

## ❖ Introduction

The “Modernisation of Institutional Management of Innovation and Research in the South Neighbouring Countries (MIMIR)” is designed to aid and assist partner universities in South Neighbouring Countries to understand the status quo of their innovation and research mentality. The project aims to help universities in Morocco and Jordan to develop their management research and innovation.

The Project engages European, Moroccan and Jordanian institutions of higher education in a structured dialogue on the transfer, exchange and application of European practices in the field of research management and innovation.

This report aims to present the state of research and innovation management at Sultan Moulay Slimane University (USMS) in Béni-Mellal and the impact of the project on University.

## ❖ Presentation of Sultan Moulay Slimane University (USMS):

Sultan Moulay Slimane University has been founded in 2007, it is a scientific, cultural and professional public institution located in the heart of the region Beni-Mellal/Khenifra (this region is located in the center of Morocco). Beni-Mellal/Khenifra is one of the most important regions with rich historical background and wealthy agricultural centre. USMS is an actor in the development of Higher Education and research in the five cities of the region Beni-Mellal/Khenifra.

### **Sultan Moulay Slimane University currently includes:**

#### ❖ Seven institutions:

- Faculty of Arts and Humanities (FLSH), Béni Mellal
- Faculty of Science and Technology (FST), Béni Mellal
- Polydisciplinary Faculty (FP), Béni Mellal
- Superior School of Technology (EST), Béni Mellal
- Polydisciplinary Faculty (FP), Khouribga
- National School of Applied Sciences (ENSA), Khouribga
- Superior School of Technology (EST), Khenifra

#### ❖ Seven centers

- Language Center of USMS
- Center of Analysis and Control-Quality

- Center for Continuing Education
- University Center of Incubation Beni-Mellal/Khenifra (CUIBK)
- FabLab Center of SMS University.
- Print Center of USMS
- Center of Doctoral Studies

➤ **Sultan Moulay Slimane University in numbers:**

- **40522** students
- **59** Undergraduate Programs
- **31** Master's Program
- **07** Engineers programs
- **10** Doctoral Programs
- **203** Employees
- **549** Professors
- **58** Laboratories of Scientific Research

❖ **Laboratories Scientific Research of USMS**

Aware of the role and importance of Scientific Research in socio-economic development at the national and regional level, the USMS, like other Moroccan universities and in conformity with national standards of the structuring of Scientific Research, has set up a device for the structuring of research entities. In this context, the situation of the research structures accredited by the University Council stands at: **58** laboratories of scientific research in different areas.

❖ **Faculty of Sciences and Technology**

- Laboratory Biotechnologies and Valorisation of Plant Genetic Resources
- Laboratory of Mathematics and Applications
- Laboratory of Organic Chemistry and Analytics
- Laboratory of Sustainable Development
- Laboratory of Information Processing and Decision Support
- Laboratory of Applied Mathematics and Scientific Computing
- Laboratory of Industrial Engineering
- Laboratory of Flow and Transfer Modeling

- Laboratory of Biological Engineering
- Laboratory of Physics of Materials
- Laboratory of Automatic and Energy Conversion and Microelectronics
- Team of Management and Valorization of Water Resources and Techniques
- Team of Georesources and Environment
- Team of Bioprocesses and Biointerfaces
- Team of Experimental Oncology and Natural Substances
- Team of Remote Sensing and GIS
- Team of Applied Geosciences and the Environment
- Team of Molecular Electrochemistry and Inorganic Materials
- Team of Agro-Resources, Bioenergy and Environment
- Team of Agro-Industrial and Environmental Processes
- Team of Ecology and Sustainable Development
- Team of Environmental Engineering
- Team of Applied Spectro-Chemiometry and Environment

#### ❖ Faculty of Arts and Humanities

- Laboratory of Applied Research on Literature, Language, Art and Cultural Representations
- Laboratory of Dynamic Scenes, Risks and Heritage
- Laboratory of Dialogue and Objectives for Research and Studies
- Laboratory of Narrative, Cultural and Visual Forms
- Laboratory of Research on Culture and Communication
- Laboratory of Interdisciplinary Research on Diversity and Development
- Laboratory of Arabic Language and Speech Analysis
- Laboratory of History and Land in Morocco and the Mediterranean World
- Team Research on International Migration, Development and Regionalization
- Team Research on Cities and Regionalization in Morocco
- Team Research on Structures and Dynamics of the Society
- Team Interdisciplinary Research on Intercultural and Communication
- Team Research on Moroccan and Andalusian Folklore
- Team Research in Speech Analysis and Knowledge Integration
- Team Research on Sunna and Knowledge

- Team of Studies in History, Heritage and Regional Culture
  - ❖ **Faculty Polydisciplinary, Beni-Mellal**
- Laboratory of Chemical Processes and Applied Materials
- Laboratory of Studies and Research in Economics and Management
- Laboratory Research in Economic and Social Sciences
- Laboratory of Biotechnology and Sustainable Development of Natural Resources
- Laboratory of Innovation in Mathematics, Applications & Information Technologies
- Laboratory Polyvalent in Research and Development
- Laboratory of Legal Sciences, Politics and Communication
- Team Research of Applied Chemistry and Modeling
- Team Research of Applied Physics and New Technologies
- Team Research of Theoretical Physics and Materials
- Team Research of Electronics, Instrumentation and Measurement
- ❖ **Superior School of Technology, Beni-Mellal**
- Laboratory of Engineering and Applied Technologies
- ❖ **Polydisciplinary Faculty, Khouribga**
- Laboratory of Applied Mathematics, Information and Communication Technologies
- Laboratory of Economics and Management
- Laboratory of Territorial Development, Environment and Energetics
- Laboratory of Materials Science and Modeling
- Laboratory of Mathematical Chemistry and Modeling
- Laboratory of Nanosciences and Modeling
- ❖ **National School of Applied Sciences, Khouribga**
- Laboratory of Process Engineering and Optimization of Industrial Systems
- Laboratory of Computer Science, Systems, Electronics, Networks and Telecommunications.

## ❖ Doctoral Studies at USMS

The reform of doctoral studies came into force in 2008 with the publication of a decree setting out the regulations governing doctoral studies within the «Centers for Doctoral Studies » and constituting the list of national pedagogical standards of the Doctoral cycle.

The USMS has two Doctoral Studies Centers, accredited within its institutions, which cover the following disciplinary fields:

### ➤ **Doctoral Studies Center of Sciences and Technology»**

#### ❖ **02 Doctoral Programs**

- Natural Resources, Environment and Health
- Mathematics and Applied Physics

### ➤ **Doctoral Studies Center of Humanities and Literature»**

#### ❖ **08 Doctoral Programs**

- Urban Planning and Urban Development
- Dynamics of Landscapes and Heritage
- Heritage and Regional History
- Interactions in Literature, Culture and Society
- Arabic Language and Science
- Literature and Arts
- Languages and Language Sciences: Arabic, French, English
- Religious and Cultural Dialogue in Islamic Civilization

**Table:** Number of PhD Students and PhD Theses Supported in 2018

Doctoral Studies Centers	Doctoral Programs	Number of PhD Students	PhD Theses Supported
Sciences and Technology	Mathematics and Applied Physics	330	74
	Natural Resources, Environment and Health	247	57
Humanities And Literature	Languages and Language Sciences: Arabic, French, English	225	79
	Urban Planning and Urban Development		
	Heritage and Regional History		

	Interactions in Literature, Culture and Society		
	Dynamics of Landscapes and Heritage		
	Arabic Language and Science		
	Literature and Arts		
	Religious and Cultural Dialogue in Islamic Civilization		
<b>Total</b>		<b>802</b>	<b>210</b>

### ❖ The Funding of Scientific Research

In addition to research projects funded by the Ministry of Higher Education or by the European Union as part of calls for projects, USMS spends at least twenty percent of its budget for scientific research to support their research laboratories for purchase equipment and scientific material, encourage the mobility of students and professors and fund research projects with scientific and socioeconomic important interests. Below are the administration and management of scientific research in the USMS via the mobilization of professors and students, the organization of scientific events, participation in research calls for USMS and the annual scientific production of each laboratory.

#### ➤ Support for researchers' mobility

Mobility	2015	2016	2017	Total
Professors / outside Morocco	30	36	46	112
Professors / Interior Morocco	23	15	27	65
PhD students / outside Morocco	28	26	56	110
PhD Students / Interior Morocco	18	24	20	62
<b>Total</b>	<b>99</b>	<b>101</b>	<b>149</b>	<b>349</b>

#### ➤ Publications 2012-2017

As part of its efforts to support research, the USMS launches an annual call for scientific production support, which encourages the publication of scientific articles in international indexed journals.

Year	Number of Publications
2012	112
2013	130
2014	190
2015	250
2016	292
2017	301

### ➤ Support for scientific events

The USMS gives a particular interest to the organization of the scientific events within their institutions because it allows discussing the latest advances of the research works in various fields, to establish scientific collaborations and to encourage the exchanges of professor and student and to elaborate projects of research with common interests. During the last 4 years, a hundred seminars and conferences is organized on water, energy and climate change, health, environment, agriculture, sciences, tourism, heritage, urban planning, letters and human sciences, .... Bellow some examples of scientific events organized in USMS:

- International Congress of fight against cancer;
- International Forum on Renewable Energy;
- International Symposium: Water, Energy and Agricultural Development;
- "Fablabs", a new university space of creativity and innovation;
- International Forum on Climate Change "ATLAS COP";
- Startup week end at the USMS;
- Advanced regionalization;
- Low Carbon Organization (OBS) balance sheet towards a low carbon territory (TBC) balance sheet.
- Conference on Theoretical and Mathematical Physics

### ➤ Research Projects funded by USMS

The university funds research projects in different area of significant scientific and socio-economic interest at the regional, national and international levels.

In the same context, calls for projects launched by the Ministry of Higher Education, CNRST, OCP, the LALA SALMA Foundation for Prevention and Treatment of Cancers are a priority for our professors, they are involved in more than

**146** research projects between 2012-2017 (projects PHC Toubkal, Integrated Actions VOLUBILIS, Programme Morocco–Allemande / PMARS III, R & D project around phosphates, projects In the context of cooperation CNRST- Morocco /CNRS-France, projects In the context of cooperation CNRST – Morocco / FCT Portugal , projects In the context of cooperation CNRST–Morocco /CSIC-Spain...etc.).

#### ❖ International Cooperation

USMS seeks to further develop international cooperation and partnership. Our university has signed a hundred bilateral agreements with several universities all over the world (France, Italy, Spain, Belgium, Portugal, UK, Turkey, China, USA, Russia, Tunisia, Canada, Lithuania, Iraq...etc).

USMS is also a partner member in international networks and consortium (AUF, TETHYS, Union of Arab Universities, E-Omed, Silk Road Agricultural Education & Scitech Innovation Alliance, Yangling, China,.....etc.)

USMS is involved in several programs of the European Union (ERASMUS, TEMPUS...etc) which target the development of skills in **governance, Education, Research, Entrepreneurship**... etc.

**Governance:** Institutional Evaluation, Human Resources Management, Audit and Quality Assurance, Financial and Asset Management, Information System, International Project Management, Institutional Management of Innovation and Research.

**Education:** Electronic and Optical Physics, Gender, Inclusive Education, Distance Learning (PT and Courses), Credit System in Higher Education,

**Research:** Water and climate change in the Oum Rbia basin, mathematics applied to health, environment, renewable energies...

**Orientation and Insertion into active life:** Employability of the laureates, Entrepreneurship

#### ❖ Impact of MIMIR on Research and Innovation management at USMS

The project “Modernisation of Institutional Management of Innovation and Research in the South Neighbouring Countries (MIMIR)” was an opportunity for the USMS, it is because of this project that the university was able to improve the administrative management of the research as it took advantage of the experiences



of the partner universities. This project has enabled the university to overcome the difficulties and obstacles related to research management through interaction with the different project partners and finally the USMS appreciates this experience and will benefit from the achievements of its participation in this project by continuing its efforts to improve the management of research and innovation.