# 6 Conclusion and reflection

*Landscape of new development area in Han Dan municipality*
*Source: https://www.google.com/maps*

# 6.1 Conclusion

## 6.1.1 Research conclusion



Dilemma of the transition of resource-based industrial cities → City attractiveness decreases → Floating-out population

Secondary cities are being spatial marginalized in the mega-region

Industry vitality continues to decline and floating-out people ⇄ Research object HanDan city ⇌ Un-integration with mega-regional development

Transform from a traditional resource-based industrial city to a innovative metropolis

Functional positioning of the innovative belt

Space for innovative urbanism × Engine for landscape and local cultural revitalization × Platform for regional cooperation and communication

Designing principles

Ancient innovative center

Industrial heritage

Innovative urbanism × Spatial regeneration

Spatial resource

Innovative drivers    Spatial opportunities

Creative group
Knowledge and technology
Enterprises climte
Cultural activities and tourism
Political support and governance
Accessibility
Environment quality

Transformation from an industrial belt to an innovative belt

Spatial regeneration of industrial belt

Reuse and revitalization of buildings and landscape ✕ Cultivation and introduction of innovative industries

Innovative industries
Innovative people
Innovative activities

Innovative space

Resource-besed Industries Belt

New innovative Industries Belt

Industrial transformation

Urban vitality improvement    Environmental restoration    knowledge&technology    New identity for regional

Planning perspectives

Regional traveling flow    Urban attractiveness improvement

Tourism upgrading    Regional cooperation

Three key strategies

Good connectivity × Tourism system implemen-tation × Innovative communities construction

Principle1-Environmental restoration

Principle2-Good physical/ digital accessibility

Principle3-Decentralized living facilities

Principle4-Plug-ins for cultural activities and tourism

Principle5-Diversity of the third places

Principle6-Reserved space for start ups and free to use

Principle7- possibilities for the future adventure

# 6.1 Conclusion

## 6.1.2  Answering the research question

> **Research question on HanDan city:**
> *Facing the double dilemma of regional spatial marginalization*
> *and difficulties in the industrial transition,*
> *how can* **spatial regeneration of post-industrial sites** *help Handan*
> **transform from a traditional resource-based industrial city to an innovative metropolis**?

| Spatial regeneration of post industrial sites | → | Innovative urbanism in HanDan city | → | Transformation and integration |
|---|---|---|---|---|

The response to the research question is mainly divided into three steps. First of all, this is a plan based on the regeneration design of abandoned industrial sites. Spatial elements are considered to be an important potential for realizing the planning vision. On the basis of space regeneration, innovative urbanism is considered to be the key driving force for the transformation of Handan. Through this process, Handan will transform from a traditional resource-based industrial city to an innovative metropolis. This will give Handan a new identity, and this new identity will enable the city to find its own position in the mega regional development system and integrate into it.

## Spatial regeneration of post industrial sites

### Industrial buildings, structures, and other construction space



*Fig. 6.1.1 Industrial buildings, structures, and other construction space Source: author*

In the process of space regeneration, the most important spatial elements are leftover industrial buildings, industrial structures, and other construction spaces. These places are highly iconic and have great potential to be reused. Due to the different characteristics of industrial production, industrial buildings also have extremely high diversification, scale, form, color, etc. This gives these buildings the potential which can be implanted with diversified functions.

## Industrial infrastructure

During the industrialization, a railway system for the transportation of goods and the movement of workers was established. These railways, scrap trains are also considered to be important spatial elements. In this scenario, some of the train tracks are regenerated as an element of entertainment to enhance the interesting places.

Industrial railways also connect urban areas, large towns, and important factories in series. Therefore, these disused facilities are also considered to be updated into a new high-speed railway system to enhance the connectivity of the entire area.

## Industrialized landscape

Due to the high pollution and high energy consumption of resource-based industries, the ecological environment in this area has been severely damaged. Including natural landscapes such as mines and rivers. In this project, restoration of these landscape are considered to be an important foundation of innovative urbanism.

# Industrial culture





Fig. 6.1.13-6.1.14 Industrial culture Source: author https://hillpost.in/wp-content/uploads/2018/12/Sirsa-pollution.jpg

In addition to spatial elements, industrial culture is also considered to be regenerated. In the past, the composition of industrial enterprises was actually industrial communities of different sizes, including production areas and living areas, and thus created a good atmosphere of daily life.

These community courtyards were also abandoned as the factory closed. In the design of the local scale, these courtyard spaces are considered as the spatial basis for creating innovative communities, which can be transformed into workshops, entertainment areas and other functions.

# 6.1 Conclusion

## 6.1.2 Answering the research question -innovative urbanism in HanDan city

**The results and benefits to veruous components of creative group**

| | Components | People | Benefits |
|---|---|---|---|
| **Innovative core – the creative group** | Creative class | Designers, local cultural creators, inheritors of traditional handicrafts, artists, painters, writers, picture producers, etc. | • Creation platform<br>• Communication opportunities<br>• Social networks<br>• Promotion support<br>• Workplaces |
| | Professional experts | Senior researchers and scholars, experts in climate/environment/culture/economics/management/social/medical science/art, etc. | • Knowledge network<br>• Academic communication<br>• Research support<br>• Experiment platform<br>• Knowledge-Technology-Industry Integration Opportunities |
| | College student | Junior researchers and scholars, university students, graduates, etc. | • Innovative education<br>• Entrepreneurship support<br>• Social network<br>• Knowledge network<br>• Practice platform |
| | Government group | Government officials, politicians, policy planners, civil servants, etc. | |
| | Enterprise and firm | Entrepreneurs (both junior and senior), employees, managers, technicians, engineers, etc. | • Industrial Cooperation Network<br>• Technical and knowledge support<br>• Guidance for Junior Entrepreneurs<br>• Job opportunity |
| | Rural residents | Farmers, rural artists, etc. | • Promotion support<br>• Service Agriculture Upgrade<br>• Entrepreneurship support |
| | The elderly group | | • Nursing place<br>• Medical treatment<br>• Innovation place<br>• Social interaction |
| | The younger generation | Kids under age 16 | • Daycare<br>• Innovative education<br>• Practice platform |

**Innovative urbanism promote the urban sustainability**

**Innovative urbanism- economic aspect**
- Industrial upgrading
- Knowledge and innovation as drivers for economic growth
- Small enterprise support

**Innovative urbanism- social aspect**
- Local cultural conservation and revitalizion
- More opportunities for social innovation, and interaction
- Diversity of social groups

**Innovative urbanism- environmental aspect**
- Environment restoration and repair as basis for urban innovation
- Integration of environment and human life
- Environment-friendly industries transition

**Innovative urbanism- cooperation/ partnership aspect**
- Regional cooperation platform establishment
- Knowledge and technology communication network
- Innovative community construction

In this project, the core of innovative urbanism is the creative group. Different from the creative class, the creative group has a broader definition in this project. In addition to creative classes such as designers, painters, and cultural creators, it also includes professional experts, university students, government organizations, enterprises, rural residents, the elderly group, and the younger generation. In fact, everyone can be involved in this group and jointly participate in innovative industries and innovative activities.

In terms of economic development, the upgrading and transformation of industries, the use of knowledge and innovation to drive economic growth, and the support of small businesses will all contribute to a healthier development of the urban economy. At the social level, local culture is considered to be an important factor in promoting innovative urbanism, so it is protected and promoted, and social group interactions and cooperation are also considered in local scale design. In terms of the environment, the purification and restoration of the natural environment is considered the basis of innovative urbanism. In addition to the traditional three aspects of sustainable development, partnership is also considered a part of sustainable development. This project is discussed based on the development of regional cooperation. Therefore, in the planning and design, the construction of regional cooperation platform, knowledge innovation network, and innovation community are mainly considered to promote multi-dimensional cooperation.

## 6.2 Evaluation

### 6.2.1 Sustainable development goals and urban resilience



Fig. 6.2.1 Sustainable development goals and urban resilience Source: https://sdgs.un.org/goals

The United Nations established the Sustainable Development Goals (SDGs), also known as the Global Goals, in 2015 as a global call to action to eradicate poverty, preserve the environment, and guarantee that by 2030, everyone lives in peace and prosperity.The 17 SDGs are interconnected, recognizing that actions in one area have an impact on outcomes in others and that development must strike a balance between social, economic, and environmental sustainability. Countries have agreed to emphasize improvement for those who are the most disadvantaged. The Sustainable Development Goals (SDGs) aim to eradicate poverty, hunger, AIDS, and discrimination against women and girls.To fulfill <span>218</span> the SDGs in every setting, all of society's creativity, know-how, technology, and financial resources are required.
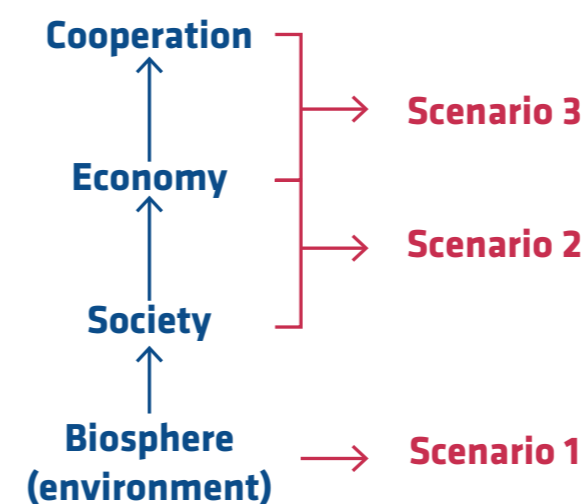
**SUSTAINABLE DEVELOPMENT GOALS**
**Contributions to Agenda 2030 - Azote Images for Stockholm Resilience Centre**



Fig. 6.2.2 Azote Images for Stockholm Resilience Centre
Source: https://www.stockholmresilience.org/research/research-news/2017-02-28-contributions-to-agenda-2030.html



Scholars from Stockholm University combined urban resilience with sustainable development goals, and at the same time revealed that the realization of sustainable development goals should be divided into different stages. At the bottom of the pyramid is the consideration of the environment, which is the primary goal pursued for sustainability. On this basis, social-related sustainability goals, such as the sustainability of urban communities, are developed, which in turn stimulates the realization of economic sustainability goals. At the top of the pyramid is partnership and sustainability, which are considered to be the key factors for maintaining the good functioning of the sustainable system. In the project evaluation chapter, different scenarios are established to test the results of each stage of the planning and design. <span>219</span>

*" The SDGs need to embrace the concept of social-ecological systems, seeing people and the biosphere as integrated parts of a whole;*
**The SDG process needs to address and navigate the trade-offs between being ambitious and achievable;**
*Formulating the goals should be guided by existing knowledge about social change processes on all scales, from global to individual"*

*Citation: Norström, A. V., A. Dannenberg, G. McCarney, M. Milkoreit, F. Diekert, G. Engström, R. Fishman, J. Gars, E. Kyriakopoolou, V. Manoussi, K. Meng, M. Metian, M. Sanctuary, M. Schlüter, M. Schoon, L. Schultz, and M. Sjöstedt. 2014. Three necessary conditions for establishing effective Sustainable Development Goals in the Anthropocene. Ecology and Society 19(3): 8. http://dx.doi.org/10.5751/ES-06602-190308*

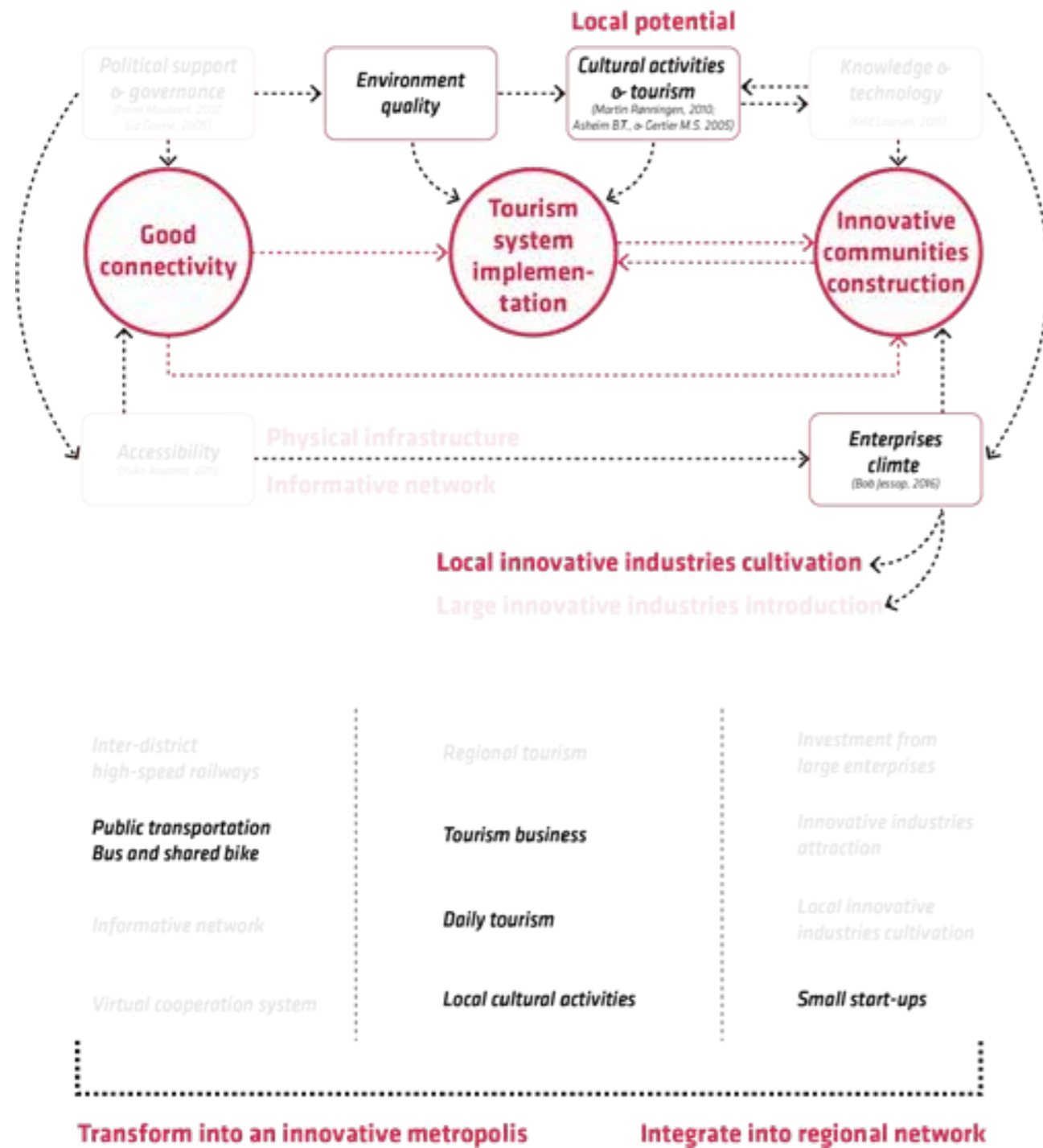## Strategies to achieve the goals
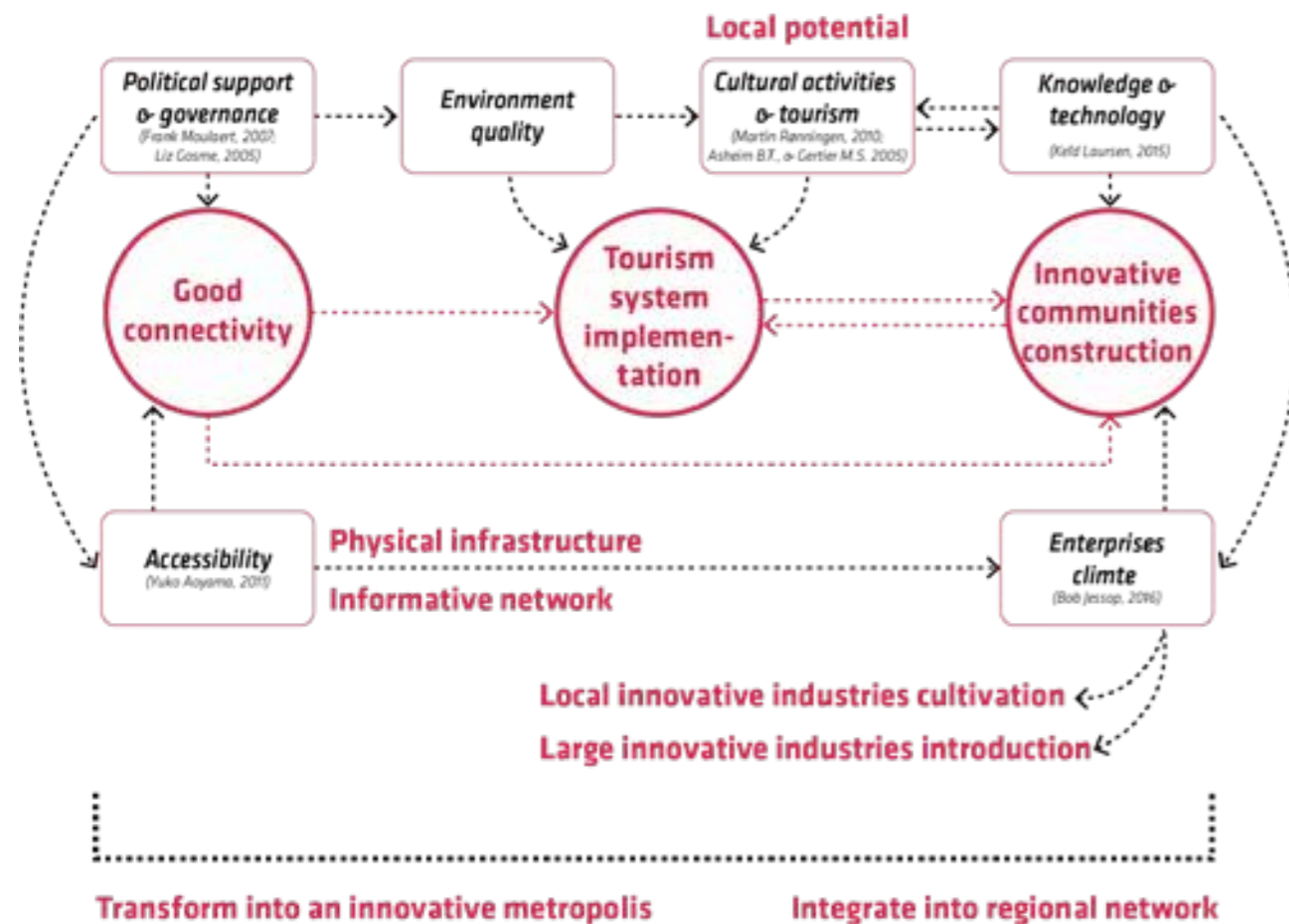


The goal of sustainable development should be set between ambitious and feasible. This can stimulate development and progress, while taking into account reality to a certain extent, so as to ensure the realization of sustainable development goals. In fact, the development goals set in this project also follow this theory. The three main planning strategies all contain the concept of sustainable development, and they will also be implemented in stages. This also ensures a certain degree of planning flexibility. Although the highest goals may be difficult to achieve, the realization of some secondary goals can also improve the development of Handan City.
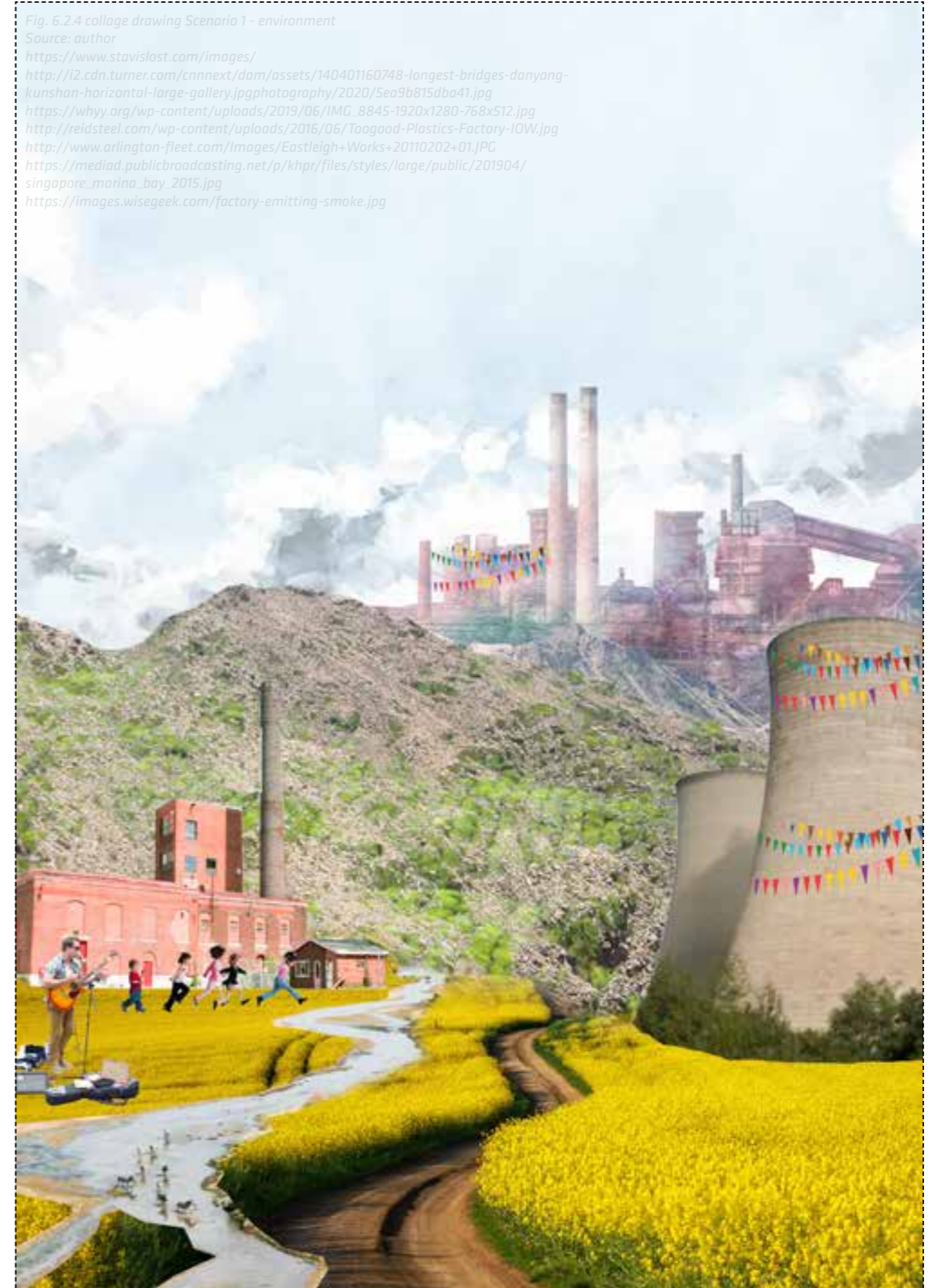
## 6.2.2 Scenario 1 - environment



In the first scenario, environmental issues are discussed. By improving the quality of the environment and restoring the polluted landscape, the tourism system will have the opportunity to realize its huge potential. In this process, small tourism businesses, urban entrepreneurial spaces, and public transportation systems will be emphatically considered. In this way, the value of post-industrial legacy buildings will be brought into play, and local culture and mountain water resources will be fully protected and utilized.

## 6.2.3 Scenario 2 - social
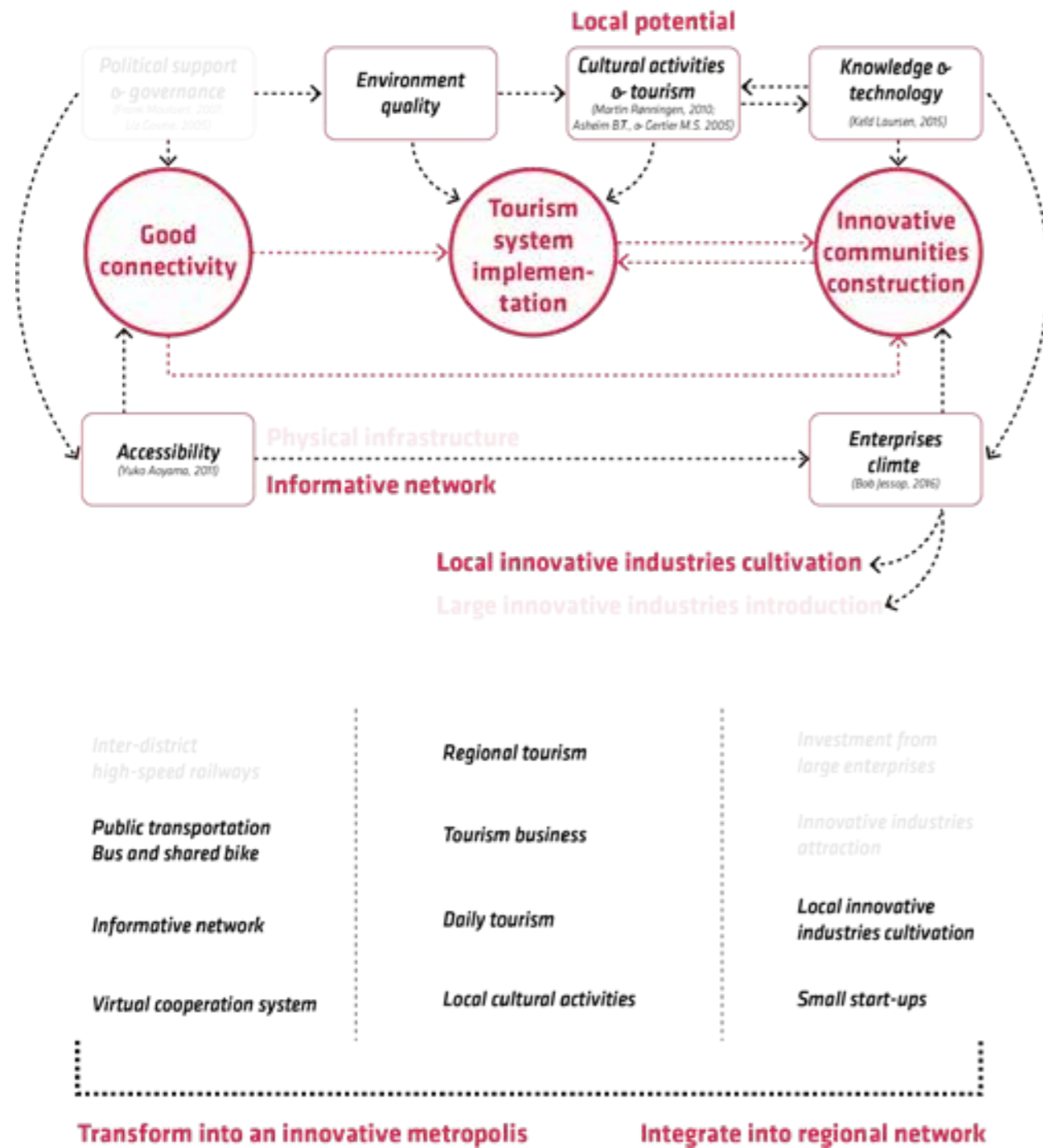
In the second scenario, socioeconomic issues are discussed. On the basis that the environment is fully protected, local innovative industries are cultivated and act as the engine to promote urban innovation. In this process, the city's entrepreneurial climate is activated, and new technologies, knowledge, etc. begin to flow, which in turn stimulates industrial transformation. In addition, the network of social communication also plays an important role in the multi-dimensional use of post-industrial sites. At this stage, large-scale high-speed infrastructure has not yet been established. Therefore, information-based infrastructure will be fully utilized to pursue regional cooperation.
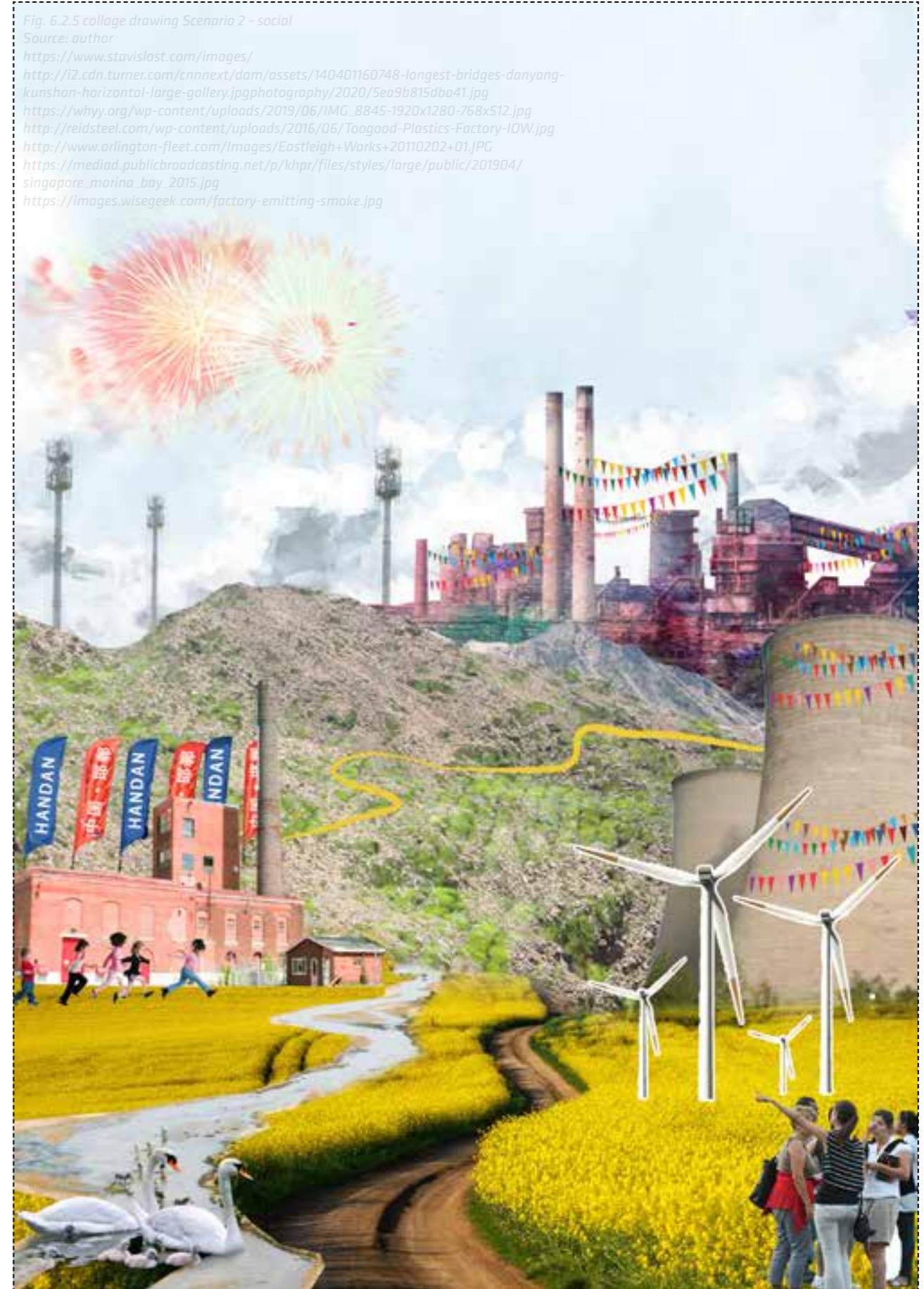
## 6.2.4 Scenario 3 - economy
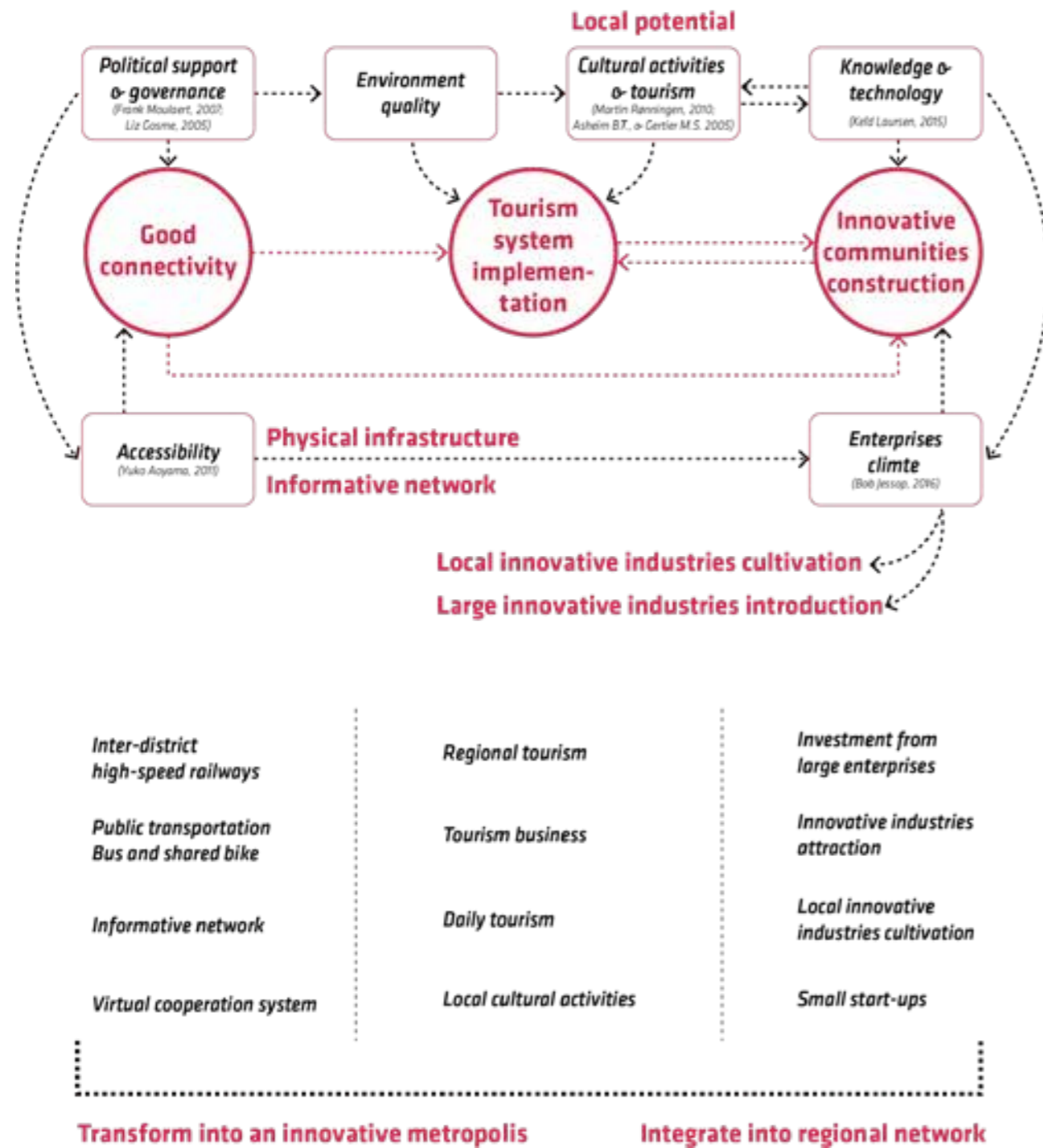


In the final scenario, the city will receive policy support, large enterprises will begin to invest, and a high-speed rail transit system will be established. In this process, the goals of industrial transformation and regional cooperation will be achieved. On the one hand, good connectivity provides an opportunity for cities to improve their attractiveness, and is also the basis for the introduction of new and innovative industries. On the other hand, the tourism system will also enhance the popularity of the city and give this area a good living and working environment. These two factors work together to build an innovative community and pursue innovative development.
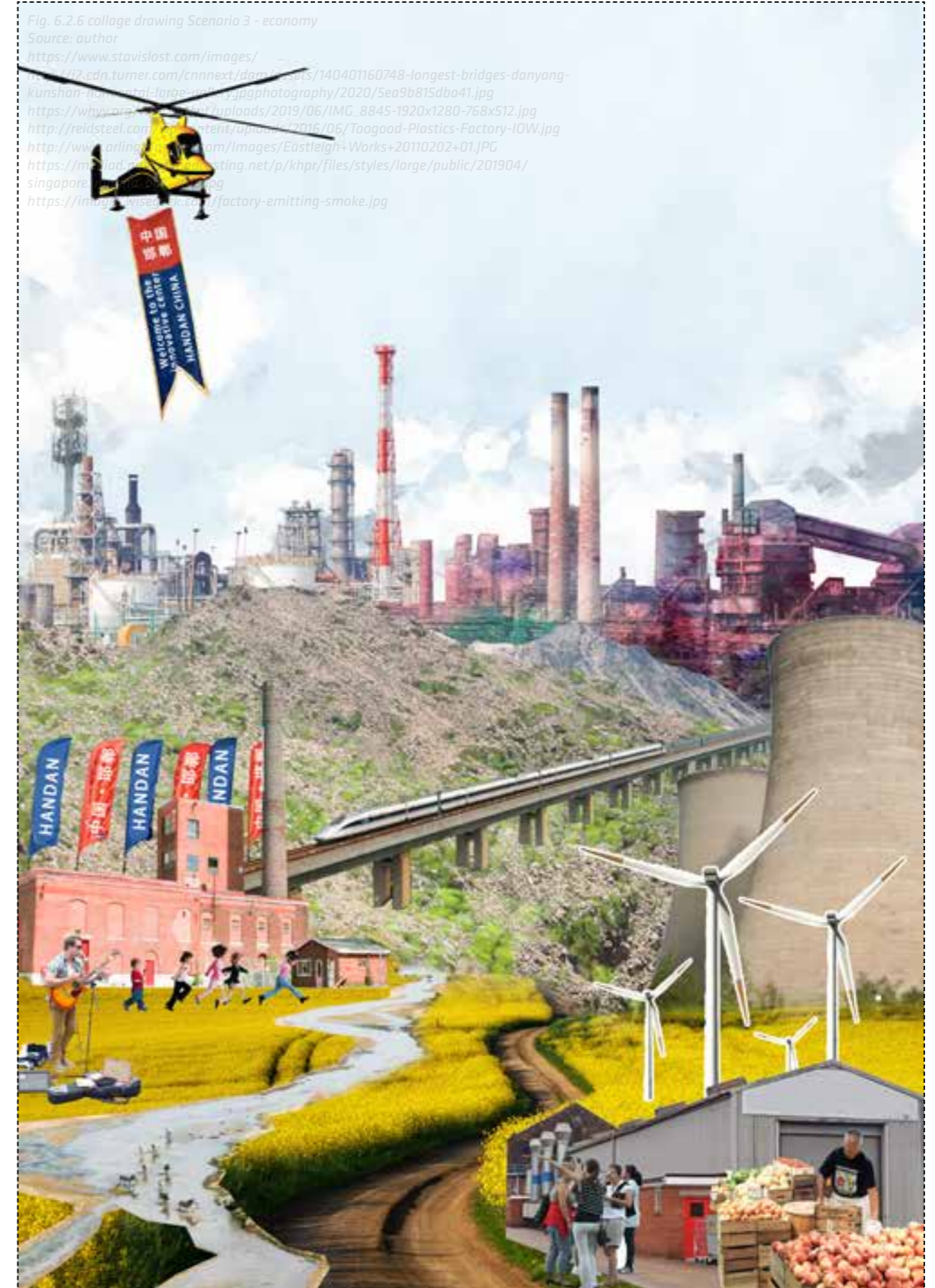
# 6.3 Research reflection

## 6.3.1 On the project

***Relation between this graduation project topic, the studio topic, urbanism master track, and master program of MSc AUBS***

In my opinion, the essence of Urbanism is a science that studies how to make the development of cities, the environment, and people more sustainable. As a powerful approach, spatial planning and strategies promote the realization of the vision of sustainable development. My master's program is based on the two current development dilemmas of China's secondary-resource-based industrial cities: on the one hand, the transformation of resource-based industrial cities faces many difficulties. On the other hand, in the context of rapid regionalization, secondary cities in China are being spatially marginalized in the regional system. These two dilemmas have formed a vicious circle in the secondary resource-based industrial cities, which plagued the development and transformation of these cities. Faced with such problems, studio Planning Complex Cities provided me with an excellent research platform. I use spatial regeneration as an approach to realize the vision of sustainable development, and combine the relevant theories of innovative urbanism to propose planning and design proposals.

***Advantages and limitations of the methodology***

Phenomenon research is the starting point of this project. In fact, the two dilemmas faced by the secondary resource-based industrial cities mentioned above are both vividly reflected in the current social life and economic development. The causes and consequences of these phenomena are studied first. For example, the mechanism of the spatial marginalization of regional secondary cities, which factors aggravate this phenomenon, and which measures can alleviate this problem, are studied in the beginning stage. These contextual and theoretical research have become an important basis for the design of proposals and strategy. In the stage of defining problems, proposing proposals, and strategic design, predictive research and related methods are adopted. The urban system is constantly evolving and changing, so in this project, future development is taken into account in the exploration of spatial strategy and implementation.

When selecting specific methods, field research has always been one of the most important research approaches. Due to the epidemic, I worked on my master's program in China, and I was fortunate to have the opportunity to conduct fieldworks. However, this work did not contribute well to my research project. Because, when analyzing problems and formulating planning proposals, I did not think deeply about the "building" scale, but only stayed at the level of regional systems and conceptual strategies. I don't think that a master's program should cover all aspects, but it is a pity that the planning project fails to integrate well with the site research.

## 6.3.2 On the significance and Innovativeness

***Societal relevance***

In China, where the trend of regionalization is spreading rapidly, the core power of big cities is becoming stronger and stronger under the catalyst of marketization and social entrepreneurship. This polarization effect exacerbates the phenomenon of regional inequality. Under such circumstances, industrial cities in a secondary position in a region are facing more severe challenges. Labor, especially talents, are attracted by big cities, the long-term dependence on the development of resource-based industries makes it impossible to quickly adapt to the requirements of sustainable transformation, the vitality of cities has declined, and economic development has been slow. The resulting social problems have seriously hindered the development of cities and the happiness of citizens. These cities have become inhabitable, unworkable, and untravellable. This project selected Handan City, a typical regional secondary-resource-based industrial city, as the specific research object to explore how strategic planning can help this type of city out of its predicament.

***Scientific Relevance***

Industrialization has contributed a lot to urban civilization. However, in the process of transformation, resource-based industries have been shut down, factories and buildings have been abandoned and become urban waste. But it is undeniable that these buildings have important cultural, economic, and spatial values. How to reuse these precious resources is a topic that many scholars have been exploring. As far as current research is concerned, the attitude of Chinese scholars towards "industrial heritage" is more to protect and re-use an individual building site. Few people consider the potential of the industrial landscape pattern. A geological belt rich in coal and steel resources runs through the central and western part of Handan City. Such an industrial landscape is unique. This project is not limited to the re-design of individual buildings but pays more attention to the cluster benefits and driving effect brought by the regeneration of the "industrial belt", and how it will promote the transformation of urban industries. This will enrich the research portfolio of the reuse of urban industrial heritage and fill the knowledge gap of spatial regeneration. In addition, how sub-cities can integrate into the regional system and benefit from regionalization has also been widely discussed. This research provides a new idea, which is to use the approach of spatial regeneration to promote the transformation of the city's positioning in the region, and introduce the concept of "innovative urbanism" to promote the city with a new functional identity and participate into regional development.

***Transferability***

This project has great potential in Transferability. In fact, the research object of Handan is not set at the beginning but is based on the general phenomenon and problems: regional marginalization and the transformation dilemma of resource-based industrial cities. Since these two issues are vividly reflected in Handan City, it is chosen as the research object. When formulating planning strategies based on problems, "generality" is also considered one of the underlying principles. For example, in the implementation phase, the vision of environment, culture, industry, and government can be summarized as a new paradigm and applied to other cities in China that face the same problems.

### 6.3.3 On the ethical considerations

***Am I developing this project as a planner, from a social justice position?***

- Problem: unavoidable bias
The most important limitation of this project is the evaluation of the design, and whether the strategic plan can really promote the realization of the planning vision. In many cases, the strategy and implementation of this project are often too idealistic. Although I try my best to speculate about the difficulties this plan will face, both in the preparation process and implementation process, and formulate corresponding countermeasures to these potential problems, I cannot guarantee that things will be what I hope in this complex system. Therefore, I still cannot be sure whether my work will contribute to the development and transformation of this city.
- Solution: Conduct interviews with different groups of people, especially government workers and the Vulnerable Groups
- planner: Integrate multiple interests of different stakeholders
The city needs economic development
Nature needs to be restored
Citizens need a good living environment
Young people need job opportunities
Culture needs to be respected and promoted
The region needs healthy, healthy partnerships

***Am I creating a new "regional center" that will exacerbate regional imbalances caused by excessive competition?***

The rationale for the project:
Regional cooperation- the purpose of metropolitanization, and mega-regionalization in China.
The great potential of sub-cities in mitigating the over-concentration of regional centers and creating a healthy and balanced regional system.
Guided by these theories, I would not like to see Handan overcome the difficulties of regional spatial marginalization by " enhancing centrality ", but rather to transform Handan in a way that strengthens regional cooperation.
This vision is realized through "positioning". In ancient times, Handan was the center of regional economy, culture, politics and innovation, but after the founding of New China, Handan began to serve as a resource-based industrial city in order to support national industrialization, which is the root cause of Handan's current development difficulties. In this project, Handan has been given a new positioning: a regional innovation center. This means that Handan will use its potential to provide a platform for regional innovation activities, industrial development, and cooperation in order to be integrated into the system of regional development.
Thus, Handan will not be strongly central in all respects, in order to avoid vicious competition with existing regional centers and to try to alleviate the over-centrality of existing regional centers.

***Will the plan promote the urbanization of this semi-urbanized area to cause further urban sprawl, and the encroachment of the natural environment? while creating a competitive relationship with the existing urban area?***

The introduction of innovative industries, the creation of innovative communities, and the attraction of innovative people will inevitably stimulate again the urbanization of this peri urban area. However, in order to prevent urban sprawl and competition with existing urban areas, "industry" is considered to be the core element of the belt, so that the innovative belt does not become a new independent urban area, but rather a complement to existing urban areas. It provides space for leisure, entertainment and entrepreneurship for the urban residents and space resources for new industries to be implanted. Compared to the current model of "new town construction" (planning a new town on undeveloped or underdeveloped land. This is a common model of urban development in China), this "reuse" is inherently more sustainable.

***In this regeneration project, do I respect the existing industrialized cultural lineage?***

Like other traditional cultures, the rapid and aggressive industrialization of China in the 1950s and 1980s is considered a type of (modern) Chinese culture. Although this industrialization, meant that the air was polluted and resources were wasted, it also contributed greatly to China's economic development.
I believe that the process of spatial regeneration should not completely overshadow this culture. Therefore, in addition to making the best possible use of the industrialized spatial elements, the "big courtyard culture" is used to develop one of the core concepts of this project - the innovative community. This means that people with similar values and lifestyles will work and live together, creating an atmosphere of urban innovation.

# 6.4 Limitations and Future research

In summary, this research starts from the two problems Handan faces in the development process, regional spatial marginalization, and industrial transformation dilemma, and proposes three main planning strategies, the good connectivity, tourism upgrading, and innovative community construction, to promote the development of Handan's innovative urbanism. And based on this the strategies are developped to support the transformation of Handan from a traditional resource-based industrial city to an innovative metropolis, and integrate into the regional development system with this new identity to promote the balanced development of the region.

Although I try my best to ensure the integrity, scientificity, and logic of the project, there are still some limitations in the project, and these limitations also guide future research on related projects. First of all, this project has a hypothesis, that is, once Handan transforms into a regional innovation node, it can integrate into the regional development system with this new identity. This hypothesis has not been demonstrated. Therefore, in the future, it is necessary to explore the metropolitan system and the relationship between it on the mega-regional scale. Second, when formulating planning strategies, local culture is considered to be an important factor in promoting innovative urbanism. However, due to the complexity of the cultural system, this project did not give specific interventions for specific cultural content, but formulated a general strategy. Therefore, in the future, it is very valuable to explore the protection and promotion of specific cultures in depth. Finally, this research plans the future development strategy of Handan City. Therefore, how to ensure that this system continues to function in the long run should also be discussed. Some future research questions are as follows:

## In terms of regional cooperation:

**How can innovative urbanism reshape the relationship of regional competition and cooperation, and promote Handan's integration into the regional development system?**

**In the new regional metropolitan system, how will Handan cooperate with other cities to play its role as a "regional innovation center"?**

## In terms of socio-cultural aspects:

**What role can specific local cultures, both tangible (ceramics, ancient cities, historical sites, etc.) and intangible (taiji, idioms, opera, etc.), play in the process of innovative urbanism to encourage and promote urban innovation?**

**What spatial strategies, interventions, and design principles should be developed?**

## In terms of urban development:

**This study explores the potential and spatial strategies of regeneration of former industrial sites to promote innovative urbanism.**

**How to evaluate the possibilities of this system from a practical perspective?**

**What governance mechanisms should be developed to enhance the chances of success of the project and to sustain its good functioning in the long term future?**

# 6.5 The future of China - reflection on the national scale

The development of China has always been a controversial topic. In 1949, the Nationalist regime (Republic of China) was relocated from the mainland to the island of Taiwan as a result of the defeat of the civil war, and with this process a great deal of wealth, technology, and scientists were taken away, leaving the Communist regime (People's Republic of China) facing enormous poverty and technological backwardness. Recent developments have led more and more people to believe that China will challenge the United States in the near future and become the world's largest economy. But there is no denying that China is still a developing country, with a huge gap between rich and poor, a worrying environmental quality, and uneven social resources that limit the country's progress toward a better future. In fact, the Chinese government is making efforts. For example, by 2020, poverty eradication have been completed nationwide. Local officials are going door to door to help the poor find employment, education for school-age children, access to safe food and water, and medical and social insurance.

In addition, China's central government is promoting a policy of "ecological civilization," which means that economic development needs to give way to environmental protection and ecological restoration. This study is based on the problems caused by this policy, as many resource-based enterprises with high pollution and energy consumption have been shut down, and the development of resource-based cities has been affected. Therefore, I believe that in China's future development, "resilience" should be a key word to guide all aspects of construction. This "resilience" should not only be reflected in environmental aspects, but also in economic and social aspects. For example, in this study, the development strategy for secondary post-industrial cities has a degree of flexibility, which helps to promote a healthier urban transition with as few new problems as possible.

Second, China's economic and social development is still uneven. Because of its large population, it is difficult to achieve a fair distribution of social resources. I am glad to see that some policies are starting to improve this situation, from social and human daily life level, housing security, basic education, entrepreneurship support, etc. are gradually being implemented. In terms of regional development, supporting the development of small and medium-sized cities and balancing the regional urban system has been advocated for more than 10 years. However, it is undeniable that this imbalance is also difficult to solve through policy restrictions or support. Educational resources, job opportunities, financial support, and other elements are limited, and people can only compete to obtain benefits, which has resulted in the current situation of excessive and vicious competition in China, and the well-being of young people is particularly affected. And at the regional level, big cities continue to spread, and only a limited number of secondary cities can enjoy the benefits of regionalization; most of the secondary cities are facing decline, as the latest census can illustrate. Therefore, I think that a balanced system of cities and societies that are cooperative, with healthy competition, is a problem to be solved in the future.

Because of ideological differences and cultural barriers, China is often discussed, criticized, and questioned by some western countries such as the United States, especially when it comes to the topic of democracy and geopolitics. In fact, the Chinese Communist Party and the central government are leading the development and progress of this country and its people, they have set a goal for China's development: to be a rejuvenated, rich and powerful country by 2035. I am confident that this goal will be reached, and that environmental issues, diplomatic issues, economic issues, etc. will be addressed, but I think resilience and balance are two additional points to focus on in this process.