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## 1                   **Integration of rural and urban society in China and implications for urbanization,** 2                   **infrastructure, land and labor in the new era**

### 4   **Abstract:**

5   In many parts of China, rapid economic growth, socio-economic inequality, and environmental  
6   degradation (air, water, soil) are undermining social stability and sustainable urbanization. Rural-urban  
7   migration is the main factor contributing to urban population growth. Economic opportunity in urban  
8   areas is the main ‘pull factor’ but government policies provide a ‘push factor’. A model of the  
9   relationship over time of the rural sector and the urban sectors, mainly relating to the focus on  
10   manufacturing and the services sector, is discussed. Each sector provides a market for the other. We use  
11   three cameos of different types of urban-rural development taking examples from a Prefecture-level  
12   city of about 500,000 population located in Guangxi Autonomous Region in south east China. We  
13   analyze the infrastructure plan and land use planning in respect to the impact on labor, investment and  
14   urban growth.

16   **Key words:** urbanization, migration, vocational training, rail, ports, transport hub, smart manufacturing,  
17   marine aquaculture, integration, governance

### 19   **Context and setting**

21   China is a big country undergoing unprecedented economic development. The words ‘New Era’ in the  
22   title of this paper reflect the thinking of President Xi Jinping at the 19<sup>th</sup> Communist Party Congress in  
23   Beijing in October, 2017 when he laid out his vision in the document ‘Thought on Socialism with  
24   Chinese Characteristics for a New Era’. The New Era represents a change in direction in China’s  
25   development away from a focus solely on GDP (Gross Domestic Product) growth towards Green  
26   development and creation of an ‘ecological civilization’. This is not to say that GDP will be  
27   disregarded but rather that it will be framed within the overall benefit of the country and its peoples.

29   China's economic transformation since 1978 has been remarkable, including incredibly rapid growth  
30   of China’s cities. Over the last several decades, employment opportunities generated by  
31   industrialization and the expansion of the urban construction and service sectors, along with the  
32   gradual relaxation of controls on population movements have stimulated rural-urban migration on a  
33   massive scale. It is well understood that the flow of cheap labor out of agriculture to non-agricultural  
34   sectors improves economic efficiency and provides an important source of economic growth. Less  
35   understood are the significant impacts of rural-to-urban migration on rural development. Mass  
36   migration has impacts on rural development in a number of ways, including the loss of labor,  
37   changes in household age and gender structure and off-farm income.

### 39   **Rural-urban migration**

41   Mobility of rural people in China’s countryside was first enhanced by the newly implemented  
42   household responsibility system [HRS], which in 1982 dismantled the communes and gave rural  
43   households individual contracts to farm agricultural land. A more efficient and productive use of  
44   resources – including labor – allowed for greater agricultural output and income, as markets for rural

45 products thrived. The household became the main unit of production, at the same time that it acquired  
 46 greater freedom of labor allocation as well as in migration decisions. Both household size and structure  
 47 (the household development cycle) as well as land cultivation needs became important determinants of  
 48 household surplus labor. In order to diversify the household income, surplus labor began to engage in  
 49 off farm work. However, the pull factor (Fig 3) created by enterprise labor demand led many peasant  
 50 workers to leave the countryside even when they were not surplus to agricultural production. Mobility  
 51 has further been ensured by a set of policies diminishing central state control over provincial and lower  
 52 administrative units, which can now establish their own economic priorities. The new provincial and  
 53 local economic strategies – especially in middle and larger urban areas – include bringing in cheap  
 54 labor to work in construction, manufacturing and other service sectors. On the other side of the  
 55 spectrum, decentralization policies in the rural areas have encouraged local governments to actively  
 56 promote and facilitate out-migration in order to increase village living standards through migrant's  
 57 remittances. Increasing proportions of rural households and village income are indeed being derived  
 58 from both migration and other non-agricultural activities.

59 .Mass migration has impacts on rural development in a number of ways, including the loss of labor,  
 60 changes in household age and gender structure and off-farm income. (Jacka, 2006, Meng, 2014)

61 The key questions relate to migration's impact on:

- 62 • income mobility,
- 63 • poverty alleviation,
- 64 • education,
- 65 • health and nutrition of migrant children, and
- 66 • the assimilation of migrant workers into the urban environment.

67 A new policy of rural urban migration was announced in 2012 *chengzhenhua* (城镇化, literally 'city-  
 68 and town-ization. The Chinese government's plans to move some 250 million rural residents into new  
 69 towns and cities by 2050 (and 80 million by 2020). Unprecedented' is the word commonly used to  
 70 describe China's urbanization 都市化. Yet the country remains less urbanized than most developed  
 71 countries. What makes China's urbanization process remarkable and, indeed, unprecedented is its  
 72 magnitude and speed. Today, 51% of the Chinese population live in cities as compared to the 19% that  
 73 did so in 1979. Under the 13<sup>th</sup> 5-year Plan emphasis was placed on urbanization of China. Targets were  
 74 set to have 80 million people to become urbanized by 2020<sup>1</sup> and 200 million by 2040 to a point in  
 75 2030 when more than two-thirds of China's population will be urbanized (Fig 2). Over 100 million who  
 76 are residents of cities will get their residential permits<sup>2</sup> for urban living in 2018. China will limit land  
 77 use in cities with over 5 million residents to prevent city expansion from eroding the area of farmland.  
 78

79 So, what distinguishes *chengzhenhua* from the former process of rapid urbanization in China?

- 80 • Will the trajectory of 'becoming urban' remain the same, such that the *chengzhenhua* policy  
 81 ends up being nothing more than novel rhetoric?
- 82 • What goals are China's fifth-generation leadership attempting to establish ?,
- 83 • what new practices do they seek to adopt?, and
- 84 • which aspects of the status quo does *chengzhenhua* intend to break away from?

<sup>1</sup> [http://www.chinadaily.com.cn/business/2014-01/11/content\\_17230381.htm](http://www.chinadaily.com.cn/business/2014-01/11/content_17230381.htm) (accessed Dec26, 2017)

<sup>2</sup> Also called hukou see footnote 5

85

86 **The Goals of Urban-rural Integration**

87

88 The larger goal and rationale underpinning *chengzhenhua* is urban-rural integration 城乡一体化. The  
 89 official discourse describes this goal as ‘breaking the urban-rural duality structure’ 打破城乡二元结构.  
 90 In 2007, the Ministry of Construction established four ways of rebuilding peri-urban villages so as to  
 91 integrate them into existing cities. The so-called Four Transfers involve: converting collective land  
 92 ownership to state ownership; converting the rural household registrations of villagers into urban  
 93 registrations; re-assigning social services provided by village collectives to selected municipal bureaus;  
 94 and redeveloping villages according to the urban spatial planning regime.

95

96 On the one hand, many rural household registrations have been converted into urban ones. Therefore  
 97 rural residents (*cunmin* 村民) have been officially renamed as city residents (*shimin* 市民) and villages  
 98 (*cun* 村) as communities (*shequ* 社区). On the other, local infrastructure and services – in particular,  
 99 health care, education and social security – remain largely funded through village collectives’ assets and  
 100 business earnings. Moreover, collective landownership has historically been the most important source  
 101 of income for villagers, and any ‘across-the-board’ attempt for rural-to-urban land conversion almost  
 102 always attracts local opposition. These gaps between the state’s attempts at urbanization and what has  
 103 happened on the ground suggest that the new policy of *chengzhenhua* will encounter significant  
 104 complications, contingent on the actual process of implementation in different places.

105

106 **The *zhen* (‘town’) in *chengzhenhua*** The new policy is focused on towns (*zhen* 镇).

107 Administratively, towns fall under the rural government system in China and are therefore subjected to  
 108 rural institutions such as collective land, rural household registration and village governance. However,  
 109 towns can be populous and prosperous. There are over 20,000 million towns in China, and the average  
 110 population of the largest 1,000 of these is over 70-90,000. A major objective of *chengzhenhua* is to  
 111 encourage and accelerate urbanization in large towns.

112

113 **Promoting *chengzhenhua* in Towns** It has become increasingly clear that there is no clear-cut  
 114 (*yidaoqie* 一刀切) prescription for implementing *chengzhenhua*, because each town has its own  
 115 historical and socio-political conditions. Nevertheless, three main approaches to organizing the various  
 116 practices for ‘urbanizing’ towns can be identified.

117

118 **New Zone Development 新区开发** is a major strategy used by local governments to implement  
 119 *chengzhenhua*. Generating land-related profits through expropriation and conversion of rural collective  
 120 land is central to this mode of development. The first of these is described in the official literature as  
 121 encouraging farmers to move into the city (*nongmin jin cheng* 农民进城). Here, the word ‘farmers’ 农  
 122 民 refers to people who hold rural household registrations with no bearing on their actual employment;  
 123 ‘city’ 城 refers to the built-up residential areas in towns. The core idea of this approach is to reduce the  
 124 threshold for people to obtain urban household registrations, especially for those who have already  
 125 lived, worked, or been educated in towns and cities. An important reason behind this approach is that  
 126 the rural immigrant population 外来人口 of many towns often outnumber the registered population  
 127 户籍人口 by a large margin. Chinese urban planners and policy makers approach *chengzhenhua* by

128 considering towns and villages as potential sites of transformation.<sup>3</sup>

129

130 The second approach to *chengzhenhua* is decentralising the authority for spatial planning. This approach  
131 is also commonly referred to as ‘planning first’ 规划先行. Sitting at the lowest level of the  
132 administrative hierarchy, town governments have little decision-making power over spatial  
133 development. Towns are usually rather passive recipients of the spatial planning conducted by higher  
134 levels of government. However, to promote *chengzhenhua*, towns selected as experimental sites have  
135 themselves been granted more power and authority over spatial planning and land leasing decisions. This  
136 means that town governments will be much more actively involved in spatial and land-use planning  
137 activities and have greater regulatory discretion in determining both the direction and content of town  
138 development.

139

140 The third approach is the legal relaxation of collective land transfers 集体土地流转. Currently,  
141 collective land is subject to many legal constraints on private and profit-oriented development. To permit  
142 and encourage *chengzhenhua*, experiments are currently in progress to both deregulate and marketize  
143 collectively owned land. This practice of *chengzhenhua* may significantly increase the degree of  
144 commodification of collectively owned rural land in China. In public discourse, this important change to  
145 the socialist divide between urban and rural land is lucidly described as ‘capital going to the countryside’  
146 资本下乡.

147

#### 148 **Economic growth and infrastructure development**

149 Economic growth is fueled by enormous investments in infrastructure development – railways,  
150 especially highspeed rail<sup>4</sup>, ports, transport hubs and networks, shipbuilding, manufacturing etc. Labor  
151 to undertake construction mainly comes from employment of rural workers. In earlier decades (it still  
152 continues) most labor was classified as migrant workers who spent some time on a major project and  
153 then returned to their home village. Some acquired skills and stayed on to be part of the maintenance  
154 team. In the past there were barriers to migrant workers settling down in the larger cities. The lack of  
155 an urban registration (*Hukou*<sup>5</sup>) denies migrants the ‘civic inclusion’ that comes with the access to  
156 institutions that provide capacities and resources. For example, children of those migrant workers who  
157 had a *Hukou* from another province or region were denied access to schools, health services etc. in the  
158 city where their parents were migrant labor. It took decades for the injustices in the system to be fully  
159 realized. Excluded from urban citizenship, migrants have developed their own resources to cope with

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<sup>3</sup> The Characteristics and Problems of China’s Current Path to *Chengzhenhua* 当前中国城镇化进程的特点和难点, 13 March 2013, online at:

<http://www.chinareviewnews.com/doc/1024/6/7/2/102467273.html?coluid=7&kindid=0&docid=102467273>.

<sup>4</sup> It is planned to have completed over 30,000 km by the end of 2020.

news.xinhuanet.com/english/2016-01/18/c\_135021027.htm

<sup>5</sup> *Hukou* is a certificate that establishes the citizen’s residential address. The *Hukou* system was introduced by the Mao Zedong Administration as part of ‘New China socialism building’ strategy in the late 1950s and formed step by step by more policies issued later. Its purpose was to prevent the flood of unskilled, poorly educated people deserting the countryside threatening social order while ensuring that improvement in agricultural productivity was not hampered by lack of labor.

160 the lack of public services. They have mainly relied on kinship and native place connections for mutual  
 161 assistance and community formation at destination areas. Two of the most important outcomes of this  
 162 congregation have been chain migration and the establishment of migrant enclaves. The more advanced  
 163 of these entities have developed into self-sufficient communities separate from the state; offering cheap  
 164 housing, job opportunities, schooling, and health care. These can be ‘city villages’ - an enclave within  
 165 the city (see Fig. 4). The activities of this group of urban dwellers fall outside any official jurisdiction,  
 166 and are thus a possible source of social disunity. However, these complex communities are still a  
 167 minority; most peasant migrants are not always able to organize such sophisticated organizations.

168

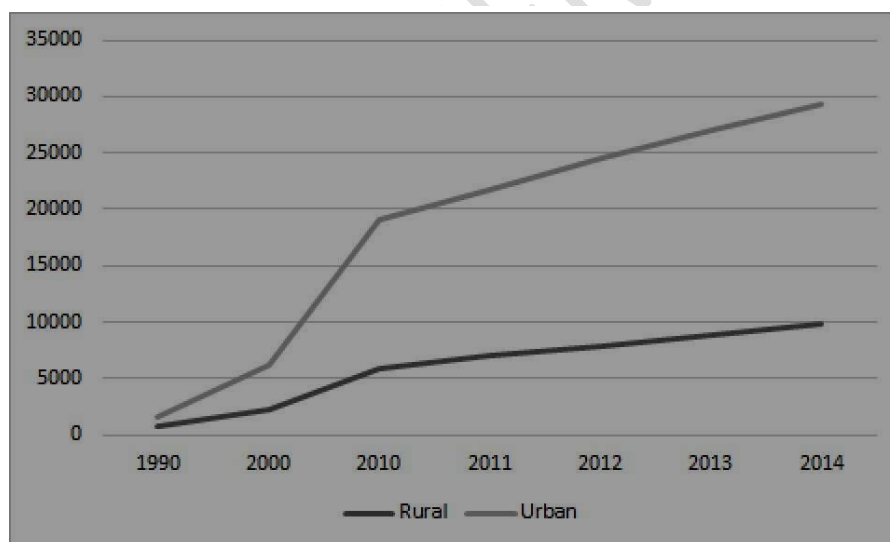
### 169 **Interaction between rural and urban sectors**

170

171 Just how the government has dealt with the relationship between the rural sectors and the urban sectors  
 172 since New China, depended on China’s stage of development. The government has been guiding  
 173 migration as a formal rural development strategy since the early 21<sup>st</sup> century with a view to boosting  
 174 agricultural intensification and promoting rural development. Nowadays the government is trying to  
 175 revitalize the rural regions to cope with unbalanced rural-urban development and to reduce rural-urban  
 176 income inequalities. There is widening gap between rural and urban dwellers and this is even more  
 177 noticeable when we compare disposable income (Fig.1)

178

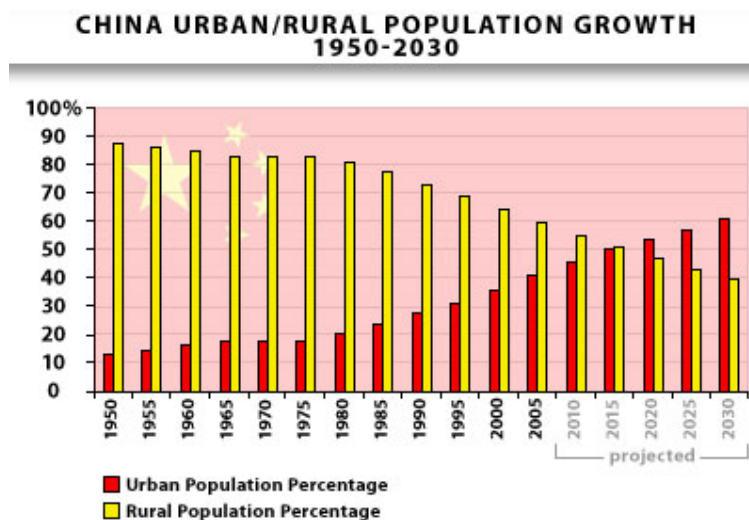
179 Fig.1 The gap between incomes of rural and urban households is accelerating (compiled by the authors  
 180 from multiple sources).



181

182 While China has all but eradicated extreme poverty, the poverty line has declined as a percentage of  
 183 average disposable urban income, from 26.7% in 1998 to 13.8% by 2010. This means, in effect, that to be  
 184 considered poor, one has to be quite far away from middle class living standards.

186



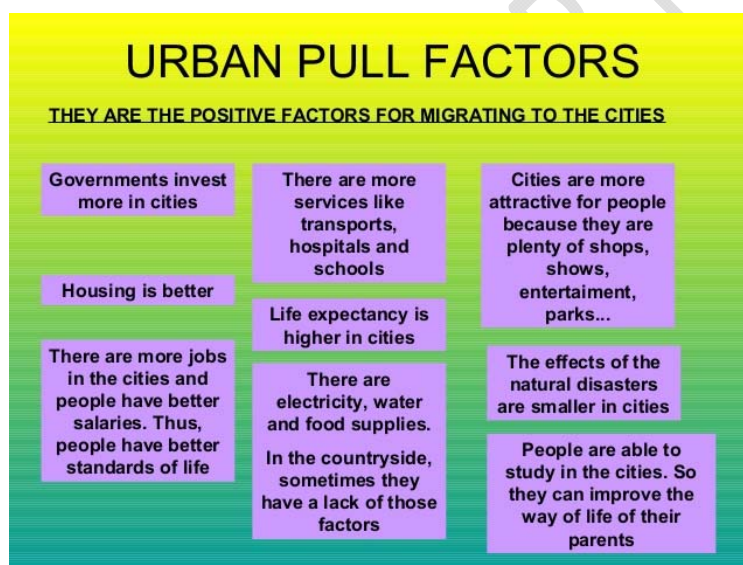
187

188 Fig. 2 From fewer than 12% of the population living in urban centres in 1950 to a target of more than  
 189 60% urbanization in 2030. Note the upswing from the early 21<sup>st</sup> century.

190

191 There are many 'pull' factors that attract people to urban areas (Fig 3) as well as 'push' factors arising  
 192 from government policy.

193



194

195 Fig 3. There are both pull and push factors that influence migration to urban areas. Here are some pull  
 196 factors.

197

198 This mass migration will not result in everyone moving to an already overcrowded 'first tier' city like  
 199 Beijing-Tianjing, Shanghai, Guangzhou or Shenzhen. Instead third and fourth tier cities and many  
 200 prefectural-level hubs or even large county cities will absorb many migrants. All migrants will need  
 201 jobs and housing, some will buy property, others will want to rent and still others will live in  
 202 sub-standard dwellings in what have become known as 'city villages' (Fig. 4). Some of the migrant  
 203 workers find a job in the urban area and buy residential property but they also possess land in the

204 villages so they are called double-residential persons. For them social integration is becoming a big  
205 problem. Many would-be migrants can find a job in the urban areas but cannot reside there or educate  
206 their children there and must migrate seasonally. Finally, most have to come back to the rural society. It  
207 is hard for them to apply new-found skills and be entrepreneurial without targeted policies for rural  
208 revitalization.  
209



210

211 Fig. 4 City villages can occur near the CBD or in enclaves like this one

212 These can occur in the periphery of the CBD (downtown) to the outer edge. Prefectures and County  
213 governments across the country are acquiring land, building housing, schools, hospitals and developing  
214 infrastructure (better roads, integrated transport terminals) and manufacturing bases. Under the new era  
215 emphasis is on 'ecological civilization' so urban greening and beautification of the landscape is a major  
216 consideration in urban development and planning to ensure adequate green space.

217

218 The need for land to support industrialization and urbanization has resulted in forced displacement of  
219 farmers and conversion of agricultural areas into land allocated for industrial projects and urban real  
220 estate (housing) developments on the periphery of every city (Fig 5). There is a changing relationship  
221 over time of the rural sector and the urban.



222

223 Fig 5 Farmland on the edge of urban areas is under threat as urban areas expand

224

225 Each sector provides a market for the other. Growth in both requires investment, but of distinctly  
226 different kinds. Their integration results in an S-shaped curve. The current need is for appropriate  
227 investments and policies to develop the productivity of the urban sectors so that they can continue to  
228 stimulate and support modernized agriculture and still provide jobs for those who are leaving  
229 agriculture. The relationship between industry and agriculture in China is in transition depending on the  
230 geographic region and its phase of development. Many coastal areas are experiencing rapid change  
231 while inland areas and western China generally are proceeding at a slower pace. The new strategy of  
232 rural development and urbanization in China emphasizes town development. From the perspective of  
233 rural-urban integration, the big driver is the need to lessen the disparity between the industrialized  
234 urban centres and the rural hinterland.

235

### 236 **Many questions -- fewer answers**

237 A key question is what happens when agricultural labor is no longer needed as a result of sudden  
238 structural economic shifts? How does the transition from unskilled labor to trained technician or skilled  
239 tradesperson occur? What roles do the Vocational Training Colleges have in preparing for the surge of  
240 young people seeking a trade (plumbing, electrician, brick layer, electronics technician, hairdressers,  
241 sales persons, nurses' aides, and health care providers, etc.

242

243 Whilst many of these questions and challenges have been faced in what are now developed countries  
244 the pace at which the transition occurred was so much slower there. China today is rushing ahead. It  
245 now in the post-Industrial era and is now a major proponent of high tech electronically-based systems  
246 of communication, banking, and manufacture, with much of the last-mentioned, by use of robotics.  
247 China, is at the forefront of technology to commercialize driverless vehicles, electric cars, Smart  
248 manufacturing and so on.

249

### 250 **Multilevel Metropolitan Governance**

251 Leadership is concerned about the megacities. The Development and Reform Commission and  
252 government Think Tanks like the Academies of Social Sciences, private research institutes, and other  
253 academic bodies express concerns about China's megacities. The immediate causes of such high-level  
254 concern are threefold. First, socioeconomic and fiscal disparities between metropolitan centres and  
255 their outlying settlement clusters have reached a critical juncture and current domestic demographic  
256 trends portend an ever-worsening gap in terms of economic resources, including provisioning of water  
257 and fresh food. And the problem of waste disposal. To exacerbate the situation there is a serious air  
258 quality problem as burgeoning automobile numbers create many pollutants. Secondly, sharp  
259 competition within the global economy increasingly threatens the economic base of some core cities  
260 based on outdated manufacturing (steel making, cement making etc) and their inner-ring suburbs. New  
261 productive investments and industrial growth are pre-dominantly in the outer suburbs and edge of cities.  
262 And thirdly, urban sprawl -- uncontrolled land development and 'leapfrogging'—is visibly threatening  
263 the sustainability of the physical environment of large urban communities.

264

265 Some argue that metropolitan governmental fragmentation is the primary cause of the newly  
266 emerging urban problems, and that some form of regional governance is the necessary first step  
267 towards a solution. Top-down directives, though out of favor, are necessary for managing metropolitan  
development and ensuring fiscal equalization. Furthermore, the hyper-complex nature of governance



268 currently in place requires multilevel intervention, to reinforce local moves in the direction of regional  
269 co-operation and consolidation. Intergovernmental strategies are essential to promote metropolitan  
270 revenue-sharing, ‘smart growth’, the ‘new urbanism’ and the targeting of skills training, housing and  
271 transport opportunities to match the changing intraurban and interurban location of employment  
272 expansion and job needs. Central and local Revenue systems, revenue transfer at the central level,  
273 building supportive mechanisms at local level between regions where one body in a developed area  
274 provides money and talents to the body in the undeveloped region. That is in China, between the more  
275 developed eastern seaboard cities and undeveloped western hinterland where there is little or no  
276 revenue sharing between rural-urban communities.

277

278 Thanks to a booming national economy, most cities in China are experiencing a strong fiscal and  
279 economic growth. Several factors need to be high on the agenda (i) *Expanding Homeownership and*  
280 *Affordable Rental Housing*. Homeowners can build strong neighborhoods but providing more  
281 assistance for rental housing is critical for alleviating the distress of worst case housing needs and  
282 homelessness; for overcoming the “housing/jobs mismatch” created by metropolitan development  
283 patterns; and for providing families with the support and stability they need to become part of the new  
284 labor markets. (ii) *Promoting Smarter Growth and Liveable Communities*. To realize the billions in  
285 savings that could be generated by strengthening existing developed communities, the strategy includes  
286 a major initiative to promote liveable communities. It also includes measures to ensure public safety,  
287 strengthen schools, and preserve natural resources and historic amenities. By providing communities  
288 with strong tools to tackle these challenges, the strategy helps enhance the attractiveness of both new  
289 and existing neighborhoods for residents, businesses, and investors.

290

291 The pattern throughout China today is for investment and job creation in the exurbs<sup>6</sup> and  
292 rural-greenfield locations purposely targeted by large scale domestic and international corporations e.g.  
293 automobile and aircraft assembly plants, electronics manufacture, bio-medical industry, chemical  
294 material manufacturing, smart industry, logistic centres and cloud data centres. We need a new  
295 theoretical basis for our understanding of urban and regional economics and a better appreciation of  
296 urban-rural sociology in a rapidly-changing China. The governments should make supportive policies  
297 and reform the system in both rural and urban areas to be based on more human-centred approaches  
298 with regard to land use rights, Hukou reform and labor mobility, and the right of farmers to choose  
299 which crops to plant so as to maximize revenue from their agri-food systems.

300

### 301 **Qinzhou Prefecture – a microcosm that epitomizes China in the new era**

302

303 In the cameos that follow we hope to illustrate the type of regional development that has taken  
304 place or is planned in the near future. We choose as our study site, Qinzhou Prefecture in the Guangxi  
305 Zhuang Autonomous region in south China (Fig. 6).

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<sup>6</sup> Land beyond the suburbs, often requiring land acquisitions totalling hundreds of hectares



Qinzhou Port is in the gulf of Tonkin south east of Nanning and west of Guangzhou. It is linked by high-speed freight-only railway from Lanzhou on the Yellow River in Gansu province

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307

Fig.6 South China is undergoing massive development under the impetus of the 21<sup>st</sup> Century Maritime Silk Road initiative as part of China' Belt and Road Initiative

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The Prefecture's population of over 4 million is made up mostly of the Han nationality and area spanning 10, 843 km<sup>2</sup> that includes several counties. The Prefectural city<sup>7</sup> of Qinzhou lying on the Gulf of Tonkin (also called Beib) has an urban population of over 600,000. The local government has some forward-looking plans to transform this strategically-placed coastal region and its port city into a modern metropolis and economic powerhouse over the coming decade. The development strategy is favoring comprehensive industries but also sees a bright future for eco-tourism, sightseeing, recreational and resort facilities etc. Plans are well advanced to bring this about along the beaches, foreshore and in hinterland (Fig.7)

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321

322

Fig.7 Coastal zoning has been done, land use planning for foreshore and hinterland are coordinated.

<sup>7</sup> In China the administrative hierarchy is Province, Prefecture, County, Township and Village, A Prefectural city might have 5-8 Counties within its boundaries and a population exceeding 10 million.

323  
324 ***Cameo 1 Rail/port integration*** Geographically, Qinzhou is located at the core of North (Beibu) Gulf  
325 also known as the Gulf of Tonkin), where there is a very important port to become a link in the  
326 rejuvenated 21<sup>st</sup> Century marine silk road as proposed by China as part of the ‘Belt and Road  
327 Initiative’<sup>8</sup>. Qinzhou is a starting point, and a connection/or transportation hub facing eastern Asian  
328 countries that lie around the South China Sea. Qinzhou is the terminus of high speed, freight-only,  
329 rail system linking Lanzhou, a city of 4 million people on the banks of the Yellow river in Gansu  
330 Province to Qinzhou, a lesser- known coastal city on the Gulf of Tonkin. The high-speed rail line is  
331 over 1650 km long and can deliver freight both ways in about 7 hours – this will cut the time from 27  
332 hours, using the old lines, and makes possible delivery of fresh produce like sea food and consumer  
333 goods for regional sales or for on-forwarding through the upgraded rail links to Central Asia and  
334 Europe as part of the ‘Belt and Road Initiative. It also allows rail delivery of vital strategic supplies,  
335 including military equipment. The recently opened rail link is designed to make Qinzhou city a regional  
336 transport hub. Qinzhou is also the terminus of a high speed (300 km/hour) passenger train service to  
337 Guangzhou, capital of China’s richest province with its own links to Hong Kong and Macao.

338  
339 The port facilities in Qinzhou will be further upgraded to handle bigger and faster container ships as  
340 well as support the recently-revived fishing industry based on high tech marine aquaculture (see Cameo  
341 3). The Qinzhou Free Trade Zone was officially established and approved by the State Council in May  
342 2008 as a state-level free trade port area and is part of the Qinzhou port that covers 10km<sup>2</sup> has an  
343 annual throughput capacity of 10 million tons. Shipbuilding will also be feature of the port facility and  
344 is expected to employ thousands in the construction phase and in the ship building itself, although the  
345 skill set required (welders, riveters, machinists, marine architects, maritime diesel technicians etc) for  
346 the latter is likely to be provided by specialists from other parts of China.

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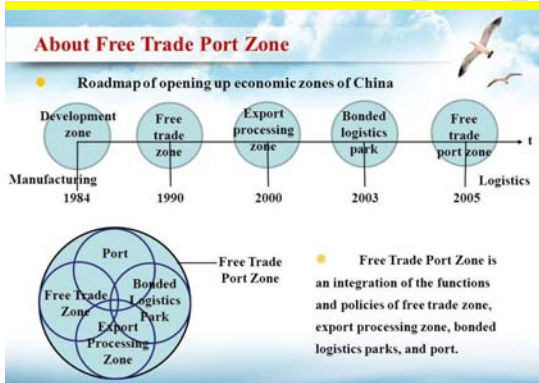
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<sup>8</sup> [english.gov.cn/beltAndRoad](http://english.gov.cn/beltAndRoad)



349

350 Fig 8 Upgraded port facilities and container terminal are well underway



351

352 Fig 9 China has established several Free Port Trade Zones, including some Dry Port Zones in the  
353 hinterland.

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355 **Cameo 2 Smart manufacturing and infrastructure**

356 A major green fields development plan will see the construction of a large (27,000 m<sup>2</sup>) facility Fig. 10).



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358

359

360 Fig. 10 Greenfield sites are popular because they face fewer constraints and provide opportunities for  
361 entrepreneurs to design a facility to suit their present purposes and also leave room for future  
362 expansion.

363

364 This facility occupies 7.5ha and is on former woodland/farmland, including cropland. Displacement of  
365 7 households occurred. Compensation included provision of apartments in Qinzhou metropolitan area  
366 of in similar apartments in the county town and offers of off-farm employment. The facility, once  
367 completed, will be an example of Smart manufacturing. Smart manufacturing (SM) is a  
368 technology-driven approach that utilizes Internet-connected machinery to monitor the production  
369 process. The goal of SM is to identify opportunities for automating operations and use data analysis to  
370 improve manufacturing performance. Smart Manufacturing is about big data and predictive analytics  
371 calculations and artificial intelligence. It puts machines in the business of real  
372 decision-making—outside the range of human capabilities. The emergence of cheap connected devices,  
373 coupled with the availability and affordability of mass computing power, has been the biggest driver of  
374 Smart Manufacturing. The location of various industrial facilities in Qinzhou Prefecture is determined  
375 according to the North Gulf Development Master plan, as a part of Belt and Road Initiative<sup>9</sup> and has  
376 been integrated into the intra-regional transportation grid that is under construction.

377

378 **Cameo 3 Rejuvenated maritime aquaculture industry and associated integrated packing, and**  
379 **shipping facilities**

380

381 Artisanal fishing and marine aquaculture on a small scale (mainly shell fish and shrimp) have been a

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<sup>9</sup> [english.gov.cn/BeltandRoad](http://english.gov.cn/BeltandRoad)

382 feature of the coastline around the Gulf for millennia. Recent advances in the raising of marine animals  
383 (fin fish, shell fish, crustaceans and even specialty creatures like squid, octopus, sea cucumber etc)  
384 have made it possible to support coastal populations with high yielding aquaculture facilities that return  
385 a good level of income. Plans are being developed in conjunction with local government (both  
386 Prefectural and Regional<sup>10</sup>) and commercial firms to utilize the waters of the Gulf and the adjacent  
387 hinterland to establish a ‘state of the art’ marine aquaculture industry. Artisanal fishing will continue  
388 but it is envisaged that many local people will get employment in the new ventures. Initially, in the  
389 construction of the facilities in the sea, at the port and in the hinterland where processing, packing and  
390 shipping will occur.

391 Development of modern marine aquaculture is ongoing as evidenced by a grid of black spots, line after  
392 line, straight as the rays of the rising sun, from one shoreline to the other. The spots are buoys that support  
393 the submerged platforms and thick netting that grow scallops, clams, oysters, and mussels. The buoys,  
394 tended by fishermen in wooden boats that have become gray and weathered by decades of use, are the  
395 most visible features of an aquatic food factory that has potential to employ hundreds and feed many.



396

397 Fig. 11 Artisanal fishing and small-scale culture of shellfish and crabs is giving way to large-scale  
398 marine aquaculture

399 Production practices have been adopted to ensure that Qinzhou’s marine aquaculture industry becomes a  
400 model of local food production that is ecologically sustainable and safe. The waters of the North Cape  
401 bays where shellfish are produced are clean. Shellfish gain their food from the tides; they are not fed.  
402 And fishermen don’t use antibiotics or any other drugs to raise them.

403 Marine aquaculture is but one part of broader investment initiative that has seen Qinzhou port raised to  
404 the status of Free Trade Port Area (see Cameo 2)

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<sup>10</sup> Guangxi is an Autonomous region for Zhuang ethnic minority

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406 **Conclusions and summing up**

407

408 There are many major infrastructure projects going on in China, of which these three cameos are an  
409 example. They employ hundreds of thousands of rural workers. The unskilled labor force in Qinzhou  
410 city alone is over 15,000. The government of China has chosen an opportune time to facilitate  
411 migration to the urban areas as the types of developments described briefly above are being replicated  
412 and scaled up across China – many as a direct result of the economic impetus created by the Belt and  
413 Road Initiative. There are challenges with infrastructure expansion such as rail, maritime facilities,  
414 manufacturing, processing and packing facilities, and actor coordination. Cheap land and labor may not  
415 be enough if there is a dearth of top talent.

416 A reasonable debate, informed by an understanding of changing rural–urban settlement patterns, is  
417 required as a basis for local and regional planning. There are research questions to be answered (see  
418 above) and a greater degree of coordination across the different levels of government must to be  
419 achieved before everything will be better. We need a new theoretical basis for our understanding of  
420 urban and regional economics that focuses on land and labor, factors that are major part of urbanization  
421 and rural revitalization in the new era. The sociological aspects relating to the rural-urban interface  
422 are often neglected in the rush to move and to build and develop. We hope that the observations we  
423 make here may help to foster more research and investigation into this important aspect of China's  
424 planned shift to an urbanized society.

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433 **References**

434 Jacka, T 2006, *Rural Women in Urban China: Gender, Migration, and Social Change*, M E Sharpe  
435 Inc, Armonk USA.

436 Knight, J., Q. Deng, and S. Li. 2011. The Puzzle of Migrant Labour Shortage and Rural Labour Surplus  
437 in China. *China Economic Review*. 22 (4). pp. 585–600.

438 Li, S., C. Luo, and T. Sicular. 2011. Overview: Income Inequality in China: The Intergenerational  
439 Dimension. CIBC Centre for Human Capital and Productivity Working Paper No. 201113. Ontario:  
440 University of Western Ontario.

441 Li, S., and H. Wan. 2015. Evolution of Wealth Inequality in China. *China Economic Journal*. 8 (3). pp.  
442 264–87.

443 Meng, X 2014, 'Rural-urban migration in China', in Shenggen Fan, Ravi Kanbur, Shang-jin Wei, Xiabo Zhang (ed.),  
444 *The Oxford Companion to the Economics of China*, Oxford University Press, Oxford, pp. 382-387.

445 Wan, G. H., and J. Zhuang. 2015. Making Growth More Inclusive. In J. Zhuang, P. Vandenberg, and Y.  
446 Huang, eds. *Managing the Middle Income Transition—Challenges Facing the People's Republic of*  
447 *China*. UK: Edward Elgar.

448 Xie, Y and Zhou, X 2014. Income inequality in today's China Proc Natl Acad Sci U S A. 111(19):

- 
- 449 6928–6933.  
450 Zhuang, J and Shi, L 2016. Understanding Recent Trends in income inequality in the People’s Republic  
451 of China. ADB Economics Working Paper Series N. 489, ADB, Manila 17 p.  
452

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