

SISSTEM  
December 2019

# Sustainable Island Solutions through Science, Technology, Engineering and Mathematics



KU LEUVEN



*This project is funded by the  
European Union*

## SISSTEM-cluster

On August 1, 2019 the SISSTEM project kicked off at the University of Aruba, an ambitious program aimed at the development of critical capacity for Sustainable Island Solutions. SISSTEM advances sustainability policies at an academic level, supporting resilience in small island states while educating a new generation of academics that have the skills and capacity to make these policies a reality. SISSTEM offers a 3-year, 180 EC bachelor program in STEM with specializations in bio-environmental sciences, technology and engineering, and informatics and data sciences; a 1.5-year, 90 EC multidisciplinary master program, PhD projects for sustainable development in small island states and a research and development center. The SISSTEM project is the result of a collaboration between the University of Aruba, KU Leuven and the initial phase is funded by the EU as part of the EDF-11 fund.

## Research Projects

During the first three years of the SISSTEM project, 12 PhD-projects for Sustainable Development in Small Island States will be initiated in close collaboration between the University of Aruba and KU Leuven. Two projects have started already, four are ready to start and the final five will start in 2020.

- Aruba's indoor vertical farm based on LED light technology (**Kryss Facun**)
- Development of an optimal waste management system for Aruba (**Colleen Weekes**)
- Detection and spatial analysis of urbanization and land use change in small island states, by means of GIS and remote sensing techniques (**Start pending**)
- Connectivity of Marine Fish Populations (**Start pending**)
- Sustainability in the agri-food chain group: life cycle analysis for a more sustainable agri-food chain on Aruba (**Start pending**)
- Comparative research on social innovation and just resilience in the governance of small insular socio-ecological systems (**Start pending**)
- Engineering sustainability... or sustainable engineering. Research project on the edge of sustainability, engineering, entrepreneurship, and education in Aruba (**Start pending**)

## Administrative Milestones

Financing Agreement between the European Commission and the Government of Aruba, signed on March 26<sup>th</sup>, 2019

Letter of Intent between the European Union, the Government of Aruba, the United Nations Development Program (UNDP) and KU Leuven, signed on March 26, 2019

EDF-11 Grant Contract No FED/2019/406-549

Collaboration contract between Katholieke Universiteit Leuven and University of Aruba, effective as of June 1, 2019

## Outputs

Special collaboration agreement capacity development KU Leuven – UA

Special collaboration agreement sustainability KU Leuven – UA

Project agreement Land Aruba – KU Leuven - UA

MOU Global Resilience Institute Northeastern University – University of Aruba

UA membership of Global Resilience Research Network

Covenant UA – Marine Barracks Aruba

UA Partnership in The Metabolism of Islands program (University of Waterloo)

UA Partnership in Global University Consortium on SDG 13

In September 2019, the SISSTEM project was presented at UNESCO Caribbean partners Forum in Jamaica and at the ICSD 2019 at Columbia University in collaboration with the UN-SDSN initiative.

In the media

Van der Bruggen, B. (2019). Groep W&T KU Leuven geeft Aruba meer STEM. *Geniaal* jg. 12 nr. 47 p. 22

Mijts, E., P. Arens, N. Buys & G. Gielen (2019). Capacity Building for Sustainable Development in Small Island States through Science and Technology Research and Education. *IC-SD* ([https://ic-sd.org/wp-content/uploads/2019/11/eric\\_mijts.pdf](https://ic-sd.org/wp-content/uploads/2019/11/eric_mijts.pdf))

Upcoming:

Mijts, E., P. Arens, M. Eppinga, J. Lozano-Cosme, T. de Scisciolo, M. Santos, N. John (2020). Education for sustainable development in Small Island States at The University of Aruba.