



**SuGIK**

Sustainable Geographic Information Knowledge Transfer for Postgraduate Education

**Project Beneficiary:**

ISEGI-UNL - Instituto Superior de Estatística e Gestão de Informação da Universidade Nova de Lisboa

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**Partners:**

UniCV - Universidade de Cabo Verde  
UCM - Universidade Católica de Moçambique

**Associate Partners:**

ESRI Portugal  
Fundação Calouste Gulbenkian

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**BUILDING CAPACITIES IN GEOGRAPHIC INFORMATION SCIENCE AND TECHNOLOGY (GIS&T) IN MOZAMBIQUE AND CAPE VERDE**

Geographic Information Science and Technology (GIS&T) can be determining in supporting decision making in key environmental and social development areas, such as: water supply, public health, natural resources management, ecosystem protection, transportation, land use planning or utilities and communication management.



In Mozambique and Cape Verde, NGOs and private and public companies are increasingly counting on geoinformation to manage their infra-structures and activities. Yet the lack of highly qualified professionals in the field hinders the implementation of GIS&T in many areas where it could be operational and making a difference.

The SuGIK project aimed to increase the number of skilled GIS&T professionals in these counties by improving the quality of GIS&T postgraduate education at the Universidade de Cabo Verde – UniCV (Praia, Cape Verde) and the Universidade Católica de Moçambique – UCM (Beira, Mozambique).

**PROMOTING A BEST PRACTICE MODEL CONSORTIUM OF EU-ACP HIGHER EDUCATION INSTITUTIONS IN THE FIELD OF GIS&T**

The ultimate goal of the **SuGIK** project was to develop, implement and disseminate a best practice model consortium of EU-ACP higher education institutions for the institutionalization of a GIS&T postgraduate program in Cape Verde and Mozambique.

By supporting UniCV and UCM with training, quality standards, resources and technologies, the SuGIK project enhanced the overall management, academic, and technological capacity of these two higher education institutions, allowing the transfer and the implementation of three editions of a GIS&T postgraduate programme.



The **SuGIK** project allowed the transfer and the implementation of a curriculum development model in GIS&T for both partner institutions.



**TRANSFERRING AND ADAPTING STATE OF THE ART GIS&T CURRICULUM**

During the first year, the African partner institutions conducted a regional and local study on the necessities of GIS&T professionals in different sectors of activities.

This initiative, along with the contribution provided by faculty and staff of both partners institutions, helped to identify the specific competencies of the GIS&T postgraduate course and ensured an efficient reformulation of the contents that were proposed for the following editions of the course.

Subsequently, the postgraduate curriculum in GIS&T offered by ISEGI-UNL was adapted to the needs and realities of the Mozambique and Cape Verde labour markets.

The possibility to adapt the structure of the postgraduate program in order to allow the award of a GIS&T master degree was considered in the first year of the project. Therefore, since the beginning of the 1st edition of the program, the postgraduate program (2 semesters) and the master program (4 semesters) were delivered by UniCV and UCM.



**DELIVERING A SELF-SUSTAINABLE GIS&T POSTGRADUATE PROGRAM**

The GIS&T master program was organized into four semester modules distributed through five learning areas:

- Geographic Representation and Visualization;
- Geospatial Data Acquisition and Manipulation;
- Databases and Data Modelling;
- Geospatial Data Analysis and Geocomputation;
- Applications of Geographic Information Systems, Society and Organizations.

1 <sup>st</sup> SEMESTER	2 <sup>nd</sup> SEMESTER	3 <sup>rd</sup> SEMESTER	4 <sup>th</sup> SEMESTER
Geographic Information System and Science	Remote Sensing	Research Methodologies	Dissertation
GIS Applications	GIS and Modelling	Dissertation	
Geospatial data models	Geospatial Data Mining		
Geospatial databases	GIS and Local Communities		

The Project integrated a set of solutions that aimed to support a self-sustainable GIS&T master programme delivery.

During the first year, the curricular units were taught by ISEGIUNL teachers to a group of selected students from both partner institutions.

In the 2nd and 3rd editions of the GIS&T master programme, the curricular units were taught by ISEGIUNL teachers in a partnership with selected students from the 1st and 2nd editions.

By the end of the project both partner institutions were prepared to offer, in an autonomous way, the GIS&T master programme.

Thus, the Universidade Catolica de Mocambique and the Universidade de Cabo Verde included in their 2012 educational offers a 4th edition of a master programme in the field of GIS&T.



**MEETING GIS&T EDUCATIONAL AND PROFESSIONAL NEEDS**

The SuGIK Project aimed to address the lack of GIS professionals and GIS advanced education in Cape Verde and Mozambique.

The implemented approach demonstrated to be effective to enhance and multiply the effects and benefits of a self-sustained co-operation, in a scientific and technological field considered very relevant to pursue the socio-economic development strategies of these two countries.

The SuGIK project benefited the government departments, local authorities, private companies and NGOs, that have now highly qualified researchers and GIS&T professional in their personnel teams. Therefore, the final beneficiaries of the project are better prepared to face ongoing development strategies and to help the Mozambique and Cape Verde local communities in key issues such as disaster prevention, public health, resources management or public safety.

The project also contributed to combat the tendency towards brain drain, by mitigating the adverse effects of Highly Qualified resources migration from Cape Verde and Mozambique.



University of Cape Verde  
Students of the 1<sup>st</sup> Edition



Catholic University of Mozambique  
Students of the 1<sup>st</sup> Edition



University of Cape Verde  
Students of the 2<sup>nd</sup> Edition



Catholic University of Mozambique  
Students of the 2<sup>nd</sup> Edition



University of Cape Verde  
Students of the 3<sup>rd</sup> Edition



Catholic University of Mozambique  
Students of the 3<sup>rd</sup> Edition

### BUILDING HUMAN CAPACITIES TO PROMOTE POVERTY ERADICATION AND SUSTAINABLE DEVELOPMENT

The alleviation of poverty and the promotion of sustainable development were addressed by the SuGIK project through two different and complementary ways:

The first one was related with the specific application areas of the GIS&T master programme. In the context of the academic projects developed by the students, and in their own professional activities, the potential offered by GIS&T has been intensively explored in diverse priority areas of socio economic development in Mozambique and Cape Verde (water resources; public health; natural resources management and ecosystems conservation, transportation, land use planning, public defense, utilities and communication, etc.). With the aim to fostering poverty reduction and building good governance and sustainable development, these GIS projects tend to promote the linkages and partnerships between local and regional authorities, private institutions, NGOs and local communities.



UCM – Master thesis defenses and presentations

The second one was related with the effective contribution to strengthen the human capital in the two partner institutions, by transferring knowledge in the technical, didactical, and scientific domains, allowing for a gradual transition, based on quality criteria and adequate resource and technology use, necessary for the sustainability of the process and the continuity of GIS&T advanced teaching.



GIS DAY 2011 at Catholic University of Mozambique

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<http://sugik.isegi.unl.pt/>

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