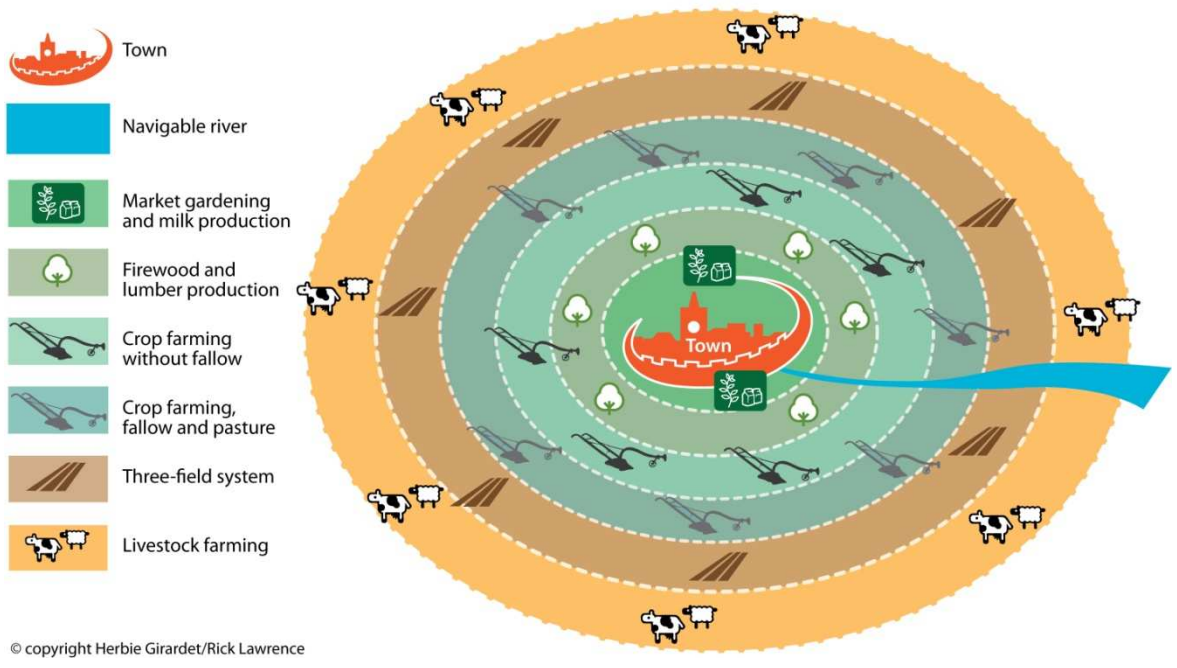
# Creating Regenerative Cities

**Herbert Girardet**

At the start of the 21st century, humanity is becoming a predominantly urban species and this represents a fundamental, systemic change in the relationship between humans and nature. Today the ecological footprints of cities cover much of the Earth's surface, and urban energy use is intimately linked to climate change. The challenge we now face is no longer just to create *sustainable* cities but truly *regenerative* cities: To assure that they do not just become resource-efficient and low-carbon-emitting, but that they positively enhance rather than undermine the ecosystem services they receive from beyond their boundaries.

Creating *regenerative cities* primarily means this: *To develop comprehensive political, financial, and technical strategies to assure a restorative relationship between cities and the ecosystems from which they draw resources for their sustenance.*

**"Agropolis": the traditional town embedded in its local landscape**




Towns and cities cannot exist in isolation from nature. They need sustenance for their people and this requires elaborate resource supply arrangements. In his book *The Isolated State,* the 19th century German economist and geographer Johann Heinrich von Thünen described how traditional human settlements were systemically linked to their local landscapes via a range of concentric rings representing various modes of cultivation. In the absence of efficient transport systems, cities depended on nearby market gardens,

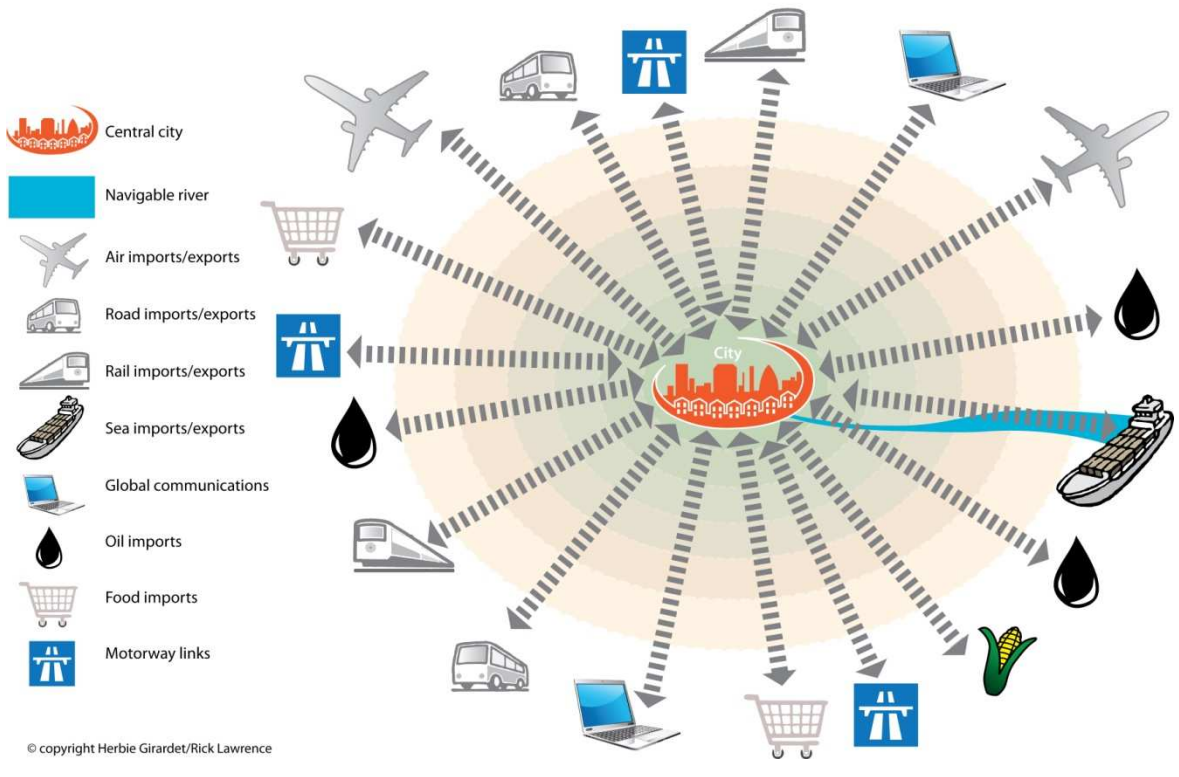
orchards, forests, arable and grazing land, and local water supplies for their sustenance. I have chosen to use the term “Agropolis” for this traditional type of human settlement.

**The rise of “Petropolis”**

All this changed fundamentally with the industrial revolution. The new fossil fuel-based technologies severed the intimate linkage between towns and cities and their local hinterland. The modern city can be described as “Petropolis”: all its key functions – production, consumption, and transport – are powered by massive injections of non-renewable fossil fuels. Cities were no longer centers of *civilization* but of *mobilization*, making long-distance access to resources possible as never before; they increasingly relied on globalized production as well as consumption. But with much of the “easy” coal, oil, and gas now used up, and with climate change and other forms of pollution an ever-growing concern, Petropolis is becoming an increasingly precarious habitat for humanity.

The concept of Petropolis needs to be challenged fundamentally as its systemic flaws become increasingly apparent. The challenge now is for us to face up to the environmental impacts of modern urban living before it fatally undermines the health of our planet home. The “planetary boundaries” that are becoming evident in the face of global industrialization, urbanization, and population growth have major implications for urban decision-making.

**“Petropolis”**

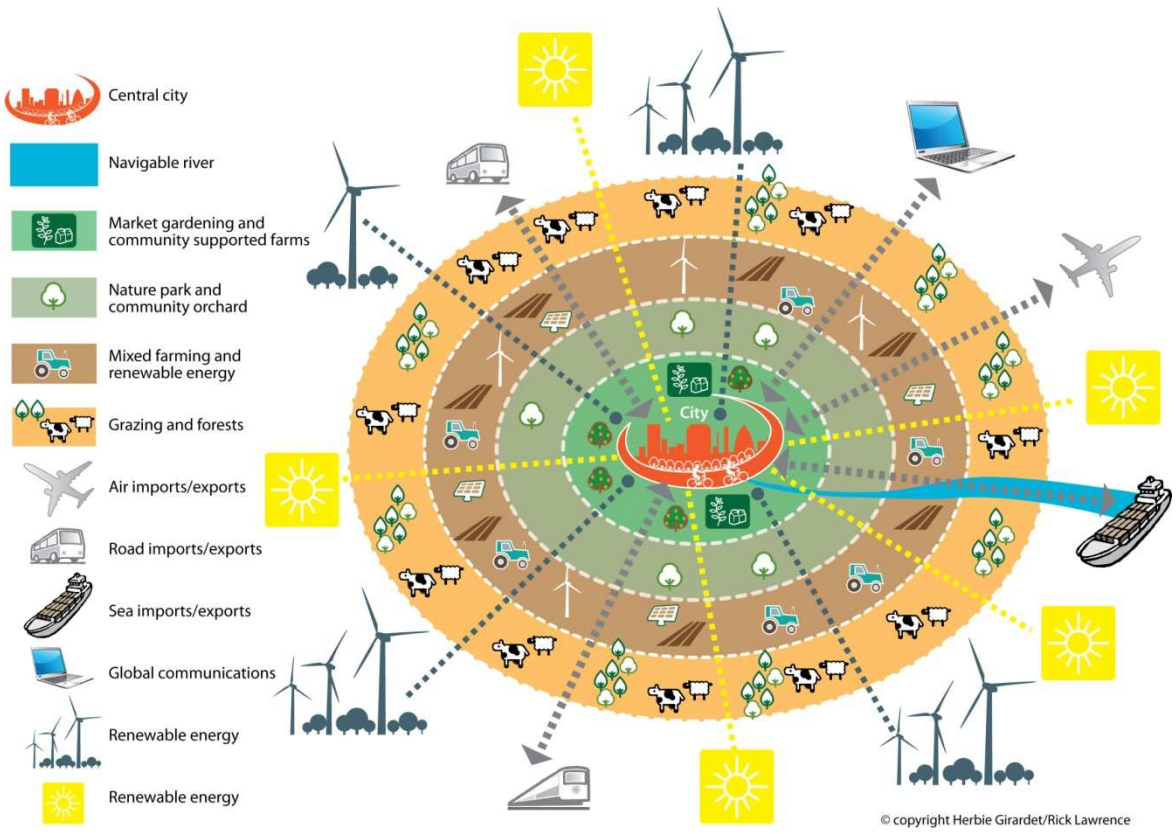



**From Petropolis to Ecopolis**

At the start of the 21st century, a primary task for city people and urban policymakers is to try and map out what is *necessary* in order to try and expand the parameters of what can become politically *possible*. We want urban environments that are free from

pollution and waste accumulation, but we also need to get to grips with the impacts of cities beyond their boundaries. And we want our cities to provide pleasant spaces for work, recreation and human interaction, and efficient mobility. Can we create human habitats that satisfy the needs of people whilst also assuring ecological resilience?

**“Ecopolis”**




This is where the concept of “Ecopolis” – an ecologically as well as economically restorative city – becomes relevant. It proposes a new integration of the human habitat within its local environment. A new emphasis on regional food needs to be augmented with local, renewable, modern energy supplies. Renewable energy technologies allow us to bring the energy economy home, back to the urban region, from far-flung oil fields and coal mines.

Already many smaller towns across Europe have substantial supplies of wind power, biogas, and solar energy from their local region. Both Europe and the United States are experiencing the rapid growth of farmers’ markets and community-supported agriculture. Currently, such developments are mainly driven by private initiatives. The challenge we face is to initiate public policies that contribute to the emergence of environmentally regenerative cities, and to create new businesses and jobs from greening the urban economy.

The ecological, economic, and social *externalities* of our urban systems need to be addressed in new ways. Cities exist by taking resources from nature. Ecopolis will actively help to regenerate natural systems from which it draws resources.

To initiate projects for restoring the health of forests, soils, and aquatic ecosystems that have been damaged by urban resource demands certainly goes beyond strictly urban policy parameters. Creating frameworks for appropriate action will involve both political and business decisions – with a spectrum ranging from transnational to national, regional, and local levels of decision-making.

The following list of policies is based on proposals I made for Adelaide eight years ago, which were scrutinized and largely implemented by the government of South Australia under Premier Mike Rann. Metropolitan Adelaide, with a population of over a million people, has become a global leader in initiating regenerative urban development:

**Efficient use of energy**
• Make efficient energy use by all sectors a key focus of urban planning and management
• Modify building codes to make resource-efficient building practice the norm
• Create energy sufficiency standards to limit per capita energy consumption

**“Solar city” development**
• Introduce feed-in tariffs for renewable energy, enabling owners to sell electricity to the grid at preferential rates
• Support renewable energy development as an important new manufacturing industry

**Water security**
• “Waterproof” cities by encouraging water efficiency and rainwater collection in households and businesses
• Make wastewater recycling and reuse a central plank of water policy

**Zero waste**
• Develop new industries for processing organic wastes into soil-enhancing materials
• Implement policies for the cost-effective reprocessing of all technical wastes
• Use zero-waste policy to create new green businesses and jobs

**Local food**
• Encourage local peri-urban food production for local markets
• Encourage farmers’ markets and community-supported agriculture

**Sustainable transport**
• Create new pedestrian zones wherever possible
• Create a comprehensive network of dedicated cycle lanes across cities
• Encourage public transport by improving its attractiveness, frequency, and flexibility
• Stimulate development of new electric- and fuel-cell vehicle technology
• Encourage car-sharing as a key feature of urban transport

**Nature and the city**

• Encourage tree planting for biodiversity and soil erosion control in and around the city
• Make carbon sequestration a key aspect of peri-urban tree planting
• Develop initiatives to help restore forests in remoter areas

**Green business**
• Boost green business by effective use of government procurement
• Encourage resource efficiency in all businesses
• Create “green business incubators” across the city

**A culture of restorative urbanization**
• Ensure that it is addressed through education, the media, and public events
• Ensure that all citizens have a stake in restorative development
• Produce regular reports on implementation of eco-restoration policies and practices

The challenge now is to initiate a mutual learning process in which cities across the world can exchange experiences and information about best policies and practices of regenerative urbanism. It seems to me that the Heinrich Böll Foundation could make a major contribution to this vitally important process.

---

Prof. Herbert is a co-founder of the World Future Council. He is a writer and filmmaker on human impacts on the global environment and has worked as a consultant on regenerative development in many parts of the world. Books and reports available from – http://www.worldfuturecouncil.org.