

MEDIUM

New Pathways for Sustainable Urban Development in Chinas medium-sized cities

Zhuhai Scientific Seminar - Report

December 3-5th 2016

Day 1

The first session of the day is chaired by Irene Poli (UNIVE).

Introduction

Pr. Suhong Zhou greets welcomes on the behalf of SYSU. Brief presentation of SYSU (Departments, Research Institutes). At School of Geography, Human Geography and GIS/Remote Sensing as key disciplines.

Pr. Chunshan Zhou Welcome on behalf of SYSU. Zhuhai typical medium sized city : feature and typical issues. Economically developped area : representative case study. Output of seminar → ref for dev of medium sized cities.

Pr. Natacha Aveline (CNRS) presents the Medium project. It aims at sustainable urban development in China, following three axis: Case study of three medium-sized cities; collaboration with three universities; young european researchers in China.

Présentation of Géographie-cités Research Unit

(Martine : General Secretary)

Organisation : CNRS and P1 / P7. CNRS largest research center in Europe. all research fields.
59 researchers ; 20 ingeneers ; 70 phd students.

It has three teams : CRIA focusing on industry and planning ; EHGO : image in geography, developement of knowledge ; PARIS : city and urban systems, spatial dynamics, science of complexity.

(Seb Haule) geomatics engineering. L Chalonge : cartography and Visualisation, statistical treatments. Can help anyone with doing maps/technical questions. S. Haule : historian ; analysis of geohistorical data. website design, digital humanities. ERC Seasteems.

A. Banos : simulating complex spatial systems, new perspectives in geosimulation.

CNRS and China : late 70s (1978). 6 structures affiliated to inshs Geocites particular relations : Medium since 2015 ; Finurbasie (Natacha's ANR) ; Odessa with Tsinghua and Sheffield ; ERC C Ducruet (7 CHinese researchers) ; Denise : Thèse Elfie.

The integration of medium-size Chinese cities in the globalized world: the profile integration of Zhuhai - Pr Celine Rozenblat

join work with E Swerts and A Ignazzi.

Research Question Fast integration of China in global economy

Assumption : small and medium size benefit lower skill industrial. but could concentrate innovative firms.

-> how can Zhuhai become innovative.

Larger Q : Medium size cities.

Def ? by negation / relative to an urban system.

Def in China : [Henderson, Choi, Logan, 2005] : county level, administrative. ; Size : [Appleyard, Zheng et al, 2007] ; geographic position [Schneider, Mertes, 2014] : distance to big cities.

Hypothesis : Intensity of integration in the globalization.

Effects to test : admin , Urban Size, Geo position. Specific economic profile of Zhuhai?

Multi-level cities networks (micro - meso - macro)

Data: Micro Networks Data (Bureau Van Dijk), 3000 Top world groups (Turnover), 8e5 subsidiaries (nodes) ; nodes : ownership.

aggregation : inter-urban network.

def of city : Large Urban Region (UNIL + ERG Geodiversity)

Elfie's database for China.

World network of cities (graph viz positioning).

In 2013 : change in Network topology (crisis).

continents are very cohesive. only 20% are inter-continental.

China in 2010 : 61% on inter-continental linkages ; intra-urban only 6% in 2013 : 10% ; 45% only inter-cont.

Zoom on CHina. ! importance of Bahamas. network more balanced.

middle size cities took advantage.

rank-size in ownership and subsidiaries (in and out degree) : exchange Hong-Kong/Beijing.

Middle size cities does a plateau in middle ? (middle size for company)

Scaling laws.

Test of predictive power of pop on network ? $R^2 = 2/3$ roughly. Change in regime, more importance of specialization ?

growth rates.

(Orbis db ?)

Zoom on 3 cities :

1. Hangzhou : Fund mgt activities/services mostly. Example of Zhejiang expressway company. Very diversified, thanks to Shanghai proximity.
2. Datong : strong specialization, difficulty for attraction and diversification.
3. Zhuhai : 2nd port after Shenzhen, airport, train bridge. SEZ since 80. National HiTech dev zone ; Free trade zone. Administrative measures : reduction of taxes. Example : Gree Electrical Appliances. Strategic link with universities. Zhuhai quite well integrated, also in emerging countries. 2nd ex. : Livzon Pharmaceutical Group ; intensive collaboration with SYSU school of medicine and pharmacology (oldest of western medicine) ; mainly for Chinese market. Zhuhai has related and unrelated specializations, importance of universities ?

Conclusion : def of medium size by integration in globalization. urban size effect decreasing. administrative effect : spatial spread of emergent attractive cities around metropolis. Specialization : local resources (Datong)

Specialization of Zhuhai as innovative place. Polycentrism perspective (proximity financial poles).

(recall forthcoming IGU Brasil 2017 ; Quebec 2018)

Q Natacha : Datong : involved in coal industry - strategic domain as coal (for central government).
pb : no other companies.

Q Suhong Zhou City regions emerging - difficulty to define the city. -> Work now to define functional urban regions. Different levels. Functional urban region : same airport for international : accessibility to the world. (q : when many airports ?)

Q Pr Hangzhou Alibab very international ; why these particular companies ? → pb with alibab, settled in a fiscal heaven, one link only, no other company complexifies. should look at other companies.

Q : possible to have same database openly ?

New pathways for sustainable urban development in Zhuhai

Presentation of the Pearl River Delta : one of economic poles. largest urbanization rates ; largest GDP.

Very large population, plus floating labor (not in stats).

Urbanization in PRD :

- 80s. Transfer of industry ; Hong-Kong Macao ; Opening policy. Mode of development : bottom to top, development of villages ; infrastructure construction.
- late 80s - mid 90 : construction of express ways and railways ; 92 : Deng Xiaoping strengthen opening policy.

one of highest density area. Spatial structure (cluster of cities).

Different level of development.

Modes : Dongguan (Foreign Investment) - East ; Shunde (private-owned, local investment industry cluster) - West ; Shenzen (Special Economic zones : high-tech and service sector).

Division and Cooperation : Emergence of specialized clusters.

Situation of Zhuhai : lagging of eco dev. very low gdp but high urbanisation rate. Waving of economic development. 80->95 : oscillating.

pb : investment efficiency is not high.

Resources : very good transportation, infrastructure, good tourism resources. Good environmental protection. Also good real estate and living conditions.

advanced equipment manufacturing industry.

Zhuhai has a good spatial position in DPR : three triangles (Zhuhai-Shenzen-Guangzhou ; Zhuhai HK Macao ; Zhuhai Zhingsan Zhanmen).

Space-time trajectory : local development vs adjacent regions's development.

Trajectories for 21 cities in Guangdong [Zhou Suhong, Gu Jie, Ye Xinyue, Yan Xiaopei, 2015]. Cities that are in advances compared to regional average.

Importance of infrastructure development.

Cooperation Zhuhai-HK-Macao : close, but not high level. impacts : better integration of Zhuhai. Maps : impact on accessibility. change on all structure on DPR (**RQ : we cant know that for sure (structural effects of transportation)**)

Cl : rapid urbanization ; Special Economic Zone ; Lagging but high potential of dev ; New chances and New pathways.

Q Irene Poli Different profiles East/West ; different environmental politics ? → gap appeared at beginning of dev. now east upgrading.

Q Prof Venice Sustainable Development indicators ? → not working directly. Q : city of Zhuhai working on it ?

Q Prof Hangzhou New opportunities brought by new bridge. Of course closely related to dev of HK/Macao. Difficult to break fixed pattern in SEZ. : don't need to break it. -> on macro level, difficult to inverse it. Zhuhai capitalizing on this positioning ? good position in strategy of transformation of industries in China (new era). more potential to catch up with other cities.

Q who paused for infrastructure : State government. : but also province (railways). [Zhuhai good infra (?)]

The Development of medium cities in China - Pr Zhou Chunshan Criteria for classifying cities. by def, population < 1Mio. (permanent residents). Large, super-Large $\in [5e6, 10e6]$; before was 20-50 for medium. def of population changed

Number and distribution by grades of cities. 2014 : 100 middle size chengshi.

At different dates : stable number of medium sized cities. Pattern : large and medium are evolving into big cities. Distribution by regions : mainly located in Central China.

increase in rank by size in almost each province. Map of spatial distribution.

Population : decreasing from 2005 to 2014. capacity to accomodate pop has decreased.

Average salary : lowest salary level : relatively poor, however rise in time, but also rise of costs.

Economy : fluctuation of GDP. Coastal areas and Beijing-Guangzhou railway. also lowest across classif. (in per capita GDP). but rising. distribute in city clusters. GDP growth rate : lowest gdp growth rate.

Fiscal revenue and expenditure : more expenditure than revenue. technology/education : lower on sci but high for education. Great spatial disparity for science and education : northeast parts have lowest expenditures. Financial index : deposits in financial institutions/loans

Industry : industrial structure. primary industry increase with decreasing size. NorthEast : more primary. Number of enterprises (over 5Mio RMB) : downward trend in middle size cities. by type : domestic, invested by HK Macao Taiwan, foreign.

Structure of jobs. expect large cities where secondary if most. tertiary most in middle, creating more jobs. map of jobs created by industry. primary : Beijing-Shanghai ; secondary : Yangtze delta ; tertiary : middle, southern and West china.

Conclusion :

1. middle were majority, now large cities.
2. located in middle, central China
3. population high but decreasing trend ; gdp high, raising trend in per-capita gdp and average salary
4. but rate quite slow, low expenditures ; majority on education, lower on science.
5. industrial structure : secondary most
6. increasing foreign investment
7. property market contribute little
8. number of jobs created : secondary.

Low efficiency in medium size cities ; same conclusion the other day in other seminars. migrants moving to medium now. advantages but need to improve efficiency.

Q Suhan Zhou lowest income level, slow growth : possible reasons for lower pace ? -> surprising result. medium cities have problem to increase housing prices. income : innovation and attracting investments: lower efficiency ; maybe large scale for investments, but not efficient. people going back to hometown after graduating.

Q Liao Liao criteria of classification : link with administrative classification. reason for low efficiency ? other countries to try to boost ? give more priority to small cities ? -> county level. cities with better efficiency : bigger than one million. policies : controlling the size, seeking rational development. maybe need multi-dimensionnal approach. efficiency of development and liveability of the city.

The Development strategy of Zhuhai city (Planning Bureau)

Zhuhai core city in DPR, but lagged during 8 years. characteristics and statistics. 2Mio real pop.

Awards : sustainable devlpmt city ; most liveable city.

Spatial Strategies : different stages

1. Startup : 79-83 - agriculture and industry
2. Big economic dev 84-90 : bigger spatial dev zone.
3. 91-2000 : infrastructure, difficulty to raise funds.
4. 01-08 : devlpmt of west size

88 : foreign oriented ; sez. third phase : expansion to west. 98 : west corridor region of PRD. 4th version not very flexible. Last version : 2015 ; next year : compare with new version. protecting natural resources. cluster of economic zones, naturally formed (mountains, water)

plan for 2060 : CBD in now wetland, plan ebated.

Problems : capacity of regional influence stays low. infrastrucutre congested, not completed, internal transportation not smooth. Zhuhai airport : small handling capacity. poor public facilities.

not "efficient land use" ? Imbalance between east and west. townships upgraded but few public services. Lack on complete industry chain.

Future spatial strategies ? Guangdong HK Macao Bay area : create a world-level city cluster. all south bay area integrates innovation economic belt. (rq : third bridge at ecological island) Zhuhai needs to increase radiation. Region-oriented spatial development strategy. Bridge to increase interactions. Questionnaire for HK companies to invest in Zhuhai : radiation in West and facilities. exploring the west as a priority. (...) Land use patterns. Future spaces for eco dev. agricultural parks. ecological patterns. Traffic patterns : W/E - N/S U shaped development belt.

Sustainable dev index system. regulation for buildings etc. Pathways. Performance evaluation. Index system of immediate plan.

The urban spatial structure towards low-carbon transportation and an exploration of low - carbon city construction

21% of CO2 emissions from transport sector. increasing car ownership. Zhuhai is 28th on traffic congestion.

Way to low-carbon transport :

- Low carbon energy
- Traffic control
- spatial structure

Form - Function - Network

Compact cities

Effective mixed land use [Pan Haixiao 2008] [Gu and Zhou 2010]

Reference to foreign cases. Zurich as raw model for pedestrian cities : two-stage pedestrian network system.

TOD model. ex Singapore (1981 : new town planning).

Link building Complex / trnaposrt system.

Copenhaguen : finger-shaped ; also tod model.

Europe-China low carbon eco-cities : Zhuhai and Luoyang. Zhuhai : green line planning.

TOD townships planned in Zhuhai (ex north station)

low carbon transit + effective mixed land-use + liveable block size.

Q (chairman) air pollution monitoring system ?

A study on the construction strategy of Qi Ao ecological island in Zhuhai Major part of Zhuhai territory : islands.

mangrove area in north of island - very close to urban area : protected. beautiful scenery. cultural resources.

policy support for the development of an eco-island. -> become a model ?

Mangrove : natural habitat for birds etc. eco-technologies ?

Threats : garbage, domestic rubbish. cultivation : unregulated cultivation by fishermen, illegal fishing.

Alien invasive species.

reduce, Reuse, Recycle. offshore wind powerplants.

Ecological tourism (mangrove museum)

Q : Pr Hangzhou how many inhabitants ? size of the population, not develop island, consider

LiaoLiao which level of administration ? township or city govt -> plan for wetland parks.

Irene Poli which kind of political procedure for the pb of food for the population.

A comprehensive evaluation on the development of industrial ecologicalisation and analysis of influencing factors - a case study of Zhuhai Industrial Ecologization : industries coordinates, industrial ecology. Kalundborg, Denmark. Guandong open economy. interdisciplinary and integrated.

Zhuhai : mostly secondary industry.

Multiobjective : weighting.

(...)

Q Natacha bottom-up policies in China ? need to find more stimulus for that in Zhuhai.

Q Valentina beautiful environment : what ? (...)

Social integration of different types of migrant workers and analysis of the influencing factors: a case study of Shenzhen

Social Spatial Structure in Zhuhai

Day 2

This morning session is chaired by .

Migrant workers and Chinese medium-size cities: the issue of migration in Chinas new urbanisation strategy

Cinzia Losavio, Université Paris 1, UMR CNRS 8504 Géographie-cités

Towards a theory of co-evolutive networked territorial systems: insights from transportation governance modeling in Pearl river delta

Juste Raimbault, Université Paris 7, UMR CNRS 8504 Géographie-cités

Evolution of management in the development zone in Zhuhai: an emergence of a local model of governance

Liao Liao, Sciences-Po Aix

Agent-based modeling of migrant workers residential dynamics within a mega-city region: the case of Pearl river delta

CL and JR

Planning, representations and perceptions of Chinas urbanization: a case study on Hangzhou Future Sci-Tech City

Valentina Ansoize, UNIVE

The reshaping of social groups through the process of urban renewal in post-socialist China: a case study on the coal miners in Datong

Judith Audin, Sciences-Po Aix

Conclusion