

## **A tribute to the debate of urban compactness: A morphologic study and models using Landsat imagery in West Siberia**

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Russia continues to play a key-role in world energy supply and its energy sector has been the principal driver of the country's economic recovery since the late 1990s. Russia is the world's biggest producer and exporter of natural gas and the second-largest producer and exporter of oil. Oil and gas basins are concentrated, especially in West-Siberia; the region produced in 1999 6% of world's oil production and nearly 23% of world's gas production. The area was devoted to energy production 30 years ago and therefore became a rapid process of urbanisation and industrialisation when the population was very scattered before. Between 1959 and 1979, its population grew from 1.1 million to 3.2 millions. Moreover, among the 28 towns, 23 have been created since 1960 out of which only 9 are not related to oil or gas-production. We conduct a research program with the French Research Ministry, on spatial organisation models of those new towns based on RS and GIS approach. The project includes two parts; one at urban scale and the second one at urban system scale looking at the whole region. We will present a spatial analysis of urban shapes at regional scale, using Landsat imagery and statistics. Then, we will discuss what the inhabitants of those towns express when they answered our questionnaires: they usually felt their own town as compact. The perception of compactness of the town is also an old debate in West. In fact, being against or for urban sprawl is a question that has been debated over centuries and still nowadays as the debate is related to the sustainable development. From Landsat imagery, we will use several morphologic index. We will discuss the results, their similarities and differences, and we will try to build a better understanding of the emergence process of those towns considering their age, population, the energy-industry they emerged from and so on. Finally, we will try to conclude with an evaluation of the West-Siberian towns' compactness compared to European typology that M. Guerois (2003) made up and discussed using Corine Land Cover (CLC) which provides classified Landsat imageries.