

National Institute of Research in Rural Engineering, Water and Forests

Mohamed Lahbib BEN JAMAA
(Researcher, Head of the Lab 'GVRFF')

benjamaaml@gmail.com



Some facts about INRGREF - Tunisia:

1957: Creation of the **Forest Research Station in Tunis** and setting up a **network of arboretum** in different regions of the country.

1959: Foundation of the first Tunisian Research Center on Water: CREGR.

1962: Establishment of the research center using of saline water in Irrigation.

1965: Creation of the **Institute of Reforestation of Tunis**.

1966: Creation of the **National Institute of Forest Research**: INRF.

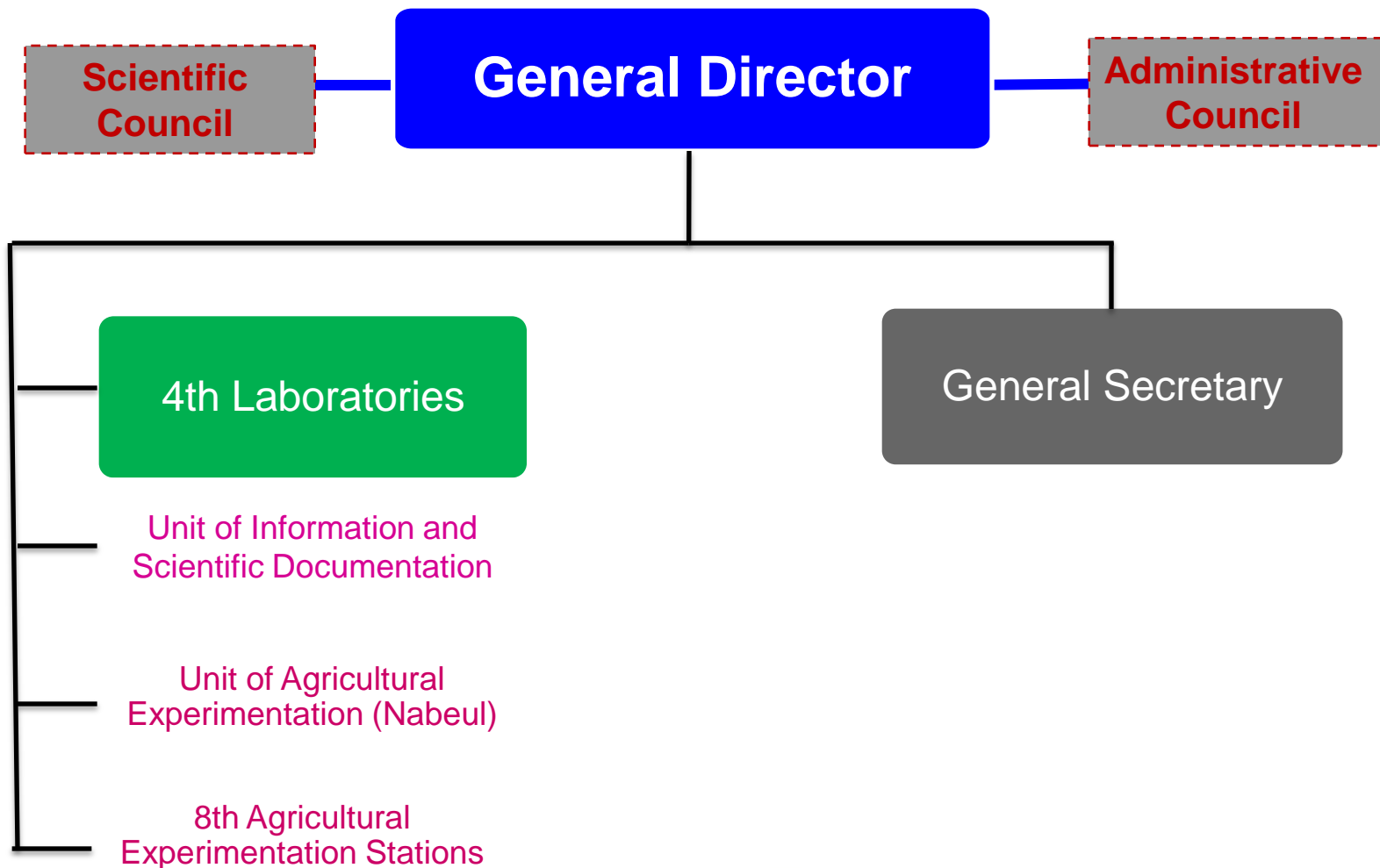
1970: Creation of the Research Center in Rural Engineering: CRGR.

1996: Creation of the National Research Institute of Rural Engineering, Water and **Forests** (INRGREF) [INRGREF has merged the INRF and the CRGR].

Among the main missions of the National Institute of Rural Engineering Research, Water and Forests are:

1. Contribute to the development of the national research policy in the areas of Water, **Forests** and Rural Engineering.
2. Participate in the **protection, conservation** and rationalization of the exploitation of **natural resources**.
3. Participate in the development of scientific and technological research and its integration into the **economic and social fields**.
4. Contribute to the **training** of doctoral students in the programs of the institute.
5. Organize scientific events to allow the assimilation and mastery of technologies used.
6. Promote **partnership** in the field of scientific research and technological development, with **National** and **International** institutions and organizations.

Administrative Organisation



Laboratories

**Laboratory of
Management and
Valorization of Forestry
Resources**

**Laboratory of Rural
Engineering**

**Laboratory of Forest
Ecology**

**Laboratory Valorization
of Non Conventional
Waters**

Foresterra Project (Deliverable N° 2.4)- Report on the mapping and characterisation of existing funding programmes and research capacities. Lead participant: Agricultural Research Council (CRA) **the following information are about INRGREF-Tunisia**

Scientific Organizations: research capacities

Total staff (Permanent): 110

Total number of ISI papers per year: 29

Journal with highest IF: *Forest Science (IF 2011): 1.047*

Most promising research lines:

- Ecological adaptation to climate change
- Genetic adaptation to climate change
- Biomass production optimization
- Forestry services

Funding: existing programmes

Overall yearly budget: 0.80 M€

Budget dedicated to Forestry projects:

- Budget of forestry project per year: 0.20 M€
- Budget declared by Funding Bodies (2010-2011): *no data available*

Number of Forestry projects per year: 5

Budget per project: 0.05 M€

Budget of Forestry project per subject area:

- Silviculture: 50%
- Forest Ecology and Forest Grazing improvement: 50%

Laboratory of Management and Valorization of Forestry Resources

Objectives

- Improvement of managing techniques and production of forest ecosystems: regeneration, growth of trees, growth modelling, protection, insects, fungi, soil, biodiversity.
- Development and valuation of local wood, Non-woody forest products, Services, ..
- Provide technical tools and economic instruments to optimize the production forest goods and services.

Programs

The Lab of “MVFR” comprises two programs and three research projects:

- Program 1: Management of Forest Lands
 - Project 1.1. Productivity and Management
 - Project 1.2. Forest Protection
- Program 2: Valuation of Forest Products and Services
 - Project 2.1. Development of models and tools for an optimal production of forest goods and services.

Research Team

	Number
Senior researchers « A »	07
Researchers « B »	15
Students in thesis	12
Associated researchers	04
Engineer & technical	12 (with 8 contractuels)

Laboratory of Forest Ecology

Objectives:

- Study the dynamics of forest ecosystems and pastoral gradients, the evaluation of their potential products;
- Determination and control the eco physiological behavior of forest species.
- Evaluation of the behavior of the species tested in arboretums, plots and compare their performance to guide the choice towards the most productive species and the most suitable, especially those that show increased tolerance to drought in anticipation changes of unpredictable weather.

Programs:

The Lab'FE' comprise two programs and

- Program 1: Ecophysiology of forest species and ecosystem management agro-silvopastoral.
 - Project 1.1. Response of forest species to the environmental constraint.
 - Project 1.2. Adaptation capacities of the agro-forestry ecosystems to the climatic change.
- Program 2: Breeding, multiplication and conservation of forest species and pastoral interest
 - Project 2.1. Characterization and selection of the adapted species with higher biological forest and pastoral potential.
 - Project 2.2. Biotechnology, production, multiplication and conservation of forest, semi-forest and pastoral species.

Research Team

	Number
Senior researchers « A »	09
Researchers « B »	09
Students in thesis	14
Associated researchers	02
Engineer & technical	10

Main past and current projects (topic, partners, some figures, framework programme)

- Bilateral cooperation Tunisia-Portugal : 4 projects (2008-2012); Tunisia-Morocco : 5 projects (2008-2013); Tunisia-Algeria: 1 projects (2010-2011); Tunisia-Spain: 4 projects (2009-2013); Tunisia-France (CMCU).
- FORESTERRA Project (Enhancing FOrest RESearch in the MediTERRAnean through improved coordination and integration). European project ERA-NET, Project (2012-2015).
- European Project PCRD FORTNUNEX « Forêt Tunisien : Observatoire pour les événements climatiques extrêmes en méditerranéen. » (Juillet 2012-Juin 2015).
- European COST Network : 3 projects.
- Convention INRGREF-IRD (2009-2012).
- AGORA European Project : « Advancing Mediterranean Forest Research Capacities »: 2010-2013.
- Regional Project (Algeria, Morocco, Tunisia), CRDI (Canada) (2009-2012): « Participative and Adaptative Expérimentation Model of Management of the Forestry Resources of the Atlas Mountain ».
- Cooperation Tunisia-Korea (KOICA): 2007-2011. Analysis of cork oak forest degradation causes and involvement of local population in the regeneration improvement for sustainable development.
- MEDFOR Project (Mediterranean Forestry and Natural Resources Management), European Project ERASMUS MUNDUS, Master international (management of the forests and mediterranean resources).

Future perspectives in the forest research domain

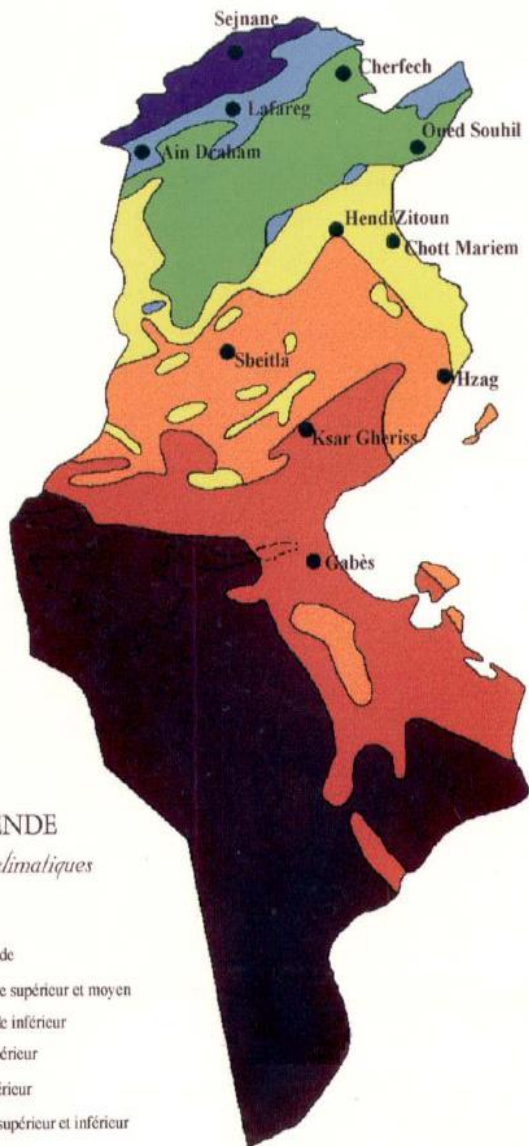
1. FORESTERRA Project (Enhancing FOrest RESearch in the MediTERRAnean through improved coordination and integration). European project ERA-NET, Project (2012-2015).
2. Euopean COST Network : 3 projects
3. Cooperation Tunisia-Korea (KOICA): 2014-2018. Cooperation project on rehabilitation of the forest cork oak (2nd phase).
4. MENFRI Project 'Mediterranean Network of Forestry Research and Innovation Research area': INCO.2013-9.1 **Reinforcing cooperation with European Neighbourhood Policy countries** on bridging the gap between research and innovation (2013-2016).
5. ECOPLANTMED Project 'ECOlogical use of native PLANTs for environmental restoration and sustainable development in the MEDiterranean region' (2014-2014).

About forest research infrastructures:

List of available infrastructures* (experimental sites, large facilities, scientific equipment, databases, collections, etc) to conduct forest research.

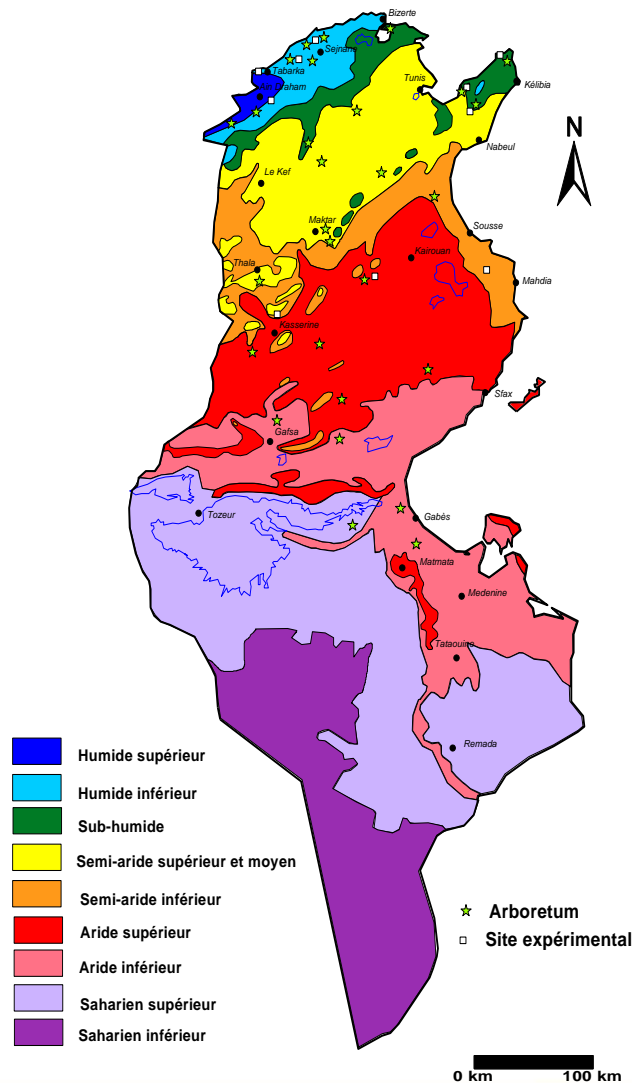


Composition	Area (m ²)
Meeting room	40
Administrative space	100
Scientific library	80
Other spaces (shop,	200
Scientific space (Lab 'MVFR')	450
Scientific space (Lab 'FE')	450
Regional station	100



3 regional stations for forestry research:

- **Sejnane** 'North-West' (Humid): Genetic improvement, silviculture, Management.
- **Ain Draham** 'North-West' (Humid): Protection, conservation and developpement of Tunisian forests.
- **Gabès** 'South-East' (Arid): Planting techniques in arid zones and fight against dssertification.



Arboretum network (Khouja, 2001)

- Created in the Public Forest (cooperation management with the DGF).
- Since 1957 (provide more meaningful safeguards on the use of species in reforestation).
- 30 arboretum.
- Different bioclimatic area (humid, sub-humid, semi-arid, arid).
- 320 000 trees.
- 208 species.
- 32 genus (Eucalyptus 117 species, Acacias 26 species).

- 1 Chromatographe en phase gazeuse avec détecteurs FID et ECD
- 1 Machine universelle UTS
- 2 Microscopes Leica + accessoires
- 2 Stereomicroscopes Leica + accessoires
- 1 Machine pour la photosynthèse (Li-Cor 6400)
- 1 Hotte laminaire à 3 filtres
- 2 Autoclaves
- 1 Planimètre digital
- 1 Appareil x'ylem

Transnational collaborations (European and international)

Does your institute participate in any network? Which one? Which is the main topic?

1. ERANets (European Research Area Networks) (by IRESA)
2. (FAO): *Silva Mediterranea*
3. (IOBC) : International Organization of Biological Control : ‘Working Group: Integrated Control in *Quercus* Forests’.
4. (IUFRO) : International Union of Forest Research Organizations : ‘Working Group “7-03-14” of the : Entomological Research in Mediterranean Forest Ecosystems’.

Transnational collaborations (European and international)

Who are the national / European / international institutes with which you have active collaborations?

National

- Faculty of sciences (Tunis, Bizerte, Gafsa, Jendouba, Gabes, Sfax)
- National Institute for Agronomic (Tunis, Chott Meriem, Mograne, Le Kef, Mejez ElBab, Mateur).
- IRA Medenine
- CITET
- ISBAT

European

- France : INRA, Univ. of Montpellier, Univ. of Orléans, Agro-Paris Tech (ENSAM - Cluny), University of Lorraine (Nancy)
- Spain : Center of Forest Technology of Catalonia (CTFC); Institute of Food Research and Technology of Catalonia (IRTA); University of Barcelona, University of Castilla-La Mancha, Toledo, EFIMED – Barcelone.
- Belgium: University of Agronomic Sciences of Gembloux.
- Portugal: National Institute of Biological Resources (Oeiras); ISA Lisbon.
- Italy: University of Sassari (Sardinia).
- CIHEAM.
- IRD Tunisia

International

- University of Seoul (South Korea) and CRDI (Canada).

Transnational collaborations (European and international) **Which are the direct outputs from this collaboration?**

1. Exchange experience in the field of the forestry research.
2. Capacity building.
3. Part of Mediterranean Networks.

Transnational collaboration

Which is your interest in creating Transnational Joint Research Units?

Form research team to work on common themes:
mainly regional project on behavior and resilience of
Mediterranean Forest Ecosystems facing Climatic
Change.

Transnational collaboration

Which are the positive outputs you expect from this type of collaboration?

1. Apply a common project.
2. Training for students.
3. Publish papers in journals with high impact factor.
4. Exchange expertise between South and North Mediterranean.

Transnational collaboration

Do you identify any drawback?

1. Sometimes the priorities and objectives are not the same for all teams.
2. Some tasks and WP of those projects should be attributed to South Medit partners.



FORESTERRA

Enhancing Forest RESearch in the MediTERRanean
through improved coordination and integration



Thank for your attention