Tourism consumes the “environment”, generally intended as the whole supply of territory of the destination.

From the economics perspective, the key issue is that the relationship between tourism and the environment does not pass through the market and its price mechanism.

**Externality is the key concept**

**Table 16.1**  
Sustainability and the two dimensions of externalities generated by tourists

<table>
<thead>
<tr>
<th>The timing of externalities</th>
<th>The subjects of externalities</th>
<th>Tourists on tourists</th>
<th>Tourists on residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the same time</td>
<td>Elite tourism/mass tourism</td>
<td>Friendly tourism/Unfriendly tourism</td>
<td></td>
</tr>
<tr>
<td>In the future</td>
<td>Environmental (un)sustainability</td>
<td>Sociocultural (un)sustainability</td>
<td></td>
</tr>
</tbody>
</table>
Two examples of sustainable tourism

Hiking on the mountains...
(e.g. trekking on the Himalaya) … or volunteering for a social movement (e.g. peace camps in EZLN communities)

But, are they really sustainable forms of tourism?
Case Study 1 – Trekking in the Himalaya
What is this?

A unique experience for Mountain lovers

But...
http://science.time.com/2013/05/29/60-years-after-man-first-climbed-everest-the-mountain-is-a-mess/
Case Study 2 – Zapaturismo – visiting the Zapatistas communities

The Global solidarity movement

But...  
tourism and sustainability (2)

Official definition of sustainable development:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. (WCED 1987).

Applying this approach to the concept of sustainable tourism:

“those activities that meet the present needs of tourists, of the tourism sector and of the host community without compromising the ability of future generations to meet their own needs”. (Candela and Figini, 2012).

“Tourism is compatible with the environment only in homoeopathic doses. The reciprocity aspect and the relationship with the indigenous community are essential. Otherwise, even the keenest of the eco-tourists can easily become an annoying, irritating and harmful Jiminy Cricket. (Langer, quoted by Canestrini, 2002).
tourism and sustainability (3)

Three typical dimensions of sustainability:

- **Economic sustainability** (which deals both with the positive aspect linked to the multiplier) and the negative aspects of diverting resources from alternative uses (the crowding-out effect);
- **Environmental sustainability** (which deals with both natural resources and the cultural and historic heritage);
- **Social sustainability** (which deals with the social and cultural impact on the host population).

The environment has to be understood in a holistic sense:

(a) The **natural environment** (land, water, climate, wildlife, vegetation, etc.)
(b) The **human-made environment** (urban and industrial architecture, historical and artistic heritage, monuments, public infrastructures, the skyline, etc).
(c) The **sociocultural environment** (dialects, traditions, arts: the culture and the social organization of the local community).
Economic theory approaches the concept of environment in terms of **stock of total capital**, to be decomposed in three distinct elements: **natural capital**, **physical capital**, and **human capital**.

Now, time to focus on natural (and also cultural) capital.

Natural resources are those consumption goods or factors of production that are **not economically reproducible**.

Natural resources are **biologically reproducible**, but their production occurs naturally and not as the result of an economic process.

According to **their availability**, natural resources can be divided into exhaustible and inexhaustible resources.

According to **the natural process of replenishment**, natural resources can be divided into renewable and non-renewable resources.

According to **the law**, natural resources can be divided into appropriaible or inappropriaible resources.
environmental sustainability (2)

If $X(t)$ is the quantity of the resource at time $t$, the sustainability condition depends on the type of resource:

1. **Inexhaustible and non-renewable** resource (e.g. the sun):
   \[
   \frac{dX}{dt} = 0
   \]

2. **Exhaustible and non-renewable** resource (e.g. the cultural resources)
   \[
   \frac{dX}{dt} = -aN(t)
   \]
   hence, we define an inter-temporal choice problem

3. **Exhaustible and renewable resource** (e.g. the forest)
   \[
   \frac{dX}{dt} = n - aN(t)
   \]
   where $n$ is the natural growth rate of the resource

Hence, the sustainable tourism flows are given by: $N^* = n / a$.

4. **Inexhaustible and renewable resource**
   \[
   \frac{dX}{dt} = n
   \]
   the resource will progressively grow and become a free good
the tragedy of the commons

Revisit the original case provided by Harding (1968): a beach where people want to open kiosks selling drinks \( (x) \):

The **cost of managing the kiosk** is \( C = ax \)

The **expenditure function** is concave: \( S(x) = -mx^2 + nx \).

The **economic problem is**: how many kiosks is it optimal to open?

1. **Beach with free access** (**common good**): new kiosks open as long as they are profitable: up to when average revenue is greater than average cost:

\[
S(x) / x = ax / x \quad => \quad x^\circ = (n - a) / m
\]

2. **Beach that is owned / licensed by the local government** (**monopoly**): new kiosks are licensed in order to maximise overall profit (marginal revenue = marginal cost)

\[
\text{Max } \Pi = S(x) - ax \quad => \quad x^* = (n - a) / 2m
\]

Hence, the common nature of the beach (lack of property rights) drives to the **over exploitation** of the resource.

**Intervention**: definition of property rights through licensing or public production.
social sustainability

In tourism, like in any human experience, the meeting with the *Other* is always an experience that changes the *Self*.

The only sustainable tourism is the one not jeopardizing the life and the culture of the host community.

The meeting of the tourist with the host population can be *synergistic* but, more commonly, it might be *problematic*: the more problematic the greater the differences in terms of income and culture.

The effects of the tourist on the local population can be:

(a) *positive*, like the preservation and recovery of traditions, the conservation of ceremonies or craftsmanship, the restoring of historic buildings or artistic sites;

(b) *negative*, like the commodification of local behaviours or traditions;

(c) *potentially neutral*, like assuming certain dress codes or food habits, that do not enter in conflict with the local traditions.

This classification is based on *own value judgements*.
Social sustainability (2)

Social sustainability requires the involvement of the host population in the planning and development of the destination.

It implies a double distributive conflict:

- between tourists and residents (i.e. friendly and unfriendly tourism)
- between different stakeholders in the host community.

The role played by the local population (and by its destination management) is crucial to tackling the problem of social sustainability:

Without the participation of the host community in the strategic decisions regarding tourism development, environmental protection, and social organization it is difficult to conceive a type of development that is authentically sustainable.

The search for sustainability should lead to a self-centered local development model.
Great confusion of concepts and definitions...

**Responsible tourism**: the process of self-selection, on the part of the tourist, of tourism activities that are sustainable and respectful of the environment

- It can be defined as the expression, on the **demand-side**, of the need of sustainable tourism.

**Corporate social responsibility**: the process of self-selection, on the part of the firm, of tourism products that are sustainable and respectful of the environment

- It can be defined as the expression, on the **supply-side**, of the willingness to offer sustainable tourism.

**Ecotourism**: a non-invasive form of nature-based tourism, focussing primarily on learning about nature first-hand. The aim of the ecotourists is not sustainability in itself but rather the desire to **live the natural ecosystem**: the tourism activity is respectful, but invading unexplored areas risks putting its sustainability in danger.

**Social tourism** indicates those tourism activities that favour the meeting and the socialization between people and among social groups (even those that are disadvantaged), responding to a **widespread need of social interaction**.
The rise in the demand and supply of ethical tourism pushed the request to identify the rights of the different actors and stakeholders involved in tourism (tourists, the host community, firms) and to give tourism an ethical code.

Global Code of Ethics for Tourism (UNWTO, 1999), which main principles are:

- The recognition of tourism as a factor of mutual understanding and respect between people and societies;
- The recognition of fundamental rights to the workers of the tourism sector, particularly in relation to the high degree of seasonal and temporary jobs;
- The recognition of biodiversity and the importance of natural, cultural, and artistic resources for tourism, as humanity’s common heritage;
- The recognition of the right for the host community to have access in a fair manner to the benefits stemming from tourism.
- The implementation of a World Committee on Tourism Ethics, able to resolve the controversies related to the application and interpretation of the code.
carrying capacity

Concept developed in engineering to indicate the weight that a structure can bear before collapsing.

Applied to economics (in territorial planning) to identify the threshold not to exceed for the protection of resources.

In tourism: “the maximum number of people that visit the destination at the same time without compromising its environmental, physical, economic, and sociocultural characteristics and without reducing the level of satisfaction of tourists”. (UNWTO)

Hence, the carrying capacity applies to social and environmental aspects:

- In a social sense, since the overload of tourism flows can produce negative effects on the culture and on the social fabric of the host community
- In an environmental sense, because it can produce physical effects that alter the state of sustainability of the natural (and cultural) resources.
monitoring the carrying capacity

The **methodology** to measure the carrying capacity has been set by the UNEP. The carrying capacity must become an essential part of the process of **tourism policy and planning**. The methodology includes the following phases:

- **data analysis** and their graphical representation;
- definition of the **sustainability indexes** for the tourism resources;
- analysis of the **present tourism scenario**;
- definition of **future** tourism development scenarios;
- definition of the **method to compute** the carrying capacity.

The monitoring of the indicators is controlled: (i) by the local authorities and **policy makers**; (ii) by the different **tourism stakeholders**: hotels, tourism firms, consumer associations, and also tourists themselves.

Through the carrying capacity, tourism destinations can calculate the **hospitality load**, defined as the maximum number of tourists that the destination can host.
setting the carrying capacity for the destination

**Trivial problem** if there is only one resource (the destination is specialised in one type of tourism only):

- The overall carrying capacity is given by the **carrying capacity of the resource**: it is sufficient to monitor the overnight stays: \( N < N^° \)

What happens if the dimensions interested by the problem are **more than one**?

Example. A seaside resort with two main resources: the **beach** and the **water**:

**Case 1.** There is only one type of tourism (**sea&sun**): \( N < \min [N_w^°; N_B^°] \)

**Case 2.** There are two types of tourism (**sea&sun** and **swim&dive**): \( N = N_1 + N_2 \)

In this latter case there are two possibilities:
- (a) the carrying capacity of one of the resources is dominated by the other one, which is **the only binding constraint**;
- (b) the two constraints intersect. The **mix of tourism hosted** by the resort determines which constraint of the carrying capacity is binding.
setting the carrying capacity for the destination (2)
If the mix of tourism hosted by the destination changes overtime, the constraint which defines its overall carrying capacity changes as well:

- the activity of monitoring becomes difficult, since the carrying capacity does not only depend on the overall number of overnight stays but also on its distribution among different types of tourism;

- the carrying capacity is a dynamic concept that can change also in the short run following the dynamics of the tourism mix in the destination.
the social carrying capacity

The social carrying capacity measures the destination’s sustainability, not in relation to the physical limit of the natural resources, but rather to the effect that crowding has on the relationship between residents and visitors.

Both tourists and residents have their own preferences as regards the optimal threshold of the crowding, in terms of overnight stays.

Tourists and residents decide their optimal crowding level by voting:
- Tourists “vote by feet”, eventually deciding to leave the destination;
- Residents “vote by voice”, through the election of the local government.

If \( N_T^* = N_R^* \) there is perfect empathy between tourists and residents.
If \( N_T^* < N_R^* \) the binding constraint is the one set by tourists, who impose their decision by leaving the destination;
If \( N_T^* > N_R^* \) the binding constraint is the one set by residents, who will ask the destination’s management to limit the size of tourism flows by using the direct and indirect instruments of control.
References for Week 10
