
Rural-urban migration in China and implications for land and labor in the new era

Abstract:

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

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

Introduction

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

Economic growth is fueled by enormous investments in infrastructure development – railways, especially highspeed rail¹, ports, transport hubs and networks, shipbuilding, manufacturing etc. Labor to undertake construction mainly comes from employment of rural workers. In earlier decades (it still continues) most labor was classified as migrant workers who spent some time on a major project and then returned to their home village. Some acquired skills and stayed on to be part of the maintenance team. In the past there were barriers to migrant workers settling down in the larger cities. For example, children of those migrant workers who had a Hukou² from another province or region were denied access to schools, health services etc. in the city where their parents were migrant labor. It took decades for the injustices in the system to be fully realized.

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.

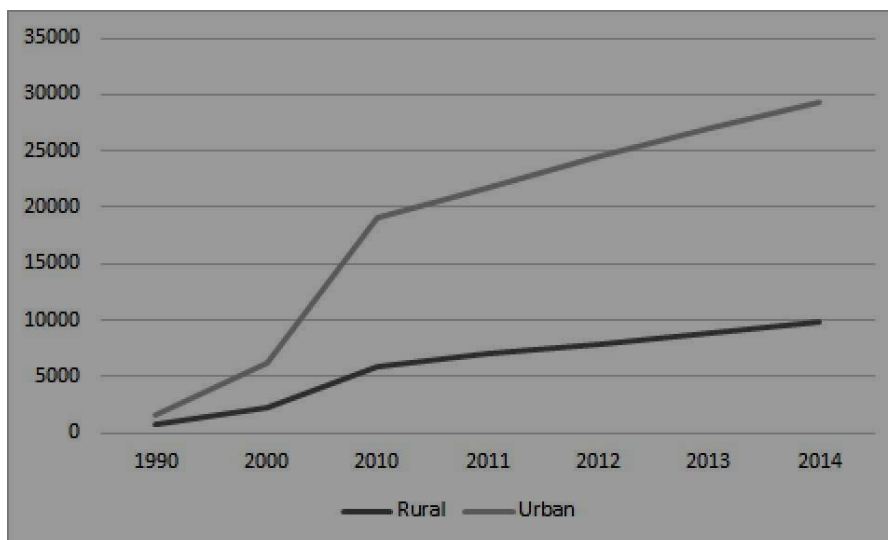
¹ It is planned to have completed over 30,000 km by the end of 2020
news.xinhuanet.com/english/2016-01/18/c_135021027.htm

² Hukou is a certificate that establishes the citizen’s residential address

42 Just how the government has dealt with the relationship between the rural sectors and the urban sectors
43 since New China, depended on China's stage of development. The government has been guiding
44 migration as a formal rural development strategy since the early 21st century with a view to boosting
45 agricultural intensification and promoting rural development. Nowadays the government is trying to
46 revitalize the rural regions to cope with unbalanced rural-urban development and to reduce rural-urban
47 income inequalities. There is widening gap between rural and urban dwellers and this is even more
48 noticeable when we compare disposable income (Fig.1)

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50 Fig.1 The gap between incomes of rural and urban households is accelerating



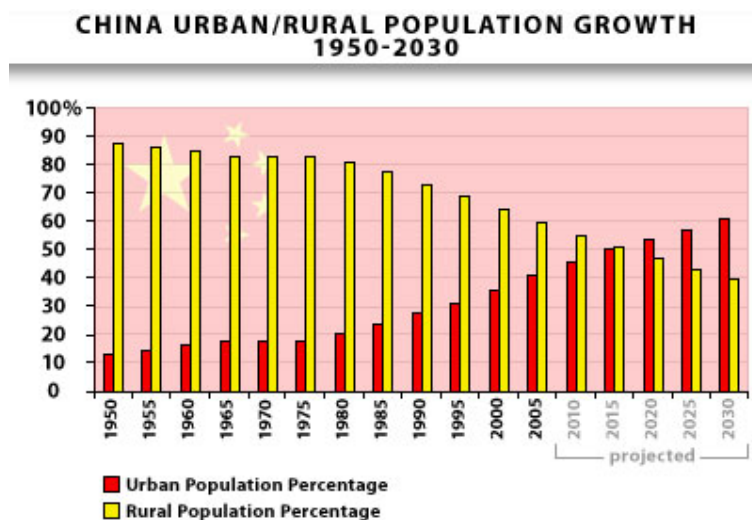
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52 While China has eradicated extreme poverty, the poverty line has declined as a percentage of average
53 disposable urban income, from 26.7% in 1998 to 13.8% by 2010. This means, in effect, that to be
54 considered poor, one has to be quite far away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

56

57 Under the 13th 5-year Plan emphasis was placed on urbanization of China. Targets were set to have 80
58 million people to become urbanized by 2020 and 200 million by 2040 to a point in 2030 when more
59 than two-thirds of China's population will be urbanized (Fig 2). Over 100 million who are residents of
60 cities will get their 'hukou' in 2018. China will limit land use in cities with over 5 million residents to
61 prevent city expansion from eroding farmland,

62 http://www.chinadaily.com.cn/business/2014-01/11/content_17230381.htm (accessed Dec26,2017)



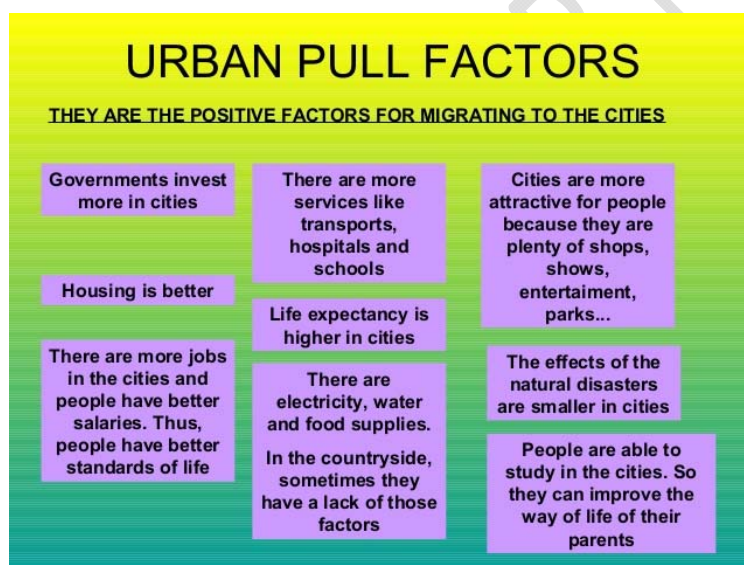
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64 Fig. 2 From fewer than 12% of the population living in urban centres in 1950 to a target of more than
 65 60% urbanization in 2030. Note the upswing from the early 21st century

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

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70

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

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

80 villages so they are called double-residential persons. For them social integration is becoming a big
81 problem. Many would-be migrants can find a job in the urban areas but cannot reside there or educate
82 their children there and must migrate seasonally. Finally, most have to come back to the rural society. It
83 is hard for them to apply new-found skills and be entrepreneurial without targeted policies for rural
84 revitalization.
85



86
87 Fig. 4 City villages can occur near the CBD or in enclaves like this one
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89 These can occur in the periphery of the CBD (downtown) to the outer edge (see schema in Fig 6).
90 Prefectures and County governments across the country are acquiring land, building housing, schools,
91 hospitals and developing infrastructure (better roads, integrated transport terminals) and manufacturing
92 bases. Under the new era emphasis is on 'ecological civilization' so urban greening and beautification
93 of the landscape is a major consideration in urban development and planning to ensure adequate green
94 space.
95

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



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

103

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

114

115 **Many questions -- fewer answers**

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

122

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

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130 **Multilevel Metropolitan Governance**

131 Leadership is concerned about the megacities. The Development and Reform Commission and

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

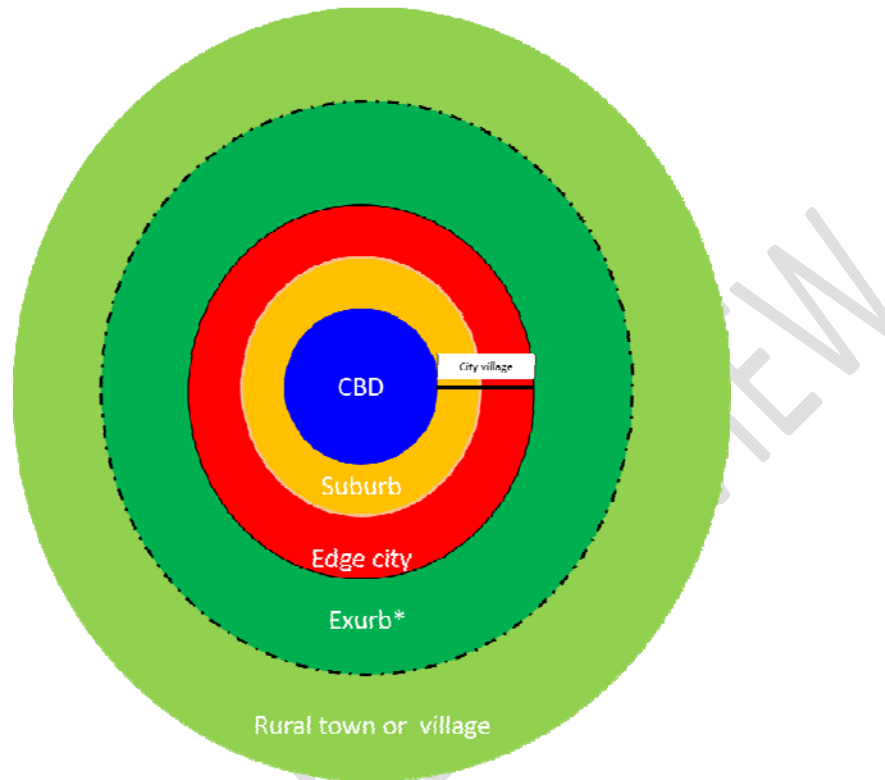
144 Some argue that metropolitan governmental fragmentation is the primary cause of the newly
145 emerging urban problems, and that some form of regional governance is the necessary first step
146 towards a solution. Top-down directives, though out of favor, are necessary for managing metropolitan
147 development and ensuring fiscal equalization. Furthermore, the hyper-complex nature of governance
148 currently in place requires multilevel intervention, to reinforce local moves in the direction of regional
149 co-operation and consolidation. Intergovernmental strategies are essential to promote metropolitan
150 revenue-sharing, 'smart growth', the 'new urbanism' and the targeting of skills training, housing and
151 transport opportunities to match the changing intraurban and interurban location of employment
152 expansion and job needs. Central and local Revenue systems, revenue transfer at the central level,
153 building supportive mechanisms at local level between regions where one body in a developed area
154 provides money and talents to the body in the undeveloped region. That is in China, between the more
155 developed eastern seaboard cities and undeveloped western hinterland where there is little or no
156 revenue sharing between rural-urban communities.

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

170
171 The pattern throughout China today is for investment and job creation in the exurbs³ (see Fig.6) and
172 rural-greenfield locations purposely targeted by large scale domestic and international corporations e.g.
173 automobile and aircraft assembly plants, electronics manufacture, bio-medical industry, chemical
174 material manufacturing, smart industry, logistic centres and cloud data centres. We need a new

³ Land beyond the suburbs, often requiring land acquisitions totalling hundreds of hectares

175 theoretical basis for our understanding of urban and regional economics and a better appreciation of
 176 urban-rural sociology in a rapidly-changing China. The governments should make supportive policies
 177 and reform the system in both rural and urban areas to be based on more human-centred approaches
 178 with regard to land use rights, Hukou reform and labor mobility, and the right of farmers to choose
 179 which crops to plant so as to maximize revenue from their agri-food systems.



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184 Fig. 6 Stylized pattern of rural-urban development (see Fig.4 for more on city village) *Exurbs
 185 may have villages and small towns embedded

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

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190 In the cameos that follow we hope to illustrate the type of regional development that has taken
 191 place or is planned in the near future. We choose as our study site, Qinzhou Prefecture in the Guanxi
 192 Zhuang Autonomous region in south China (Fig. 7).



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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Fig.7 South China is undergoing massive development under the impetus of the 21st 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 km² that includes several counties. The Prefectural city⁴ of Qinzhou lying on the Gulf of Tonkin 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.8)

⁴ 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.



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206 Fig.8 Coastal zoning has been done, land use planning for foreshore and hinterland are
 207 coordinated

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209 **Cameo 1 Rail/port integration** Geographically, Qinzhou is located at the core of North (Beibu) Gulf
 210 also known as the Gulf of Tonkin), where there is a very important port to become a link in the
 211 rejuvenated 21st Century marine silk road as proposed by China as part of the 'Belt and Road
 212 Initiative'⁵. Qinzhou is a starting point, and a connection/or transportation hub facing eastern Asian
 213 countries that lie around the South China Sea. Qinzhou is the terminus of high speed, freight-only,
 214 rail system linking Lanzhou, a city of 4 million people on the banks of the Yellow river in Gansu
 215 Province to Qinzhou, a lesser- known coastal city on the Gulf of Tonkin. The high-speed rail line is
 216 over 1650 km long and can deliver freight both ways in about 7 hours – this will cut the time from 27
 217 hours, using the old lines, and makes possible delivery of fresh produce like sea food and consumer
 218 goods for regional sales or for on-forwarding through the upgraded rail links to Central Asia and
 219 Europe as part of the 'Belt and Road Initiative. It also allows rail delivery of vital strategic supplies,
 220 including military equipment. The recently opened rail link is designed to make Qinzhou city a regional
 221 transport hub. Qinzhou is also the terminus of a high speed (300 km/hour) passenger train service to
 222 Guangzhou, capital of China's richest province with its own links to Hong Kong and Macao. The port
 223 facilities in Qinzhou will be further upgraded to handle bigger and faster container ships as well as
 224 support the recently-revived fishing industry based on high tech marine aquaculture (see Cameo 3).
 225 The Qinzhou Free Trade Zone was officially established and approved by the State Council in May
 226 2008 as a state-level free trade port area and is part of the Qinzhou port that covers 10km² has an
 227 annual throughput capacity of 10 million tons.

⁵ english.gov.cn/beltAndRoad

228 Shipbuilding will also be feature of the port facility and is expected to employ thousands in the
 229 construction phase and in the ship building itself, although the skill set required (welders, riveters,
 230 machinists, marine architects, maritime diesel technicians etc) for the latter is likely to be provided by
 231 specialists from other parts of China.
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235 Fig 9 China has established several Free Port Trade Zones, including some Dry Port Zones in the
 236 hinterland.

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238 Cameo 2 Smart manufacturing and infrastructure

239 A major green fields development plan will see the construction of a large (27,000 m²) facility Fig. 10).

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

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247 This facility occupies 7.5ha and is on former woodland/farmland, including cropland. Displacement of
248 7 households occurred. Compensation included provision of apartments in Qinzhou metropolitan area
249 of in similar apartments in the county town and offers of off-farm employment. The facility, once
250 completed, will be an example of Smart manufacturing. Smart manufacturing (SM) is a
251 technology-driven approach that utilizes Internet-connected machinery to monitor the production
252 process. The goal of SM is to identify opportunities for automating operations and use data analysis to
253 improve manufacturing performance. Smart Manufacturing is about big data and predictive analytics
254 calculations and artificial intelligence. It puts machines in the business of real
255 decision-making—outside the range of human capabilities. The emergence of cheap connected devices,
256 coupled with the availability and affordability of mass computing power, has been the biggest driver of
257 Smart Manufacturing.

258 The location of various industrial facilities in Qinzhou Prefecture is determined according to the North
259 Gulf Development Master plan, as a part of Belt and Road Initiativeⁱ and has been integrated into the
260 intra-regional transportation grid that is under construction.

261

262 **Cameo 3 Rejuvenated maritime aquaculture industry and associated integrated packing, and**
263 **shipping facilities**

264

265 Artisanal fishing and marine aquaculture on a small scale (mainly shell fish and shrimp) have been a
266 feature of the coastline around the Gulf for millennia. Recent advances in the raising of marine animals
267 (fin fish, shell fish, crustaceans and even specialty creatures like squid, octopus, sea cucumber etc)
268 have made it possible to support coastal populations with high yielding aquaculture facilities that return
269 a good level of income. Plans are being developed in conjunction with local government (both
270 Prefectural and Regional⁶) and commercial firms to utilize the waters of the Gulf and the adjacent
271 hinterland to establish a ‘state of the art’ marine aquaculture industry. Artisanal fishing will continue
272 but it is envisaged that many local people will get employment in the new ventures. Initially, in the

⁶ Guanxi is an Autonomous region for Zhuang ethnic minority

273 construction of the facilities in the sea, at the port and in the hinterland where processing, packing and
274 shipping will occur.

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



280

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

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

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

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290 **Conclusions and summing up**

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292 There are many major infrastructure projects going on in China, of which these three cameos are an
293 example They employ hundreds of thousands of rural workers. The unskilled labor force in Qinzhou
294 city alone is over 15,000. The government of China has chosen an opportune time to facilitate
295 migration to the urban areas as the types of developments described briefly above are being replicated
296 and scaled up across China – many as a direct result of the economic impetus created by the Belt and
297 Road Initiative. There are challenges with infrastructure expansion such as rail, maritime facilities,

298 manufacturing, processing and packing facilities, and actor coordination. Cheap land and labor may not
299 be enough if there is a dearth of top talent.

300

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

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330

ⁱ english.gov.cn/beltAndRoad