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	Ke Zhou
Student number	5563356

Studio		
Name / Theme	Planning complex cities	
Main mentor	Marcin Dabrowski	Urbanism
Second mentor	Inge Bobbink	Landscape architecture
Argumentation of choice of the studio	Delta systems are among the most dynamic and productive environments on Earth, and many of them have high population densities. Deltas play a central role in food and water security but are also increasingly exposed to the frontlines of climate change hazards such as sea level rise, river and coastal flooding, and coastal erosion. Among them is the Mekong Delta in Vietnam, where rice-dependent agricultural production systems and methods are increasingly unable to adapt to the new environment created by climate change. There is therefore an urgent need for climate-resilient agricultural transformation and the accompanying social engagement and cross-border cooperation, taking into account and adapting to local cultures and contexts. The Planning complex cities studio can provide me with an opportunity to address the development of spatial planning and strategies in complex urban and rural contexts, including the political, cultural and social context of the site, sustainable agricultural rice production for climate change adaptation, and pilot spatial design for selected case areas.	

Graduation project	
Title of the graduation project	Climate Resilient Agriculture System: towards a diverse food market and climate adaptive rice production in Mekong Delta of Vietnam
Goal	
Location:	Mekong River Delta of Vietnam
The posed problem,	Climate change has brought major shocks to agricultural livelihoods and

	ecosystems in the Mekong Delta of Vietnam. The current rice production models are no longer sustainable under the climate threats. The geopolitical relations of the Mekong River countries for basin management also exacerbate the climate problems facing the delta. Therefore, spatial planning for adaptation to climate change in agricultural systems and collaboration in stakeholders and institutions will be necessary.
research questions and	Main research question: How can climate adaptation strategies intervene in the agricultural production chain of rice and social engagement while creating economic opportunities and environmental benefits in the Mekong Delta of Vietnam? Sub-RQ1: What is the knowlage gap between the current planning policies and resrearch, and the problems in the agriculture system regarding climate change effect? Sub-RQ2: What are the challenges and opportunities for climate adaptation strategies? Sub-RQ3: How can farmers and citizens adapt to climate change risk by developing a climate-resilient agriculture system while maintaining the quality of life in urban and rural areas? Sub-RQ4: How can local experiences guide the change in rice production and water management to improve resilience through agricultural transition toolboxes? Sub-RQ5: How can cooperation in cross-border river management be promoted to improve resilience?
design assignment in which these result.	The analysis results of the research and spatial planning will provide an overview and insight for society, government, and

	agencies across boundaries to build a vision that communicates planning performance and open communication. This will be conducted through a set of principles, toolboxes, and assessment methods that form a planning framework to develop a common language of communication for civic education, stakeholder integration, and evaluation of planning performances. A study of local experience, traditions, and history in climate adaptation will help develop spatial planning strategies from the bottom up, enriching the toolbox of agricultural transformation from a site-specific approach, and enhancing the cultural and traditional aspects of design. Several pilot projects will be conducted in specific areas as testing for the methods and intervention.

[This should be formulated in such a way that the graduation project can answer these questions.
The definition of the problem has to be significant to a clearly defined area of research and design.]

Process

Method description

(1) Literature Review

Through literature research and study, the impact of climate change on agriculture and vulnerable populations in the Mekong Delta and its causes, as well as the coping strategies and measures proposed in previous studies, will be compiled; by reading relevant policies and current plans, as well as proposals from different organizations, will inform the background and possible directions of the project; learning from case studies of agricultural transformation and social adaptation in different deltas around the world will help me to synthesize existing tools and propose appropriate strategies for the site. The best practices of agricultural transformation and social adaptation in different deltas around the world will help me to take stock of existing coping tools and propose appropriate strategies for the sites.

(2) Mapping and data analysis

Collecting data and maps on demographics, economics, agricultural production, and climate change such as flooding and saltwater intrusion from various institutions will help me identify narrower areas of concern and populations. The data and analysis

will need to be aggregated and summarized to produce a synthetic map that will guide the implied spatial structure and spatial planning.

(3) Pattern language
The pattern language will allow me to summarize spatial tools and local experiences in a systematic way, forming a toolbox and assessment network for the site. The pattern language will also form a common language and tool for communication and co-creation with stakeholders and will play an important role in public participation and civic education of the project.

(4) Research by design
The project will be designed in a series of pioneering areas, designed strategically through solid preliminary research and feedback from design practice. Knowledge and understanding will be generated through research into the effects of positive and systematic changes in design solutions and their context, leading to the further development of larger-scale planning strategies and applicability to other deltaic and rice-producing areas.

Literature and general practical preference

1. theories and cases of agricultural transformation and climate adaptation
2. Theory and practice of using indigenous cultural traditions
3. Previous planning and investment projects in the Mekong Delta
4. Sustainable agricultural livelihood adaptation and decision-making participation
5. Regional cooperative planning and transition management

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 Urbanism track and the studio theme of planning complex cities enables my graduation project to understand the complex spatial and institutional realities of the Mekong Delta in the political, cultural and social context of the site; and to respond to them at the regional scale and planning level in order to address spatial planning in complex urban and rural contexts in terms of climate adaptation, water management and ecology and Strategic development issues. Also at a smaller scale, the study area is concerned with the composition of site structures and spaces, landscapes, networks and systems, time and transformation, and relationships between scales and enabling connections between agricultural rice production and socio-cultural, historical, and economic sustainability.

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

At the social level, the project seeks to improve the climate resilience and sustainability of the Mekong Delta's societies, ecosystems, and natural resources through targeted, climate-resilient spatial planning of food systems, starting with rice-based food production, and to create new economic opportunities for its sustainable development. Integrate leadership, coordination, and funding to govern the transition

to sustainable agriculture in the Mekong Delta, combining top-down planning with bottom-up action. Develop a common language to integrate and communicate with different stakeholders, address cross-border cooperation in governance, and mitigate the tensions between traditional lifestyles and climate adaptation measures. Such an attempt to develop a planning and design framework will be of reference to a wide range of agricultural regions threatened by climate change, especially to other deltas engaged in agricultural production in Asia.

At the scientifically level, the project explores the potential of traditional culture to adapt to the increasing climate change effects in the context of indigenous agricultural practices in the Mekong Delta of Vietnam and translates them into design and planning principles by integrating them with the different landscape types and regional characteristics of the region. This may, to a certain extent, complement the knowledge network of Vietnamese or Southeast Asian indigenous cultures and provide another direction for the extension and revitalization of this knowledge in the new context of today. It may also provide a knowledge reference for similar rice production areas or delta regions.