Ecosystemic Approach To City: Exploiting Mobile Technologies For Monitoring Social Dynamics
TOWARDS SUSTAINABILITY COMPLIANCE ON BIOFUELS PRODUCTION AND USE: CRITERIA TO CONSIDER ON A CASE STUDY ON BIOETHANOL.

R. Diaz-Chavez, J. Woods
Centre for Environmental Policy ICERT Imperial College London South Kensington Campus, London SW7 2AZ
r.diaz-chavez@imperial.ac.uk

Under the EU Biofuels Directive (Directive 2003/30/EC) a series of initiatives have been undertaken across the EU member states to increase the proportion of biofuels used in transport. These initiatives have raised concerns regarding the sustainability criteria associated with the use of biofuels in all stages in the supply and use chain. The use of biofuels is related to the increase of local rural activities, environmental concerns, and to the need to reduce oil dependency and the observation of international agreements to reduce GHG. However, several environmental, economic and social issues have been raised about the production and use of ethanol. This paper presents some of the sustainability criteria designed on the basis of an ongoing project in Europe, the JBSF (Bioethanol for Sustainable Transport). This project entails an extensive substitution of fossil fuels (petrol and diesel) with bioethanol, and aims to lead to a market breakthrough. The sustainability performance is based on selected indicators of sustainability designed for a specific framework. Preliminary results are presented using the data gathered from the first year of implementation of the project. The framework is also based on the ongoing review of agricultural compliance in Europe regarding bioenergy crops and environmental compliance, along with trade considerations on bioenergy crops grown in developing countries. These results are expected to contribute to an initiative for setting sustainability standards and a certification system in Europe.

ECOSYSTEMIC APPROACH TO CITY: EXPLOITING MOBILE TECHNOLOGIES FOR MONITORING SOCIAL DYNAMICS

R. M. Pulseli 1,2, F. M. Pulseli 1,2, G. Ratti 1, E. Tezzi 1
1 Dip. Chemistry and Biosystems Sciences, University of Siena, Via della Dama 24, 53100 Siena, Italy
2 SESU_Lab City Lab, MestreVista Institute of Technology (M7), Cambridge, MA, USA
pullel@unisi.it

The general characteristics of an urban system can be described using patterns which vary at a macro level thanks to interaction between parts of the system at a micro level. An ecosystemic approach to studying cities suggests we should achieve a holistic vision of urban systems. In the case of the city and society, and bearing in mind this new viewpoint, this study focuses on the interaction of single parts, for example between individuals, and between the parts and the whole. This configuration is the tangible example of the organisation of the city. We describe an urban system, its changeable and in perpetual motion. The first stage aims to visualise the patterns of the city's social dynamics. A recent study, called Mobile Landscapes, was carried out in collaboration with an Italian telecommunications company. While exploiting new techniques developed for mobile phone systems, this study presents a spatial analysis of social dynamics in urban areas. These techniques are based on mobile phone activity data that were geo-referenced and represented in a series of maps in order to provide instant information on the intensity of human activity in any particular city. A case study was developed in the metropolitan area of Milan. Telephone traffic data was monitored for each antenna (cell); the latter recorded the number of users connected while they make a call. Based on the information received regarding the position and activity of mobile phone antennas, it is possible to monitor daily variations and how these variations change over time. Based on the statistics, we are in a position to presume that the telephone traffic in a certain region is indicative of the effective population density and its variation in 24 hours. Variations in telephone traffic, monitored in time and space, portray city life based on people's actual movements and how they use space and infrastructures. Different ways of using urban space can be monitored and measured over time. There are many possible ways in which this tool can be used to manage, program and solve practical problems in a city because this technique illustrates overall behaviour and recognises any disturbances, perturbations or fluctuations that can cause the results to vary. The Mobile Landscapes projects is an opportunity to understand the mutating complexity of cities. It is based on temporal rather than spatial patterns and for this reason refers to a new paradigm for urban studies.

FACULTATIVE ONTOGENETIC NICHE SHIFTS AND OVERCROWDING IN SALMONIDS: CHALLENGES TO REHABILITATION

R. Primicerio 1, P-A Amundsen, A. Klemetsen, R. Knudsen
Norwegian College of Fishery Science, University of Tromsø, Tromsø, Norway

In many fish populations, interaction and demographic parameters are often stage structured in that ontogenetic niche shifts are associated with maturation. The resulting competition operating within but not between stages provides a realistic model of equilibrium density. The alternative stable states predicted by structural population models with pure intra-stage competition suggest the existence of fish populations with either low or high (overcrowded) equilibrium density, as...
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Authors & affiliations:
R. M. Pulselli *, F. M. Pulselli 1, C. Ratti 2, E. Tiezzi 1.
1 Dep. Chemical and Biosystems Sciences, University of Siena, Via della Diana 2A, 53100 Siena, Italy.
2 SENSEable City Lab., Massachusetts Institute of Technology (MIT), Cambridge, MA, USA.
*e-mail: pulselli@unisi.it

Abstract:
The general characteristics of an urban system can be described using patterns which are visible at macro level thanks to interaction between parts of the system at a micro level [1]. An ecosystemic approach to studying cities suggests we should achieve a holistic vision of urban systems.

In the case of the city and society, and bearing in mind this new viewpoint, this study focuses on the configuration of interaction between single parts, for example between individuals, and between the parts and the whole. This configuration is the tangible example of the organisation of the system; it is changeable and in perpetual motion [2].

The first stage attempts to visualise the patterns of the city’s social dynamics. A recent study, called Mobile Landscapes, was carried out in collaboration with an Italian telecommunications company. While exploiting new techniques developed for mobile phone systems, this study presents a spatial analysis of social dynamics in urban areas. These techniques are based on mobile phone activity data that were georeferential and represented in a series of maps in order to provide instant information on the intensity of human activity in any particular city.

A case study was developed in the metropolitan area of Milan. Telephone traffic data was monitored for each antenna (cell); the latter recorded the number of users connected while they make a call. Based on the information received regarding the position and activity of mobile phone antennas, it is possible to monitor daily variations and how these variations change over time. Based on the statistics, we are in a position to presume that the telephone traffic in a certain region is indicative of the effective population density and its variation in 24 hours.

Variations in telephone traffic, monitored in time and space, portray city life based on people’s actual movements and how they use space and infrastructures. Different ways of using urban space can be monitored and measured over time. There are many possible ways in which this tool can be used to manage, program and solve practical problems in a city because this technique illustrates overall behaviour and recognises any disturbances, perturbations or fluctuations that can cause the results to vary [2, 3].

The Mobile Landscapes projects is an opportunity to understand the mutating complexity of cities. It is based on temporal rather than spatial patterns and for this reason refers to a new paradigm for urban studies [4].
