

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	Monseratt Cortés Macías
Student number	5221595

Studio		
Name / Theme	Transitional Territories. Inland, Seaward. <i>The form of time and the politics of space.</i>	
Main mentor	Dr. Diego Andrés Sepúlveda Carmona	Urbanism, Spatial Planning and Strategy
Second mentor	Ir. I. Inge Bobbink	Landscape Architecture
Argumentation of choice of the studio	<p>My curiosity makes me go deep under the surface, looking for knowledge and evidence in every layer to be able to understand the full scope in order to be able to give a possibility of change through design that takes into account the plurality of worldviews, needs and ideas. The proposed area of study is a complex mosaic of different biodiversity rich landscapes competing for survival against the effects of nature pulses and human actions. For decades, the focus remained mainly on the economic development of the coastal areas without considering the ecological stress and social uncertainty as a result of urban expansion.</p> <p>My motivation then comes from a deep desire to cast a light to these realities and to obtain the knowledge and tools necessary to empower the lower sectors who, with political corruption and climate change, are the first and most affected.</p> <p>I chose the Transitional Territories Studio as I am sure it will guide me and give the tools that my thesis needs to look into sustainable transitions through different scales, sectors, from seaward going inland taking into account the interdependency between the different systems and the necessary care the landscape needs in order to continue to sustain life, human and non-human. Through the process of cartography, de-construction and synthesis</p>	

	looking at the different but interconnected layers of sub-surface, surface and atmosphere, I want to first expose the accumulation of processes, to reflect on how we consume matter and the traces we leave behind on the landscape and society. Then, by the exercise of clearance, to think of possible future scenarios with a different relationship between the systems, actors and processes.
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Graduation project

Title of the graduation project	Future [Arch]Ecologies Territory, Identity and Heritage. <i>Landscape as infrastructure for a new socio-cultural co-production in the Yucatan Peninsula, Mexico</i>
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Goal

Location:	Yucatan Peninsula, Quintana Roo Estate, Mexico.
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The posed problem,	<p>Problem focus</p> <p>The Eastern Yucatán Peninsula is a complex mosaic of different biodiversity rich landscapes, home of endemic species and territory of the cultural history of an ancient civilization. For decades, the focus remained mainly on the economic development of the coastal areas without considering the ecological stress and social uncertainty as a result of urban expansion. Today, the area is struggling from freshwater shortages, pollution, habitat modification, wetland loss, and weak political interest.</p> <p>Although the natural environment and socio-cultural heritage, are linked inseparably through complex interrelationships, they are still approached as individual units. There is a total disconnection between economic thinking and the environmental aspects of economic activity and the social repercussions. This results from the failure to communicate to society and decision makers about the interconnections of natural and human systems and to decouple economic growth and urban development from the loss of natural and social capital.</p> <p>The lack of a local and metropolitan well-rounded vision for the area and the failed administration of landscape resources and the irregular information on them causes a permanent loss of opportunities for the socioeconomic development of these areas and of those that depend on their proper functioning, the indigenous communities that take care of the ecosystems in rural areas.</p>
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Despite numerous historical disruptions and steady iterations of colonialism that continue through today, indigenous communities have resisted and continue to care for their land. The cultures that exist and have existed in the territory have developed a close relationship with the biological diversity of their environment, both in their worldview and in the way in which they have taken advantage of the available natural resources. The most important negative effect is the growing loss of control over the use of the land and occupation of the ejido territory, where markets for renting and selling land arise that lead to a greater fragmentation of the social fabric and clear risks of environmental impact, which in turn closes possibilities of regulating the conservation and usufruct of collective resources. This results in mayor degradation of the culture, the collective visions and practices, and the relationship with natural resources.

With the acceleration of modernization and globalization, intangible cultural heritage is more and more difficult to get the same attention as material cultural heritage. Its living environment is deteriorating, and the degree of damage is accelerating. The inheritance of traditional indigenous knowledge needs not only the careful protection of generations, but also the courage to innovate in accordance with the changes of the times.

Problem Statement

The region's mostly mono-cultural economic practices focusing on tourism services have pushed the locals, from mostly indigenous background to leave their communities and seek job opportunities in the cities created for the new Mayan Riviera. The extensive knowledge about the natural capital of the territory that the indigenous communities have reached, for millennia and through complex processes of nature-society interaction, is being diminished by situations of extreme poverty and massive migrations of rural communities.

This set of political, social, economic and natural elements have had enormous repercussions on the physical and social integrity of the landscape, which nowadays is threatened not only by the over-exploitation of resources and unplanned urban sprawl, but also by the homogenization and simplification of an ancestral culture.

Going forward, these factors, together with climate change, are likely to continue the deterioration of ecosystems and the fragile social fabric on the local communities unless effective action is taken immediately. There is an urgency to

	<p>understand the interactive effects of these drivers, which will most likely reinforce themselves and which have the potential to generate tipping points, with potentially irreversible changes in the region and its fragile interconnected systems.</p>
<p>research questions and</p>	<p>Main Research question</p> <p>Starting with the Ejido as fundamental design unit of dynamic equilibrium, how to reposition the landscape as new systemic resilient backbone of the territory, by integrating the traditional indigenous knowledge for a new socio-cultural co-production of space?</p> <p>Sub-research questions</p> <p><i>Assessment</i></p> <p>AR1: Which are the systems at play and where are the critical zones where they connect, have their limits been reached?</p> <p>AR2: Which are the processes and national plans developing in the territory that sustain, disrupt or project new values</p> <p>AR3: What is the hierarchy of stakeholders and the power relations and economic drivers that take place in the territory?</p> <p>AR4: How to find common ground in the different cosmovisions within the territory that will enable the different actors, environmental systems and land uses to coexist?</p> <p>AR5: How to re-map the natural capital of the territory in order to provide a new lens with which the value of the landscape can be assessed?</p> <p><i>Design and planning</i></p> <p>DR1: If awareness of an issue is not enough then what could be the first steps towards a disruption of the system?</p> <p>DR2: How to diversify the narratives of the territory that could provide new productive economic activities to benefit marginalized groups of society without further deteriorating the natural capital?</p>

	<p>DR3: How to transcend Natural Protected Areas for a new way of managing the lands that does not remove the local inhabitants from their territory?</p> <p>DR4: What can we learn from traditional indigenous knowledge and how to potentiate it in order to incorporate in future territorial ecological planning frameworks?</p> <p>DR5: How different relationships and attachment to land can render different ways of uses within regulation, conservation or regeneration?</p> <p>DR6: What could be a better way to present and preserve our cultural tangible and intangible heritage?</p> <p><i>Projection</i></p> <p>PR1: What are the flexible and adaptative pathways needed for a resilient future where new models of occupation can take place?</p> <p>PR2: How to continue the participation and involvement in the process in the long term?</p> <p>PR3: How to continue strengthen the system in order to overcome future natural and social disturbances?</p>
<p>design assignment in which these result.</p>	<p>Proposition</p> <p><i>What could be a new socio-cultural contract with the territory for a careful engagement with the landscape that could provide a new pathway for bio-socio-cultural spatial justice?</i></p> <p>As globalization keeps pressuring the local socio-cultural fabric in the Peninsula, the affective relationship between human and landscape continues to deteriorate. There needs to be a recognition of the bio-physic and socio-cultural dynamics in order to better understand the limits of the array of complex systems at play, their different gradients of use and impact in the equilibrium of the ecosystem, and the stakeholders and actors that are the most important drivers of change.</p> <p>Traditional knowledge occupies a pivotal place in the range of actions needed to mitigate climate change. A new cultural construction of the territory that explores its the elements and qualities that contribute to its transformation, adaptivity and</p>

durability overtime may shift the focus from an economy of extraction and conservation to an investment in the regeneration of natural capital, ecosystem services, heritage and most importantly to be able to sustain future ways of occupying and using the land.

With my thesis, my goal is to explore the possibility of a more diverse use and production of space, to counter act the processes of urban sprawl, abandonment of critical land as result of migration, and habitat modification. By reading the landscape as *tabula scripta*, I propose to bring forward the natural capital, ecosystems services and traditional local knowledge for a new territorial socio-ecological planning framework that uses as unit of measure the *ejido*, a piece of land community owned by locals from mostly indigenous background that are the most affected by the current urban and economic development in the coastal areas. By examining the critical zones for urgent action and exposing the potential of the landscape as infrastructure, I can start to imagine a possible transformative pathway that through the project will be able to re-valueate and re-evaluate the way in which we can achieve a coexistence between the different systems, scales and actors that come from different worldviews and have had a different relationship with the environment.

I propose a planning framework strategy that will guide the local and metropolitan development in a functional ecological and socio-economical way. As a starting point, the first area of focus includes but transcends NPA (Natural Protected Areas), *ejido* communities and the ecosystems surrounding them. After assessing the current situation and interconnections withing the systems, to propose a plan to transform neglected landscape into productively managed landscape with the added value of the productive heritage in mind. Taking into account ecological criteria at the appropriate scale and by involving all actors, my goal is to reassess vernacular strategies and traditional indigenous knowledge in order to integrate them in the current system to finally form a network of bio-cultural corridors that will expand and strengthened the development of the territory, making it more resilient to future disturbances, social or natural. With social participation and the convergence of actions between the different sectors and

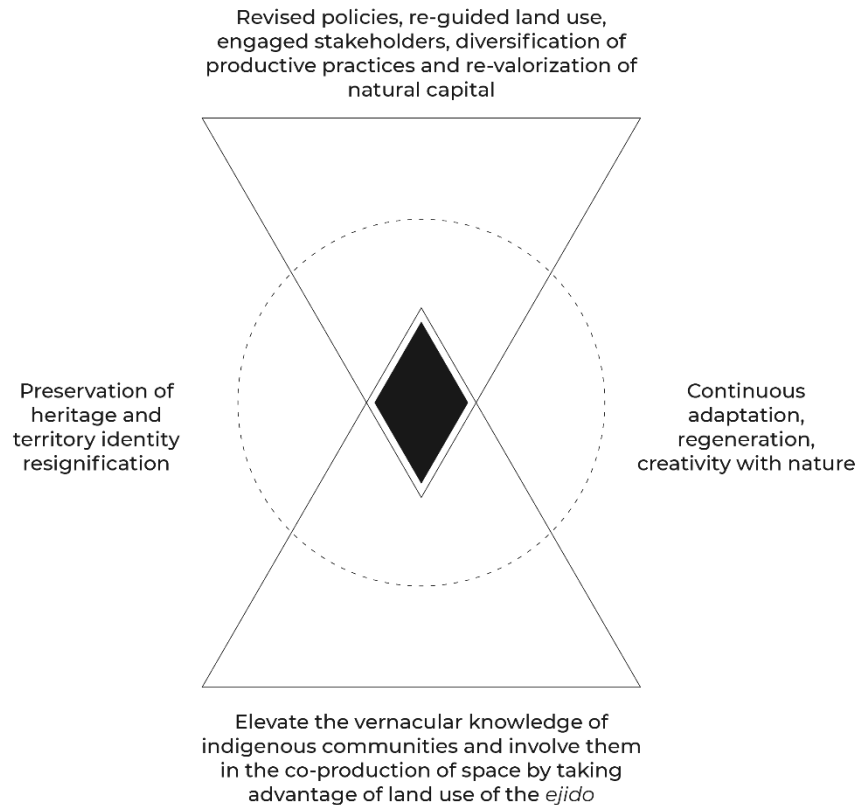
	<p>government orders and NGOs, the goal is to allow for the functional connectivity of ecosystems and the socio-cultural integration in the development of the metropolitan area of Quintana Roo.</p> <p>Design outcomes:</p> <p>Following the studio’s lines of inquiry (Matter, Topos, Habitat and geopolitics), and the processes of accumulation and possibilities for clearance in the area, the outcomes are as follow:</p> <ul style="list-style-type: none"> a. Atlas of the natural and social systems at stake b. Documentation of the history and practices of local indigenous communities c. Alignment with national and international sustainable development goals d. Hierarchy of stakeholders e. Revision of the critical zones and potentialities f. Proposal of specific case scenarios g. Planning framework and guideless for the future local and metropolitan development h. Discussion on our role as urbanists and designers in the face of climate change and reaching our planet’s limits and human limits.
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Process

Method description

Research Aim
Revision of a regional plan as a systemic resilient backbone for the Yucatan Peninsula from an integrated perspective of natural resources, culture and governance to critically revise the existing conditions and determine an improved co-production and more diverse use of space for a sustainable transition.

Starting with the Ejido as fundamental unit of design in equilibrium, the aim of the project is to design a network of interweaved productively managed land to re-connect bio-cultural corridors, incorporating TEK that at the same time offers a new productive use of the heritage.



Sub-goals

- a. To propose a new cultural construction of the territory by exploring the elements and qualities of the territory that contribute to its transformation, adaptivity and durability overtime. Shifting the focus from an economy of extraction and conservation to an investment in the regeneration of natural and social capital, ecosystem services and productive heritage.
- b. To research and understand the limits of the different systems working in the territory and their gradients of influence within the complex network of relationships
- c. To explore the possibility of diversifying the productive activities to counter act the current monopoly economic practices and use nature in a creative way.
- d. To remap the natural capital in order to shed light on the crucial processes the ecosystem services perform in the area in order to sustain life, human and non-human. Then to reconnect bio-cultural corridors.
- e. To collect enough data to have a redundancy of knowledge and actors that could enable the project to adapt and evolve in the face of tensions and pressures.

- f. To find common ground between the indigenous knowledge systems and ecological practices and the federal, state and local plans for development of the region.

Research Methods

Assesment

- a. Literature review to know the current state of the region, its challenges and potentialities.
- b. Theoretical and conceptual framework that gives direction to the project.
- c. Consulting National Mexican Databases and National Universities research papers (INEGI, CONABIO, CONAGUA, UNAM).
- d. Cartography on Accumulation, mapping of the variables (ecosystems, indigenous communities' location, land parcellation and land cover, priority areas, natural protected areas, infrastructure, metropolitan areas, Heritage zones)

Design, planning and projection

- a. Cartography on Clearance, mapping natural capital, social capital, ecosystem services, indigenous knowledge systems, projecting mapping.
- b. Photos, videos, interviews with local NGOs and researchers.
- c. Selection of case studies and critical zones.
- d. Scenario building and projection of possibilities in their spatial form as initiators of the new interconnected network.

Expected outcomes

Design possible scenarios and possibilities for the region through nature based solutions, taking into account theory of complex systems and system thinking in order to achieve a dynamic equilibrium that acknowledges the landscape eco-services, socio-cultural value, local identity and collective agency.

- a. Overall view/documentation of the actual state of the area (Atlas of accumulation)
- b. Overview of all involved actors and stakeholders
- c. Mapping of natural capital and ecosystem services (Atlas of clearance)
- d. Vision and design possibilities for the region (diversity, interdependency, connectivity)
- e. Grounded set of interventions with nature-based solutions and productive heritage (spark, maintenance and *longue durée*) (S, M, L)
- f. Visual documentary

Literature and general practical preference

Literature:

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General sources and databases:

- Heritage, Archeology and Maps resources and information from the INAH (National Institute for Archeology and History). Online library and georeferenced maps.
- INEGI (National Institute of Geography and Statistics)
- TU Delft library
- UNAM (National Autonomous University of Mexico)
- CONABIO (National Commission for the Knowledge and Use of Biodiversity)
- CONAGUA (National Water Commission)
- Ministry of Environment and Natural Resources and National Institute of Ecology, México
- Government of Quintana Roo, Yucatan and Campeche, Yucatan Peninsula.
- IUCN (International Union for Conservation of Nature)
- TNC Mx (The Nature Conservancy Mexico)

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)?

From imagination to creation, the process of design is to think of ways we can improve the world around us. Design has the power to start conversations, to change paradigms, to make explicit what is implicit and it does not seek complexity in order to reveal what is most essential.

I find the relationship between my graduation project and the studio of choice in the way we not only have to study and observe the consequences of our decisions in the surface layer, but also how does it also affects the subsurface and atmosphere. In other words, how every choice has a direct or indirect impact through every layer and across every axis. Transitional Territories are zones going through changes that impact the current ways of life, whether by forces of nature as water or by human actions and different worldviews of development. Politics, social structures, cultures

and landscape and time are complex systems interrelated and any disturbance in the fragile equilibrium that they interact could disrupt their continuous cycle of life.

The current state of our planet is an urgent call for action. Urban areas around the world are experiencing the effects of climate change, mass migrations, and social inequalities. After completing my first year of master's in the Urbanism track, my way of looking at sustainability has changed from a process of adaptations or restrictions to a way of co-existing with nature, designing for the plural and the maintenance of prosperity. This has been relevant for my graduate project since my aim is to expose the critical issues, assess the damage and recover together with nature with the guiding principle that resources should be managed to reflect the relationships among all ecosystem components, including humans and nonhuman species, the environment in which they live, and physical, biological and socioeconomic interrelationships.

As Urbanists, Architects or simply designers, we should strive to incorporate in our projects the diversity and plurality of voices, human and non-human, to propose resilient possible scenarios for the future, to provide a compass instead of a set of rules or to simply expose critical narratives to start a conversation.

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

Scientific

There is a gap in knowledge and recognition of the different systems at stake, their interdependency, their vulnerability and their limits or points of no return. On the other hand, by exposing the negative trends the region has experienced recently and intensely due to mono-political practices and weak institutionality, the aim is to think for new ways of co-habitation and re-guided land use.

Social

The goal through this research is to benefit locals and not only to preserve but regenerate the landscape and our relationship with it. Through a process of progressive and adaptive plan towards a new relationship between the different complex systems, the aim is to increase the economic activities, thus increasing the possible income sources, reduce vulnerabilities and strengthen the backbone of the territory by recognizing the interdependency between every complex socio-ecological system.

Professional

To design for the plural in care-full design. Not fall in generalizations and respect the heritage and ancient culture of the area as well as the natural capital and the potentials of learn from the vernacular knowledge. The goal is to revised objectively the responsibility and degree of impact of every stakeholder, system and resource and my responsibility as guide and planner.