Online Training #1 - Sustainable Tourism Programme

HOW TO MAP TOURISM VALUE CHAINS & IDENTIFY KEY ACTIONS

17TH OF APRIL 2019 (10H00-11H30 CEST)
18TH OF APRIL 2019 (15H00-16H30 CEST)

One planet travel with care
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A global and diversified network involving over 160 actors with one common goal: decoupling tourism growth from the consumption of finite natural resources.
Tips for a smooth session:

• All attendees are on listen-only mode (please make sure you are muted and your web camera is off)

• Attendees can ask questions to the panellists anytime throughout the webinar by posting them in the chat box of the control panel

• At the end of the webinar, during the Q&A session, the moderator will be reading out the questions

• The session is being recorded and the YouTube link will be sent to you and posted on the One Planet Clearinghouse and One Planet STP web page (UNWTO website) tomorrow
Value Chain Mapping

A step-by-step methodology for mapping the tourism value chain, identifying hotspots and finding solutions to them.

Promoting resource efficient and low-carbon development through transforming tourism value chains in developing countries and SIDS.
A step-by-step methodology for mapping tourism value chains

Introduction | Outline content

01 Introduction and overview
02 Mapping the tourism value chain
03 Identifying value chain actors and influencers
04 Assigning lifecycle impacts
05 Hotspots analysis
06 Identifying existing initiatives
07 Identifying and shortlisting solutions to tackle hotspots
08 Developing a business case and workplan
09 Creating a supportive policy framework
This guidance is intended to support the development of a value chain map by tourism businesses or government ministries to enable them to:

- Identify and prioritise the lifecycle environmental impacts associated with a value chain;
- Understand how to use their influence with partners to address key hotspots;
- Identify and work with value chain partners to find a range of solutions to improve resource efficiency and reduce greenhouse gas emissions in tourism;
- Build a business case for implementation or policy framework to support business action.
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Introduction | How to use this guidance

Please follow the step-by-step guidance contained in this slide deck to build a multi-faceted map of the tourism value chain. Some guidance is provided on the slides and additional guidance is included in the notes below some slides.

Editable templates are provided at the end of the guidance to help you build and customise your own value chain map, hotspots analysis, solutions and implementation roadmaps.
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Introduction | Value chain vs supply chain

**Value chain**: the entire sequence of activities or parties that provide or receive value in the form of products or services (e.g. suppliers, outsources workers, contractors, investors, R&D, customers, consumers, members).*

**Supply chain**: the entire process of making and selling commercial goods, including every stage from the supply of materials and the manufacture of the goods through to their distribution and sale.

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Mapping the value chain

VALUE CHAIN = ECONOMIC + SOCIAL + ENVIRONMENTAL VALUE
Mapping and managing the value chain is all about extending your line of sight and influence beyond the traditional areas of focus on immediate supply chain partners, to take a more comprehensive look at the entire commodity or service chain: creating a map of the structure of the value chain, all of those that sit within it and how they interact.

Your map should look both upstream to primary producers and raw materials, intermediate suppliers and service providers; and downstream to consumers and end of life management. If possible, this should also include consideration of indirect stakeholders, such as relevant government ministries/bodies, R&D or finance institutions. The aim is to limit risk and add value at each stage of the value chain; and to guide the activities to be taken within the value chain based on the identification of hotspots, threats, opportunities and the creation of new partnerships and collaborations to address or capitalise on them.

Where possible, your map should be multi-faceted, containing operational, economic, environmental and social information. This can be drawn from both top-down national and tourism sector statistics and bottom-up primary data collection gathered through value chain partners and other stakeholders, like trade bodies and NGOs.
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Mapping the value chain | Building your map: template

Supporting institutions: e.g. Ministries of Tourism, Trade, Commerce, Infrastructure, Environment, Climate Change, Culture, etc.

Trade promotion organizations: e.g. Chambers of Commerce, Banks, Investment Agencies, Licensing and Standards Bodies

Key:
- Goods and services relating to promotion of destination
- Promotional activities, ICT, banking and insurance
- Communications and PR, press and media
- Travel organisation and booking
- Direct economic impacts
- Support Services
- Environmental impacts
- GHG emissions (tCO₂e)
- Air pollution (SOx/NOx)
- Wastewater (litres/m³)
- Food waste (tonnes)
- Packaging waste (t)
- Other solid waste (t)
- Chemical wastes (U/l)
- Land use (hectares)
- Biodiversity loss
- Noise & odour nuisance

Please use this template as a starting point to build your map

Please remember to include all stages of the product/service lifecycle when identifying any environmental impacts in your value chain.

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Mapping the value chain | Step 1: Agreeing your goal and scope

Agreeing the goal and scope for your tourism value chain map is a critically important step in understanding the depth, breath and types of data and information required to produce your value chain map.

As a policy-maker, you may want to gain a better understanding of the tourism value chain at a national-level or the relevant value chain actors, expenditure patterns and environmental impacts at a destination-level.

As a tourism business, you may want to map and visualise all of your value chain partners, better understand your environmental impacts and use your relationships with suppliers or ability to influence guests to drive positive change and take action on key environmental hotspots.
Taking a lifecycle or ‘whole life’ view of your tourism value chain will help you to structure your map, as it helps you to think about all of the activity taking place in your value chain: from where your raw materials and food and beverage products come from, to how the tourism sector or your business operates and is maintained. It can also help you to start thinking about how to become more resource efficient and reduce the amount of waste that is generated; or to reduce your greenhouse gas emissions.
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Mapping the value chain | Step 3: Data collection

Below are some of the sources of data that can help you to build your value chain map:

<table>
<thead>
<tr>
<th>Value chain data sources</th>
<th>Economic data sources</th>
<th>Environmental data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ministries of Tourism and Trade</td>
<td>• UN World Tourism Organisation</td>
<td>• Ministry of Environment</td>
</tr>
<tr>
<td>• UN World Tourism Organisation</td>
<td>• World Travel and Tourism Council</td>
<td>• Regulatory bodies</td>
</tr>
<tr>
<td>• Food &amp; Agriculture Organisation of the United Nations (UN FAO)</td>
<td>• Ministries of Tourism and Trade</td>
<td>• Energy and water companies</td>
</tr>
<tr>
<td>• World Travel and Tourism Council</td>
<td>• National Tourism Satellite Accounts</td>
<td>• Waste management companies</td>
</tr>
<tr>
<td>• National Tourism Satellite Accounts</td>
<td>• Industry / Trade Bodies</td>
<td>• National Green Accounts</td>
</tr>
<tr>
<td>• Industry / trade bodies</td>
<td>• National Statistics Bureaus</td>
<td>• UN Environment and UN FAO</td>
</tr>
<tr>
<td>• National Statistics Bureaus</td>
<td>• National Accounts</td>
<td>• UNFCCC National Communications</td>
</tr>
<tr>
<td>• National Accounts</td>
<td>• Regional Development Banks</td>
<td>• Industry / trade Bodies</td>
</tr>
<tr>
<td>• Regional Development Banks</td>
<td>• Investment agencies / banks</td>
<td>• Tourism businesses: sustainability &amp; CR reports; EMS / certification data</td>
</tr>
<tr>
<td>• Investment agencies / banks</td>
<td>• Trade and development organisations / donors</td>
<td>• NGOs &amp; conservation organisations</td>
</tr>
<tr>
<td>• Tourism businesses: annual reports and accounts; QMS/EMS audit data</td>
<td>• Tourism businesses: annual reports and accounts; QMS/EMS data/audits</td>
<td>• State of the Environment reports</td>
</tr>
<tr>
<td>• Procurement data / platforms</td>
<td>• Procurement data / platforms</td>
<td>• Equipment suppliers (e.g. product specifications / energy efficiency ratings, environmental product declarations, lifecycle analyses, etc.)</td>
</tr>
<tr>
<td>• Tourist Information agencies</td>
<td>• Customs Agencies / Port Authorities</td>
<td></td>
</tr>
</tbody>
</table>
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Mapping the value chain | Step 3: Data collection

‘Walking the chain’* with value chain partners is a good way of identifying and prioritising problems and collaborating to find the most cost-effective and impactful solutions.

*This is sometimes also referred to as ‘value stream mapping’, ‘green and lean supply chain auditing’ or ‘whole chain resource efficiency’
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Mapping the value chain | Step 4: Scoping your map

Supporting institutions: e.g. Ministries of Tourism, Trade, Commerce, Infrastructure, Environment, Climate Change, Culture, etc.

Trade promotion organizations: e.g. Chambers of Commerce, Banks, Investment Agencies, Licensing and Standards Bodies

Key:
- Goods and services relating to promotion of destination
- Environmental impacts
- Direct economic impacts
- Goods/services suppliers: furniture, ICT, food, textiles, furniture, etc.

Scope of map limited to in-destination accommodation, food support services; environmental impacts highlighted in red, all lifecycle stages covered

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Supporting institutions & tourism assets | Tourism industry | Tourism value chain businesses | Environmental impacts

Template for creating a value chain map for tourism. Adapted by UN Environment from ITC WTO (2015)
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Mapping the value chain | Step 5: Adding transaction values

Supporting institutions: e.g. Ministries of Tourism, Trade, Commerce, Infrastructure, Environment, Climate Change, Culture, etc.

Trade promotion organizations: e.g. Chambers of Commerce, Banks, Investment Agencies, Licensing and Standards Bodies

Infrastructure support for the tourism sector

<table>
<thead>
<tr>
<th>Energy and Water ($150M)</th>
<th>Natural Environment</th>
<th>Agriculture &amp; Food ($79M)</th>
<th>Other materials</th>
<th>Cultural Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customs Office</td>
<td>Construction ($42M), Real Estate, Mining &amp; Quarrying ($2M)</td>
<td>Intra-sector spend ($285M)</td>
<td>Trade Companies</td>
<td></td>
</tr>
<tr>
<td>Port Authority</td>
<td>Electrical equipment &amp; machinery ($17M), Textiles ($11M), Metal products ($27M) and Tobacco ($4M)</td>
<td>Minor goods &amp; services ($11M)</td>
<td>Wholesalers</td>
<td></td>
</tr>
<tr>
<td>Ministry of Transport</td>
<td>Consumables</td>
<td>Food &amp; Drink Suppliers ($306M)</td>
<td>Site Restoration</td>
<td>Wholesale Shops &amp; Imports</td>
</tr>
<tr>
<td>Immigration Dept</td>
<td>Maintenance</td>
<td>Other Suppliers ($17M)</td>
<td>Site Management</td>
<td>Manufacturers</td>
</tr>
<tr>
<td>Transport equipment ($3M)</td>
<td>Transport equipment</td>
<td>Wholesale / Retail ($235M)</td>
<td>Goods &amp; Services for Guides</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Handcrafts, arts, etc. suppliers</td>
<td>Maintenance/Env Services ($6M)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wood &amp; Paper ($70M)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fuel suppliers ($46M)</td>
<td></td>
</tr>
</tbody>
</table>

Suppliers - Indirect economic impacts

Direct economic impacts

Supporting institutions: e.g. Ministries of Tourism, Trade, Commerce, Infrastructure, Environment, Climate Change, Culture, etc.

Trade promotion organizations: e.g. Chambers of Commerce, Banks, Investment Agencies, Licensing and Standards Bodies

Example data from Dominican Republic (UN Environment IKI Transforming Tourism Project (2018))

In and around the destination

<table>
<thead>
<tr>
<th>Intra-sector spend ($285M)</th>
<th>Trade Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customs Office</td>
<td>Construction ($42M), Real Estate, Mining &amp; Quarrying ($2M)</td>
</tr>
<tr>
<td>Port Authority</td>
<td>Electrical equipment &amp; machinery ($17M), Textiles ($11M), Metal products ($27M) and Tobacco ($4M)</td>
</tr>
<tr>
<td>Ministry of Transport</td>
<td>Consumables</td>
</tr>
<tr>
<td>Immigration Dept</td>
<td>Storage &amp; Distribution</td>
</tr>
<tr>
<td>Transport equipment ($3M)</td>
<td>Back office ICT</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use the data you’ve gathered to identify important economic partners that you can work with to improve the sustainability performance of the sector
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Identifying value chain actors and influencers, assets and risks
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Mapping the value chain | Step 6: Stakeholders, assets, risks

3.1

Key stakeholders

- International and regional organisations
- Banks, investors, donors and shareholders
- Supporting government ministries and agencies / local government departments
- Infrastructure support for tourism: e.g. energy, water, transportation, ICT, maintenance

Lifecyle Stages

- Raw material
- Manufacture
- Distribution & Sales
- Consumption / Use
- End of life

Primary producers*

- Product manufacturers+

Wholesalers & retailers

End consumers (businesses & guests)

Waste managers

- Agricultural GHG emissions
- High energy costs
- Road congestion
- National Park
- Pristine beaches & reefs
- Habitat degradation
- Unlicensed landfill site

Supporting government ministries and agencies / local government departments

- Banks, investors, donors and shareholders

*Primary producers include: farmers, growers, fishermen, timber, fuel and mining companies, etc.

+Includes service providers

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*Primary producers include: farmers, growers, fishermen, timber, fuel and mining companies, etc.

*Includes service providers
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Mapping the value chain | Step 6: Stakeholders, assets, risks

3.2 Supporting institutions: e.g. Ministries of Tourism; Economy, Planning & Development; Environment & Natural Resources; Agriculture, etc.

Trade promotion organizations: The Bayahibe Hotel Association and the Romana-Bayahibe Tourism Cluster

Energy | Natural Environment | Food & Beverages | Other materials | Cultural Assets
---|---|---|---|---
Supporting institutions: e.g. Ministries of Tourism; Economy, Planning & Development; Environment & Natural Resources; Agriculture, etc.
Trade Companies | Wholesalers | Technology Shops & Imports | Manufacturers

Suppliers: e.g. Hotels, restaurants, tour operators, etc.

In origin and in transit to and from the final destination(s)

In and around the destination

Promotional activities, ICT, banking and insurance

Communications and PR, press and media

Goods and services relating to promotion of destination

Travel organisation and booking

Direct economic impacts

Indirect economic impacts

Example data from Dominican Republic (UN Environment IKI Transforming Tourism Project (2018)

Use the data you’ve gathered to identify specific value chain partners, strategic tourism assets and potential economic, social and environmental risks
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Mapping the value chain | Step 6: Stakeholder mapping

Having identified key tourism stakeholders, it is sometimes useful to produce a map to illustrate how they can support the development of a more sustainable tourism sector (e.g. what expertise and influence do they have); and how interested on willing they might be to support your efforts. See example stakeholder analysis from the Dominican Republic.

NOTE: separate stakeholder mapping guidance is also available from the Transforming Tourism Value Chains project to help you understand how to identify, rank and engage key stakeholders in the tourism sector.
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4.0 Assigning lifecycle impacts
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Assigning lifecycle impacts | Step 7:

You have mapped the life-cycle stages for the whole tourism sector value chain in your country, a selected tourism destination or an individual tourism business value chain. What are the natural resource inputs, waste arisings and GHG emissions for each stage of the life-cycle? Example answers are given below:

<table>
<thead>
<tr>
<th>Raw materials</th>
<th>Manufacturing</th>
<th>Distribution and sales</th>
<th>Use / consumption</th>
<th>Disposal / reuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural crops, land, water,</td>
<td>Electricity use, food ingredients,</td>
<td>Transport vehicles, fuel &amp; electricity</td>
<td>Electricity &amp; water use (cooking &amp; washing),</td>
<td>Land (waste management), recycling &amp; reuse infrastructure</td>
</tr>
<tr>
<td>minerals, etc.</td>
<td>water</td>
<td>(chill chain)</td>
<td>chemicals (cleaning)</td>
<td></td>
</tr>
<tr>
<td>GHG emissions, food waste,</td>
<td>GHG emissions, solid waste,</td>
<td>GHG emissions, waste oils, water (cleaning)</td>
<td>GHG emissions, product waste, wastewater</td>
<td>Food, product &amp; packaging waste</td>
</tr>
<tr>
<td>wastewater</td>
<td>wastewater</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Assigning lifecycle impacts | Step 7

Assign impacts to each stage of the tourism value chain lifecycle, based on resource use, waste arisings and greenhouse gas emissions. A template for capturing this information is provided below:

<table>
<thead>
<tr>
<th>Life-cycle stages</th>
<th>Raw materials</th>
<th>Manufacturing</th>
<th>Distribution &amp; sales</th>
<th>Use/consumption</th>
<th>Disposal / reuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. land use, fish stocks</td>
<td>e.g. energy use, GHGs</td>
<td>e.g. transport fuels, GHG</td>
<td>e.g. electricity, water</td>
<td>e.g. solid wastes</td>
<td></td>
</tr>
</tbody>
</table>

Example impacts at each stage of the tourism value chain, including likely severity of impact: High, Medium or Low (H/M/L)

<table>
<thead>
<tr>
<th>Impact Description</th>
<th>Life-cycle Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. biodiversity loss due to land use change (H)</td>
<td>Raw materials</td>
</tr>
<tr>
<td>e.g. volume of energy used by energy source (kWh) (H)</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>e.g. transport emissions for chilled airfreight (tCO$_2$e) (H)</td>
<td>Distribution &amp; sales</td>
</tr>
<tr>
<td>e.g. electricity use (HVAC, cooking &amp; lighting) (kWh) (H)</td>
<td>Use/consumption</td>
</tr>
<tr>
<td>e.g. volume of food waste to landfill (tonnes) (H)</td>
<td>Disposal / reuse</td>
</tr>
<tr>
<td>e.g. depletion of fish stocks (over-fishing) (M)</td>
<td>Raw materials</td>
</tr>
<tr>
<td>e.g. GHG emissions (tCO$_2$e) (M)</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>e.g. vehicle washing (litres of water) (L)</td>
<td>Distribution &amp; sales</td>
</tr>
<tr>
<td>e.g. waste water (bathing) (litres) (M)</td>
<td>Use/consumption</td>
</tr>
<tr>
<td>e.g. plastic packaging waste (tonnes) (M)</td>
<td>Disposal / reuse</td>
</tr>
</tbody>
</table>
5.0

Hotspots analysis: prioritising your actions
UN Environment’s Lifecycle Initiative has produced an 8-step methodological framework* to help governments and businesses to identify and address the key sustainability hotspots associated with sectors of the economy or business value chains.

In the Transforming Tourism project, an identified environmental impact is considered to be a hotspot if it contributes to more than 50% of total lifecycle impact across all of the product or service lifecycle stages in any given impact category (e.g. greenhouse gas emissions, energy or water use, waste), ensuring that most of the impact is considered. This approach is also taken to ensure that the impact of data uncertainty on addressing hotspots is minimised.

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**Hotspots Analysis | Step 8: Prioritising lifecycle impacts**

<table>
<thead>
<tr>
<th>Product / Service Lifecycle Stages</th>
<th>Sustainability Hotspots &amp; Existing Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Waste</td>
</tr>
<tr>
<td>Raw materials (extraction/production)</td>
<td></td>
</tr>
<tr>
<td>Manufacturing (product &amp; packaging)</td>
<td></td>
</tr>
<tr>
<td>Distribution &amp; sales</td>
<td></td>
</tr>
<tr>
<td>Use/consumption</td>
<td></td>
</tr>
<tr>
<td>Disposal/Reuse (End of life management)</td>
<td></td>
</tr>
</tbody>
</table>

Please use this matrix to prioritise the lifecycle impacts you have identified at each value chain stage, including any information on activities you are already undertaken to address the hotspots you include in this matrix.
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**Hotspots Analysis | Step 8: Using the hotspots profiler tool**

Helps define the key sustainability hotspots associated with the product or service

Qualitative approach: uses the 80:20 principle

**Primary hotspots** (Red): contributes to more than 50% of total lifecycle impact across all lifecycle stages

**Secondary hotspots** (Amber): contributes 25-50% of total lifecycle impact across all lifecycle stages

**Hotspots that are already being addressed** (Green)
## Hotspots Analysis | Step 8: Beef example

### Beef

<table>
<thead>
<tr>
<th>Product / Service Lifecycle Stages</th>
<th>Waste</th>
<th>GHG emissions</th>
<th>Energy use</th>
<th>Water</th>
<th>Other impacts (E.g. biodiversity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials (extraction/production)</td>
<td>Manure from cattle can lead to over-enrichment / pollution of water</td>
<td>Methane emissions from cattle, manure management</td>
<td>Energy use in feed production (if cattle not grass-fed)</td>
<td>Water use in rearing &amp; cleaning, feed production</td>
<td>Land-use change risks from feed (soy linked to deforestation)</td>
</tr>
<tr>
<td>Manufacturing (product &amp; packaging)</td>
<td>Abattoir waste / carcass utilization</td>
<td>Emissions from energy use in processing</td>
<td>Energy use in processing</td>
<td>Cleaning and processing water</td>
<td></td>
</tr>
<tr>
<td>Distribution &amp; sales</td>
<td>Non-recyclable pack format</td>
<td>Transport emissions (if imported via airfreight)</td>
<td>Aviation fuel (if imported via airfreight)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use/consumption</td>
<td>Meat waste in hotels and restaurants (mainly plate waste)</td>
<td>Cooking energy dependent on mode of cooking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposal/Reuse (End of life management)</td>
<td>Skin-pack to extend product quality &amp; life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Cattle rearing main hotspot for GHG emissions, energy, water and biodiversity
- Key variables: production system, feed, suckler v’s dairy beef, age of cattle at slaughter
**A step-by-step methodology for mapping tourism value chains**

**Hotspots Analysis | Step 8: Beer example**

<table>
<thead>
<tr>
<th>Product / Service Lifecycle Stages</th>
<th>Sustainability Hotspots &amp; Existing Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Raw materials</strong> (extraction/production)</td>
<td>Waste: GHG emissions from grain production; GHG emissions from grain production; High energy use in agriculture, fertilisers for barley/grain crops; High water use in cereal production (barley = 1.420/kg); Other impacts (E.g. biodiversity): Use of fertilizer and herbicides / pesticides.</td>
</tr>
<tr>
<td><strong>Manufacturing</strong> (product &amp; packaging)</td>
<td>Waste: Emissions from energy used in beer production, processing of glass, aluminium and steel; Energy used in mashing, boiling, fermentation &amp; filtration; Water use in cleaning (4.4 pints per pint of product) / production; Use of recycled content materials in bottles and cans.</td>
</tr>
<tr>
<td><strong>Distribution &amp; sales</strong></td>
<td>Waste: Emissions associated with distribution.</td>
</tr>
<tr>
<td><strong>Use/consumption</strong></td>
<td>Waste: Emissions associated with cooling of beer; Energy associated with cooling of beer.</td>
</tr>
<tr>
<td><strong>Disposal/Reuse</strong> (End of life management)</td>
<td>Waste: Lack of packaging recycling/reuse systems; Energy associated with recycling of packaging materials; Bottle washing water in reuse systems.</td>
</tr>
</tbody>
</table>

- 10-30% of greenhouse gas emissions associated with agricultural production of ingredients
- 40-70% of greenhouse gas emissions associated with extraction and processing of packaging materials
- High water use in agriculture, processing and manufacturing and reuse systems (bottle washing). Up to 120l of water used per 1l of beer!
### Summary of hotspots across environmental impact categories for the tourism sector in the Dominican Republic

<table>
<thead>
<tr>
<th>Rank</th>
<th>GHG</th>
<th>Energy</th>
<th>Water</th>
<th>Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Beef and dairy products: methane emitted through bovine enteric fermentation (digestion) and production of manures. 98% of beef comes from domestic sources, including a major cattle-raising area in the province of La Altagracia, where Punta Cana is located. According to the World Resources Institute (WRI) Climate Analysis Indicators Tool, agriculture was the second highest source of emissions (31.6%) in the Dominican Republic in 2013, with enteric fermentation and manure left on pasture contributing 75% of the sector’s emissions.</td>
<td>Hotel and restaurant activities: typical hotel energy use is for lighting (6%), heating, ventilation and air conditioning (HVAC) of rooms, public spaces, back of house areas (40%) and water heating (26%). Hotels in the Dominican Republic account for 43% of the commercial sectors’ energy demand.</td>
<td>Water use in hotels and restaurants: guest washing and sanitisation, cleaning of rooms and public spaces, laundry services, food preparation and cooking, irrigation of grounds, swimming pools and spas. It is worth noting that some destination studies show that hotel guests consume three times as much water as the average Dominican.</td>
<td>Food waste in hotels and restaurants: average of 7-12% meat waste in kitchens, with some hotel surveys indicating overall food waste levels at up to 35% of food purchased.</td>
</tr>
<tr>
<td>3</td>
<td>Hotel and restaurant activities: typical hotel energy use is for lighting (6%), heating, ventilation and air conditioning (HVAC) of rooms, public spaces, back of house areas (40%) and water heating (26%). Hotels in the Dominican Republic account for 43% of the commercial sectors’ energy demand.</td>
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</tr>
</tbody>
</table>

**Source:** example table taken from Dominican Republic Country Report – UN Environment IKI Transforming Tourism Project (2018)
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Hotspots Analysis | Step 8: mapping hotspots

Example hotspots from Dominican Republic (UN Environment IKI Transforming Tourism Project (2018))

In and around the destination

1. Beef & dairy products: 75% of agricultural GHG emissions
2. Energy use in hotels: 43% of commercial energy demand
3. Water use in hotels: guest use 3x more water than citizens
4. Food waste in hotels/restaurants: up to 35% wastage rates
5. Fossil fuel GHG emissions from tourism electricity supply
6. Energy use in slaughterhouses: processing & refrigeration
7. Livestock production: feed (irrigation water) & drinking water
8. Fresh produce: 20% losses in-field & immediate post-harvest

Key:
1. Beef & dairy products: 75% of agricultural GHG emissions
2. Energy use in hotels: 43% of commercial energy demand
3. Water use in hotels: guest use 3x more water than citizens
4. Food waste in hotels/restaurants: up to 35% wastage rates
5. Fossil fuel GHG emissions from tourism electricity supply
6. Energy use in slaughterhouses: processing & refrigeration
7. Livestock production: feed (irrigation water) & drinking water
8. Fresh produce: 20% losses in-field & immediate post-harvest
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Hotspots Analysis | Step 8: Visualising hotspots (optional)

Tourism Value Chain with Environmental Hotspots

- 50% of tourism-related emissions come from transport
- 31% of tourism-related emissions come from fossil fuels
- 10% → 25% current share of renewables
- 20% of their annual gross domestic product is derived from tourism
- 89% of water used in the country is used in agriculture
- 7% of agricultural Sectors, leading to water scarcity

Energy use in hotels:
- 28% lighting
- 40% heating, ventilation, and air conditioning
- 26% water heating

Tourism activities:
- Food waste in hotels and restaurants
- Primary production of produce, water, and energy

Marine environment:
- Waste and pollution from single-use plastics, packaging, and other materials

Water supply:
- From surface or underground sources
- Used in agriculture, processing, and manufacturing

Energy generation:
- 57% nuclear, 31% coal, 10% renewables

Renewable energy:
- 20% of their productive vast resources of energy

Electricity generation:
- 57% nuclear, 31% coal, 10% renewables

Hotspots analysis:
- 50% over 10% of hotspots cause environmental damage

Solid waste:
- 35% of plastic produced by industries, companies, and individuals
- Waste, including waste from tourism, is managed effectively

United Nations Environment Programme

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6.0 Identifying existing initiatives
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**Existing initiatives | Step 9: Desktop research and surveys**

To avoid duplication or identify potential partnerships and collaborations to tackle hotspots it is useful to gain a better understanding of existing initiatives. These may be driven by different tourism stakeholders at the international, national, sectoral, destination and business value chain level. Examples of what to look for are provided below:

<table>
<thead>
<tr>
<th>International</th>
<th>Sectoral</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing initiatives</strong></td>
<td>• Tourism sector actions under the UN Paris Agreement on climate change</td>
</tr>
<tr>
<td></td>
<td>• UN World Tourism Organization &amp; World Travel &amp; Tourism Council sustainability initiatives</td>
</tr>
<tr>
<td></td>
<td>• Green tourism certification schemes</td>
</tr>
<tr>
<td>National</td>
<td><strong>Business value chain</strong></td>
</tr>
<tr>
<td></td>
<td>• Climate change targets/initiatives</td>
</tr>
<tr>
<td></td>
<td>• Sustainable procurement practices</td>
</tr>
<tr>
<td></td>
<td>• Building/room energy management</td>
</tr>
<tr>
<td></td>
<td>• Renewable energy installations</td>
</tr>
<tr>
<td></td>
<td>• Water treatment plants and reuse</td>
</tr>
<tr>
<td></td>
<td>• Use of energy-efficient equipment</td>
</tr>
<tr>
<td></td>
<td>• Energy management and auditing</td>
</tr>
<tr>
<td></td>
<td>• Food waste measurement &amp; reporting</td>
</tr>
<tr>
<td></td>
<td>• Guest engagement &amp; awareness-raising campaigns</td>
</tr>
<tr>
<td></td>
<td>• Single use plastics bans</td>
</tr>
<tr>
<td></td>
<td>• On-site recycling and refill/reuse systems</td>
</tr>
<tr>
<td></td>
<td><strong>Destination</strong></td>
</tr>
<tr>
<td></td>
<td>• Green transport plans</td>
</tr>
<tr>
<td></td>
<td>• Natural, cultural and built heritage protection</td>
</tr>
<tr>
<td></td>
<td>• Beach/reef/river monitoring and clean-up</td>
</tr>
<tr>
<td></td>
<td>• Waste management/recycling facilities</td>
</tr>
<tr>
<td></td>
<td>• Water abstraction/monitoring</td>
</tr>
<tr>
<td></td>
<td>• Shared laundry facilities</td>
</tr>
</tbody>
</table>
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Identifying and shortlisting solutions
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### Solutions Development | Step 10: Idea generation: business

#### BUSINESS SOLUTIONS
(products, services & business models)

<table>
<thead>
<tr>
<th>BUSINESS SOLUTIONS</th>
<th>Cost to implement</th>
<th>Sustainability benefit</th>
<th>Consumer benefit</th>
<th>Business benefit</th>
<th>Technical &amp; commercial feasibility</th>
<th>Difficulty</th>
<th>Priority</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▲ = ▼</td>
<td>+ = -</td>
<td>+ = -</td>
<td>+ = -</td>
<td>Y ? N</td>
<td>easy</td>
<td>hard</td>
<td>S/M/L</td>
</tr>
</tbody>
</table>

Capture your short-listed business solutions to identified sustainability hotspots on the left-hand side of the template and then prioritise Top 2-3 using the filters provided.

**NOTE:** it is important that business and policy solutions are considered together.
## Solutions Development | Step 10: Idea generation: policy

<table>
<thead>
<tr>
<th>NATIONAL-LEVEL SOLUTIONS (policies, strategies, legal &amp; regulatory frameworks)</th>
<th>Cost to implement</th>
<th>Sustainability benefit</th>
<th>Societal benefit</th>
<th>Supports business action</th>
<th>Technical &amp; legal feasibility</th>
<th>Difficulty</th>
<th>Priority</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>^ = v</td>
<td>+ = -</td>
<td>+ = -</td>
<td>Y ? N</td>
<td>Y ? N</td>
<td>easy</td>
<td>hard</td>
<td>L/M/H</td>
<td>S/M/L</td>
</tr>
</tbody>
</table>

Capture your short-listed national-level solutions to identified sustainability hotspots on the left-hand side of the template and then prioritise Top 2-3 using the filters provided. You can also include economic instruments (e.g. eco-taxes, grants, incentives), voluntary or mandatory agreements, standards, certification and ecolabels, and awareness campaigns, etc.

**NOTE:** it is important that business and policy solutions are considered together.

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Solutions Development | Step 11: roadmap (example)

**Key:** three coloured blocks signify short, medium and long-term timeframes; red dotted lines signify individual identified hotspots; green circles represent solutions and innovations; green arrows illustrate where a solution or intervention addresses more than one hotspot.

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Solutions Development | Road-mapping template

<table>
<thead>
<tr>
<th>Shorter-term solutions</th>
<th>and / or</th>
<th>Longer-term innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotspot 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotspot 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotspot 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotspot 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotspot 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotspot 6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This template option is generic and does not specify different categories of hotspot.
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Solutions Development | Roadmapping guidance

7.6

Source: UK Sustainable Development Commission: You are what you sell – Product roadmapping: driving sustainability
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Shortlisting solutions | Step 12: Systemic solutions

Definition and guidance:

• 'Systemic solutions’ represent a strategic theme or natural umbrella for a cluster of actions and interventions with the same overarching goal. Systemic solutions, and the actions or interventions that sit within them, could be delivered by individual tourism businesses and their value chains or undertaken by groups of tourism businesses working in collaboration, with or without support from government policy-makers.

• The systemic solutions identified for/by each country, location, destination, tourism business or group of tourism businesses should look to encompass many of the shortlisted solutions identified and road-mapped in earlier steps. As such, they may also include a range of short, medium and longer-term actions and can be made up of a combination of business actions and supporting policy instruments and frameworks.

• The following slide provides an example of how to cluster shortlisted solutions under the umbrella of three systemic solutions.
A step-by-step methodology for mapping tourism value chains

### Shortlisting solutions | Step 12: identify systemic solutions

<table>
<thead>
<tr>
<th>Aim</th>
<th>Improve the sustainability performance of tourism value chains in Dominican Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcomes</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-outcome</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Systemic solutions</strong></td>
<td>1) Transforming the all-inclusive model</td>
</tr>
<tr>
<td><strong>National-level actions</strong></td>
<td>National Food waste policy: enhance infrastructure, provide incentives for measurement, reduction and redistribution</td>
</tr>
<tr>
<td></td>
<td>Protect remaining forests from deforestation, introduce landscape rewilding programmes &amp; agroforestry</td>
</tr>
<tr>
<td><strong>Cross-sector</strong></td>
<td>Developing alternatives to single use plastics (e.g. refillable toiletries) and their suppliers</td>
</tr>
<tr>
<td></td>
<td>Developing sustainable food providers</td>
</tr>
<tr>
<td></td>
<td>Jointly developing campaign materials</td>
</tr>
<tr>
<td><strong>Business-level actions</strong></td>
<td>Campaigns and guest-facing actions: smaller plates, sustainable menu, ‘availability on request’, replacing single-use plastics</td>
</tr>
<tr>
<td></td>
<td>Food waste monitoring, including review of kitchen practices and comprehensive kitchen audits</td>
</tr>
<tr>
<td></td>
<td>Sustainable dining</td>
</tr>
<tr>
<td><strong>2) Beating pollution in tourism</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improve current landfill sites (convert from open-air to closed, biogas collection), develop recycling, composting and anaerobic digestion facilities</td>
</tr>
<tr>
<td></td>
<td>Investigate public waste-water treatment</td>
</tr>
<tr>
<td><strong>3) Sustainable energy programmes for hotels and restaurants</strong></td>
<td>National energy efficiency improvement (energy reduction) and renewable energy targets</td>
</tr>
<tr>
<td></td>
<td>Policies to support energy efficient equipment</td>
</tr>
<tr>
<td></td>
<td>Incentives and finance for purchase of energy efficient and/or renewable energy equipment</td>
</tr>
</tbody>
</table>

Three overarching systemic solutions

Clusters of shortlisted solutions that collectively deliver each systemic solution
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8.0 Building a business case and work plan
### Step 13: Business case/workplan | Business Model Canvass

<table>
<thead>
<tr>
<th>Key Partners</th>
<th>Key activities</th>
<th>Value proposition (your idea!)</th>
<th>Customer relationships</th>
<th>Customer segments and activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key resources</th>
<th>Channels</th>
<th>Revenue streams, savings, return on investment</th>
<th>Social and environmental cost</th>
<th>Social and environmental benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For more information on how to use the Business Model Canvass, please see: [https://strategyzer.com/canvas/business-model-canvass](https://strategyzer.com/canvas/business-model-canvass)
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Business case for food waste prevention | Champions 12.3

For each $1 invested $7 of financial benefit realised

investment recouped 89% within two years of implementing a food waste programme

All sites able to keep investment below $20,000 within 3 years

Source: Champions 12.3 – The business case for reducing food loss and waste: Restaurants (February 2019)
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Business case for food waste prevention | Champions 12.3

Key strategies:

- Measure
- Engage Staff
- Rethink inventory & purchasing practices
- Reduce overproduction
- Repurpose excess food

Co-Authored by WRI & WRAP

Find the report at:
Champions123.org

Source: Champions 12.3 – The business case for reducing food loss and waste: Restaurants (February 2019)
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Business case for energy efficiency | Examples

Efficient LED Lighting

• Impressive energy and maintenance savings of up to 85% and 95% respectively (Goodlight, 2018)
• One hotel case study showed USD6,000 investment and savings of USD16,000 a year (6 month pay-back period)

Optimized HVAC

• According to analysis by Siemens, optimized heating, ventilation and air-conditioning (HVAC) alone can lower energy consumption by more than 40% in hotels, without negatively impacting guest satisfaction
• Experience of a hotel in Thailand: Investment in a mini-chiller system (USD 130,000), saved USD 45,000 annually (2.8 year pay-back period)

Room energy management systems

Bhujun and Bahadoor (2016) benchmarked the electricity and water use of hotels in Mauritius. Those using Room Energy Management Systems consumed about 37.5% less electricity than those not using it, demonstrating its value.

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Creating a supportive policy framework
Step 14.1: Build your policy framework | The policy cycle

The policy cycle is a sequence of four main stages (see graphic). Although the characteristics of the policy stages may vary, based on national context, political system, complexity of the issue and the stakeholders involved, it is a useful framework through which to understand that policy creation progressively builds upon prior activities with a view to achieving future objectives. It demonstrates that multiple opportunities exist to review, amend and create new strategies to affect change.

For more information on how to utilise the policy cycle please see: UNEP/EC – Mainstreaming Eco-Innovation in Sustainable Consumption and Production Policies (2017) pp.19-20 & 56-69
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**Step 14.2: Policy Framework | Identify your policy mix**

There are a range of policy instruments that can be applied in the tourism sector:

<table>
<thead>
<tr>
<th>Regulatory instruments</th>
<th>Economic instruments</th>
<th>Information-based instruments</th>
<th>Voluntary instruments</th>
<th>Behavioural instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHG emissions targets</td>
<td>Eco-taxes</td>
<td>Strategic foresight studies</td>
<td>Voluntary agreements</td>
<td>Nudging</td>
</tr>
<tr>
<td>Waste/landfill</td>
<td>Emissions charges/permits</td>
<td>Eco-labels</td>
<td>Training &amp; capacity-building</td>
<td>Behaviour change campaigns</td>
</tr>
<tr>
<td>regulations</td>
<td>EPR / DRS</td>
<td>Energy-efficiency grants</td>
<td>Supply chain initiatives</td>
<td>Sharing economy</td>
</tr>
<tr>
<td>Recycling quotas</td>
<td>Energy-efficiency</td>
<td>Corporate Sustainability</td>
<td>EMS &amp; 3rd party</td>
<td>Actionable feedback</td>
</tr>
<tr>
<td>Water quality &amp;</td>
<td>grants</td>
<td>Reporting</td>
<td>certification</td>
<td></td>
</tr>
<tr>
<td>wastewater treatment</td>
<td>Sustainable</td>
<td>Awareness campaigns</td>
<td>Knowledge networks</td>
<td></td>
</tr>
<tr>
<td>Statutory bans</td>
<td>procurement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R&amp;D support</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: EPR = Extended producer responsibility; DRS = Deposit Return Schemes; EPD = Environmental Product Declaration; EMS = Environmental Management Systems
### Step 14.3: Policy Framework | understand pros and cons

Different policy instruments have their strengths and limitations:

<table>
<thead>
<tr>
<th>Pros:</th>
<th>Cons:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can resolve key issues</td>
<td>Enforcement cost</td>
</tr>
<tr>
<td>Enforceable</td>
<td>Can be static or inflexible</td>
</tr>
<tr>
<td>Provide clear policy goal</td>
<td>Harder to design</td>
</tr>
</tbody>
</table>

#### Regulatory instruments
- **Pros:**
  - Beyond compliance
  - Market transformation
  - Tax revenues
- **Cons:**
  - Enforcement cost
  - Right charge to incentivise

#### Economic instruments
- **Pros:**
  - Government provide unbiased information
  - Consumer education goals
- **Cons:**
  - Effort & cost to set-up schemes & campaigns

#### Information-based instruments
- **Pros:**
  - Motivates first movers
  - Flexible & cost-effective
  - Avoids regulation
- **Cons:**
  - No penalties for non-compliance

#### Voluntary instruments
- **Pros:**
  - Targets behavioural drivers
  - Helps set new societal norms
  - Rapid ICT dissemination
- **Cons:**
  - Can be hard to measure impact

#### Behavioural instruments

**Key:** ICT = Information & Communication Technologies (e.g. social media and digital communications platforms).
### Step 14.4: Policy Framework | use a policy checklist

<table>
<thead>
<tr>
<th>Key policy considerations</th>
<th>Questions to be answered before you finalise your policy framework</th>
</tr>
</thead>
</table>
| Understanding the starting point           | • What challenges and opportunities do current policies and strategies present?  
• Do we understand the necessary conditions for sustainable tourism and the current barriers that hamper it?  
• Do we understand what will and won’t work given the political, institutional, cultural and economic context?                                                                 |
| Practice policy integration                | • Is sustainable tourism policy integrated across other policy areas - e.g. food and agriculture, transport, waste, water, energy and climate change? And did we consult with ministries from other policy domains relevant to tourism?  
• Are our selected policy interventions consistent with existing relevant international, regional and national policies, strategies and targets – e.g. UN SDGs, Paris Agreement? |
| Adopt lifecycle thinking                   | • Do we consider the issues and impacts from a lifecycle perspective? Are we shifting an impact somewhere else: other environmental or social issues, different location or lifecycle stage? |
| Apply a value chain approach               | • Do we understand what actions by tourism businesses lead to unsustainable outcomes and which actor’s choices and decisions do we need to target for a more sustainable outcome? Do we understand their motives and reasons? |
| Build collaborations                       | • Did we map and convene all the relevant stakeholders to help us design the best policy interventions?  
• Could we do more to encourage collaboration with other ministries and build new public/private partnerships? |
| Adopt a long-term view                     | • Did we think sufficiently long-term in line with our existing targets and international commitments?  
• Do we understand the long-term priorities and context for the tourism sector? |
| Select the right policy mix                | • Are the selected mix of policy instruments consistent and complementary; and do they deliver the necessary impact and urgency in relation to the challenges facing the tourism sector in the future? |
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**Policy Framework | The Golden Thread**

As you develop your mix of policy instruments always keep in mind the overarching aim(s) of your tourism policy framework and the goals you would like to deliver by following the ‘golden thread’ that links your proposed actions to the delivery of systemic solutions, outcomes and aims. Also ensure that what you are seeking to put in place supports the actions that business value chain actors have committed to.

<table>
<thead>
<tr>
<th>Aim</th>
<th>Improve the sustainability performance of tourism value chains in Dominican Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes</td>
<td>To reduce the resource use and GHG emissions from food production</td>
</tr>
<tr>
<td>1.1 To reduce consumption of high-impact food items</td>
<td></td>
</tr>
<tr>
<td>1.2 To reduce food waste from hotels, conference venues, agriculture &amp; livestock</td>
<td></td>
</tr>
<tr>
<td>Sub-outcome</td>
<td>2. To reduce pollution &amp; waste in Dominican Republic</td>
</tr>
<tr>
<td>2.1 To reduce waste and the use of single use plastics in tourism value chains</td>
<td></td>
</tr>
<tr>
<td>2.2 To increase energy efficiency in hotels and conference venues</td>
<td></td>
</tr>
<tr>
<td>3. To reduce the consumption of fossil fuels by the tourism sector in Dominican Republic</td>
<td></td>
</tr>
<tr>
<td>3.1 To increase energy efficiency in hotels and conference venues</td>
<td></td>
</tr>
<tr>
<td>3.2 To increase the use of renewable energy in the accommodation sector</td>
<td></td>
</tr>
</tbody>
</table>

**National-level actions**
- National Food waste policy: enhance infrastructure, provide incentives for measurement, reduction and redistribution
- Protect remaining forests from deforestation, introduce landscape rewilding programmes & agroforestry

**Cross-sector**
- Developing alternatives to single use plastics (e.g. refillable toiletries) and their suppliers
- Developing sustainable food providers
- Jointly developing campaign materials

**Business-level actions**
- Campaign and guest-facing actions: smaller plates, sustainable menu, ‘availability on request’, replacing single-use plastics
- Food waste monitoring, including review of kitchen practices and comprehensive kitchen audits
- Sustainable dining

**Systemic solutions**
- 1) Transforming the all-inclusive model
  - National Food waste policy: enhance infrastructure, provide incentives for measurement, reduction and redistribution
  - Protect remaining forests from deforestation, introduce landscape rewilding programmes & agroforestry

- 2) Beating pollution in tourism
  - Improve current landfill sites (convert from open-air to closed, biogas collection), develop recycling, composting and anaerobic digestion facilities
  - Investigate public waste-water treatment

- 3) Sustainable energy programmes for hotels and restaurants
  - National energy efficiency improvement (energy reduction) and renewable energy targets
  - Policies to support energy efficient equipment
  - Incentives and finance for purchase of energy efficient and/or renewable energy equipment
Q&A session

Please send your questions through the chat box in the control panel.
Thank you!

For more information on online trainings and webinars:

One Planet STP Clearinghouse: [http://www.oneplanetnetwork.org](http://www.oneplanetnetwork.org)

One Planet STP website: [http://sdt.unwto.org/trainings-oneplanet-stp](http://sdt.unwto.org/trainings-oneplanet-stp)

or contact: [svitlana.mikhalyeva@un.org](mailto:svitlana.mikhalyeva@un.org)