35
Canada	590.2	7	17.91	13
United Kingdom	546.43	8	8.97	45
Korea, Republic of	503.32	9	10.49	31
Iran (Islamic Republic of)	495.99	10	6.85	61
Italy	475.3	11	8.01	52
Mexico	471.46	12	4.39	89
South Africa	433.53	13	8.82	47
Saudi Arabia	402.45	14	16.31	14
France	401.01	15	6.5	63
Indonesia	397	16	1.77	131
Australia	396.28	17	19	12
Brazil	368.32	18	1.94	125
Spain	366	19	8.32	51
Ukraine	340.15	20	7.35	58

CO2 Emissions versus CO2 Emissions per Capita



Carbon Offset Awareness

- **Rural tourism** has the potential to increase **public appreciation of the environment and to spread awareness** of environmental problems when it brings people into closer contact with nature and the environment.
 - This confrontation may **heighten awareness of the value of nature and lead to environmentally conscious** behaviour and activities to preserve the environment.
 - If it is to be sustainable in the long run, **tourism must incorporate the principles and practices of sustainable consumption** which include building consumer demand for products that have been made using cleaner production techniques, and for services.
 - Tourists consume an enormous quantity of goods and services; moving them towards using those that are produced and provided in an **environmentally sustainable way, from cradle to grave, could have an enormous positive impact** on the planet's environment.
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Carbon Offset Tools

- **Carbon offsets** is a tool to help control greenhouse gas emissions.
 - By **using energy efficiently or switching to renewable energy** sources businesses can offset the carbon footprint they create in the course of operations (Dyer, 2008).
 - Tourists can also offset their carbon footprint contributed through air travel to a **rural destination by calculating the footprint through online means or through carbon calculations** provided by tourism service providers.
 - As a voluntary contract tourists may choose offsets in cash or offset related activities pre-planned by tourism service providers.
 - **BUT it does not mean that by offsetting your carbon, we have resolved the CO2 emission. It merely controls and create the necessary awareness.**
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Carbon Offset Tools

Analysis of the Carbon Offset Plan for Swiss Climate Protection Partnership (My Climate, 2013)

Emissions Type	Measurement Indicators	Dimensions of Measurement
Flight Emissions	• Flight path - From, To & Via	Flight path
	• Flight type - One-way & Round-trip	Flight type
	• Flight class - Economy Class, Business Class & First Class	Flight class
Car Emissions	• Number of travellers	Number of travellers
	• Travel-distance (km)	Travel distance
	• Vehicle type - Compact car (5 l/100 km), Medium-sized car (8 l/100 km), Minivan (12 l/100 km), SUV (14l/km) & Enter exact consumption	Vehicle type
House Emissions	• Fuel type - Petrol, Diesel, Biogas & Natural gas	Fuel type
	• Heated area in m ²	Heated area
	• Heating fuel consumption (l or kWh)	Heating consumption
	• Fuel type - Heating oil (light), Heating oil (heavy) & Wood Natural gas	Fuel type
	• Electricity Power consumption (kWh)	Power consumption
	• Country	Country

Carbon Offset Tools

Analysis of the Carbon Offset Plan for Hong Kong (Carbon Care Asia, 2013)

Emissions Type	Measurement Indicators	Dimensions of Measurement
Individual Emissions	<ul style="list-style-type: none"> Consumption in the past 12 months - for Liquefied Petroleum Gas (LPG), Electricity, Town gas Unit & Water. Location of living (mainland / island). Energy supplied by - HK Electric or China Light & Power Yes. Size of household Routes that you usually travelled over the last year. Mode of Transport - car, bus or minibus. Distance travelled. Frequency of travel per week. Engine size of private car - <= 1500cc, 1501-2000cc, 2001-2500cc, 2501-3000cc & >3000cc Average expenditure per month on train fares over the last year. Frequent use of the ferry service over the last year. Type of ferry used - Star Ferry, Slow Island Ferry, Fast Island Ferry & Macau Hydrofoil Total flight distance taken over the last year - Short haul (<452 km), Medium haul (452 - 1600 km) & Long haul (> 1600km). Number of journeys to reach destination. Number of means of transport taken - On foot / cycling, Private car, Bus, Minibus, MTR, Ferry, Taxi & Aeroplane 	<ul style="list-style-type: none"> Utility consumption Energy supplier Household size Transport mode & use Private car engine size Spending on public transport Frequency of ferry use Type of ferry used Travelled flight distance Total journey Means of transport Distance travelled Total journey Means of transport Total flights taken Transport mode in city Size of house Green practices
Travel Emissions	<ul style="list-style-type: none"> Distance travelled. Number of journeys to reach destination. Number of means of transport taken - On foot / cycling, Private car, Bus, Minibus, MTR, Ferry, Taxi & Aeroplane Number of journeys to reach destination. 	<ul style="list-style-type: none"> Distance travelled Means of transport
Lifestyle Emissions	<ul style="list-style-type: none"> Round-trip flights taken in the past 12 months - 0 to 2, 3 to 5, 6 to 10 & Over 10. Mode of moving around the city - Walking or cycling, Bus or MTR, Taxi & Private car. Size of your dwelling (in square feet) - < 500, 500-1000, 1001-2000 & >2000. Frequency of taking up green practices (e.g. refuse plastic bags, recycling, save water and energy) in a week - Never, Once, A few times & Everyday 	<ul style="list-style-type: none"> Total flights taken Transport mode in city Size of house Green practices
Flight Emissions	<ul style="list-style-type: none"> Direct flight to Hong Kong. Number of passengers Flight type - One-way & Round-trip Flight class - Economy Class & Premium Class (Economy Premium, Business, or First) 	<ul style="list-style-type: none"> Direct transport Total passengers Flight type Flight class

Carbon Offset Tools

Analysis of the Carbon Management, UK (Carbon Footprint, 2013)

Emissions Type	Measurement Indicators	Dimensions of Measurement
Household Emissions	<ul style="list-style-type: none"> Consumption of each type of energy - Electricity (kWh), Natural gas (kWh), Heating oil (tons), Coal (metric tons), LPG (litres, therms), Propane (litres) & Wooden pellets (metric tons) How many people are in your household? 	<ul style="list-style-type: none"> Energy consumption Household size
Flight Emissions	<ul style="list-style-type: none"> Flight path - From, To & Via Flight type - Roundtrip/return & One-way Flight class - Economy, Premium Economy, Business, First Class & Average (unknown) 	<ul style="list-style-type: none"> Flight path Flight type Flight class
Vehicle Emissions	<ul style="list-style-type: none"> Number of trips Travel distance (km) Vehicle type & fuel type - Car (CNG car, Diesel car, LPG car, Petrol car, Petrol hybrid car & Unknown fuel); Motorbike (petrol motorbike, Average/unknown, Large >500cc, Medium 125-300cc & Small up to 125cc; Van (up to 1.3 tonne; 1.3-1.75tonne; 1.75-3.5tonne; >3.5tonne) - Average/unknown, CNG van, Diesel van, LPG van & Petrol van 	<ul style="list-style-type: none"> Number of trips Travel distance Vehicle type & fuel type
Public Transport Emissions	<ul style="list-style-type: none"> Distance travelled via public transport - Bus, Coach, Local or Commuter Train, Long Distance Train, Tram, Subway & Taxi 	<ul style="list-style-type: none"> Travel distance
Lifestyle Emissions	<ul style="list-style-type: none"> Food preferences - vegan, vegetarian, eat mainly fish, eat mainly white meat, eat a mix of white and red meat & eat red meat every day Organic produce - I only ever buy or grow our own organic food, Some of the food I buy or grow is organic & I never buy or grow organic food, or don't know what we buy In season food - only ever buy or grow in season food, try to buy or grow some in season food & don't try to buy or grow in season food Imported food and goods - grow all food, and don't buy any produce, only buy locally produced food and goods, mostly buy local produce, prefer to buy goods produced closer to home & don't notice where goods come from Fashion - regularly shop to have the latest fashions, buy new clothes when need them & only buy second hand clothes Packaging - don't buy anything which has packaging around it, only buy things with very little packaging, try and buy things with little packaging & only buy things which are nicely packaged Furniture and electrical - like to have the latest technology and latest home fashion, mostly buy new but generally keep things for more than 5 years, only buy essential equipment and use it until it wears out & only buy second hand furniture and appliances Recycling - Everything used gets recycled or composted, Most of the waste is recycled, Some of my waste is recycled & don't recycle at all Recreation - only do zero carbon activities e.g. walk and cycle, occasionally go out to places like the movies, bars or restaurants, often go out to places like the movies, bars or restaurants & enjoy carbon intensive activities e.g. quad biking, sky diving and flying Number of car own Finance and other services - don't even have a bank account & use the standard range of financial services 	<ul style="list-style-type: none"> Food preference Organic produce Season food Imported food & goods Fashion Packaging Furniture & electrical Recycling Recreation Car own Finance services



Carbon Offset Tools

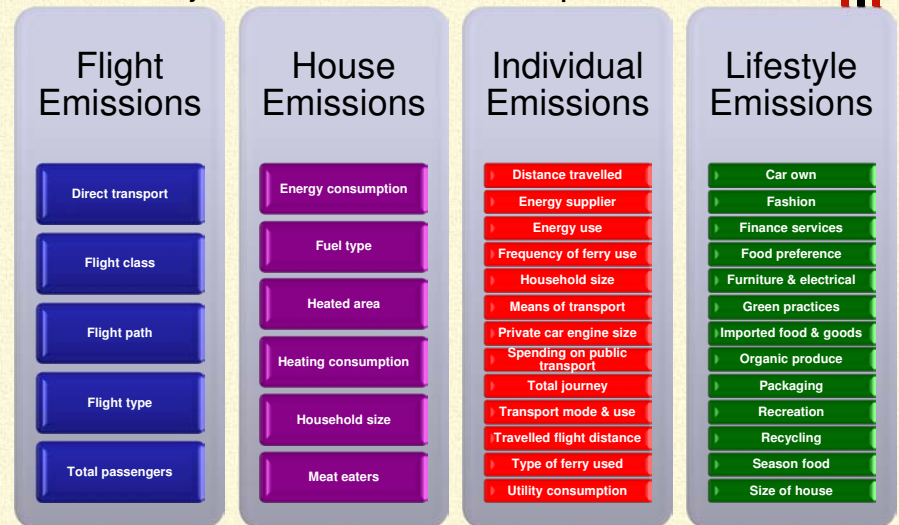
Analysis of the Carbon Offset Plan for Helping People and the Planet, USA (Trees, Water & People, 2013)

Emissions Type	Measurement Indicators	Dimensions of Measurement
Transport Emissions	<ul style="list-style-type: none"> Type of car - Small car (40mpg fuel economy), Medium car (21 mpg fuel economy) & SUV/4-Wheel Drive (15 mpg fuel economy) Car travel (mile/month) Air travel (mile/month) Train travel (miles/month) 	<ul style="list-style-type: none"> Travel distance
Energy Emissions	<ul style="list-style-type: none"> Electricity usage quantity (kwh/month) Natural/propane gas usage quantity (ft3/month) Fuel oil heating usage quantity (gal/month) 	<ul style="list-style-type: none"> Energy use
Household Emissions	<ul style="list-style-type: none"> Number of household Number of meat eating household 	<ul style="list-style-type: none"> Household size Meat eaters



Carbon Offset Tools

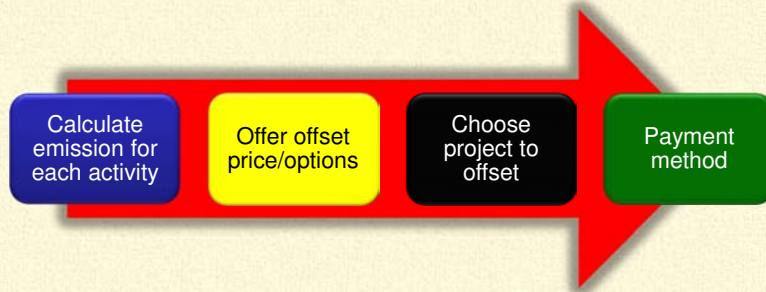
Analysis of Dimensions in carbon footprint measures



These dimensions can be further proliferated to suit individual rural destinations.

Carbon Offset Plan

- Having **measures** is good to evaluate **proper offset methods**.
- The plan should be able to **calculate the carbon emission for all the activities and offer offset price** that is tied to a chosen project before the payment method is determined.



Carbon Offset Lifestyle Plan

E.g. For the **Lifestyle Category**, it allows for tourists and tourism service providers to understand the kind of emission category a tourist would fall under, in order for a payment system to be devised.

Score	Carbon Lifestyle	Recommended Annual Carbon Offsets (1 tonne Carbon = 1000kg Carbon)
<4	A carbon trend-setter	3 tonnes
4-8	A moderate emitter	6 tonnes
9-12	A carbon high-flyer	10 tonnes
>12	A hyper-active earthling	20 tonnes

Analysis of the four carbon offset system shows a range of US\$0.01 to US\$0.03 for offsetting each kilogramme of Carbon:

- Carbon Care Asia, 2013 – US\$0.02;
- My Climate, 2013 – US\$0.03;
- Trees, Water & People, 2013 – US\$0.01;
- Carbon Footprint, 2013 – US\$0.015

So, is
US\$0.01-0.03
sufficient??

Carbon Offset Lifestyle Plan

Following the Carbon Offset Plan further when the quantum of the emission that needs to be offset has been determined, projects can be selected as the beneficiary from the plan. Example:

Carbon Care Asia (2013): Hong Kong

- Yunnan Duijiaacun Small Hydropower Project Southwest China.
- Afforestation and Reforestation on Degraded Lands in Northwest Sichuan Southwest China.
- Baicheng Wind Power Project, Jilin Province Northeast China.

Carbon Offset Lifestyle Plan

My Climate (2013): Swiss

- Solar Water Heaters for Households in Bolivia
- **Kolar Biogas Project in Karnataka, India**
- Energy-efficient Cook Stoves for Siaya Communities, Kenya
- Efficient cookers in south-west Madagascar
- Organic waste composting in Nepal
- Power from FSC wood chips in Itacoatiara, Brazil
- Energy from Biomass Boiler for Paper Mill in Brazil
- Solar and Efficient Cook Stoves for Better Living in Bolivia and Paraguay
- **Energy-efficient biomass cookers for communal kitchens in India**
- Clean Water and Efficient Cooking in Darfur, Sudan
- Water saving in low-income urban households in Mexico
- Energy Efficiency helps Brick Producers in Peru
- From coal to biomass in Limpopo, South Africa
- Energy-efficient cook stove in Kakamega, Kenya
- Electricity from biogas in Papua New Guinea
- Efficient biomass cook stoves, Shanxi, China
- Solar Power Plant in Monte Plata, Dominican Republic
- Avoiding methane emissions with biogas plants,
- Switzerland
- Efficient cookers in Peru
- Solar Lighting in rural Ethiopia
- Energy-efficient Cable Cars in Medellin, Colombia
- Solar energy and energy efficiency in canton Valais
- **Biodigester Programme of Activity in India**
- Biomass plant with sawmill residues in Honduras
- Burgaz Wind Farm Project - Turkey
- Efficient stoves and rocket barns, Malawi
- Heat from Biogas in Vietnam
- Wind power Peninsula of Çesme, Turkey
- Hydro power in Hunan, China
- Saving hot water in Lucerne's households
- Improved Management of Riverine Community Forests in Uganda
- Community Forestry and Forest Conservation, Sierra Piura, Peru
- Solar thermal energy in Eritrea
- **Wind power in Karnataka, India**
- Power from biomass in Andhra Pradesh, India
- Efficient cookers in Cambodia
- **Solar hothouses in Ladakh, India**
- Solar collectors in Alajuela, Costa Rica
- Master Power – 3MW Nugu Mini Hydro Project

Carbon Offset Lifestyle Plan

Trees, Water & People (2013): USA

- Clean cookstove projects - Rocket, Eco, Zanmi Pye Bwa, Emelda, and Justa clean cookstoves - Central America & Haiti.
- Cleantech™ products in the form of solar lighting, solar electric, and solar phone chargers - Honduras, Nicaragua, and Peru.
- Installing dry composting latrines in El Salvador.
- Community-led reforestation projects in Guatemala, El Salvador, Honduras, and Haiti, in addition to the Forest Replacement Associations in Nicaragua.
- The Food Security Program's Solar Warrior Farm, located at the Red Cloud Renewable Energy Center in Pine Ridge, South Dakota.
- Tribal Renewable Energy programme - Energyscape community of Allen on the Pine Ridge Reservation in South Dakota.



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Carbon Offset Lifestyle Plan

Carbon Footprint (2013): UK

- Landfill Gas Recovery and Electricity Generation Project - Dar Es Salaam, Tanzania
- Gold Standard CDM Wind Project - Huadian Ningxia Ningdong Yangjiayao, China
- Gold Standard CDM Biomass Project - Sabah, East Malaysia
- **Wind Power Project - Kanyakumari districts of Tamilnad, India**
- Small Hydropower Project - Fugong County of Yunnan Province, China
- Wind Power Project - Inner Mongolia Chifeng Dongshan Phase II 50MW



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The Himalayan Community Carbon Project (HCCP)

Project coordinator: Rupantaran Nepal
Location: Dhankhela (Buthmorang and Khawphrik VDCs), Baglung (Phista and Dama VDCs), Panchalen (Sajundara and Sarjanyu VDCs) and Dang (Rampur and Lambhar VDCs)
Activities: Carbon sequestration: Improved forest management, planting new forests, reduced forest degradation, Grazing control, fire control, soil and water conservation and prevention of forest logging and encroachment
Additional activities: Income generating activities such as cash crops and fruit cultivation, handicraft enterprises, weaving funds, animal husbandry and training on capacity building and institutional strengthening
Project area: 17,730 ha of community managed forests
Capacity to generate Plan Vivo certificates: Currently 186,900 tCO₂e per annum with potential to increase as project is scaled up



The Himalayan Community Carbon Project works with forest user groups in 8 Village Development Committees (VDCs) across Nepal. It stretches from eastern Nepal to the western region, and concentrates on improving the forests and livelihoods of poor and socially excluded rural Himalayan communities. The project includes forest user groups and takes place on community and public land controlled by communities.



Project activities to reduce forest degradation include controlling fire and grazing as well as creating income generating activities for the rural poor. Activities to sequester carbon involve establishing and managing new native forests. With your investment the project can be extended to thousands of other Himalayan communities across Nepal.



Why makes the HCCP unique?

- Improves the lives of women, the poorest and the most marginalized people in Himalayan communities.
- Addresses the different needs of communities across large land areas in a holistic way.
- Builds on over two decades of community-based forest management and the experience of the Rupantaran Nepal team.
- Can be extended to thousands of communities and benefit over one million rural poor people across Nepal.
- Protects the great Himalayan watershed and makes the environment more secure for millions of people in South Asia.



How does it work?

Rupantaran Nepal supports participating communities to do the project activities. The carbon, social and environmental benefits of the project activities are measured, monitored and independently certified under the internationally recognised Plan Vivo Standard. The money from Plan Vivo Certificate sales is transferred to the participating communities and distributed using benefit sharing arrangements that have been carefully worked out by the communities. Rupantaran Nepal works in partnership with responsible local, national and international institutions to make the project a success.



HCCP is an opportunity to make a high impact investment by buying carbon credits that deliver strong social and environmental benefits.

Reduce your carbon footprint, restore and protect the Himalayan forests, and improve the lives of the Himalayan communities.

Contact details:
www.rupantaran.org.np
mail@rupantaran.org.np



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Long Term Research Grant Scheme (LRGS)

multi-dimensional RESPONSIBLE RURAL TOURISM CAPACITY (RRTC) framework for sustainable tourism



A Project Funded by Ministry of Education, Malaysia



Objectives

1. To discover the various **models** used in economic, socio-cultural and environmental responsibility and carrying capacity in rural tourism destinations.
2. To investigate all **stakeholder's perspective** on the economic, socio-cultural and environmental responsibility and carrying capacity in rural tourism destinations.
3. To establish appropriate economic, socio-cultural and environmental **model to measure stakeholders' impacts** in rural tourism destinations.
4. To develop economic, socio-cultural and environmental responsible and carrying capacity **indicators** for rural tourism destinations.
5. To develop a **tourism barometer** to assess and monitor the economic, socio-cultural and environmental responsible impact of rural tourism destinations using an **integrated decision support system**.



Multi-Dimensional Responsible Rural Tourism Capacity (RRTC) Framework for Sustainable Tourism

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PROJECT 2: ECONOMIC HEAD
 Prof. Dr. Ahmad Shuib, Dr. Syamsul Herman Mohammad Afandi, Dr. Sinar Ramahandran

PROJECT 3: ENVIRONMENT HEAD
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PROGRAMME HEAD
 Assoc. Prof. Dr. Vikneswaran Nair

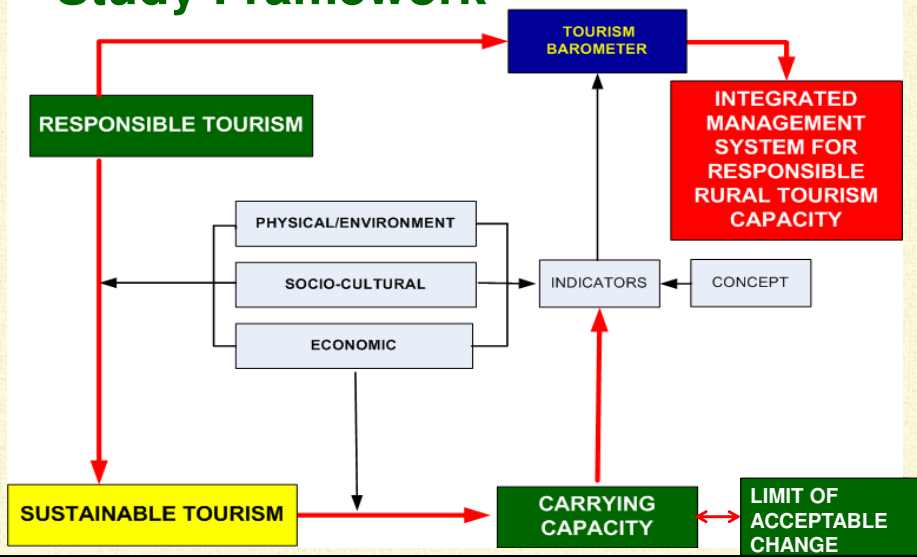
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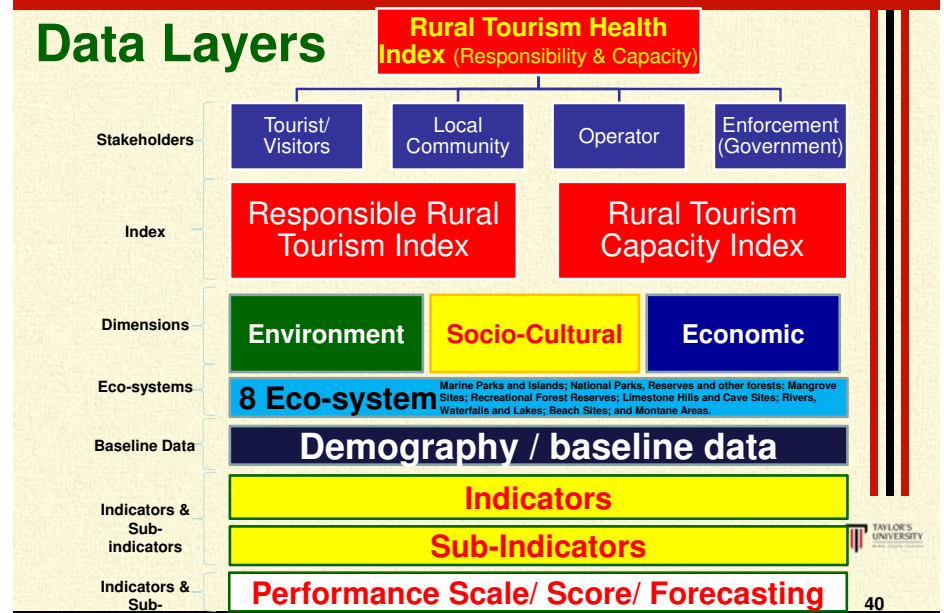
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Study Framework



Data Layers



Conclusion

- The concepts discussed here are based on general carbon footprint measures and synthesis of dimensions.
- For the purpose of future research, these same dimensions can be measured in rural tourism destinations including in highly terrain Himalayan Range.
- Rural tourism service providers are key players alongside tourists who can contribute to the sustainability of a destination.
- More studies are needed to analyse CO2 emissions connected with tourism activities in fragile destination.
- This is an increasingly important area of management as key players have to become more responsive towards widespread concern over the sustainability of the environment for their business to thrive in these destinations.
- A framework for estimating the amount of emissions and offset plan with contributors personally assuming responsibility for the impact or be made accountable for conservations practices, is the way forward.



*"We are all citizen of only one country
– the planet earth"*
... Al Gore (2007)

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Thank you



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Rural Tourism Network