

# **Territory + High-Speed Rail – (Agriculture-Zones + Eco-Parks + Seashores). Proposal for Strategic Planning of China’s Coastal Region Starting with No-Build Zones**

*Stefan Rau*

(Dipl.-Ing. Guest Professor Lanzhou University of Technology, Director of Metropolitan Synergies Shanghai)

## **1 ABSTRACT**

It is fair to expect that a significant portion of the estimated 300 million additional residents migrating from China’s rural areas to towns, cities and metropolitan areas by 2030 will end up moving to China’s coastal region and especially to “BeiShanGuang” – the three major agglomerations on China’s coast: Beijing-Tianjin-Bohai Rim, Shanghai-Yangtze River Delta and Guangzhou-Pearl River Delta.

Considering the current development within these three growing agglomerations and in addition the other expanding cities and metropolises lining the coast in China, there are likely three major challenges: (1) a suboptimal distribution of population and economic activities with respect to short distances for services and products meant in a holistic way, which leads to (2) overburdened or overscaled infrastructure and (3) a threat to valuable natural and cultural land becoming largely urbanized with utter consequences for resources like agricultural and ecologically sensitive areas including environmental quality challenges for water, soil, air, biodiversity. Some of China’s best farmland can be found in the northern and central areas along China’s coastal region coinciding with growing urban areas. Ecologically sensitive river deltas are all along the coast and mountainous landscapes and island chains are found in the southern areas coinciding with growing cities. Effects of climate change may additionally contribute to negative impacts for settlement concentration in coastal areas. And further, it may not be an optimal service efficiency of infrastructure if the distribution of population and jobs overly concentrates in China’s coastal areas.

Trends for population and jobs allocation and observations of current urbanization patterns as they happen along the coast with a large amount of authority by as well as competition between local governments support the argument that it may be necessary for the benefit at large to organize a kind of “meta-regional planning” effort for the China Coastal Region one of the “global super-regions”, hotspots of global population agglomeration.

Already the Chinese Government and associated institutions have done much research, forecasting and planning on the national level. The central government and its ministries are joined by numerous research and planning institutions to conduct national plans for various aspects such as transportation, urban structure, land resources management, environmental protection etc. addressing some of the issues mentioned above. In addition to these national plans there are numerous initiatives addressing the needed development and strengthening of central and western city clusters and regions as well as initiatives for developing “a new countryside” and a socially harmonious society etc. Plans and regulations for farmland protection, nature preservation and cultural heritage conservation have been enacted as well. All of these are very laudable initiatives by the Beijing as well as the provincial and regional governments facing this enormous challenge.

In light of the magnitude of tasks at hand in China, it is fair to assume there may still be some questions one might ask:

1. Is it possible that, even in light of these extremely laudable initiatives, the forces that shape the “new economic geography” with chinese characteristics gain such strength that China’s Coastal Region may become overly dense developed eventually to its own and the country’s disadvantage?
2. If there is a chance for the answer to the above being “maybe” or even “yes”, it may be worth anticipating interventions that may lead to more beneficial urbanization patterns?
3. Would a planning effort for the entire region at such a grand scale have the chance to succeed and how could it be organized and what kind of initiatives could be the outcome and what kind of instruments can be used and what legal status could it obtain and how can it be implemented?
4. Will the grand, unprecedented infrastructure projects - such as high-speed rail, ports and logistics, new development areas etc. some of which already implemented and many others under way - provide a fantastic opportunity for development concentration and complementary land resources conservation?

5. Will the social development and raising living standards and increasing leisure activities even support such development prohibition zones creating beneficial synergies with and complementing developed and developing concentration areas?

## **2 URBANIZATION & SPRAWL VERSUS CONSERVATION OF GREEN**

### **2.1 The situation: Urbanization and suburbanization, increasing differentiation**

Population migration from the rural areas into towns and cities with a large share of migrant workers both in blue collar as well as white collar industries is an ongoing trend in China. The physical development of urbanization, industrialization and service industries along with infrastructure construction is a structured development following China's current planning paradigm. Beyond this, there is a development that supports the idea of a self-regulating spatial distribution of population and industries – primarily due to cost: „Beishangguang“ is experiencing difficulties retaining their migrant workforce as well as their companies. This is leading to relocations of factories inland and to second tier cities within the three primary regions as well as towards the center and western China. This trend is being supported by an increasing accessibility due to highways and high-speed rail and at the same time steady increases in cost of living and housing in the centers of „Beishanguang“. However, in the process of these three center cities advancing increasingly to global cities, I would like to argue that these three regions will continue to attract residents and businesses from within China as well as from abroad following the „rules“ of the „new economic geography“.

### **2.2 The threats: Sprawling development in between - hard to control and to structure**

Urban, suburban, industrial areas are „growing“ together along highway corridors and cities, towns, counties are competing for developments locating within their jurisdiction. Commercial and industrial developments are lining highways and are sprawling into the fringes of cities, towns and villages – much like we know it from north american and european territories.

This is happening within the three primary regions. But this is increasingly also happening between these regions along the coast – in Guangxi, Guangdong, Fujian, Zhejiang, Jiangsu, Shandong, Hebei, Liaoning. And this is what I would like to call attention to!

### **2.3 The prime opportunity: Nodal development concentration plus conserving open space in between**

Almost all larger existing, ongoing and planned infrastructure projects would suggest nodal development. Nodal infrastructure such as High-Speed-Rail with stations, ports, special economic development zones, export processing zones, innovation industry zones etc. suggest a concentration of development. This concentration ought to be promoted while development away from infrastructure should be restricted. This is a tremendous opportunity for a balance between development and green space.

## **3 SELECTED PREVIOUS AND ONGOING REGULATORY AND PLANNING INITIATIVES**

### **3.1 Overall strategy of regional development in the eleventh and twelfth five year plans**

„Advancing the Western Region development, revitalizing Northeast China and other industrial bases, promoting the rise of the central region, encouraging the eastern region to take the lead in development, supporting the development of old revolutionary bases, ethnic minority areas and border areas“ were some of the strategic goals of the eleventh five year plan and many of these targets have already been accomplished from 2006 and 2010 as has been reported in March 2011. The special role of the eastern region has been reaffirmed for 2011 as „to make innovations in systems and mechanisms and transform the pattern of development, and in continuing to take the lead in development“ for China as a whole.

### **3.2 Previous national and regional planning Initiatives affecting the coastal region**

It goes without saying that a myriad of plans and developments and infrastructure initiatives have already been executed on many scales and in an organized and systematic way in the recent past in China. Some are listed below selectively:

- Local development plans by all cities: 20-year comprehensive masterplans, 2000 – 2020 and mostly also concluded 2010 – 2030 plans



- Some regions have produced strategic and structural plans
- Provinces have produced structural plans
- Beijing-Tianjin-Tangshan “JingJinTan” Regional Structure Plan
- Yellow River Delta – Shandong Urban System Plan
- Yangtze River Delta Structural Plan
- Pearl River Delta „Super“- Region Integrated Strategy
- National Urban System Plan 2006 - 2020

All of these included profound research and that may be used as a basis for the suggested more specific and larger scale plan for the China Coastal Region.

### 3.3 Legal land zone categories: from development concentration zones to no-build zones

The implementation has started of the land type categories based on what has been set in the 11th five year plan under the heading:

„Promoting the Formation of Development Priority Zones:

- *Development-Optimized Zone*: regions with high density of land development and declining resource and environmental bearing endowment
- *Development-Prioritized Zone*: regions with relatively strong resources and environmental bearing endowment, as well as favorable gathering conditions of economy and population
- *Development-Restricted Zone*: regions with weak resource and environment bearing endowment, poor gathering conditions of economy and population, which are crucial to ecological safety in a wider area or across the country
- *Development-Prohibited Zone*: natural reserves of all kinds established in accordance with law.“
- (National Development and Reform Commission: „The outline of the Eleventh Five-Year Plan – For national economic and social development of the People’s Republic of China“, 2006-2010)

### 3.4 Nature and culture protection and conservation

China has a series of development regulation policies and land categories restricting construction and land use in place. The national and even some international types of development prohibition zones and there quantities as formulated in the 11th FYP are: National Natural Reserves (243), World Cultural and Natural Heritages (31), National Landscape Parks (187), National Forest Parks (565), National Geology Parks (138). Many of them are in the coastal region and their land areas range from several hectares to hundreds of square kilometers. And of course in addition to these national level parks provinces and municipalities assign and administer parks respectively.

### 3.5 Farmland Protection

The Town and Country Planning Act from 2008 spells out in article 17 that it prohibits „any unit or individual in basic farmland protection areas to build kilns, building, graveyards, quarrying, mining, piling of solid waste or destruction of basic farmland for other activities...”. In article 41 it says: “...agricultural land shall not be occupied and if it is unavoidable, the occupation of agricultural land shall be in accordance with the "PRC Land Management Law" ... relevant provisions of agricultural land use change requires the approval by the city and county government planning departments for urban and rural construction permits are issued by the village...” An increasing number of violations against this law has been reported and published online.

## 4 THOUGHTS ON RESEARCH ORGANIZATION FOR COASTAL PLANNING EFFORT

To know exactly what the opportunities, challenges and conflicts are between urban development, nature, culture, farming and rural development between economic, social and ecological concerns a comprehensive research ought to be undertaken as a basis for this planning effort. A balance has to be found between

researching enough detail while keeping an eye on the relevance for the bigger picture of the overall coastal region.

#### **4.1 Categorizing the issues**

I wish to suggest organizing the issues along an interdisciplinary set of 10 systems I have developed previously to plan, monitor and evaluate eco-efficient territories: Green Economy, Social harmony, Land use efficiency, Transportation efficiency, Landscape ecology, Water efficiency, Energy efficiency & - sustainability, Materials- and Waste efficiency, Culture & Tradition integrity and Eco-efficient lifestyle choices. Along these systems issues can be arranged, communicated, visualized and evaluated. A framework of topics and methods along these 10 systems needs to be developed as a research grid for the project at large in such a way that all the local findings can integrate into the overall coastal region research.

#### **4.2 Involving local governments, institutions, consultants and organizing the subregions**

To tap into as much local intelligence as possible and combine it with experts knowledge it is suggested here to engage local governments, experts, universities and local, national and international consultants to perform a comprehensive research. Local task forces ought to be formed to research the various issues and local steering committees will guide the discussions in local round table town hall meetings and communicate the results in the overall conferences of delegates.

#### **4.3 Comprehensive mapping and GIS base**

In the process of this planning effort visualization and mapping to clearly communicate and locate the various results are extremely critical. I would suggest, that for this kind of meta-regional planning a specific kind of visual language ought to be developed to be specific enough while leaving enough flexibility for the local players to micro-adjust spatial planning decisions. What needs to be mapped and overlaid is existing land uses, all plans from all levels and all themes, comprehensive environmental information, ecological and social sensitivities, environmental challenges and opportunities. The four land categories as defined in the 11th five year plan: development-optimized zones, development-prioritized zones, development-restricted zones, development-prohibited zones should all clearly be mapped. Different views of things and conflicts will be made apparent as well as numerous redundant and sprawling developments will become obvious. The research findings and all the mapping will be fed into a large GIS base that allows complex thematic analytical maps for clear communication of economic, ecological and social concerns.

#### **4.4 Communication platforms: websites, qq-blogs, local-, regional- and overall conferences**

The research findings may be shared in an open or semi-public website among the participants and information and comments can be shared in an interactive manner. In fact all the research might be communicated this way with different levels of access limitations that may change during the process as results might be presented and communicated with a larger audience as the project proceeds.

### **5 THOUGHTS ON INSTRUMENTS FOR COMMUNICATION, REGULATION & APPROVAL**

What would be the nature of such a meta-regional plan if it wants to produce meaningful and operational results? A series of formal legal instruments – like the four zones types defined in the 11th FYP - as well as informal recommendations and initiatives ought to be developed. Zoning of these four land categories ought to be mapped and backed by legalized status for approvals of four main land zone categories.

In the process of researching and communicating the plan, key projects may be identified and through the involvement of many individuals, institutions, companies and government these projects and initiatives might be instigated and carried out in public and private partnership.

Visualizations like maps and illustrations etc. of the development concentration and the development prohibition zones ought to be an important outcome to create transparency and predictability. The other two zones allow more flexibility for the local players to adjust.

#### **5.1 Some suggestions for possible results**

What might we like to add to the list of great planning initiatives in China above?

Maybe some more details such as:



- Comprehensive visualization and overlay of the various interests: infrastructure, development, farming, ecology etc.
- Research on the actual developments all along the coast
- Identification of negative developments (i.e. unpermitted developments)
- Specifically tying together the existing plans
- Review and if needed revision of plans
- Specifically allocating the intended farmland protection zones and enforcing them
- Research on possible processes that improve development efficiency
- Initiatives to educate, train and involve local leadership
- Strategic Public and Private Partnerships (PPP) in the process
- Two or three parallel processes: one open process soliciting public ideas and opinions and formal process involving the various levels of government and one professionally moderated process
- Branding of regions with precious nature and culture areas as ecological destinations for eco-tourism – like Tuscany in Italy or the Black Forest in Germany
- Maybe a law could be considered that provides a clear distinction between areas inside a consolidated built-up zone (city, town, village, industrial park) and areas outside these, drastically restricting construction permitted outside. A law like this quite successfully prevents unplanned sprawling development in Germany.

## 5.2 Case examples that may be serving as references for certain aspects

Are there any precedents to such meta-regional planning? It seems that some of the famed regional plans like Burnham and Bennett's Plan of Chicago from 1909, Copenhagen's Fingerplan from 1947, the Greater London Plan of Patrick Abercrombie and his team or the Plan for greater Paris with its "villes nouvelles" or recent plans for Chinese metropolises like the "1 city – 9 New towns" plan for Shanghai were and are trying to manage the expansion of a metropolis into their regions in very structured ways.

Maybe later plans were trying to be more apprehensive such as the regional plan for Greater Vancouver by the GVRD or plans and research for the organisation of a city-network in the Randstad in the Netherlands in the 1990's or initiatives such as the International Building Exhibition IBA Emscher Park in the Rhein/Ruhr area in Germany throughout the last 20 years (including Essen and the redefinition of heavy industrial sites, like the Zeche Zollverein) were comprehensive and included very large regions with multiple cities and metropolises and they integrated economic development with a social and ecological agenda.

With respect to the process maybe a great lesson can be learned from the regional planning initiative „Chicago Common Ground – A Blueprint for the Region“ by the Northeastern Illinois Planning Commission done in 2001 with huge professionally moderated town hall meetings using "group ware" equipment.

## 6 THOUGHTS ON ORGANIZATIONAL FRAMEWORK POSSIBILITIES

To legitimize a plan of such a scale the participation of ideally all levels of government as well as institutions and constituents is required. Organizing the effort of this meta-regional planning it can be drawn on the above mentioned planning and research expertise by governments and experts already developed.

### 6.1 Administrative responsibilities for spatial planning in China

The national level is evidently strong, producing guidelines, plans and policies for the whole country. The provincial level governments are relatively weak as the tax income base is comparably smaller. The local level has a very strong influence on local planning and implementation.

Spatial planning in China falls under the responsibility of at least five ministries/departments overseen by the Standing Committee and the People's Congress and the CPPCC. Five ministries on the national and the provincial level as well as departments on the municipal level each produce their own national/provincial and local plan according to their respective agendas:

- National/Provincial/Municipal Development and Reform Commission
- Ministry/Department/Bureau of Housing Urban and Rural Development
- Ministry/Department/Bureau of Land and Resources
- Ministry/Department/Bureau of Transportation
- Ministry/Department/Bureau of Environment

Further ministries are related to the issue of planning.

The various ministries and departments communicate and coordinate their planning efforts and they engage universities and research and planning institutes. Numerous academicians, professional advisors and consultants are coordinated by the ministries and their commissions to perform research on the various aspects of the national, provincial and local plans.

This is a tremendous, comprehensive and complex effort and very laudable. Coordination among the departments and among the different levels of government for problems and projects that may require special solutions and a high level of interaction and integration that depart from the established way of doing things are i.e. to achieve more ecological efficiency etc. are especially challenging. It seems that there may be some lessons available to be learned from elsewhere, where communication and negotiation patterns have been evolving over the past several decades with interaction and integration and the common goal of making good places for the people of a city and region and with the common goal of planning for an ecological environment.

## **6.2 Stakeholder participation in planning in China**

Participation of local residents and enterprises is requested by the the Town and Country Planning Act from 2008 and it has started to enter the planning practice including in rural areas where the „collective landownership“ lends strong rights to the local farming communities in lieu of social benefits enjoyed by urban residents. This ensures the need for involvement of the village leaders and local residents in countryside planning. At the same time this presents an enormous challenge to good planning and implementation as economic interests of rural residents may challenge planning decisions and policies implementations.

## **6.3 A scenario for organizing this meta-regional planning in China**

Different countries have different ways to organize planning processes. In the case of China it may be suggested that a more formal and top to bottom approach may have the likeliest chance for success. ue to the magnitude of this effort as well as the way planning has been organized in the mainland. At the same time it is essential that the local governments, experts and stakeholders are actively engaged to utilize intelligence, create acceptance and ownership. Negotiation should lead to agreements and compromises that balance local interests with regional and national interests considering the carrying capacity of infrastructure, nature resources in the territories.

In this scenario the central government is in charge to oversee the entire project, while the provinces are strengthened and the scientific institutions have an important role. Local task forces on single issues prepare research and suggestions and discuss with local steering committees who will participate in subregional conferences and workshops. In that way, the local government and their constituents, local universities and institutions as well as local, national and international experts are constantly engaged in the research, the findings and documentation.

Engaging the various levels and players in such a way will create a large amount of ownership of the planning effort and result and thus will create a lot of support and thus chances for its implementation.

## **7 CONCLUSION – SYNERGIES BETWEEN: RES ECONOMICA, RES PUBLICA & RES ECOLOGICA**

The intention of this paper is to instigate a discussion among professionals, academicians, administrators and politicians raising the question of the need for such a meta-regional planning effort under circumstances such as the enormous development and urbanization activities along China's coast. It may also be needed in other global population hotspots where large changes will occur in the near future such as in the Ganges river



region in India between New Delhi and Calcutta. And maybe also stretches of the US coasts or the “blue banana” region in central Europe might require stronger coordination of development concentration, infrastructure investments as well as ecological and farming zones with prohibition of development.

I would like to argue that the economic interests in an environment of strong growth and urbanization along with the collective raising of living standards and consumption based lifestyles in such highly populated areas are difficult to be limited through measures beyond cost. Economic interests though have to be harmonized with the needs to sustain the livelihood and health of the general public and the ecological sustainability of our basic resources.

With the global population being urban, we have to anticipate towns, cities, metropolises, regional agglomerations and global-super-urban-regions emerging to a new quality. We ought to think of practical ways of communication as well as fair processes leading to results that help us protect ourselves from our own weaknesses of maximizing individual, corporate and territorial well-being.

I believe that the magnitude of this urbanization process in these global hotspot regions forces us to do meta-regional planning also as a way to communicate the needs to the citizens within. This may even be a chance for a collective understanding of the larger system and one’s role and responsibility contributing to it.

## 8 REFERENCES

Acknowledgements of oral sources:

I wish to highlight the following three conversation partners who contributed with their wisdom and advice:

Dr. SHI Nan, Secretary General Urban Planning Society China (etc.)

Prof. Dr. HUANG Tianqi, Chongqing University

Prof. Dr. Wolf REUTER, Stuttgart University

Written and online sources:

LICHTENBERG, Erik and Chengri DING. 2006: Land Use Efficiency, Food Security, and Farmland Preservation in China. In: Land Lines: April 2006, Volume 18, Number 2. [http://www.lincolnst.edu/pubs/1111\\_Land-Lines--April-2006--Volume-18--Number-2](http://www.lincolnst.edu/pubs/1111_Land-Lines--April-2006--Volume-18--Number-2)

LU Bin, 2010. Master Plan of City Clusters in Shandong as part of the mega-cities of Yantai peninsula - 2020. [http://www.shm.com.cn/newscenter/2007-07/05/content\\_2135091.htm](http://www.shm.com.cn/newscenter/2007-07/05/content_2135091.htm)

NATIONAL DEVELOPMENT AND REFORM COMMISSION: The Outline of the Eleventh Five-Year Plan for National Economic & Social Development of The People's Republic of China. Profile. 2006-2010. [http://en.ndrc.gov.cn/hot/t20060529\\_71334.htm](http://en.ndrc.gov.cn/hot/t20060529_71334.htm)

NATIONAL DEVELOPMENT AND REFORM COMMISSION: Report On The Implementation Of The 2010 Plan For National Economic And Social Development And On The 2011 Draft Plan For National Economic And Social Development. Fourth Session of the Eleventh National People's Congress. March 5, 2011. [http://news.xinhuanet.com/english2010/china/2011-03/17/c\\_13783842.htm](http://news.xinhuanet.com/english2010/china/2011-03/17/c_13783842.htm)

NATIONAL MINISTRY FOR HOUSING URBAN AND RURAL DEVELOPMENT, 2010: National Urban System Plan 2005-2020. <http://xiazai.dichan.com/show-328696.html>

NATIONAL MINISTRY OF CONSTRUCTION: Jiangsu Urban System Plan (2001-2020). <http://www.czghj.gov.cn/czgh/list.asp?NewsID=1587>

NATIONAL PARK NETWORK. <http://www.gjgy.com/others.html>

NATIONAL POPULATION AND FAMILY PLANNING COMMISSION OF CHINA, 2007-01-12: 300 Million Chinese Farmers to Move into Cities in Next 20 Years. <http://www.npfpc.gov.cn/en>

STATE OCEANIC ADMINISTRATION, 2008: China Marine Environment Quality Bulletin. [http://www.eedu.org.cn/Article/es/envir/edevelopment/200903/34411\\_13.html](http://www.eedu.org.cn/Article/es/envir/edevelopment/200903/34411_13.html)