Naturalness in the eco-city of Freiburg

Almost a year ago, some of us started reflecting on what constitutes a green city thinking on Freiburg, the city we study in.

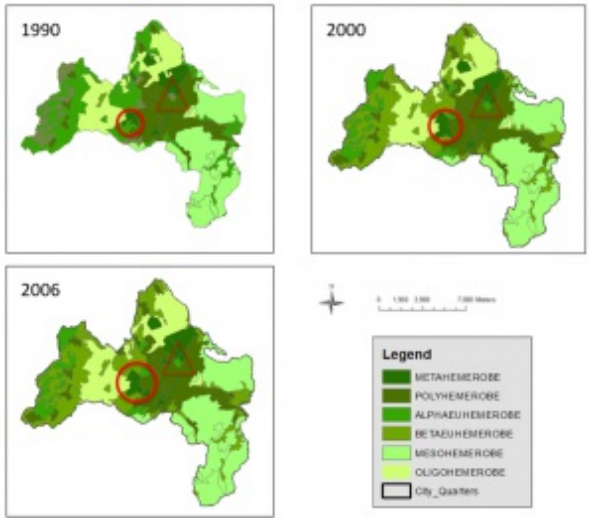

Source: Cluster GreenCity Freiburg

We knew that Freiburg is world famous because of being a green city and it is considered the "eco-city" of Germany. Of course by living there we had observed the intense use of bicycles, the quick access to nature by the surrounding Black forest, the local green politics (and its green mayor), the history of Freiburgers as being against nuclear energy and their commitment to local movements that promote sustainability. Furthermore, through one of our master module's we learned of its renewable energy and transport policies, by which Freiburg aimed to be "the city of short distances"; the sustainable forest management; the landscape conservation efforts and the restrictions to land use, by putting emphasis on the quality of urban space.

All in all, Freiburg seemed to be a green city if we looked with a top-down or bottom-up approach! Still, we wondered what is it different from Freiburg compared to other *"green"* cities that has made it so famous during the last decades? Is it possible that during the last 20 years Freiburg has become "greener", meaning more *natural*?

For this analytical challenge we used the Hemeroby theory (Steinhardt et al.) which defines different levels of naturalness (or its opposite: artificial) to the diverse land covers that compose a city. We distinguished different uses of land such as: industrial or commercial units, artificial areas, vineyards, non-irrigated arable land, pastures & forests (broad-leaved, coniferous & mixed)*. The Hemeroby theory gives a guidance on where to place the different land uses in the natural – artificial spectrum, however it is not definitive and it depends on the analysis and case study how to use it. The conceptualization and discussion of what is natural can be very interesting: "if humans are natural, everything produced by them is natural" vs "there is a natural system and a human system". For us, road and rail networks and associated land is completly *artificial*, while untouched rocky, peatbog and tundra regions is completly *natural*.

The results: During the years, 1990, 2000 and 2006, Freiburg had the same level of naturalness; with a slight increase of the coefficient (from 0.494 to 0.504). This means that during this period Freiburg has a degree of *far from natural*, having strong influence of humans. Nonetheless, this naturalness level is 3 levels above natural and 3 levels below artificial.



Even though there were land use changes in Freiburg, these were in the same naturalness-articial level, for example some pastures were changed to sport facilities; or, some non-irrigated land changed to discontinuous urban fabric or pastures.

This lead us to the conclusion that the decrease or stagnation of naturalness does not always correspond with the relative "greenness" of a city. Then, what constitutes a green city? The common environmental atmosphera towards environmental friendly activities? The strong support of the government which

increases the awareness of the sustainability?

And, what should be the basics of a green city? With this blog we have the challenge to dig into that

References:

Steinhardt, U.; Herzog, F.; Lausch, A.; Muller, E.; and Lehmann, S. 1999. Hemeroby index for landscape monitoring and evaluation. *Environmental Indices- System Analysis*. 237-254

*The information on land cover use was obtained from the Corine Land Use Dataset and it was analysed by GIS. This analysis was done by: Camila Flórez Bossio, Steffen Maschmeyer, Ina Soetebeer & Aura Villanueva.

photo by: JanC.Beck