Intensive agriculture vs. Tourism development: the need for integrated planning in the coast of eastern Granada (Spain)

J.L. Rivas Navarro, B. Bravo Rodriguez, C. Curiel Sanz
Department of Urban and Regional Planning, University of Granada, Spain
juanlu.rivas@ugr.es

In urban development policies, the idea that a community increases its competitiveness through adding economic sectors to its increasingly efficient “offer” seems to have become obsolete. We refer, for example, to the consolidation of communication infrastructure, the implantation of all types of urban resources, the diversity of the commercial fabric, diversification in employment opportunities. We also focus on economic sectors like tourism, cultural heritage, research and higher education, regional and local governance, etc. However, many territories have demonstrated how specialization can also be conducive to development. They have identified singular sectors and have been able to spatially localize the strengths and enhance them in detriment to other interests often unaffiliated to the local inherited development.

The Spanish Mediterranean coast has been over-exploited since the 60’s motivated by the tourist industry—specifically the “sun and sand” sector, which has produced an enormous real estate stock with a very seasonal occupancy. Among the negative effects of this exaggerated exploitation is the deterioration of the landscape or the overexploitation of water resources. This model of occupation has generated a chaotic urbanization in the majority of the coast, with the exception of a few protected natural spaces. The case of the province of Granada is paradigmatic. The lack of rail and road connections like the recent Mediterranean highway has resulted in a space of more than 50 kilometers of coast with atypical conditions that we might call “pre-touristic”, without massive real estate projects and a conserving potential for change. However, we are not talking about a protected natural space but rather a territory where the large scale tourist sector decided not to operate.

The necessity to exploit the hours of sun, the lack of rainfall and the absence of industrialization characteristic of Andalusia caused this territory to consolidate in the last three decades in to a type of intensive agriculture based on the greenhouse. Cultivating crops under plastic has been considered incompatible with tourism by the planners and urban designers of this territory. It is only now that the local authorities have become conscious of the necessity to diversify the economic sectors of local development and seek compatibility of both sectors in a sustainable and integrated plan.

Within the context of the Master of Urban Planning at the University of Granada, an research is carried out that attempts to singularize this coastal range, beyond the indistinct vision of the “plan del litoral andaluz” (PPCL). It is a multidisciplinary experience based on the participation of the local agents and focuses on identifying project criteria, ordering and territorial sustainable development. We present here the advances in this work in progress that seeks to rethink the future of the territory by integrating land use, multi-temporal, and innovation in both the agricultural and tourist sectors, and to exploit the natural resources while making the most of the landscape as well as the emerging local economies.

KEYWORDS: development, integration, agriculture, tourism, coast

Scenarios of livestock related greenhouse gas emissions in Austria

T. Winkler1, W. Winklhofer1
1 Inst. of Systems Sciences, Innovation and Sustainability Research, University of Graz, Austria
2 International Institute for Applied Systems Analysis, Laxenburg, Austria
thomas.winkler@uni-graz.at

The paper studies and compares existing livestock emission projections on three different spatial levels (global, European, national) and two sets of system boundaries (emission data considering the whole lifecycle and inventory data). It aims to provide insight in the validity of scenario data of national Austrian livestock emissions. The national greenhouse gas emission trends until 2030 - specifically for Austria - as well as EU-based assessments are used. Additionally, global emission data was extracted from the Representative Concentration Pathways (RCP) database for the period 2000 to 2100. By combining different datasets and extending national emission projections up to 2100 it is possible to connect national emission policies to international strategies. It becomes obvious that the goal of keeping average global temperature rise under 2°C (represented by RCP2.6), even when only looking at the livestock sector, is much more ambitious than any of the national projections. Furthermore, inventory emission data is compared to emission data considering the whole lifecycle of meat products in Austria. Emissions reported in inventories represent roughly half of those assigned to the livestock sector in life cycle studies.

KEYWORDS: livestock emissions, Emission scenario, Representative Concentration Pathway, Life cycle assessment, EU climate policy

5 - RCP Database. [Online]. Available from: http://ntrcat.iiasa.ac.at this was last accessed on 8/7/2012
INTENSIVE AGRICULTURE Vs TOURISM DEVELOPMENT:
The need for integrated planning in the eastern Costa Tropical of Granada

J.L. Rivas Navarro; B. Bravo Rodríguez; C. Curiel Sanz

Department of Urban and Regional Planning – University of Granada (Spain)
In urban development policies seems consolidated the idea that a country **increases its competitiveness** as economic sectors are added to your “offer” and these are increasingly efficient.
In urban development policies seems consolidated the idea that a country increases its competitiveness as economic sectors are added to your “offer” and these are increasingly efficient.

- the consolidation of communications infrastructure
- the implementation of all kinds of urban facilities
- the diversity of commercial fabric
- the diversification of employment
- focusing on economic sectors:
  - Tourism
  - Heritage
  - research and university
  - ‘supramunicipal’ or subregional governance
  - ...
However, many territories have shown how specialization has also been a good direction for development, identifying sectors and spatially locating unique strengths to enhance to the detriment of other interests occasionally outside the inherited local development.
The Spanish Mediterranean coast took place, from the sixties onwards, an excessive exploitation of the soil resource, driven by tourism -specifically by tourism known as “sun and sand”- which produced a huge housing stock -with an occupation too seasonal-, and deterioration of the landscape or water exploitation among other negative effects.
The Spanish Mediterranean coast took place, from the sixties onwards, an excessive exploitation of the soil resource, driven by tourism -specifically by tourism known as sun and sand- which produced a huge housing stock -with an occupation too seasonal-, and deterioration of the landscape or water exploitation among other negative effects.

This model of occupation has resulted in many cases an almost generalized conurbation coast, except for some protected natural areas.
In this sense, the case of the province of Granada is paradigmatic.

The lack of both rail connection and through the 'Autovía del Mediterráneo' has allowed today a space of more than 50 kilometers of coastline with very different conditions, we might call "pre-tourist", without massive urbanization and still considerable potential for change.
However we are not facing a protected natural area, but a territory where large-scale tourism sector decided not to operate.
The community of municipalities of the Costa Tropical of Granada. Set between the skirts of the Sierra Nevada, are around 20 cities that have formed a collective municipality.
It is a territory of around one hundred thousand stable inhabitants as well as seasonal residents in central towns and dispersed settlements about a territory in which the most important economical activities are tourism, agriculture and agro-industry as well as services.
The abrupt topography along the 50 km of coastline becomes less aggressive in small valleys near the waterways that make up its principal watershed, the greatest of which being the Guadalfeo River.
The watercourses are also channels that connect the coast to the interior, giving the group of towns into the Alpujarra living off agriculture and ranching an echo on the coast, a dual system that converts the geographic units into complex urban systems between mountain and coast.
This hydrographical network is what supports intensive agriculture, and the terraced hillsides and fertile valleys that are created by these waterways are completely occupied by this type of crop.
The need to exploit the hours of sunshine, low rainfall and the lack of industrialization characteristic of Andalusia, led to this territory to **consolidate in the last three decades a type of intensive agriculture based on the greenhouse.**
One of the characteristics of this activity is its visual presence over the hillside vegetation in which the parceled forms are structured to create the interior space of the subtropical climate.
The landscape impact of hillsides covered in white plastic is notable, eroding the biodiversity and making other types of development like tourism, the other source of economic income in the region, difficult.
Some works manifest the economic importance of the greenhouse agricultural sector for this territory, where the other economic source is seasonal tourism. In the attached outline we can see that although intensive agriculture has greatly developed in recent years, there is still a potential to double the amount of existing greenhouses. It is therefore an opportunity for employment and economic development that should seek complicity with other uses and mechanisms for integrating landscape to improve the biodiversity of the coastal territory.
These works manifest the economic importance of the greenhouse agricultural sector for this territory, where the other economic source is seasonal tourism. In the attached outline we can see that although intensive agriculture has greatly developed in recent years, there is still a potential to double the amount of existing greenhouses. It is therefore an opportunity for employment and economic development that should seek complicity with other uses and mechanisms for integrating landscape to improve the biodiversity of the coastal territory.

<table>
<thead>
<tr>
<th>Sup. Actual de Invernaderos (Has)</th>
<th>Sup. Potencial Invernaderos (Has)</th>
<th>Sup. Actual de Vega (Has)</th>
<th>Sup. Potencial de Vega</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almuñécar</td>
<td>0,25</td>
<td>0,25</td>
<td>349,54</td>
</tr>
<tr>
<td>Itrabo</td>
<td>23,24</td>
<td>23,24</td>
<td>0,00</td>
</tr>
<tr>
<td>Jete</td>
<td>1,51</td>
<td>1,51</td>
<td>91,11</td>
</tr>
<tr>
<td>Molvízar</td>
<td>65,48</td>
<td>127,65</td>
<td>35,62</td>
</tr>
<tr>
<td>Motril</td>
<td>1088,83</td>
<td>1750,41</td>
<td>1013,88</td>
</tr>
<tr>
<td>Salobreña</td>
<td>82,07</td>
<td>269,02</td>
<td>1090,15</td>
</tr>
<tr>
<td><strong>TOTAL (Has)</strong></td>
<td><strong>1261,38</strong></td>
<td><strong>2614,05</strong></td>
<td><strong>2614,05</strong></td>
</tr>
</tbody>
</table>

Number of jobs per Has of Greenhouse: 3,9
Number of jobs per Has of open field: 0,39
The cultivation under plastic has been considered by the planning and urban development of this territory as incompatible with tourism. It is now that local authorities are aware of the need to diversify the economic sectors of local development and need to support both sectors in an integrated and sustainable planning.
In the frame of the Master of Urban Planning (UGR) is carried out a research that is singling out this area of the coast, beyond the indistinct vision of the Andalusian Plan of the coast (PPCLA).

This workshop is a recent multidisciplinary experience with the participation of the social agents, economics and politics of the territorial studies and focuses on finding criteria of urban design, urban planning and sustainable development.
It is presented here this work in progress which seeks to rethink the future of this territory from the base of:

- the integration of land uses
- the ‘multitemporality’
- innovation in the agricultural and tourism sectors, among others
- the utilization of natural resources
- respect and enhancement of the landscape and the emerging local economies
**the rural space + integrators urban facilities**

An investment in the multifunctionality of the agricultural periurban space as a quality in itself in which ecological, landscape, patrimony, cultural, social, aesthetic, etc. that generate services (direct and indirect) to the population are realized together with the agricultural functions.

This project seeks to increase the functional diversity and cohabitation between the greenhouses, urban facilities, residence, tourism and heritage, generating hybridized crossroads that increase the urban network and re-qualify the agro industrial activity.
INTENSIVE AGRICULTURE VS TOURISM DEVELOPMENT: The need for integrated planning in the eastern Costa Tropical of Granada

J.L. Rivas Navarro; B. Bravo Rodriguez; C. Curiel Sanz UGR (GRANADA, SPAIN)
INTENSIVE AGRICULTURE VS TOURISM DEVELOPMENT: The need for integrated planning in the eastern Costa Tropical of Granada
J.L. Rivas Navarro; B. Bravo Rodriguez; C. Curiel Sanz UGR (GRANADA, SPAIN)
the rural space + integrators urban facilities

An investment in the multifunctionality of the agricultural periurban space as a quality in itself in which ecological, landscape, patrimony, cultural, social, aesthetic, etc. that generate services (direct and indirect) to the population are realized together with the agricultural functions.

This project seeks to increase the functional diversity and cohabitation between the greenhouses, urban facilities, residence, tourism and heritage, generating hybridized crossroads that increase the urban network and re-qualify the agro industrial activity.

The recognition of these other functions and the services generate permit:

<table>
<thead>
<tr>
<th>A more detailed knowledge of the territory.</th>
</tr>
</thead>
<tbody>
<tr>
<td>An integral evaluation of space, beyond productivity or economy.</td>
</tr>
<tr>
<td>A deepening of the identity of the agricultural periurban space, recognizing that multifunctionality has been revealed as a quality with a territorial and contextual character.</td>
</tr>
<tr>
<td>Enrichment of the vision of space in general to make decisions when planning and intervening.</td>
</tr>
</tbody>
</table>
INTENSIVE AGRICULTURE VS TOURISM DEVELOPMENT: The need for integrated planning in the eastern Costa Tropical of Granada

J.L. Rivas Navarro; B. Bravo Rodríguez; C. Curiel Sanz UGR (GRANADA, SPAIN)
The following items suppose the **programmatic repertory** towards which the projects in the different localizations can and should orient themselves, calibrating in each case more or less of each one and the possible combinations of all four.

<table>
<thead>
<tr>
<th>INTEGRATED PLANNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrating urban or territorial facilities, environment and municipality extension</td>
</tr>
<tr>
<td>A territory that recognizes itself and that prepares for the new infrastructures, sum of times.</td>
</tr>
<tr>
<td>Households, tourism, heritage: the historic city (accessibility)</td>
</tr>
<tr>
<td>The rural area, the agricultural and ranching support, urbanism hybrids.</td>
</tr>
</tbody>
</table>
As a **conclusion**, this set of actions and strategies assumes the mainstreaming of sectorial initiatives (of roads, area zoning, economic policies centred around sectors such as tourism and industry, etc) which go on to be discussed in horizontally converging platforms in search of coherence criteria.
Thanks for your attention

Juan Luis Rivas  juanluisrivas@ugr.es  @juawohl

Belen Bravo Rodriguez  bbravo@ugr.es
Thanks for your attention

Juan Luis Rivas  juanluisrivas@ugr.es  @juawohl
Belén Bravo Rodríguez  bbravo@ugr.es

9. Costa Ibérica MVRDV
10. Trabajos del Taller de Planes y Proyectos del Máster de Urbanismo de la UGR 2013_2014
11. Tesis Doctoral “Ecoestructura del Delta del Guadalfeo (Granada)” . Rocío Pérez Campaña. UGR.