

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	Aikaterini Christina Inglezaki
Student number	5394775

Studio		
Name / Theme	Transitional Territories / theme of the studio]	
Main mentor	Nikos Katsikis	Urban design, urbanization theory, world ecology.
Second mentor	Diego Sepulveda	Spatial planning & strategy, socio-spatial justice, environmental planning.
Argumentation of choice of the studio	Coming from a country that is being deeply affected by the ongoing migration crisis I have witnessed the catastrophic effect of displacement on communities. Through my thesis I aspire to investigate the spatial dimension of this problem while studying a region that is considered an entry point for migrants, and at the same time, is under an increasing risk of ecological collapse because of its dependency on the natural systems to sustain a complex economic model. The studio's approach on analyzing territories through a political, social and environmental lens perfectly fits my interest for developing my thesis.	

Graduation project	
Title of the graduation project	Agroecologies for the Stateless
Goal	
Location:	Region of Murcia, Spain

The posed problem,

The current paradigm of land exploitation that is dependent on commodity export is rapidly operationalizing the Segura river basin in Southern Spain. The immense infrastructure network of the Tajo-Segura transfer is draining groundwater in spite of the EU regulations that demand its protection since it constitutes the future supply for local populations when the climate crisis worsens and droughts become increasingly long. The administration that controls the fate of the transfer's water through the associations of irrigators does not control the volume of water that is transferred nor the number of wells that are illegally opened to sustain agriculture, resulting in major nitrate concentration in the aquifers and ultimately, jeopardizing the sustainability of the water cycle.

This intensive system of production is also dependent on an increasing migrant workforce that seeks a better level of liveability in the European context. The distribution of immigrants in the territory is unequal and is conditioned by the structure of the labour market and the main sources of demand for immigrant labour, which can be characterized as highly precarious and problematic because of the seasonality that defines it. The poor conditions of habitability, overcrowding and lack of privacy have obvious negative repercussions for immigrant communities. Tensions in the daily neighbourhood relationships inevitably arise.

Such a system of production creates a duality of exploitation of nature and exploitation of human labour, based on modernity's concept that views nature as a resource and allows geopolitical forces to control individuals. By

	<p>attempting to put a value on nature through a process of deterritorialization that will reconsider landuse distribution and the mechanisms that support it, and in parallel, by seeking a new material basis for coexistence of local communities, a viable alternative is in need of exploration to restore the imbalance in the territory. The current economy needs to shift towards a year-round model that would provide more stable working conditions, thus, the system of production will inevitably have to change from being exclusively a primary sector to a varied secondary sector that would encompass processing, industry and services.</p>
<p>research questions and</p>	<p>Main research question: <i>How to find more socially and ecologically equitable ways of human and natural work in the Region of Murcia?</i></p> <p>Analysis Sub-questions: <i>RQ1: What are the systems that pose criticalities in the region and what are their limitations?</i> <i>RQ2: How is the land operationalised to sustain the regional economic model? What are the impacts of this process on the natural systems?</i> <i>RQ3: What are the working and living conditions of the migrant workforce? How is the seasonality of production affecting the labour dynamics?</i></p>

<p>design assignment in which these result.</p>	<p>The project is based on the need for a paradigm shift in the current land exploitation model that is being followed in agricultural production environments. Bearing in mind the principles of agroecology, nature-based solutions and socio-cultural approaches theory, the goal of the project is threefold:</p> <ul style="list-style-type: none"> - Firstly, immediate eco-spatial actions to bring the system back to a state of equilibrium after its collapse, meaning the recent eutrophication incidents in the Mar Menor - Secondly, to search for a productive model in balance with the maintenance of the values of natural resources on the long-term and redefine the political framework that currently allows the non-compliance of the various actors to values that have been established by legal instruments. -And thirdly, to explore new forms of agricultural settlements within the agroecological approach as a way to promote the social sustainability of the migrant workers that are employed in the region.
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Process

Method description

(1) Literature review:

(A) Exploration of scientific discourse theories and conceptual methods on agricultural production, land productivity and its relation to labour demands, sources and treatment of water contamination of agrarian origin, and finally, socio-cultural approaches for the integration of foreign populations.

(B) Review of policy documents related to the authorization of water rights to irrigators to gain an understanding of the legal framework that capitalizes on the water system.

Scale: From global discourse to regional and local knowledge (Segura basin-Campo de Cartagena).

(2) Analytic cartography:

Construction of maps that provide a deep understanding of the current spatial

mechanisms.

Scale: Regional and local. (Segura basin-Campo de Cartagena).

(3) Speculative cartography:

The envisioning of new socio-spatial realities at the intersection of the material world and the imagination of the mind.

(4) Strategic mapping:

Unfolding a concrete strategy for the reconfiguration of the territory based on the local context needs and limitations.

(5) Statistical data collection:

Collection and visualization of data provided by administration instruments (Ministry of Agriculture, Water and Environment, Ministry for the Ecological Transition and the Demographic Challenge, Segura Hydrographic Confederation, Regional Service for Employment and Training etc.) to illustrate the current conditions of water limitations, the environmental emergency and the employment and habitation trends.

(6) Case studies:

Selection of specific sites that can showcase the current exploitation practices and would potentially be suitable for interventions.

Literature and general practical preference

Hydrological system & agriculture:

Contreras S., Hunink J., Alcolea A., Jiménez-Martínez J. (2018), Cuantificación de la descarga subterránea al Mar Menor mediante modelización hidrogeológica del acuífero superficial Cuaternario, Comunidad de Regantes Arco Sur Mar Menor.

Environmental Directorate of the European Commission (2000), The environmental impacts of irrigation in the European Union, Institute for European Environmental Policy, London- Polytechnical University of Madrid- University of Athens.

García Ayllon, S. (2018). The Integrated Territorial Investment (ITI) of the Mar Menor as a model for the future in the comprehensive management of enclosed coastal seas. *Ocean & Coastal Management*. 10.1016/j.ocecoaman.2018.05.004.

García-Marín R, Espejo-Marín C, Giménez-García R, Ruiz-Álvarez V., (2020), Transformations in the Agricultural and Scenic Landscapes in the Northwest of the Region of Murcia (Spain): Moving towards Long Awaited (Un)Sustainability. *Land*. 9(9):314. <https://doi.org/10.3390/land9090314>

Grindlay A., Lizarraga C., Rodríguez-Rojas, M., Molero, E. (2011). Irrigation and territory in the southeast of Spain: Evolution and future perspectives within new hydrological planning. WIT Transactions on Ecology and the Environment. 150. 10.2495/SDP110521.

Ministerio para la Transición Ecológica y el Reto Demográfico (2019), Proyecto informativo después de la información pública-Análisis de soluciones para el vertido cero al Mar Menor proveniente del Campo de Cartagena.

Pedreño, A. (2002), "Efectos territoriales de la globalización: el caso de la ruralidad agroindustrial murciana", Revista de Estudios Regionales, 59.

Pulido, A. (2001), Sobreexplotación de acuíferos y desarrollo sostenible. Problemática de la gestión del agua en regiones semiáridas, Inst. Est. Almerienses, Dip. Almería, Almería, 115–132.

Rodríguez Estrella T. (2004), Sobreexplotación de acuíferos y desertificación en el sureste español, Aridez, salinización y agricultura en el sureste ibérico, Fundación Ramón Areces, Madrid.

Rodríguez-Estrella, T.: The problems of overexploitation of aquifers in semi-arid areas: the Murcia Region and the Segura Basin (South-east Spain) case, Hydrol. Earth Syst. Sci. Discuss., 9, 5729–5756

Santos-Francés F., Martínez-Graña A., Ávila-Zarza C., Criado M., Sánchez-Sánchez Y., (2022), Soil Quality and Evaluation of Spatial Variability in a Semi-Arid Ecosystem in a Region of the Southeastern Iberian Peninsula (Spain). Land. 11(1):5. <https://doi.org/10.3390/land11010005>

WWF/Adena, ANSE (Asociación de Naturalistas del Sureste) (2018), La burbuja del regadío: El caso de Mar Menor.

Social sustainability & integration:

Alzamora Á., Domínguez M. (2013), Informe diagnóstico: exclusión residencial extrema de familias de etnia gitana en los municipios de Murcia y Alcantarilla, Asociación Habito, Murcia.

Corkill, D. (2005). Immigrants and a regional economy in Spain: the case of Murcia. International Journal of Iberian Studies. 18. 23-36. 10.1386/ijis.18.1.23/1.

Gadea E., Pedreño A., De Castro C. (2016), Producing and mobilizing vulnerable

workers: the agribusiness of the region of Murcia, Spain, Migration and Agriculture, Routledge.

Hoggart K., Mendoza C. (2000), African Immigrant Workers in Spanish Agriculture, The Center for Comparative Immigration Studies, University of California, San Diego.

Molinero-Gerbeau Y, López-Sala A, Serban M. (2021), On the Social Sustainability of Industrial Agriculture Dependent on Migrant Workers. Romanian Workers in Spain's Seasonal Agriculture. Sustainability.13(3):1062. <https://doi.org/10.3390/su13031062>

RASINET (2014), Vivienda, inmigración y crisis en la ciudad de Murcia: una aproximación al estado de la cuestión, Murcia.

Riquelme P., Ruiz Casanova E., Working conditions of immigrant women in household labour market: Murcia City, Colegio de Economistas de A Coruña, A Coruña, <http://hdl.handle.net/10419/146580>

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Slavkova M. (2008). Being Gypsy in Europe. The Case of Bulgarian Roma Workers in Spain. Balkanologie. 11. 10.4000/balkanologie.1102.

Torres Pérez, F. & Meier, S. (2008). La distribución territorial y la inserción residencial de los inmigrantes en la región de Murcia, Pasajes de la Murcia Inmigrante. Pedreño, A. y Torres, F. (coords) (pp.35-46), Diego Marín Editores.

Zimmerer K.S., Jiménez-Olivencia Y., Ruiz-Ruiz A., Porcel-Rodríguez L.(2020), Agri-Food Land Transformations and Immigrant Farm Workers in Peri-Urban Areas of Spain and the Mediterranean. Land. 9(12):472. <https://doi.org/10.3390/land9120472>

Agroecology:

Kerstin N., Ostermeier M. (2017), Labour Market Effects of Large-Scale Agricultural Investment: Conceptual Considerations and Estimated Employment Effects, World Development, Volume 98, 430-446,<https://doi.org/10.1016/j.worlddev.2017.05.012>.

Khan, A., Martin, P., Hardiman, P. (2004), Expanded production of labor-intensive crops increases agricultural employment. California Agriculture, 58(1). <https://escholarship.org/uc/item/9tz5m7cr>

Magrini M.B., Martin G., Magne M.A., Duru M., Couix N., Hazard L., Plumecocq G. (2019), Agroecological Transition from Farms to Territorialisated Agri-Food Systems:

Issues and Drivers. 10.1007/978-3-030-01953-2_5.

Wezel, A., Casagrande M., Celette, F., Vian J.F, Ferrer A., Peigné J. (2014), Agroecological practices for sustainable agriculture. A review. *Agronomy for Sustainable Development*. 34. 1-20. 10.1007/s13593-013-0180-7.

Nature-based solutions:

Navarro-García, J.R. (2020), No me molestes mosquito: una experiencia de divulgación científica sobre la obra hidráulica y el paludismo en las zonas regadas por el canal de Aragón y Cataluña, España., XI Congreso Ibérico de Gestión y Planificación del Agua.

Van der Jagt A., Száraz L., Delshammar T., Cveji R., Santos A., Goodness J., Buijs A. (2017), Cultivating nature-based solutions: The governance of communal urban gardens in the European Union. *Environmental research*. 159. 264-275. 10.1016/j.envres.2017.08.013.

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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 project **Agroecologies for the Stateless** is focused on the interrelation between intensive agro-industry systems and the exploitation of a flexible migrant workforce, which is critical in order to tackle the impacts of rapid anthropization. The topic falls within the studio premise that is related to territorialisation processes in transitional contexts. Regarding the studio topic in particular, the project is located on the Segura river basin, falling under the influence of the Tajo-Segura hydraulic network which capitalizes on the water resources of the region, in line with the studio's research interest on riverine environments. Regarding the MSc AUBS program, the curriculum looks into the urbanization processes from the perspective of creating urban built spaces. This project is attempting to bridge the gap between the urban and the rural, by examining the reasons that make rural landscapes serve urban areas. The role of an urbanist in such a setting is to challenge the spatial implications of geopolitical interests that shape the land and to be critical of the ways people are integrated (or rather segregated) into new societal structures of urban or peri-urban areas.

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

Societal

In a time of accelerating movements of populations and political instability, it is highly important to view such phenomena from the eyes of those afflicted by these crises. Migration processes usually have a negative connotation in public opinion that overlooks the fundamental contribution of migrants in their host societies, both in terms of productivity and cultural exchange. The project aims to shed light on local realities and conditions of marginalized and exploited populations, and to explore new socio-cultural paths for their insertion in societies and their vocational potentials.

Scientific

As the climate crisis worldwide deepens with a fast pace over the last years, the scientific discourse as well as individuals are becoming more and more concerned about the footprint that humanity leaves on the planet. Such concerns are of great value in understanding the criticalities that lie behind the urbanization processes and to propose precise actions that are needed to preserve our natural resources and restore the environmental degradation that occurs out of humanity's imposition on nature.

Professional

Through our role as urbanists we often aspire to design new human-centered environments by actions of addition to the existing urban fabric. In my thesis I strive to illustrate that the application of urbanism could also mean an action of clearance or adaptation of existing systems and injustices that manifest in spatial terms, stemming from social sensitivities. While raising issues of ethnicity and culture it is crucial not to formulate opinions from our own place of certainty and safety, but rather challenge our professional and personal worldviews.