



**Laidlaw Undergraduate Research and Leadership Programme
Report Form**

Please complete and return this form, together with a research attachment report,
to the Horizons Office (laidlaw@hku.hk).

The report must be endorsed by your HKU supervisor.

Name:	WEN YUNJIE
Curriculum:	BEon&Fin
Year of Study:	Year 3
Research Attachment Details:	
Institution:	The University of Hong Kong
HKU Supervisor:	Qian Junxi
Research Topic:	An investigation on landscape remaking in the context of urban renewal——case of governance of Meishe River in Haikou
Attachment Period:	5.30-8.30

Report

Please provide two narrative reports of **1000 to 3,000 words or two videos of 3-5 minutes (with sub-titles)** describing the research activities undertaken during your Laidlaw Scholarship and your leadership development journey, which may include but need not be limited to the following:

FIRST REPORT (due by September 30, 2022)

Research

- Brief description summarizing the purpose of the project, hypothesis, methodology, procedures, principal results, and conclusions
- Difficulties encountered and how they were resolved
- Improvements that could be made if the project were to be repeated
- Impacts of the research beyond the classroom
- Suggestions and extensions for further study

Urban renewal is being increasingly promoted around the world and it's an essential force for urban development and transformation in this era. Landscape remaking is regarded as an important carrier to undertake the main functions in the process of urban renewal. Thus, I thought it's worthy to

explore this research topic. There is a river named Meishe River, a key corridor of Haikou's green ecosystem, which was severely polluted before but becomes a sustainable model project of Chinese water environment management and realizes the unbelievable landscape replacement now. Because the success of the water management significantly speeds up Haikou's urban renewal process in the context of Hainan Free Trade Port construction and the river system governance is also valued for its accompanying economic value, environmental value, social value and cultural value, the governance of Meishe River is suitable to serve as a case to analyze in this research topic and provide experiences for practice in more and more cities in the process of urban renewal and landscape remaking.

To investigate more detailed information, I conducted several field trips to Meishe River and places around this river (e.g. the wetland park, farm, cultural sites and so on). I also interviewed different parties of people like government official for Haikou's water management, project constructor, scholar, citizen and so on. Making use of questionnaire and collected textual information analysis was also beneficial to my study.

The distinctive successful experiences of Meishe River's governance are mainly from four aspects, institutional guarantee, concept innovation, scientific governance strategy and effective operation mode:

(1) Institutional Guarantee: Implement a responsibility system and regulations to strengthen government functions

The "River manager system" was led by the original district government, and was upgraded to the secretary of the municipal party committee and the mayor as the "double river chief". The authority of the main responsible person was also continuously promoted. The improvement of the administrative level of the river system and the establishment of the leading group for urban renewal have enabled the Meishe River to gain a strong momentum of management, effective integration of various administrative resources, and greatly improved work efficiency in all aspects of project implementation. The Regulations on the Protection of Meishe River Protection in Haikou City further solidified the achievements of the reconstruction of the Meishe River landscape from an institutional level.

(2) Concept Innovation: Sponge city, respecting nature and sustainable development

Combining with the concept of sponge city construction, measures such as planting grass ditches and sponge storage are adopted to collect the initial rainwater, so as to reduce the pollution of the initial rainwater to the river. In the process of Meishe River renovation, the system of "mountain, water, forest, field and lake" has been successfully integrated, making full use of the original river, lake, pond and other elements, forming an ecosystem with self-purification ability, and effectively exerting the self-purification ability of rivers and lakes.

(3) Scientific Governance Strategy: "control source interception, endogenous treatment, ecological

restoration, and landscape improvement”

The technological measures and ecological measures of river governance were combined. In the aspect of endogenous treatment, the dredging project was initiated to remove sediments and improve the sediments in the water body and eliminate endogenous pollution in the river. In terms of ecological restoration, water ecological restoration and shoreline remediation projects are carried out to plant mangroves on both sides of the river. Fengxiang Wetland Park uses three levels of “terraced wetland” technology to improve water quality, focusing on building a diverse water ecosystem with more efficient water replenishment and circulation. In terms of landscape upgrading, the construction of characteristic streetside gardens and infrastructure facilities have made Meishe River gradually become a place for Haikou citizens’ entertainment, fully embodying the development of humanism.

(4) Effective Operation Mode: Introduce social capital

Fully adopt the “PPP (Public-Private Partnership) + EPC (General Contracting) + Tracking Audit + Whole Process Supervision” model to comprehensively manage the Meishe River. It has innovatively created a model for river management to government, enterprises and the public cooperation .

Despite the great achievements and successful experiences in the management of the Meishe River, there are still deficiencies in the process of this project. According to the existing problems, this paper also give some suggestions to address these issues.

Existing problems and suggestions:

(1) Lack of operating transparency and effective public monitoring mechanism

I also found that there were some irregularities in the actual operation process when taking the field trips. For example, someone was excavating sand from the Meishe River and said he was recognized by the government. The sandstone of the Meishe River is being mined and the behavior of excavating sand is not only a great loss to the national mineral resources, but also causes the subsidence of the river basin of the Meishe River, which has a great negative impact on its long-term development. However, it’s a pity that there is no effective mechanism for public monitoring when we discover those suspicious activities.

Suggestions: It is recommended that the government standardize the construction process of the project by providing a portable license with government’s permission to enhance the transparency of urban renewal projects. It could not only raises the public's subjective awareness, but also be convenient for citizens to participate in supervision and management. The government should also arrange supervision teams to inspect river construction or supervise some illegal acts from time to time.

(2) Neglect of local elements during landscape remaking

In the process of rebuilding the Meishe River landscape, there is not much consideration for

integrating local elements, which leads to less sense of belonging for local people and promotion of Haikou's image for travelers.

Suggestions: This paper suggests that the government could take advantages of various local elements like Hainan history development, story of local celebrities, famous local food and scenic spots to construct a local cultural corridor along the banks of Meishe River and strengthen the connection between human and landscape.

(3) Inadequate activation of cultural heritage around Meishe River

There are also rich cultural resources and numerous historical relics around the Meishe River, e.g. Wugong temple, Longpo temple, Hairui former residence, Yulong fountain and so on. But the reconstruction of Meishe River barely bring them back to life.

Suggestions: Since the Meishe River carries awesome tourism functions, it is a great opportunity to associate these historical cultural relics with this mother river of Haikou by theme display, creative featured festival activities(water performance projects, cruise ship services) and so on, releasing the cultural value of the whole project.

(4) Failure to release the economic value to the greatest extent

It is reported that value of land around Meishe River has gone up a lot and such displacement value far exceeds the cost of governance. However, this project leaves room for improvement of maximizing its economic value.

Suggestions: Many wetland parks are built along the Meishe River during this governance project. In the context of carbon finance and carbon neutral, there is a way to generate revenue from carbon assets. It is also beneficial to promote the "tourism + agriculture" model at the farms around Meishe River and develop the theme activities of agricultural tourism (fruit collection tour, flower tour, fishery tour, etc). Not only it can provide a leisure place for tourists, but also could develop local tourism industry and economy.

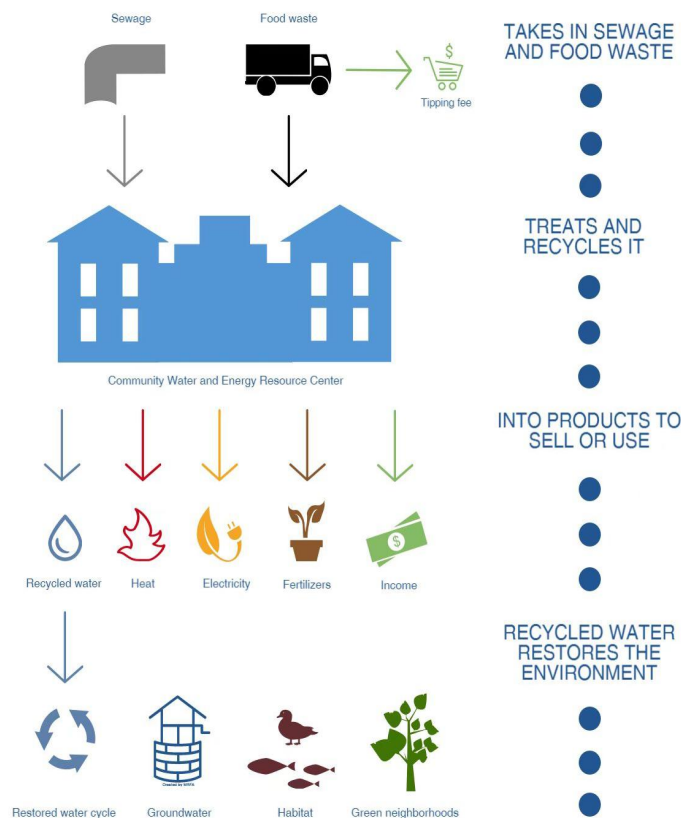
In addition, I also found that there were some further improvements that could be considered at the next stage when I learned from Charles river governance case.

(1) Water information management system

During the interview with relevant staff, I knew that the water level and quality management of Meishe River were still adopted traditional method, which was supervised and recorded by human. It's difficult to achieve dynamic water management and real-time monitoring under this circumstance. Learning from the case of Charles River's management, GIS technology (geographic information system) was applied to water management to achieve digital control integrating spatial analysis and decision support. In the future, this scientific digital management technology is worthy to introduce in Meihe River governance to explore visualization and dynamics city management model.

(2) Turn "waste" into "treasure"

Before, one of the biggest sources of pollution was sewage and food waste from residential area around Meishe River. Charles River Water Association proposed an ideal method to address this problem by constructing "Community Water and Energy Resource Center", which included a membrane bioreactor for wastewater treatment, a thermal heat pump, anaerobic digester(s), a combined heat and power (CHP) system, and nutrient recovery and composting facilities. Through this centre, the sewage and food waste would be well processed. It could not only restore the natural water cycle in the district, but also digest wastewater solids and organic food waste to create biogas, primarily methane. The biogas from each of these sources would be burned to generate electricity and thermal energy in a combined heat and power system. This environmental-friendly method could significantly avoid the pollution to the river, maximize the utilization of resources and achieve circular economy, which improves ecological and economic benefits.



Source: Charles River Water Association

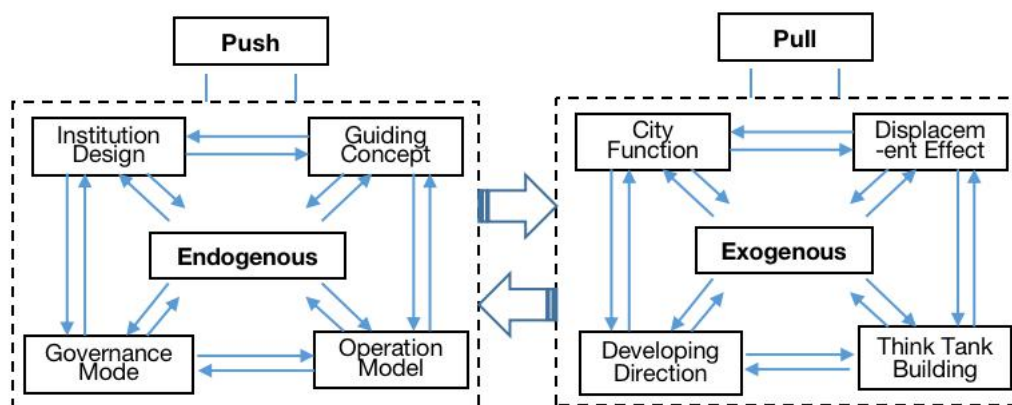
In general, despite the certain deficiencies, the Meishe River has become a model for China's water governance. As a model project, how to understand the background and influencing factors of this landscape reconstruction phenomenon, and then understand the dynamic mechanism and social significance behind this case? It needs to be examined in the context of greater economic and social development.

The above analysis shows that the elements of institutional guarantee, concept innovation, scientific governance strategy, effective operation mode and so on play key role in the process of urban renewal and landscape transformation.

Among them, the institutional factors influence the power of authority and management resources. The governance concept determines a theoretical dimension and superstructure for the overall implementation of the project. An advanced governance concept would guarantee the urban renewal to maintain the leading position. As for the governance strategy, it provides practical method of the medium and micro level for the specific project implementation. The more detailed the governance model design, the more comprehensive the “multi-regulation” integration and the more realistic the local landscape remaking is. The operation mode also affects the long-term development and sustainability of the projects.

However, can these four factors be replicated and promoted in other cities or regions? Based on research analysis and literature review of Meishe River case, this paper proposes a “Push-Pull” model as an interpretation framework to better explain the landscape transformation process and factors in a macro background.

In fact, any urban renewal is the result of the dual forces of “push” and “pull”. In the framework of this paper, it is conceptualized as endogenous factors (institutional guarantee, concepts innovation, governance strategy and operation mode) and exogenous factors (City function, displacement value, development direction and think tank construction).



“Push-Pull” model

For those exogenous factors,

- (1) City function refers to the location occupied by the city in a regional system. For Haikou, it is the capital city and regional center of Hainan Province. Therefore, this function urges Haikou's urban construction and development to have a leading role.
- (2) The displacement effect is associated with the quantitative relationship between investment input and output. With incomplete statistics, only the value of the government's land around Fengxiang Wetland Park has increased by seven million yuan, and the land premium for storage has exceeded seven billion yuan, far exceeding the cost of the Meishe River system.
- (3) The development direction is related to the future development path and growth concept of the city, and is an important manifestation of global competitiveness and attractiveness of the city at

the next stage. Under the background of building an international tourist island and creating an essential Free Trade Port in Hainan Province, Haikou must change its economic development model and social growth mode in advance, and have a balance between ecology, economy, social and local culture.

(4) Think tank construction is one of the important factors of the current urban development in China. The foresight of urban renewal determines the long-term effect of urban sustainable development. It is also reflected in the citizens participation of the city's management.

To conclude,

(1) The article focuses on the vital role of "human-environment relationship" in the process of environmental impact on the ecosystem, pointing out the importance and synergy of the human element in the analysis of the operation of the ecosystem.

(2) Although the Meishe River has become a model project of landscape remaking recognized by many experts and it speeds up the process of Haikou's urban renewal, there are still existing problems in supervision, humanistic feelings, culture promotion and so on. Based on the field research, this paper puts forward some innovative suggestions that could be considered at the next stage of Meishe River governance, aiming at making it a better place with a balance between ecology, culture and economy from the perspective of urban renewal.

(3) Most cities in China and global world have staged vigorous urban renewal or reconstruction campaigns, but few successful cases can be promoted for reference in the field of water management and governance. Based on the governance of the Meishe River system in Haikou, this paper provides the successful experiences of Meishe River governance for practice in other places and constructs a "Push-Pull" model as an interpretation framework to analyze the process and influencing factors of landscape remaking in the context of urban renewal. In addition, this study emphasizes the situationality and dynamic variability of endogenous and exogenous factors in the model.

(4) Based on the concept of sustainable development, whether we could achieve "well designed pre-urban planning", "refusing face-engineering of governance", "not take the old road of pollution first, then governance" and so on are also the next issues to be considered in the future urbanization process.

As for the extensions for future study, a long-term track of Meishe River case are needed and updated. In addition, since urban renewal is a complex project and it contains various fields in spite of river system governance, multi-dimensional and multi-perspective research cases of other fields are worthy to explore in the future.

References

- Chen Zhenzhu, 2006, Science of Water Environment, Science Press
- Charles River Water Association, the website of Charles River Water Association
- Jiang Guibin et al., 2016, Pretreatment Technology of Environmental Samples (2nd Edition), Chemical Industry Press
- Wu Guancen et al., 2016, Discussion on Urban Renewal Mechanism of China's Mega-Cities: Comparison and Reference of Global Urban Experience, China Soft Science
- Yang Xiaobo, 2008, Classic Cases and Experimental Guidance of Urban Ecology, Science Press
- Ye Chao, 2014, Duan Yifu's Thought as a Mirror of Chinese Human Geography
- Yu Kongjian et al., 2012, National Heritage and Biological Corridor of Beijing-Hangzhou Grand Canal, Peking University Press
- Zhang Lei, 2015, Comparison of Urban Renewal Governance Models and Transformation Paths under the "New Normal", Urban Development Studies

SECOND REPORT (due by August 30, 2023)

Leadership Development

- What was done to build leadership capability
- Action taken and experience gained to practice leadership
- Critical skills identified and developed for success in your future career
- Further experiences and development approaches that will best position you for your career

Overall Experience

- Reasons for undertaking the Laidlaw programme at the start
- What did you gain from the overall programme? The research experience, leadership training, networking and any other aspect you wish to comment on.
- Will the programme help you in the future and if so in what ways?
- Are there aspects of the programme that you think can be improved? And if so, how?
- Are you prepared to "give back" to the programme in the future by being an active alumnus?

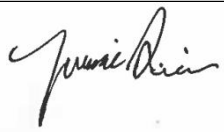
Signature: WEN YUNJIE Date: 2022/09/24

TO BE COMPLETED BY HKU SUPERVISOR

I have examined the research report and rate the student's performance as satisfactory / unsatisfactory (*Please circle whichever is applicable*)

Comments:

Good job!

Name: Qian Junxi Signature: 

Date: 29 Sep 2022