



Republic of Tunisia
Ministry of Higher Education and Scientific Research



CENTRE for WATER RESEARCHES and TECHNOLOGIES CERTE

COMSATS
Coordinating Council



Islamabad (Pakistan): 17 - 19 May 2016

Technopark (Technopole of Borj Cedria)

89 ha



TECHNOPOLE BORJ CEDRIA
prenez une technologie d'avance

■ RD&I area (4 Research Centres)

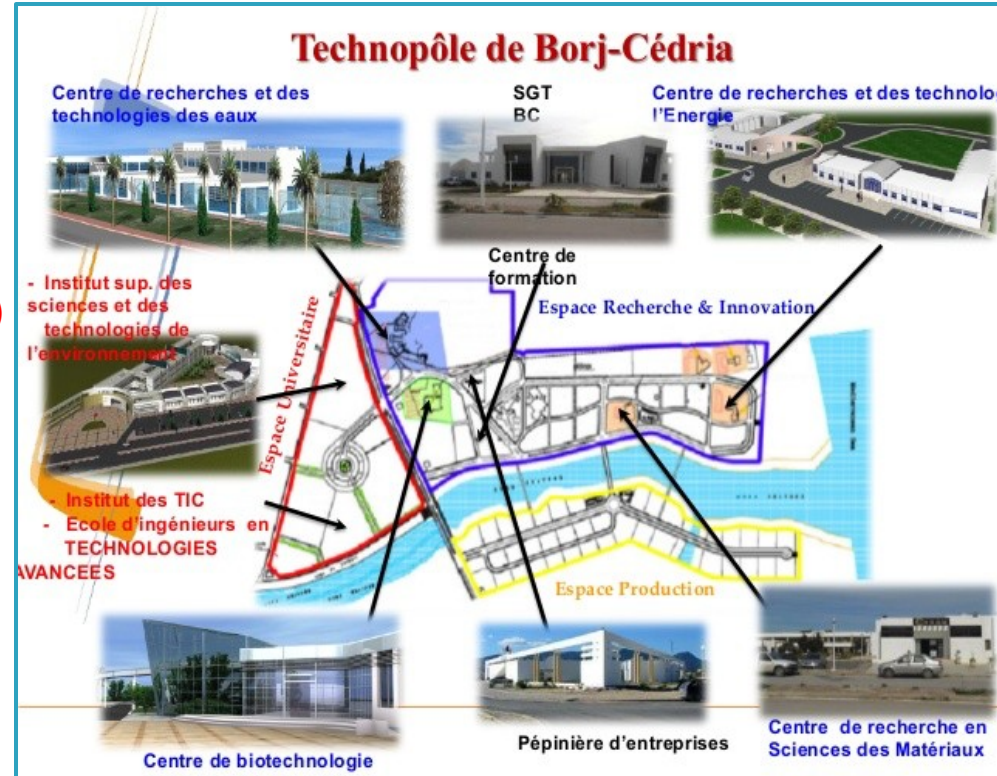
- Water: **CERTE**
- Energy: **CRTen**
- Biotechnology: **CBBC**
- Material: **CNSM**

■ Education area (3 High Education Institutes)

- TIC: **ISTIC**
- Environment: **ISSTE**
- Advanced Technology: **ENSTAB**

■ Production area

- Incubator
- Space for innovative Industry linked to the Research Centres topics.



CERTE Presentation

- CERTE and Techno-park are located at 25 km in the south of Tunis
- According to the CERTE creation decree (2005), the main mission of CERTE is to carry out Research Innovation activities and Technological Development in Water sector and to Transfer of the Scientific results to the Socio-economical sectors.

Missions of CERTE

1 / 2

Furthermore, CERTE has the obligation :

- ❑ Performing research programs and projects in the framework of contracts signed with the Government;
- ❑ Carrying out research activities, experimentations, expertise in water sector for ministries, national institutions, public and private establishments:

- Development and upgrading of production materials and processes and water quality improvement;
- Development and improvement of water treatment technologies and processes and encouraging wastewater reuse;
- Treatment and valorization of non conventional water resources;

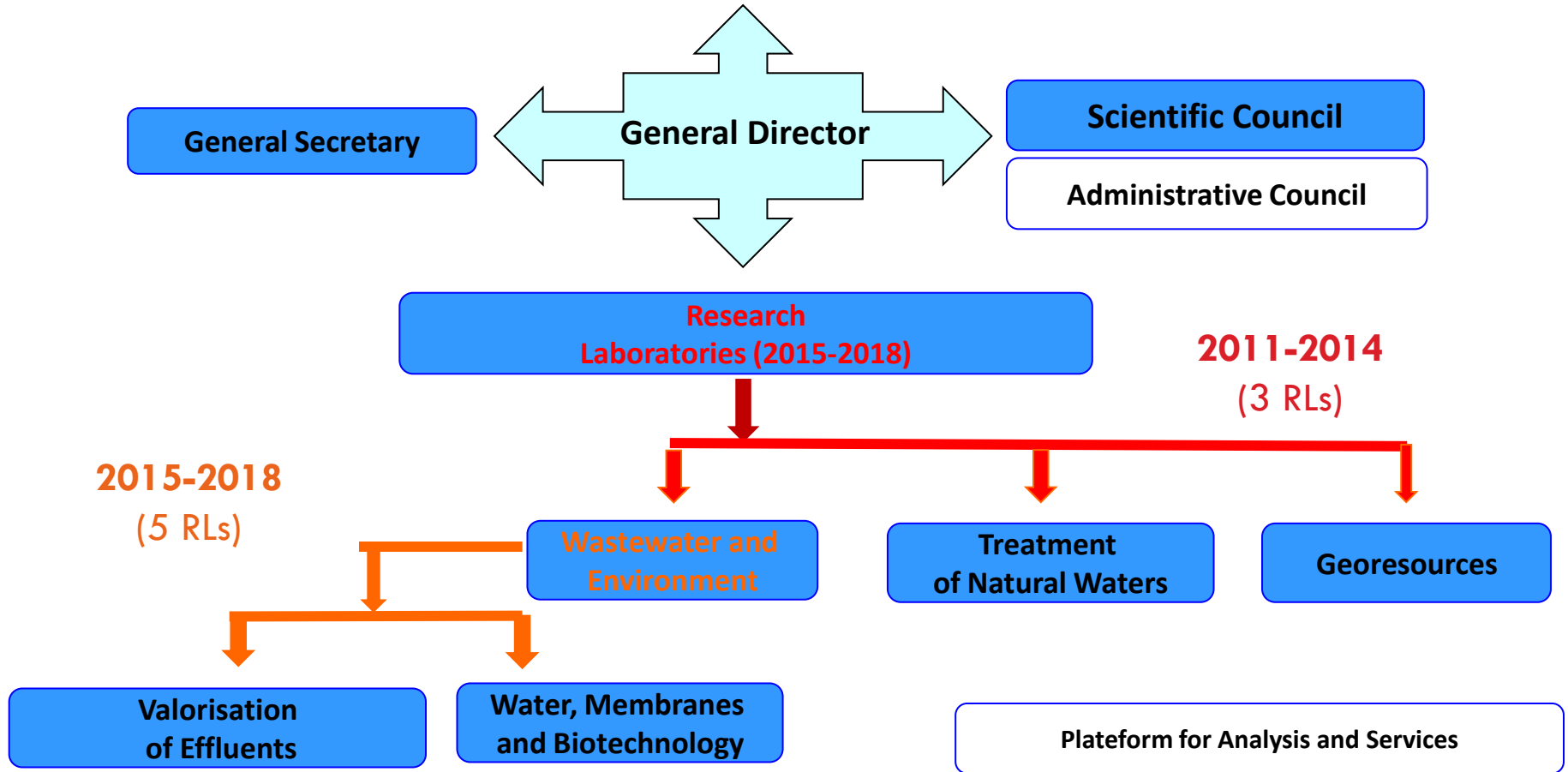
Missions of CERTE

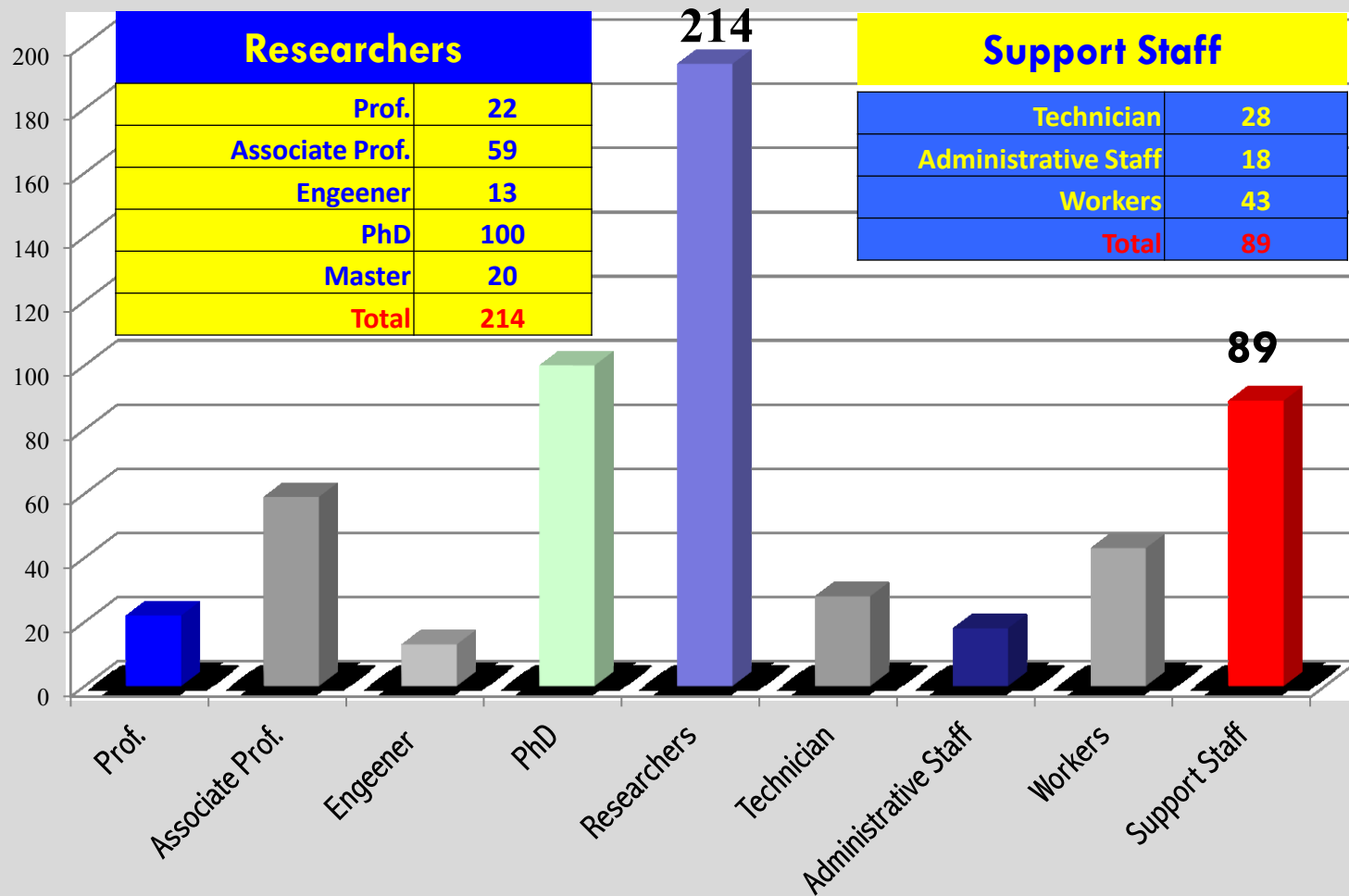
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- ❑ Carrying out research programs on sustainable water management
- ❑ Ensuring the transfer and the diffusion of the technologies related to water preservation, treatment and reuse;
- ❑ Valorization of the research results and establishment a partnership agreements ;
- ❑ Contribution to the formation of engineers, masters and PhD.



Organisation of CERTE





CERTE Staff
303 persons

- Prof.
- Associate Prof.
- Engeneer
- PhD
- Researchers
- Technician
- Administrative Staff
- Workers
- Support Staff



Main researches on Natural waters

Identification, characterization and research of suitable solutions for the scaling problems in networks of drinking and industrial water

Brackish and seawater desalination by using reverse osmosis. Application of membranes technologies



Natural water treatment for drinking purposes





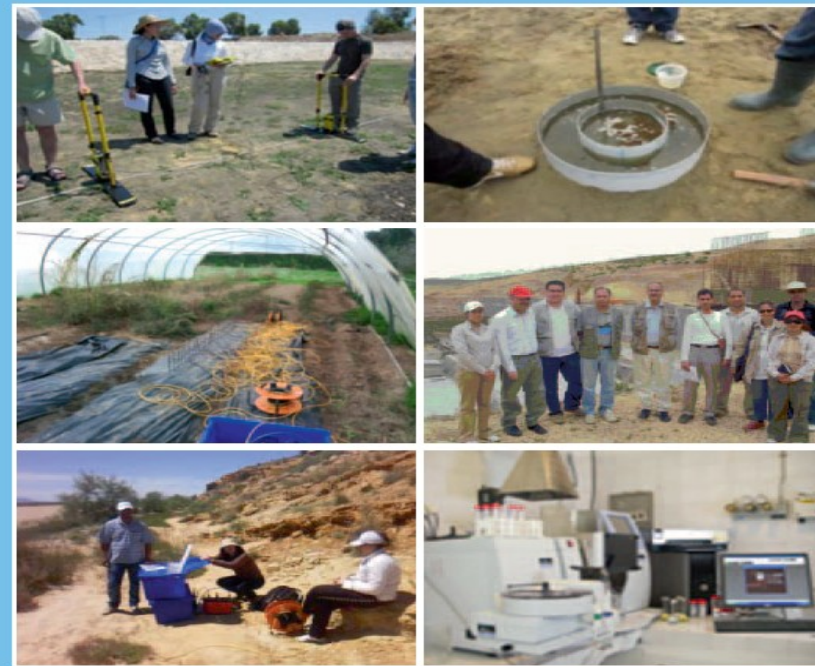
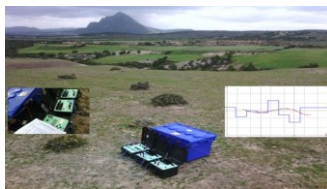
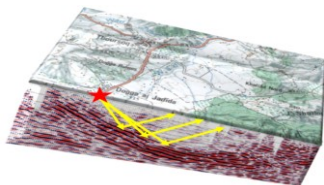
Main researches on Geresources

Characterization and valorization of surface and groundwater resources. Groundwater recharge

Integrated management of complex hydraulic systems: dams-aquifers

Identification and characterization of fractured groundwater's in the western of Tunisia.

Study of Hydraulic systems using characterization, Modeling and geostatistical methods



Quelques activités de recherche des équipes du LGR

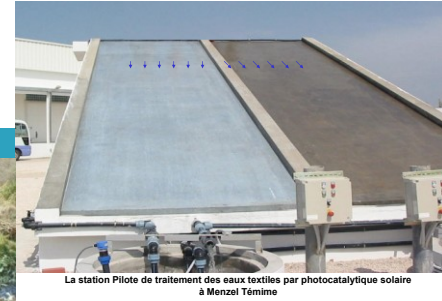
Main researches on Wastewaters



Urban wastewater treatment and nutrients recovery for reuse



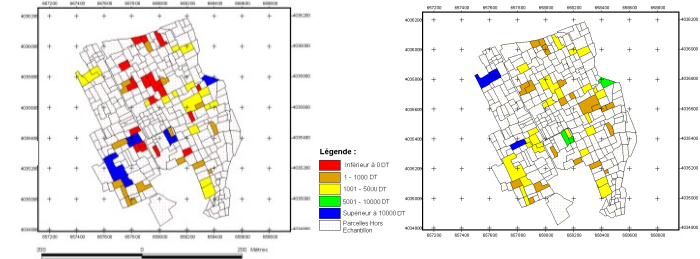
Determination and prevention of sanitary risks due to water resources pollutions



La station Pilote de traitement des eaux textiles par photocatalytique solaire à Menzel Témime











Industrial wastewater treatment and reuse (AOP, adsorption, biodegradation...)



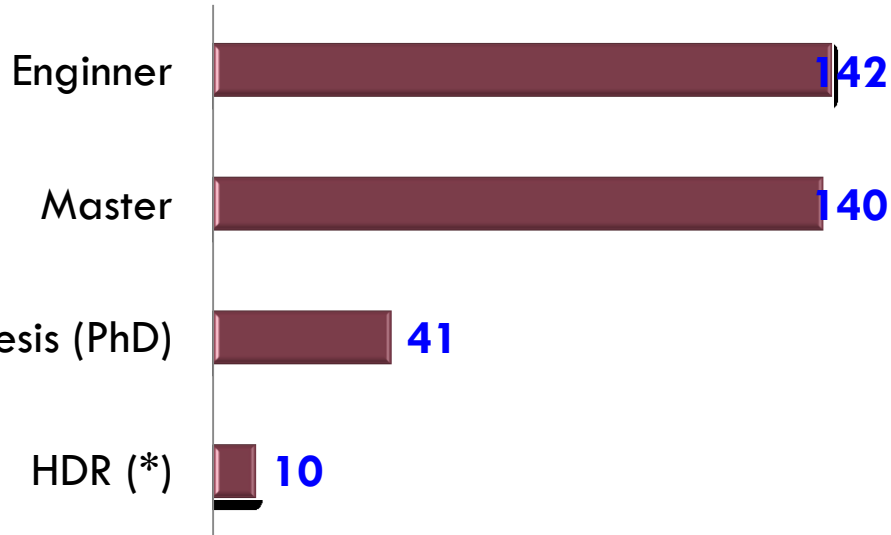
Water resources protection against chemical and bacteriological pollution

On-going International Projects (consortium) ongoing

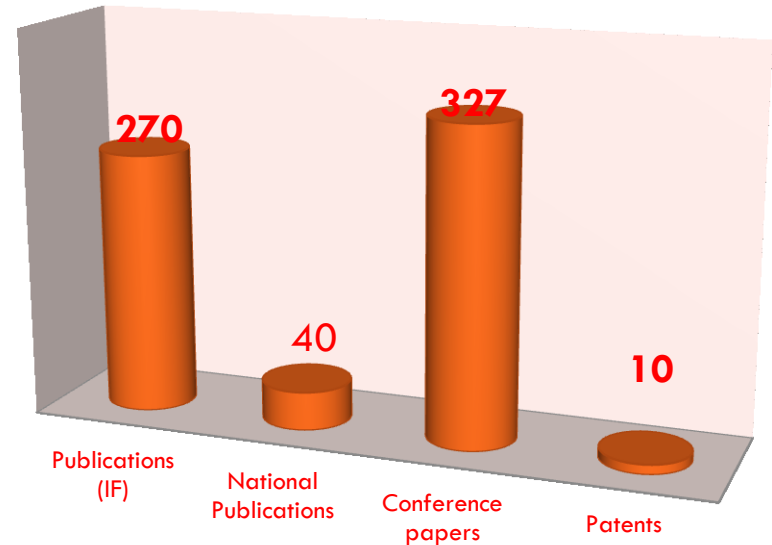
Projets Internationaux			
 WATER GOVERNANCE FACILITY 	<p>Capacity Building Programme on Water Integrity in the Middle East and North Africa (2014-2017)</p> <p>http://www.watergovernance.org/integrity/MENA</p>	CB WI-MENA	 <i>Empowered lives. Resilient nations.</i>
 FP4BATIW <i>"fostering partnerships."</i>	<p>Fostering Partnerships for the implementation of best available technologies for water treatment & management in the Mediterranean (2013-2016)</p> <p>http://www.fp4batiw.eu</p>	FP4BATIW	 SEVENTH FRAMEWORK PROGRAMME
	<p>Mediterranean Science, Policy, Research & Innovation Gateway (2013-2016)</p> <p>http://www.medspring.eu</p>	Med-SPRING	
	<p>Sustainable domestic water use in Mediterranean Regions (2012-2016)</p> <p>http://www.swmed.eu</p>	SWMED	 ENPI CBCMED <small>CROSS-BORDER COOPERATION IN THE MEDITERRANEAN</small>

Scientific Production

Diploma CERTE (2011-2014)



Scientific papers & Patents CERTE (2011 -2014)



Collaboration / Partners of CERTE

Socioeconomic Partners (Tunisia)

CETTEX, ONAS, SONEDE, BPEH, DGGREE, DGRE, CRDAs, ETAP, GCT, ANPE, CITET, Cité des Sciences de Tunis, Office du Thermalisme.

Partners from Universities and Research Institutions

CRTE_n, CBBC, CNSM, INAT, INGREF, FST, FSB, ENIT, ENIG, ENIS, INSAT, FSS, ESIER, ESAM, ESSTT, ESSTHS.

International Partners

- **Japan** : University of Tsukuba, University and Tokyo Ecopark
- **Union European** : France, Germany, Italy, Spain, Belgium, Austria, Portugal, Kingdom, Greece, Suede
- **Amerique** : USA, Canada
- **Mediterranean Arabs Countries** : Algeria, Morocco, Egypt, Jordan, Turkey

Organisation of Events (April 2015- May 2016)

- ❑ Sustainable Water Management in the Mediterranean Region: 19 - 21 February 2015
- ❑ 4 workshops on Water Integrity Capacity Building Programme for MENA (Mentoring & Coaching for ONGs, Decision-Makers, Women, High Level, Operators): April 2015- May 2016
- ❑ Workshop 29 October 2015 (Addressing Sustainable water management: wastewater Legislation and Technologies)
- ❑ Brokerage Events “ Business Development and Science Market “, 1st -2 April 2016
- ❑ Water Innovation and Valorisation of Result Researches (CERTe – UTICA), 10 March 2016



Services Facilities & Pilot Plants

• Analysis capacities on physical-chemical and microbiological water treatment and sediments:

- Gas chromatography-mass spectroscopy
- Ion chromatography (anionic and cationic)
- Atomic absorption
- UV-visible absorption spectroscopy
- High Performance Liquid Chromatography
- Photometer spectroscopy
- infrared spectroscopy
- TOC apparatus
- COD apparatus
- Denaturing gradient gel electrophoresis (DGGE)



Infiltration-Percolation: Bassin et Colonne



• Pilots:

- laboratory columns (different dimensions)
- continuous stirring tank reactors
- membranes
- struvite extraction
- photo catalysis and electrochemical
- ozonation



Traitement Eau Textile



Oxydation Avancée



MBR



SBR

• Geomatic and softwares for GIS Data bases and hydrodynamic and transport modelling (Arc-GIS, Mapinfo, PMWIN, Feflow, Hydrus 1D...)

• Hydrogeological water resources prospection devices (geophysics)

CERTE Proposal for participation in COMSATS' programmes

- Capacity Building Events (on water sector)
 - ▣ Workshop, Seminar, International Conference and Events, ...
 - ▣ Training on following Topics:
 - Pipes scaling: problems of Calcium Carbonate (limestone)
 - Wastewater Treatment and Reuse, local water management
 - Desalination
 - Low cost and sustainable technologies for small and rural villages
 - Post-doctoral and Doctoral exchange of students (Masters and PhD)
- Platform Analysis of CERTE is open for COMSATS members.

Future Event (2017)

The CERTE (**LGR**) will organise and host the First International Congress of Atlas Georesources (**AGIC**)

March 20 - 22, 2017

www.certe.rnrt.tn



The Laboratory of Georesources (LGR)
&
The Tunisian Clay Group (TCG)



Thank You

