Attractive Rural Eco-Territories – A Path towards Social Harmony, Landscape Ecology and Urbanization Management In China? – A Case Outside Chongqing

The importance of the countryside in China's "catching up & surpassing" urbanization

China's mega-cities, cities and towns are expected / targeted to grow by 300 Million by the year 2030 through migration. (National Population and Family Planning Commission of China 2009) The result is an urbanization rate of up to 70% for selected regions – unusually high even compared with industrialized countries. This presents major challenges. First, experiencing the cities in China and its environmental and infrastructural challenges, one can only imagine the impact of the magnitude of this additional growth. Second, China's best farmland (naturally) coincides with the growing agglomerations. Food security already has become an issue with the scarcity and rising prices for food in 2008. The author believes it would be overall beneficial if China's spatial structure would be more balanced towards a more distributed population with strong communication links and regional economies and ecologies that are potentially self-sufficient and more eco-efficient.

The phenomena of current Chinese rural-urban migration, peri-urban and suburban development with all its challenges and effects are comparable to those industrialized and post-industrialized countries have experienced in the 19th and 20th centuries. However, the magnitude may be quite different in China's case. Prior to these recent trends, China's policies of population distribution in the second half of the 20th century favoured rural towns and villages over cities and mega-cities to the effect that the pace of the recent and ongoing "catching up" urbanization is with such speed that sustainable, reflected planning becomes a real challenge.

China's leadership already responded to these challenges with regulations to restore forests, protect farmland, reduce excessive land-use patterns and reforming the "hukou system", the resident's registration law (Fan, C. Cindy 2008).

China's countryside and these rural towns and villages are now changing and overall may play a pivotal role in the overall sustainability of China's future. A new planning law has been enacted at the beginning of 2008 that for the first time includes towns and countryside in the "town and country planning act". "Urban and rural integration" is the keyword under which China's planners summarize this new interest. Efforts President Hu Jintao has been calling for already for some years as a program to "building a harmonious society".

Rural and Peri-Urban China's role for China's future sustainability and carbon output

Rural China plays a critical role for the level of sustainability of China's future and its future level of carbon output. The way the following two main factors are going to develop will determine how much rural China can contribute to China's sustainability and its carbon emission reduction:

1. Character of rural modernization and economic upgrading of rural population,
2. Rate of rural-urban migration.

The main hypothesis of this paper and case is that these two aspects may be addressed to positively contribute to China's future sustainability and carbon emission reduction by making "Attractive Rural Eco-territories":

1. Modernizing the countryside in an attractive and eco-efficient way, creating physical environments and operational systems that lead to carbon-neutral countryside,
2. This attractive countryside may have the appeal and power to retain and attract a significant population that would otherwise migrate into the mega-cities and cities.

Reducing the urbanization rate will have a positive impact on carbon emission reduction: Urban areas have a greater per capita ecological footprint and carbon emission than rural areas. One challenge is that modernization typically is equalized with urbanization. If *modern* rural areas can be developed offering attractive *eco-efficient* lifestyle choices, more people may decide to stay in these territories and overall future emissions from the previously anticipated urban growth may be reduced. But how can this be achieved?

How can rural China become more attractive for its people – so they don't move to the cities? How can peri-urban zones be activated to minimize and offset the ecological footprint of a metropolis? How can peri-urban, new suburban, rural and urban synergies be created to the effect that a regional overall carbon-neutrality can be achieved? Could interdisciplinary planning engaging local government, private investors and local residents and farmers become a tool to create a common vision and measurable targets for conceptualizing an ecological, a socially fair and economically sustainable plan – such that sustainable, ecological spatial structures can emerge – (ironically) from a traditionally sustainable rural culture?

Financial crisis is an opportunity to upgrade rural society

China's countryside accommodates 721 million rural residents (National Population and Family Planning Commission of China 2009) – together with a portion of the estimated 20 million unemployed workers out of a total migrant worker population of 225 million, now returning home to their villages, following the impacts of the financial crisis. These returnees are eager to modernize their home farms and businesses with their urban experiences. This momentum for economic change and the social and demographic improvements ought to be used and stimulated by the national and local policy makers.

Challenges for sustainable rural and peri-urban development

With respect to future carbon emissions reduction many challenges in this change of rural China need to be faced such as finding a sustainable way for a modernization of the rural production and economic upgrading of the rural population. A series of major challenges needs to be addressed:

Lack of opportunities, infrastructure, education, jobs

Rural infrastructure naturally is less advanced than in cities. Mobility, retail, services etc. are lacking in the countryside just like quality high school-, college- and university education and job opportunities. Serving distributed spatial structures with infrastructure is challenging. Modern ICT technologies might allow improvements via ubiquitous access to knowledge and potential telecommuting.

Social divide - low rural incomes

Income from farm work and other rural jobs generates only a fraction of that from urban jobs. Making a decent living becomes increasingly difficult. Maybe prices for rice, vegetables and other farm products ought to rise. An economic upgrade for the rural population, while a much needed blessing will also cause higher output on carbon emissions due to modernized lifestyles, mechanization and mobility.

Stigma of "peasants" and "farmers"
China ought to overcome the stigma between urban and rural residents – the former looking down on the latter as "peasants" and "farmers" to a degree that isolates rural people in the planning of urban areas, of peri-urban areas and new suburbs.

In the cities, newcomers from the countryside who join urban workers tend to be segregated from their "urban" counterparts. In new peri-urban planning, suburbanites are carefully segregated from the local farming communities. Prior to their arrival, villagers are being relocated and villages and cultivated land razed.

Demographic challenge = challenge to landscape ecology + physical environment
The ageing of the rural community is more dramatic in rural China as the overall average. To find higher education, training and jobs, young rural residents move to the cities, leaving parents and grand-parents behind. This social challenge is intertwined with an environmental challenge as fewer people will maintain the cultivated land of typically small fields, canals, earth terraces with degradation and erosion to follow.

Loss of nature and farmland
Today, much of China's farmscape is still operated by hand or small machines on relatively small fields. Still much of China's countryside are true models of sustainability where small scale farming has developed an ecological harmony with the natural environment made up of small fields, terraces, fish ponds, orchards and structures with minimal carbon output. It is that kind of pastoral landscape modern urban people cherish in their summer vacations and on weekend outings. That kind of landscape has been lost in industrialized and former communist countries with mechanized farming economies of scale. China took a different path in the mid-twentieth century with land reform that gave farmers the right to their small pieces of land. In urban, peri-urban and more and more so in rural areas, land is under pressure for development of suburban and recreational development.

Loss of and ignorance of the value of traditionally cultivated land
In planning of suburban areas, rarely anybody involved in local planning regards the rural farmscapes with their traditional cultivated land that has been perfected to fit the natural conditions for centuries as valuable and worth integrating in a plan. For instance in the Yangtze River Delta: thousands of canals, wetfields with canals, wetlands, fishponds mixed with dryfields, forests and nurseries and small villages along canals create a serene beautiful countryside new plans for landscaping suburban single-family housing cannot reproduce.

Farmscape transformation - expected great leap forward towards mechanization
In some of the larger agricultural plains in the south, east and centre mechanization of farming transformed the farmscape. Due to the small degree of mechanization still today, a great push is anticipated to improve productivity, and incomes – causing a raise in carbon emissions.

Suburbanization western style with low eco-efficiency
In many instances it seems common practice to "copy and paste" images and patterns from western cities into China's new developments, repeating all problems of "cost of sprawl" with its carbon emission excesses, urbanists have revealed over the past three decades in the west. Could there be a Chinese way that is more genuine to this grand culture and more eco-efficient?

Case for Attractive Rural Eco-Territory:
Chongqing Jiangjin Modern Ecological Agricultural Zone – Central Area

1. **Vision for attractive eco-efficient rural and peri-urban place**

Conditions
A 200 skm Agricultural Zone has been assigned to modernize the agricultural sector by the local government, 45 km by bus and car on a new highway south of Chongqing. The author guiding an interdisciplinary team developed a master plan for the central 22 skm reaching from the highway to the Yangtze river in the west. The area faces all of the above listed challenges.

Sustainable Vision
A physical, social, economic and ecological plan for a carbon-neutral "attractive rural eco-territory" has been envisioned according to the territory's carrying capacity. A series of ambitious eco-efficiency targets have been developed on the basis of a fairly low density development and a strong commitment by the local government and private players: Energy self-sufficiency, food self-sufficiency, water self-sufficiency, eco-mobility, land-use efficiency, locally value added cyclical economy, waste reduction, -reuse, -recycling etc.

Four guiding themes to develop the territory were established:

1. Social harmony: attractive lifestyle choices & prosperity for three-generations with new housing, infrastructure, education & training, jobs, raised incomes in farming, elderly care, additional income sources
2. Economic improvement: Farming modernization, new jobs, industries, R&D, services, agri-tourism, innovation, added value creation.
3. Eco-Efficiency: Ecological Landscape & organic farming, ecological systems for clean water, self-sufficiency with renewable energy, eco-mobility, eco-villages and green buildings and biodiversity.
4. Modern rural culture with healthy, active lifestyles: organic farming culture, outdoor activities, community centres, markets, festivals, education, lifelong learning, performances, exhibitions, theatres…

Site photo: Stefan Rau, Metropolitan Synergies

Celebrate the beauty of the countryside as basic attraction
The setting is beautiful and diverse, with a river estuary, a Buddhist mountain, forests, lakes, rolling farmland and terraced fields. Enhancing the natural and cultural features and provide sensitive accessibility will make it a poetic, attractive landscape based on the local traditions. A landscape for farming, working, learning, living, recreation and biodiversity. The hills, valleys, the lakes and ponds create a diversified and inspiring landscape.

Create distinct places with infrastructure, services, identity and character
The place is composed of an eco-new town in the east serving 200 skm, an organic life and culture park with ecological & agricultural, recreational & cultural landscape surrounding the Buddhist Mountain in the centre, a fishing village by the Yangtze river in the west. Seven eco-villages as well as model-organic farms with orchards, fields and gardens and agri-tourism facilities are located in the area.

2. Multi-dimensional, sustainability indicators- and quantitative eco-efficiency targets matrix - "100% self sufficiency for water, food, energy…"

Methodology
In the process, the author developed environmental quality standards in the attempt to define a system that is suitable for this project-type and suggestive. The review of previously developed sets of indicators for "Eco-Efficiency", "Eco-Cities" and indicators used in evaluations for Environmental assessment studies resulted in the following findings: Systems were organized either by environmental media and the anticipated impacts of a masterplan on these media, (soil, water, air, landscape image, landscape ecology, biodiversity…) (Environmental assessment) or by urban systems (urban structure, transportation, socio-economics, energy- and material flows) (EU Eco-City), or by both aspects of environmental media as they relate to urban systems (Beijing Changxing Eco-City) or by "environments and operations" – systems and usage of the systems by inhabitants of the city (Tianjin Sino-Singapore Eco-City) or by the classical social, environmental and economical dimensions ().

The matrix developed for this project combines aspects of the above mentioned and organizes the indicators along systems and media in 8 categories. The table has a simplified version with overall goals for the 8 proposed categories and a long version spreading out the subsystems of the categories.

Eco-efficiency targets matrix
The overall goal is be a carbon neutral place.
The conditions in this case allowed setting very high standards, due to a very low overall population density. For the 22 square kilometre area a total population target of 25,000 was set (by the local government and adjusted by the planning team) for 2020 up from 11,000 in 2008. This seems like an almost "unfair" condition and not apple-to-apple comparison when compared with "Eco-city" projects of much higher densities and thus naturally lower achievable targets. This is the reason that led to establishing the term of "eco-territory" (*) where land area, population, land coverage, green ratio would determine the project category.

Multi-dimensional, sustainability indicators- and quantitative eco-efficiency targets matrix - summary version:

Eco-Efficiency Targets Matrix for Eco-Territories - Summary Matrix in 8 Categories

1	Economy:	local cycles - local and regional production and consumption - locally added value
2	Social:	100% of locals may chose to stay while improving economically
3	Land Use:	efficient mix of uses and densities, potentially self-sufficiency
4	Landscape Ecology	nature can sustain itself - native biodiversity, air, soil, water etc. can recover itself within
	Farming & Food:	100% of food organically produced may be from on site farming and local food industry
5	Water - supply	100% of potable and irrigation water comes from sources on site
	Water - treatment	100% of domestic, agricultural, industrial wastewater treated on site, when possible in biofiltration wetlands
6	Energy:	100% of Energy is from renewable energy sources produced on site
7	Transportation:	100% accessibility of developed areas with public transit and eco-mobility system
8	Materials & Waste:	80% of waste reduced, reused, recycled – 20% incinerated within 30km

Matrix: Stefan Rau, Metropolitan Synergies

3. Locally value-added, cyclical regional economy – creating local synergies

Methodology

A set of economic activities has been developed based on the concept of industrial synergies, matching endogenous potentials and resources of different activities and processes while developing synergies with added activities utilizing resources from within and producing by-products useful within the area.

The steps taken to develop a concept for a local economy by the planning team was:
1. diagnostics of endogenous potentials,
3. identifying potential improvement for existing production methods,
2. identifying potentials for synergies between the different activities, resources and products,
4. adding smaller scale production on a local level to create higher value from products,
5. adding more advanced medium and larger scale production facilities tapping into existing resources creating industrial synergies, material- and energy cycles,
6. adding training and education facilities to create skilled human resources locally,
7. adding research and development facilities to develop new brands and products.

Economic Concept

The goal is to create a cyclical, synergetic economy with value added locally and additional economic activity to increase local incomes. Additional value is anticipated from establishing a brand for the place with its all-organic products. Initiatives from the analysed potentials were drawn. Agri-tourism development will be benefiting local residents. Additionally, tourists are expected to buy local products. Local production, consumption and recycling chains and a balance between production for local, regional & domestic consumption is suggested. In operation it is suggested to find a balance between distributing fresh products versus processed food.

The diagnostics of endogenous potentials for developing the local economy found natural, cultural, social and productive potentials that could be further developed.
Economic activities suggested after diagnostics of existing and planned activities and input-output analysis of resources:

1. Organic Farming: mix of traditional farming and modernized organic farming as well as specialized organic farms and nurseries – to create higher value primary products
2. New organic animal farms: producing meat, milk, eggs - and biogas, electricity as well as organic dung as a base for the organic farming
3. Food packaging and processing: locally grown food packaged, clean and organically processed on the farm creates locally beneficial added value – packages being returned and recycled, others biodegradable
4. Organic food-, beauty- and health products: locally refined and processed products in low quantity - high quality boutique factories on the farm, in the town and the villages.
5. Local and regional distribution: bring organically grown and manufactured products directly to the people in the area to farmer's markets, supermarkets in the villages, town and city.
6. Tourism: agri-tourism, eco-tourism, river-tourism, fishing-, sports- and outdoors tourism, conferencing, meeting, wedding tourism can be developed and marketed in the region based on a beautiful natural setting and beautifully cultivated land.
7. Production: strengthen, modernize & clean up local industries develop i.e. farming and gardening products, crafts-products, building materials, building components
8. Education, R&D: educate the local young generation and mobilize innovation for local brands and products
9. Logistics: warehousing and transportation of resources and goods to and from the area is efficient via highway and water transportation on the Yangtze river.
10. Commerce: wholesale centre for rural products, F&B, shopping centre for the 200skm park accessible from the new highway via private vehicles and buses.

4. Land-use efficiency: "Distributed Compactness" - mix of uses balancing economic, ecological, social and logistical aspects

Today primarily all land is either farming or natural landscape. Scattered farm houses are served with small roads, dirt-roads, paths or footpaths. Cables for electricity and communications criss-cross the entire area to reach the remote farmhouses.

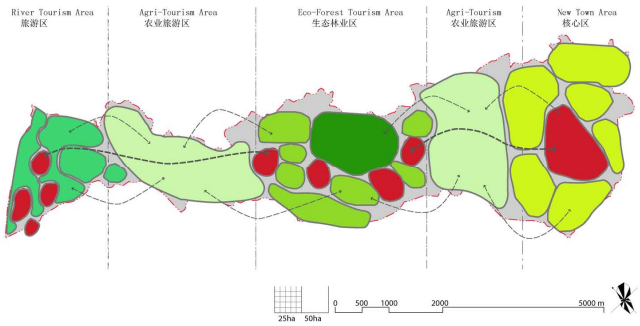
Most of the planned Modern Ecological Agricultural Zone is open space – for farming, eco-forest, wetlands, lakes and recreation. Only about 10% of the area is development.

The general strategy of the plan is to cluster complementary functions to find a structure that optimizes proximities and minimizes distances and allows reasonably efficient infrastructure service. A structure that may be called "distributed compactness" – while open space is being preserved and excessive land uses avoided.

Scattered farms may further exist, while many are being consolidated to clusters, new model farms with a larger scale are suggested, farming villages are being expanded, new farming villages created to accommodate public amenities and new and local residents. A compact rural new eco-town is developed in the east to create a mix of the central commercial, industrial, educational and public amenities with residential communities.

The challenge of rural and peri-urban mobility is tackled via this structure of "distributed compactness" with the clusters, villages and town linked via one main and two secondary roads linked with an electric bus and eco-mobility stations with parking, bicycle parking, mini-electro-buses, car-sharing and car-pooling, "electro-taxi-scooters" to access the remote areas and get people and goods into that "last mile".

This structure of spatial distribution attempts to conveniently locate public services, convenience retail, schools, elderly- and health care facilities within reach of every resident.



"Distributed compactness" in clusters & agri-tourism zones: Stefan Rau, Metropolitan Synergies

5. Social harmony: three-generations countryside with lifestyle choices & opportunities

The rural to urban migration is carried primarily by the younger generation. Any attempt to slow down this trend needs to address the causes of these movements. To meet this challenge of migration and the challenge of an aging rural society, a concerted set of actions to overcome the "soft" causes related to stigma and image and the placement of infrastructure and services to overcome the "hard" causes of migration related to lack of job opportunities and limited lifestyle choices is suggested in this plan. The goal is to create a modern, 3-generation upgraded rural society.

Overcome soft causes "image and stigma"

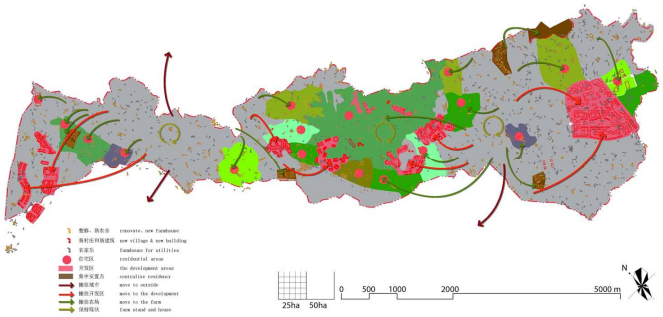
To overcome the stigma and change the image of the countryside that is being looked down at, a larger effort is needed - in the case of China, best by a campaign and real improvements organized by the central government. On the local level branding of regions and villages, events, activities and campaigns to raise awareness, reputation and pride of the locals may contribute to an improvement of the image. It is essential to change that image and stigma for the self-esteem of people in the countryside and this may be crucial for young people in their decision to move to the city or stay close to their home village.

Overcome hard causes "lack of job opportunities, lifestyles and mobility"
General improvements are suggested for better and more public service facilities, mobility and public transit, culture and entertainment, community services, community centres, rural activities, festivals and events, a variety of housing choices, social networking opportunities, training and lifelong learning.

Tailored for the younger good basic and higher educational institutions are planned like a high school and college. Job opportunities are created by the location of companies and new economic activities in industry and services. Farming jobs are being made more attractive and more efficient through modernization and mechanization generating higher incomes. The creation of larger farms allows more flexibility in the organization of the work and working hours.

Tailored for the older, better community services, health care and elderly care as well as elderly housing is planned in integrated and nice settings.

Farmer housing and lifestyle choices
Scattered farm houses and scattered villages often characterize China's rural areas. Also here, the manual operation of the farms results in scattered farms throughout the area which makes quality infrastructure difficult and costly. The government expects 70% of the residents in these farms to move by 2020. The master-plan offered a variety of housing and lifestyle choices to improve people's lives:
1. stay on their farm, 2. move to a traditional farming cluster, move to a model-organic farm, move to a new village, move to the eco-new town, move to the city (all these under no. 2?)



Farmer housing & lifestyle choices: Stefan Rau, Metropolitan Synergies

6. Farming modernization and landscape- & culture- conservation & -preservation

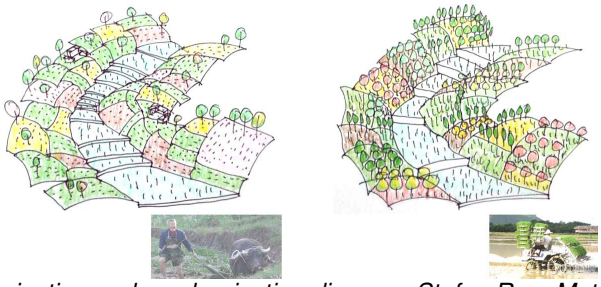
Organic farming – healthy high-quality high-value food
Principles for modern organic farming have been established and integrated conservation and modernization of agriculture. The target is 100% organic farming in a chemical-free zone of agriculture with no use of chemical fertilizers, -pesticides & -fungicides. 100% quality food, produced healthy and organic in a diversity of crops, fostering symbiosis in farming, avoiding monocultures, big farm fields and big structures. Primarily growing native crops with the principle of crop cycles.

Modern organic animal farms with organically raised cattle, pigs, ducks, chicken. The dung is collected and fermented to biogas and electrified for the local electricity production. The dried, odor-free remains of the dung is the fertilizer for the organic farms.

Farming Modernization

Balance modernization of farming with preservation & restoration of landscape, forest and cultivated land. Farming modernization is necessary and a logical consequence of the current demographic trends and the need to create higher farming efficiencies to raise local incomes.

To allow mechanization, the structure of many of the terraced farm fields need to be adjusted to accommodate tractors. To do this with sensitivity maintaining the landscape character is a main goal.



Sensitive farming modernization and mechanization diagram: Stefan Rau, Metropolitan Synergies

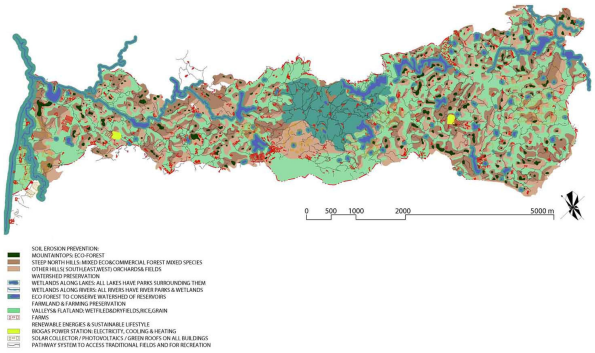
Organic Theme Farms: Creative Farming & Innovative Farming

One of the key program elements for farming is to organize theme farms to showcase and develop techniques for healthy, organic production of food as well as food-, beauty- and health products. They include facilities for agri-tourism and are innovative and interactive farms, where visitors can help pick fruit, flowers watch ducks and chicken run around. In addition, there are maintained traditional “grandma & grandpa farms” as showcases with guest apartments and cottages.

Landscape ecology, conservation and ecological infrastructure

The key landscape protection strategy is to identify environmental protection zones, hazard zones, erosion hazard areas and define them as no-build zones and identify natural measures to mitigate their risk such as creating forests on steep hills to prevent soil erosion. Erosion is mitigated via planting forests and orchards with the roots stabilizing the slopes. The establishment of clear no-build zones, build zones, and future expansion zones creates planning predictability and ecological safety.

Clean potable water from the lakes through biological filtering in eco-forests and wetlands along the shores of all lakes and on the banks of all rivers and creeks. Cultural landscape preservation is focused on the Buddhist hill. Restoration of eco-forest is suggested in selected areas to enhance native biodiversity and recover groundwater and keep the lakes clean.



Landscape conservation and ecological infrastructure diagram: Stefan Rau, Metropolitan Synergies

7. Energy: 100% of local demand produced on site from renewable sources

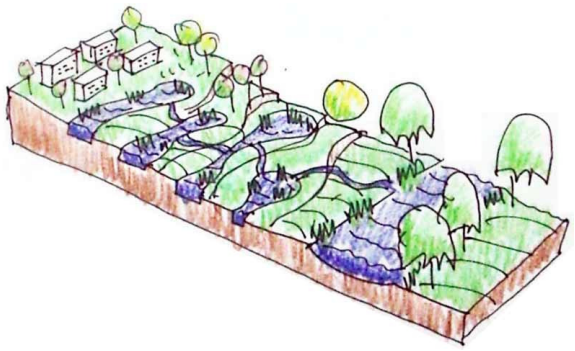
The main source of energy for this primarily agriculturally used land is biogas from animal farms with additional supply of fermentable biomass. With the animal farms needed to supply organic fertilizers the scale of the biogas power plant is sufficient to supply all domestic households with electricity, including their electric powered vehicles and the public buses.

Individual solar collectors on the roofs of houses will provide all hot water needed in households and on the farms.

Photovoltaic panels will supply the additional energy needed for the light industrial processes.

8. Water efficiency, water supply, water treatment

100% of all water is supplied from lakes on site. Potable water is extracted and filtered. Rainwater is retained and used for irrigation. 3 additional lakes are planned to retain water for irrigation.
All domestic water is being treated in biological water treatment wetlands, which is achievable due to the low densities of population.



Wetland water treatment for low-density housing : Stefan Rau, Metropolitan Synergies

9. Beautifully green, scaled, walkable, mixed-use places

Bringing it all together: integrating the systems concepts with the planning and design
The place is composed of an “eco-new town”, an “organic life and culture landscape”, 7 eco-villages, model-farms with eco-agri-tourism.
The unique identity of this area is preserved and enhanced. It comes from natural and cultural settings. The rolling hills, mountains and valleys create a beautiful and vibrant scenery combined with the long established farming culture of terraces and wet-fields engineered thousands of years ago and maintained by hand and water-buffalo to this day. The scattered farmhouses are set on valleys, plateaus or in front of hills in classical “Feng-Shui” arrangements with a hill to the north and a lake or pond to the south of the building, as beautiful as in Tuscany.

a) New Town & Orange Gardens

A pedestrian-friendly, green, mixed-use centre for rural culture & business, commerce, culture, jobs is designed to respect existing hills and ponds that are integrated as an open space system preserving the character of landscape and topography. The town is surrounded by flower gardens, orange orchards and rice terraces.

The New Town is centred around agriculture, agri-science, health businesses, organic, healthy food culture and healthy countryside living. Surrounding a central park is the commercial core with businesses, shopping, administration, culture, education, conference centre, hotels, service apartments. Residential communities are located surrounding the core that is designed like a "pedestrian pocket" (Calthorpe, Peter 1986).
A production and trading centre is located at the highway entrance. A research, development and education centre for rural culture, organic farming and ecology is located north of the core. A mixed use residential district with a diversity of housing types and densities accommodates people working in the centre, commuters and elderly people who chose to retire in an urban setting.

New-Town with light industries and commerce: Stefan Rau, Metropolitan Synergies

b) "Organic life and culture landscape" - ecological & agricultural, recreational & cultural landscape surrounding the Buddhist Mountain

The beautiful centre area of Jiangjin Modern Ecological Agricultural Zone is the heart of the place. It contains rolling farmland, hills and terraced wetfields, existing and new villages, model organic farms surrounding the mountain, its Buddhist monastery, its forests and lakes. Many places for agri-tourism are designated in villages as Bed and breakfast and small hotels, nearby the monastery, in the forest, on the fields, on the model farms, in cottages that are renovated, abandoned farmer houses.
The serene setting will be used to locate four new villages with different settings and themes. Between two lakes, at the foot of the mountain, in-between hills, in forest and orchard. Between the four villages there are a series of model farms: orchards, herb gardens, vineyards, rice fields and lotus ponds. The large area of eco-forest serves as a peaceful respite both for nature and human recovery. Kilometres of trails, small forest farms and wilderness cabins offer a variety of experiences and choices.

New eco-villages: Stefan Rau, Metropolitan Synergies

c) Fishing villages and vegetable farms at the Yangtze river

The situation at the Yangtze riverfront offers a tranquil setting in a curve of this longest river in Asia with the opportunity of cruise-boat docks, resorts and commercial port by expanding existing villages and linking them stronger with the river. Some fishing villages are surrounded by vegetable farms and wetlands at the Yangtze river estuary. Places for tourists

are offered within the villages and amenities are created both for local residents and visitors such as a dock for river-tourism and a marina for fishing boats and small tour boats. The cruiser boat pier will bring people to Chongqing and the famous Yangtze three gorges.

d) Model organic farms focused on some crops

Modern organic farming, experimental and creative farming places are located mainly around the Buddhist mountain and alternate with the four new villages. The farms have different themes focusing their production and research on a few areas. I.e. orange, peach, plum orchards, vineyards, vegetable farms, rice- and oil crop farms and animal farms. The farms are designed to be nice countryside places nice to work on and nice to visit and stay. The farms deliver their by-products to the biogas fermenter on the animal farms and receive the organic fertilizer to enhance productivity of their soils.
The farms experiment with biosynergies i.e. that of peach trees with fungus and mushrooms. They celebrate blossom and harvest festivals and directly market their high quality organic produce and products on regional farmer's- and supermarkets.

Organic theme farm concept: peach tree orchard. Copyright: Stefan Rau, Metropolitan Synergies

Terminology

Terminology: "Eco-territories" is suggested by the author versus "Eco-cities". Eco-cities often are being looked at as achieving ambitious goals for sustainability within a defined urban area. Two problems with the term of "Eco-City":
1. Eco-efficiency targets are not standardized to qualify or disqualify projects as such and "Eco-city" thus experiences the danger of being abused as a label for marketing purposes without real substantiation.
2. A larger, systematic challenge of this term is that if used for an urban area without consideration of a reasonably scaled context, eco-efficiency may not be able to be achieved on a level that actually would justify this label. The ecological and economical functions of a "green" surrounding of an urban area need to be included in the consideration of an eco-efficient place. "Territory" is thus suggested by the author as a potentially more inclusive term that also may be applied to other types of projects and places such as industrial and rural areas.

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