LOC - VROM - ISOCARP
Young Planning Professionals Workshop

45th ISOCARP Planning Congress
18-22 October 2009
Porto | Portugal
THEME: Sustainable Energy and Spatial Planning

SITE: Douro Region
Theme: Sustainable Energy and Spatial Planning

Leading question: How to allocate (wind) energy sources, initiatives in renewable energy and find solutions for reducing the demand of energy without compromising the (spatial) qualities and interests of the Douro region?

Three approaches:

1) Strategies $\Rightarrow$ Balance

2) Spatial planning $\Rightarrow$ Eco-Logic

3) Urban design $\Rightarrow$ Links
Workshop Coordinators

Julia Lourenço (LOC)
Fernando Brandao Alves (LOC, Advisor Coordinator)

Pauline van den Broeke (VROM, Netherlands)
Yigall Schilp (VROM, Netherlands)

Javier de Mesones (ISOCARP, Spain)
David Prosperi (ISOCARP, U.S.A.)

Chair:
Zeynep Merey Enlil (Vice President, ISOCARP, Turkey)
Local
Portugal - 5

Asia - 5
China
Bangladesh/Canada
India
Iran
South Korea/Germany

Middle East - 2
Egypt
Israel

Europe - 9
Austria
Czech Republic
France/Czech Republic
Germany
Germany/Switzerland
Italy
Netherlands
Russia

Americas - 3
Brazil
U.S.A

24 YPPs – 19 International from 16 different countries
6 practicing planners…!!!!!
Group 1  **BALANCE**

Coordinators: Pauline van den Broeke and Yigal Schilp

Daniele Vettorato  Karl Bursa  Khan Rubay Rahaman  Melissa Castello

Nuin-Tara Key  Sheng Ying  Shiri Bass Specktor  Sofia Fernandes
RECOMMENDATIONS

CONTEXT

CONCEPT

Douro Region

UNESCO

Top Down

Bottom Up

Balanced Relationship
CONTEXT

Douro Region

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BALANCE

bottom-up  top-down
inside  outside
CONCEPT:
Increase energy production and efficiency without compromising the character of the region
CONCEPT:
Increase energy production and efficiency without compromising the character of the region

Inside UNESCO World Heritage Site
CONCEPT:
Increase energy production and efficiency without compromising the character of the region.
Strategy 1: Outside of UNESCO Heritage Site

Cultural Landscape: Challenge

Wind Energy Potential Sites

World Heritage Site

Existing infrastructure

allocation criteria: wind potential, landscape and environmental impact, existing infrastructure
Strategy 2: Inside of UNESCO Heritage Site

Sustainable Development: Challenge

Up

Porto

Pinhao

Pocinho

Bottom

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Strategy 2: Inside of UNESCO Heritage Site

Renewable Energy: Challenge
CONCLUSION

Integration between landscape and energy is possible

bottom-up

top-down

connectivity
energy production
energy efficiency
multiscale approach

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Group 2

**ECO-LOGIC**

Coordinator: David Prosperi

Sebastian Witte  Ana Esteves  Joana Pinho  Mohammad Maeiyat

Silke Rendigs  Stephanie Rüscher  Tatiana Badmaeva  Vojtech Novotny

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Porto | Douro 2009

ECO - logic planning for Douro Region
<table>
<thead>
<tr>
<th>The Douro Region</th>
<th>Concept Objectives</th>
<th>Scenarios</th>
<th>Conclusions</th>
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</thead>
</table>

THE DOURO REGION

- Depopulation: due to migration and negative natural growth
- People are mostly employed in the third sector (56%)

- Landscape heritage
- Energy consumption: only 27% of the production of energy within the region
- Wine production: important economic factor
- High quality of agricultural products (wine, olive oil, dried and fresh fruit)
- Growing tourism
POTENTIAL DEVELOPMENT AREAS
CONCEPT

Social Cohesion

Welfare  Education  Identity

Economy  Environment

EMPLOYMENT
OBJECTIVES

Improve Economical Functioning
Achieve Sustainable Spatial Environment
Boost Renewable Energies
APPROACH

„ECO-PDF“ - *Eco-logic Planning as a Driving Force to develop the region*

Installing renewable energy devices

- *small is beautiful*
- **BIG IS GREAT**
SCENARIO - „small is beautiful“

→ maximum benefit policy

bottom up - approach
forced by local investments
decentralized, also inside UNESCO World Heritage Site

“prosumer” approach:
producing + consuming =
energy independency
SCENARIO – „BIG IS GREAT“

→ maximum profit policy

top down - approach
forced by large-scale investments
centralized, outside UNESCO World Heritage Site

„proseller“ approach:
producing + selling =
dependency on the market
<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Potentials</th>
<th>Level of Concentration</th>
<th>Spatial Impact</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind Energy</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Electricity</td>
</tr>
<tr>
<td>Solar Energy</td>
<td>High</td>
<td>Medium</td>
<td>High, Medium</td>
<td>Electricity, Thermal Energy</td>
</tr>
<tr>
<td>Bio-Energy</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Electricity, Thermal Energy</td>
</tr>
<tr>
<td>Hydro Power (River)</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
<td>Electricity</td>
</tr>
<tr>
<td>Hydro Power (Reservoir)</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
<td>Electricity, Storage</td>
</tr>
<tr>
<td>Geothermal</td>
<td>None</td>
<td>Low</td>
<td>Low</td>
<td>Electricity, Thermal Energy</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Electricity, Thermal Energy</td>
</tr>
<tr>
<td>Impact on</td>
<td>small is beautiful</td>
<td>BIG IS GREAT</td>
<td></td>
<td></td>
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<td>-------------------</td>
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<td>------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>area consumption</td>
<td>++</td>
<td>++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>local economy</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>regional economy</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>employment</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tourism</td>
<td>++/-</td>
<td>+/-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>world heritage site</td>
<td>+/-</td>
<td>+/-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>population</td>
<td>+/-</td>
<td>+/-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>world heritage site (visual impact)</td>
<td>+/-</td>
<td>+/-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Investments       | from individuals    | from institutions      |
| Financial benefits| for individuals     | for municipalities     |
CONCLUSIONS FOR DOURO REGION

Renewable Energies do have a strong potential.

Their implementation cannot be taken at all costs.

A combination of the 2 scenarios would provide benefits mutual.

Small is beautiful demands high level of social identification.

Know-how of BIG IS GREAT should reinforce the region’s know-how.
THANK YOU FOR YOUR ATTENTION

BIG IS GREAT

small is beautiful
Group 3

**LINKS**

Coordinators: Júlia Lourenço and Javier de Mesones

Abdelkhalek Ibrahim  João Granadeira Cortesão  Julia Pinto  Kiduk Moon

Niels Kropman  Priya Sasidharan  Thomas Buhler  Wolfgang Aichinger

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Group 3 | Urban Design

Links

An urban design for a sustainable and low-carbon Pinhão
Work plan

Analysis
Problem mapping
- Imageability
- Public Space
- Energy & Water

Concept
Links for a low carbon village
- AF1 Socio-cultural
- AF2 Economic
- AF3 Physical
- AF4 Environmental

Actionplan
Focal areas 4, 3, 2, 1

Target
Sustainable & Low Energy
- Identity - heritage
- Water management
- Use of “green” energy
Analysis

Problem mapping

- Imageability
- Public Space
- Energy & Water
Analysis

Problem mapping

- Imageability
Analysis

Problem mapping

- Public Space
Analysis

Problem mapping

- Energy & Water
Analysis

Problem mapping

- Working zones
Analysis

Problem mapping

- Imageability
- Public Space
- Energy & Water
<table>
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<th>Concept</th>
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<td>Links for a low carbon village</td>
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<tr>
<td>- Imageability</td>
<td>- <strong>AF1</strong> Socio-cultural</td>
</tr>
<tr>
<td>- Public Space</td>
<td>- <strong>AF2</strong> Economic</td>
</tr>
<tr>
<td>- Energy &amp; Water</td>
<td>- <strong>AF3</strong> Physical</td>
</tr>
<tr>
<td></td>
<td>- <strong>AF4</strong> Environmental</td>
</tr>
</tbody>
</table>

**AF1**
Strong Community participation

**AF2**
Adaptive uses of heritage

**AF3**
Interaction local commerce - tourist

**AF4**
Connections
Urban fabric & River Spine
Topography

**AF5**
Watermanagement
Landscape
Micro-Climate
Sustainable energy-use and production
**Analysis**

Problem mapping

- Imageability
- Public Space
- Energy & Water

**Concept**

*Links for a low carbon village*

- **AF1** Socio-cultural
- **AF2** Economic
- **AF3** Physical
- **AF4** Environmental

**Actionplan**

*Focal areas 4,3,2,1*
Zone 1 - Heart

Rehabilitation
Staircases: Current situation
Staircases: Current situation
Staircases: Current situation
• Half-open surface
• Increase penetration of water
• Connection to the waterfront
• Visibility collective memory

Zone 3

Current

Design
Staircases: Current situation
Staircases: Current situation
Analysis

- Problem mapping
- Imageability
- Public Space
- Energy & Water

Concept

- Links for a low carbon village
- AF1 Socio-cultural
- AF2 Economic
- AF3 Physical
- AF4 Environmental

Actionplan

- Focal areas 4, 3, 2, 1

Target

- Sustainable & Low Energy
  - Identity – heritage
  - Water management
  - Use of “green” energy
“A design for a sustainable and low-carbon Pinhão while keeping in mind the collective memory of the past, dealing with the present and preparing for the future!”
Thank you very much for your attention
Thank you for your attention!

YPPs of 2009 Porto Congress
thank Pinhão.