



INFRASTRUCTURE -ORIENTED DEVELOPMENT IN CHINA'S YANGTZE RIVER DELTA CITY CLUSTER

In the second of a series covering our participation in the 2019 Urban Land Institute Asia Pacific Summit, Beijing-based urban planning expert **Hungchih Liu** discusses how holistic, human-centric urban design and planning can ensure that China's inevitable growth leads to positive outcomes and long-term prosperity for its citizens.

In China, city clusters are the way of the future with an urban population expected to grow from 680 million today to over 900 million by 2060. As a result, the development of areas, such as the Yangtze River Delta Economic Region (YRDER) — which makes up some 20 per cent of the country's GDP, accounts for one-third of its imports and exports, and encompasses 26 municipalities, including star cities Shanghai, Hangzhou, Suzhou and Nanjing — has become a national strategy for the People's Republic of China (PRC).

The provision of high-quality infrastructure is essential to PRC's strategy and the city clusters' effective operation and success. For example, with its current rate of urbanisation exceeding 66 per cent, the YRDER region has seen tremendous growth over the last decade, supported by the addition of high-speed rail, an extensive new highway and airport infrastructure.

But if not carefully managed, China's dynamic and rapid urbanisation runs the risk of negatively impacting sustainable growth, residents' quality of life,



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and the agricultural and ecological environment of the surrounding areas. ➔

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current rate of urbanisation in the YRDER region

Infrastructure-orientated development — a fresh outlook

Developed to help mitigate this and facilitate an evolved sense of infrastructure, our team has pioneered a new urban methodology, ‘infrastructure-oriented development’ (IOD) that promotes careful, deliberate planning and innovative infrastructure designed to meet citizens’ demands for functional city life in China.

Taking an integrated development approach to city clusters, IOD fosters collaboration alongside healthy competition between neighbouring cities and helps establish sound urban governance frameworks to provide services — both public and private — that can be used by all.

The IOD framework considers and analyses multiple factors, such as cultural, social, digital, ecological, municipal, resource, mobility and resilient-infrastructure issues. Together, these work to help decision-makers understand a city’s urban identity, identify incentives for further development and, where relevant, highlight potential areas for city cluster integration.

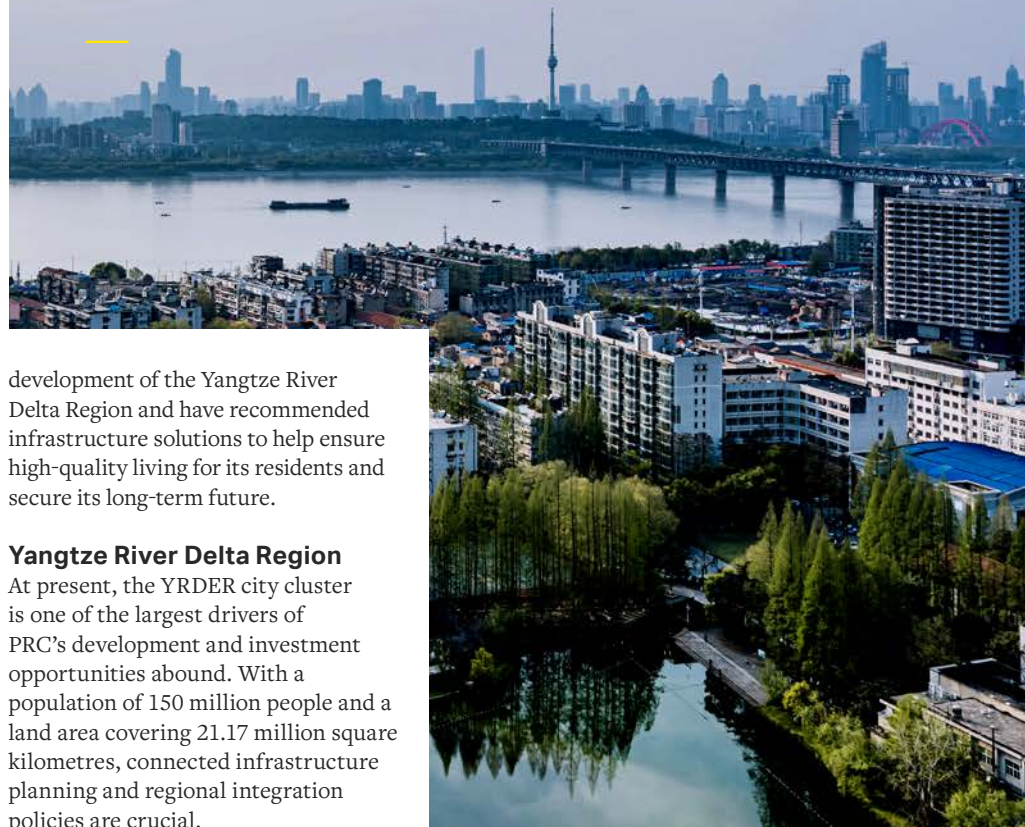
Based on this analysis, IOD focuses on four key tenets to drive sustainable urbanisation and ease the development path for city clusters:

- / Through innovation, existing municipal government centres can be transformed into smart civic hubs via the creation of a ‘cloud park’ to direct all operations for the city
- / Environmental development ensures the creation of sustainable, green buildings and cities, strengthening resilience and improving safety
- / Cultural aspects restore and reconnect the city with its historical roots to build authenticity and ownership
- / And finally, social development helps maintain tolerance and civic responsibility to foster cohesive communities and equal opportunities across the region.

As an example, we have applied an IOD approach to highlight the challenges and opportunities presented by the



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development of the Yangtze River Delta Region and have recommended infrastructure solutions to help ensure high-quality living for its residents and secure its long-term future.

Yangtze River Delta Region

At present, the YRDER city cluster is one of the largest drivers of PRC’s development and investment opportunities abound. With a population of 150 million people and a land area covering 21.17 million square kilometres, connected infrastructure planning and regional integration policies are crucial.

A competitive region

The IOD approach uses an urban competitiveness assessment to evaluate and set city clusters' criteria for success, analysing the allocation of city resources, management capabilities, operating conditions, adaptability to national strategies, capacity for innovation, city culture and overall attractiveness.

In line with this assessment, the YRDER has numerous advantages. Chief among them is its location on China's Coastal Development Corridor, which is a technologically-advanced, economically-open and dynamic international gateway to the APAC area. The manufacturing industry and businesses across the region are also mature and have been developed toward increasing value at lower costs.

Strong surrounding area

In addition to the major Shanghai metropolitan area, there are six sub-cities that support the YRDER's fast-paced urbanisation. In combination with the satellite towns surrounding the major cities, these sub-cities form a healthy urban development corridor, offering sufficient natural, technological, human, social and information resources to support its own economic development. Crucially, the region also has public services and infrastructure in place, such as the Shanghai Hongqiao Integrated Transportation Hub¹, to help promote and facilitate the wider area's emergence as a city cluster.

Closing the gap

There are, however, several hurdles for the region to overcome. These range from a lack of diversified development between cities to a mismatch in public service provision and population density. Resources are currently concentrated in major cities and there is a risk of further widening the wealth gap between these and the sub-cities that support them. As it stands, the cost of living is already too high for many to relocate or stay long-term in the major cities.

Connect to collaborate and thrive

Using innovative and smart solutions to strengthen the interconnection of transportation, information, energy and ecological infrastructure across the Yangtze River Delta Region can help to address these challenges.

The key is to utilise technology to enhance and link up the unique, yet complementary, strengths of the cluster's individual cities. Doing this will help to narrow the differences between those areas that are more, or less, developed than others, meeting China's demand for high-quality and balanced development.

For example, strengthening the cluster's transport links and interconnectivity to create an enhanced mobility network will improve residents' access to housing, jobs, education and other essential services and opportunities. Additionally, innovative micro-renewal projects in cities such as Shanghai have brought residents together to renovate old communities, collectively improving their quality of life and ensuring cultural heritage is preserved in the process. That focus on connection and collaboration will help to strengthen the region's competitive advantage, boosting innovation, cultural, and social value.

Think green

Despite a focus on liveability and smart urbanisation, environmental preservation remains a central challenge for the large-scale expansion and integration of a city cluster, such as YRDER. The region is dealing with a deteriorating ecological system. But this can be mitigated through the construction of a clean energy supply channel along the Yangtze River.

In addition, improving the YRDER's backbone power transmission network will help embed clean-energy use in the city cluster and strengthen the region's energy infrastructure.

Furthermore, the use of nature-based solutions — comprising 'green infrastructure', such as living walls



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and roofs on buildings and 'blue infrastructure,' which encompasses such aspects as urban wetlands — can boost the region's ecological infrastructure, improve its resilience to climate change issues, increase green spaces and improve air quality to support citizens' health and wellbeing.

IOD-focused expansion

Infrastructure-orientated development works to ensure the careful and informed expansion of city clusters, inclusive of the Coastal and Yangtze River Development corridors, integrating mobility, information and public service networks across regions, and recognising the value of the natural environment to sustainable development.

With YRDER, we believe IOD can help to enhance the area's governance, collaboration and connections, combining to deliver an improved quality of life and sustained economic development for its people. And more widely, the team is now looking at possible applications of IOD in other countries and regions throughout the world. ■