Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

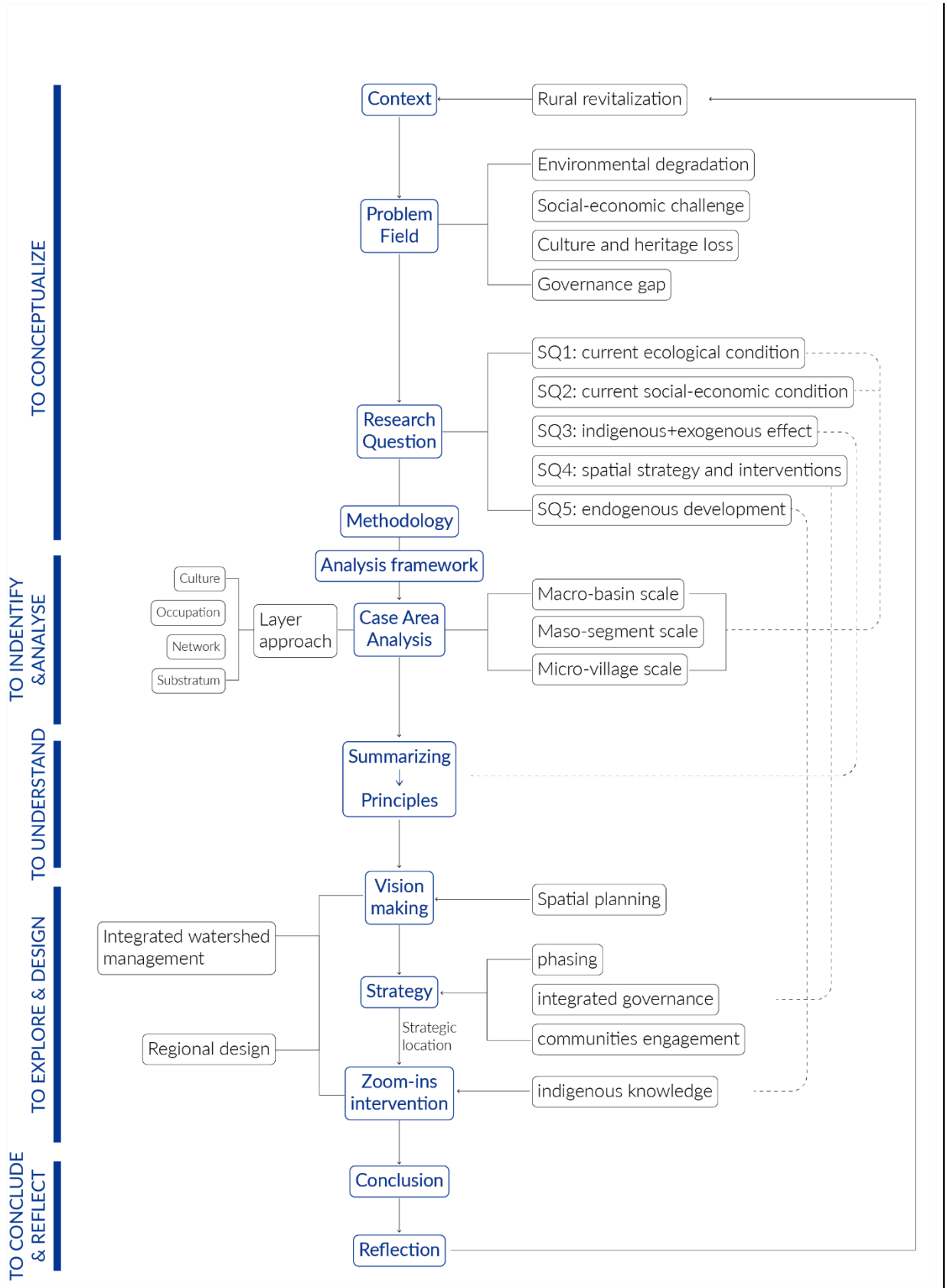
Personal information	
Name	Jiheng Li
Student number	5761927

Studio		
Name / Theme	Planning Complex Cities	
Main mentor	Lei Qu	Spatial Planning and Strategy
Second mentor	Steffen Nijhuis	Landscape Architecture
Argumentation of choice of the studio	My project is about Jiulong River Watershed in southern Fujian Province, China, which covers a total area of 14,741 square kilometres and involves 12 counties (cities and districts). Dealing with its problems requires a synergy of stakeholders at all levels, from the government to the residents, and from the overall regional planning to the design of specific projects, which encompasses multidisciplinary topics in policy, culture, economics, ecology, and technology. At the same time, the complex relationship between urban and rural areas in China and how they can be developed together is also one of my interests. I hope that I will be able to understand the development of the region from both top-down and bottom-up perspectives, which is very much in line with the theme of PCC Studio.	

Graduation project	
Title of the graduation project	Rivers Whisper, Lands Renew: Revitalizing Rural Landscapes with River-Centric Approach in the Jiulong River Watershed
Goal	
Location:	Jiulong River Watershed, Fujian, China
The posed problem,	At the heart of this research lies the complex challenge of revitalizing the Jiulong River Basin, a region where ecological fragility intersects with socio-economic vulnerability. This region, once thriving with vibrant riverine ecosystems and robust rural communities, now faces a confluence of environmental degradation and socio-cultural erosion. The degradation includes escalating water pollution, diminishing biodiversity, and disruption of natural habitats. Concurrently, the

	socio-economic fabric of rural communities along the Jiulong River is unravelling, marked by dwindling traditional livelihoods, rural depopulation, and a gradual fading of cultural practices intimately linked to the riverine environment. Compounding these issues are governance gaps, including inadequate resource management and limited community participation in decision-making processes. The problem is not merely ecological or economic in isolation; it is the weakening of an intricate socio-ecological system where the river has historically been a central axis for community life and ecological harmony. Addressing this multi-dimensional challenge requires a nuanced understanding of the interdependent dynamics between the river's ecological state and the socio-economic and cultural well-being of the communities it sustains. The core question is how to rejuvenate the river and its surrounding landscapes in a way that is ecologically restorative, economically viable, and culturally enriching, thereby re-establishing the Jiulong River as the lifeline for a resilient and revitalized rural landscape.
research questions and	How can a river-centric integrated regional design approach contribute to the sustainable rural revitalization of the Jiulong River Watershed, fostering ecological integrity and socio-economic resilience? Sub-questions: 1. What is the current state of the Jiulong River's ecological system, and what are the primary environmental challenges it faces? 2. How do the socio-economic conditions of the communities along the Jiulong River influence and interact with the river's ecological system? 3. What roles do indigenous cultural practices and exogenous governance structures play in shaping the relationship between the communities and the river ecosystem and how can they promote Integrated Watershed Management? 4. What river-centric regional design which includes spatial strategy and interventions can be employed to enhance both the ecological integrity of the Jiulong River and the socio-economic well-being of its surrounding communities?

	5. How can community participation and principles of endogenous development be integrated into watershed management with an exogenous governance structure to achieve sustainable revitalization of the Jiulong River Watershed?
design assignment in which these result.	1. In-depth Understanding of the Ecological and Socio-Economic System using the river as the centre: -Conduct a comprehensive analysis of the JRB's ecological state, including biodiversity, water quality, and ecosystem health. -Assess the socio-economic dynamics, including demographics, livelihoods, economic activities, and urban-rural interactions. 2. Development of Integrated Conservation and Revitalization Strategies: -Formulate strategies that combine ecological conservation with rural social and economic revitalization. -Explore sustainable practices in agriculture, industry, and planning that benefit both the environment and rural communities. 3. Enhancement of Community Engagement and Cultural Preservation: -Develop approaches to actively involve local communities in decision-making processes and conservation efforts. -Identify and implement measures to preserve and promote the cultural heritage and traditional practices linked to the JRW.
Process	
Method description	



Research framework

M1 Academic literature study
M2 Mapping
M3 The layer approach
M4 Skakeholder analysis
M5 Case study
M6 Policy& program research
M7 Interviews/fieldwok
M8 Vision making
M9 Strategy making
M10 Design

SQs	Methods	Outcomes
SQ-1	M1 Academic literature study- Conduct a comprehensive review of scholarly articles, reports, and studies related to the Jiulong River's ecology.	Gain insights into historical and current ecological states, and identify primary environmental challenges.
	M2 M7 Mapping and fieldwork- Utilize Geographic Information Systems (GIS) to create detailed maps of JBW. - Represent ecological features, pollution sources, land use changes, and other relevant environmental data.	Visual representation of ecological conditions and spatial distribution of environmental challenges.
	M3 The layer approach- Apply a multi-layered analysis, encompassing physical geography (substratum), infrastructure and human activity (networks)	Holistic understanding of the river's ecological system, interrelated factors affecting it, and implications for sustainable management.
SQ-2	M1 Academic literature study- Review existing research on socio-economic aspects of communities along the Jiulong River.	A comprehensive understanding of the current knowledge gaps about socio-economic conditions.
	M6 Policy& program research- Analyze regional and national policies, programs, and initiatives that affect these communities and the river ecosystem.	Insight into how policy influences socio-economic conditions and river ecology and potential improvements.
	M7 Interview/fieldwork- Conduct interviews with local residents, community leaders, and experts. Perform field observations to gather first-hand data.	Qualitative insights into local perspectives, practices, and challenges.
	M3 The layer approach- Apply the layer approach to analyze the interplay between socio-economic conditions(occupation and culture layers) and the river's ecology across different scales.	Holistic understanding of the complex interactions between human activities and the river ecosystem and selection of strategic locations.
	M4 Stakeholder analysis- Identify and analyze key stakeholders involved in the river's management and communities' welfare.	Understanding of stakeholder interests, influence, and potential for collaboration.
	M2 Utilize GIS mapping to visualize socio-economic data in relation to the river's ecological features.	Spatial representation of the socio-economic factors in relation to the river's ecological state.
SQ-3	M1 Academic literature study- review scholarly articles, books, and theses on indigenous cultural practices related to watershed management, as well as on external governance structures affecting such practices.	Identify existing principles within indigenous practices and governance models that impact the river ecosystem and to create principles recommendation.
	M6 Policy& program research- Analyze current policies, programs, and legal frameworks at local, regional, and national levels that influence the management of JRW.	Understand how current governance structures support or inhibit the integration of indigenous practices in river management.
	M5 Case study- Conduct in-depth case studies of specific communities along the Jiulong River to observe the application of cultural practices and governance policies in situ and successful project in other areas, eg: Shishou.	Draw insights and principles from real-world examples of community-river interactions and the effectiveness of governance structures.
SQ-4	M3 The layer approach- Use layers to show the intra and intro relationship of elements and scales in the strategy.	A multi-dimensional understanding and demonstration of the basin to inform spatial strategy development.
	M4 Stakeholder engagement strategy- Develop engagement strategies to ensure stakeholder participation in the planning process.	A collaborative framework for spatial planning that includes diverse stakeholder perspectives and needs.
	M8 Vision making- To create a shared vision that could visualise the future of JRW in a clearer and more intuitive way	A strategic vision that aligns with both ecological integrity and community well-being.
	M9 Strategy making- Develop the process showing how to get to the vision.	Phasing for operationalisation
	M10 Design- Develop detailed intervention proposals and design solutions that embody the shared vision and address identified challenges in zooming areas.	Design products that show the villages' future with even more detailed and intuitive way,eg: master plans, eye-perspective collages, VRs, etc.
SQ-5	M4 Stakeholder analysis- Identify and engage with community groups, local NGOs, and other stakeholders who are directly affected by or interested in the Jiulong River's management.	Outcome: A comprehensive stakeholder map that guides community participation and highlights opportunities for leveraging local knowledge and practices.
	M10 Design- Develop detailed intervention proposals and design solutions that embody the shared vision with indigenous knowledge and culture.	Design products that show the villages' future with even more detailed and intuitive way,eg: master plans, eye-perspective collages, VRs, etc.

Methods and outcomes

Literature and general practical references

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For theoretical framework:

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Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

The revitalisation of the countryside is a complex and long-standing topic, where the decline of the countryside is not only of its own making, but is inextricably linked to urban, economic, social, ecological and political aspects, and even a small area is also closely linked to regional on a larger scale. Discovering specific topics and threads in complex systems and exploring pathways to development is what the PCC studio does. The scope of my project is watershed, focusing on rural areas that are closely connected to rivers, using rivers as a clue to understand the countryside and develop strategies for rural revitalisation, which involves multi-level and cross-scale analysis, as well as discussion of the interaction between spatial design and policy, complemented by design practice, which is also in line with the Urbanism track. Meanwhile, endogenous development is an important concept in my project, which embodies the decision-making process of listening to

the voices at the bottom and further thinking about governance is also an important topic of discussion in the PCC studio.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

Societal relevance: The project addresses key social issues, particularly in the context of rural communities. By focusing on river-centred solutions, it aligns with global efforts to improve rural livelihoods, protect cultural heritage and increase community resilience. In today's world facing rapid urbanisation and rural depopulation, this project highlights the importance of sustainable rural development, ensuring that rural communities are not left behind in the pursuit of overall social progress.
Professional relevance: The project contributes to the fields of urban planning, landscape design, environmental management and sustainable development. It proposes innovative strategies for professionals in these fields to integrate ecological considerations with rural development, providing a model that can be adapted or replicated in similar contexts around the globe. The programme provides case studies for professionals seeking to balance environmental management and socio-economic development in rural areas.
Scientific relevance, this research enhances the understanding of integrated watershed management and its role in rural revitalisation. It contributes to the growing knowledge of how natural water systems are at the centre of solutions to ecological and socio-economic challenges in rural areas. By adopting an interdisciplinary approach and focusing on specific case studies, the project adds empirical data and theoretical insights to the academic discourse in environmental science, rural studies and sustainable development.