Using focus groups and participatory landscape assessment to identify and evaluate ecosystem services: a case study in North West India.
To decide between different land-use options and optimal ecosystem management...

Environmental Capital Approach was piloted in the 1990s looking at:

- What people value?
- Why they valued it?
- Could this be substituted?
- At what scale it was important?

- Desk study
- Landscape character assessment
- Participatory exercise.

LANDSCAPE APPROACH: Based on:

Better understanding of the landscape, better environmental assessments, more informed decisions.

The results combine the professional/expert perspective with that of the stakeholders.
LANDSCAPE CHARACTER ASSESSMENT.

Landscape character: features and characteristics resulting from the interaction of physical and socio-economic factors that make each place different from each another.

Identifying

Important features

Enabling

Assessment of the scale of importance of ecosystem services and whether these could be replaced by others.

Describes how the landscape has changed over time and identifies the drivers behind these changes, enabling an analysis of the ecosystem services.
Applying LCA in the coastal plain of Kachchh district, Gujarat, India

Kachchh district, located in the north-western part of Gujarat, North-west India

Industrialisation has been more intense and important agricultural and natural ecosystems such as mangroves have been severely affected

This study focuses on the coastal plain of Kachchh

Gujarat is the second most industrialised state in India.

The Coastal Plain borders the Kachchh mainland to the north, the Gulf of Kachchh to the south and the Arabian Sea to the west.
Coastal plain

Main habitats

- Coral reefs
- Mangroves
- Mudflats
- Creeks
- Estuaries.

Rural livelihoods are dependent on these ecosystems.

- Agriculture
- Horticulture
- Animal husbandry
- Salt making
- Fishing

Industrial developments

Change in the landscape, deterioration of the local ecosystems and loss of the traditional livelihoods.
Main industries:
Cement
Chemicals
Fertilisers
Mining
Salt pans

It was **not possible to find the basis on which land use planning decisions are made**, but the location of the industry seems to be *ad hoc*, with little consideration for environmental and social issues.

Opportunity to use LCA and Focus groups

Identify the stakeholders and their interests (i.e. what matter to whom) and the ecosystem services that are changing with industrial development.
Phase 1 Ecosystem Assessment of the habitats in the Kachchh District

➢ Mapping and monitoring:
Remote sensing to determine land use and land cover.

➢ Landscape characterization:
To identify natural areas of the coastal plain. Environmental conditions, physical attributes, such as topography, as well as the vegetation type, characteristic ecological assembles/communities, including notable wildlife.

➢ Socio-economic evaluation of natural resource use (Focus groups):
To identify the environmental, social and economic issues of the coastal plain. Focus groups were carried out using a pre-prepared structured interview schedule.

Phase 2 Formulation of the Natural Area Profile

This brought together the results of the landscape and ecosystem service assessment in the context of existing plans, policies and strategies for the region, with the objective of balancing the priorities of ensuring the livelihoods stakeholders while at the same time maintaining important habitats and native wildlife. Strategic objectives were identified and an action plan outlined as the basis for developing an implementation strategy.
**LANDSCAPE CHARACTER ASSESSMENT**

Key characteristics/distinctive features and why these are important:

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<th></th>
<th>Pattern</th>
<th>Scale</th>
<th>Geomorphology</th>
<th>Complexity</th>
<th>Texture</th>
<th>Form</th>
<th>Line</th>
<th>Colour</th>
<th>Movement</th>
<th>Unity</th>
<th>Balance</th>
<th>Structure</th>
<th>Visual Dynamics</th>
<th>Perception</th>
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<td>Small</td>
<td>Simple</td>
<td>Smooth</td>
<td>Vertical</td>
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<td>Weak</td>
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<td>Very Complex</td>
<td>Very Rough</td>
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<td>Colourful</td>
<td>Boisterous</td>
<td>Frantic</td>
<td>Interconnected</td>
<td>Regular</td>
<td>Resilient</td>
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**DESK STUDY:** To form the basis for the field work

information about the climate, geology, soils, hydrology, culture, economy, history, flora and fauna

**FIELD SURVEY SHEETS:** To record information that was not revealed by the desk study

**TWO PARTS**

➢ To record the topography, land cover or land use

➢ To record the perceptions of the surveyor

Each site was characterised using consensus descriptors derived from the completed field sheets.
FOCUS GROUPS

The landscape assessment phase led to eight villages in different parts of the coastal plain being selected for participatory investigation.

1st Visit: Visits were arranged in May and June 2015

Pre-prepared semi-structured interview

Livelihoods
Culture
Landscape
Wildlife

The intention was to understand the relationships between these topics, and to identify any changes and/or problems that were being experienced.

2nd Visit: arranged in December 2015

Information Verification

Information displayed on a bilingual English/Gujarati poster

Communication with stakeholders
INITIALLY THE PROJECT WAS FOCUSED ON THE NEGATIVE IMPACTS OF AN INVASIVE SPECIES: *PROSOPIS JULIFLORA*
Spread through:
- agricultural and grazing land
- protected areas

Displace native species:
- *Prosopis cineraria*
- *Gugal (Commiphora wightii)*

Thorns affecting cattle

Pods indigestible for buffaloes and cattle

The perception of the people upon this species depends on their economic needs and the benefits they can obtain from it

- **SERVICES**
  - Pods
  - Gum
  - Honey
  - Cotton like substance
  - Alcoholic drinks
  - Wood
  - Charcoal
  - calorific value (4800 k cal/kg)

- **DIS-SERVICES**
The completed Natural Character Area profile resulted in a single 71 page document which included the strategic opportunities identified by the research.

http://gala.gre.ac.uk/16221/
CONCLUSIONS

➢ Industrialisation has brought some benefits to locals, but the impact has been overall negative.

➢ There is a need of an appropriate land use planning to allow an economic growth at both large and local scale.

➢ There is a need to integrate social, environmental and economic factors into management plans decisions.

➢ The Landscape Character Assessment would give a context for management decisions.

➢ Focus groups are a cost-effective tool to assess the state of ecosystem services.
THANK YOU!

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