

# Fellowship Program

## Highlights & Opportunities

### Overview

The Dubai-based International Center for Biosaline Agriculture works towards food, nutrition and income security in marginal environments through research, innovation and partnership.

Spread over an area of around 100 ha, the Center has world-class research facilities and experimental stations, including a gene bank storing a unique collection of over 13,000 accessions of plant species with proven or potential salt tolerance from 134 countries.

Founded in 1999, the Center has grown into a global center of excellence in applied research for development, helping some of the most vulnerable populations living in marginal environments around the world.

The Center has an international team of leading scientists conducting research and innovation to improve agricultural productivity and sustainability in marginal environments.

### How it works

ICBA's Fellowship Program is open to Post-Doc fellows and graduate students enrolled in Master's and PhD programs worldwide. The Program will offer valuable opportunities for fellows to conduct field and laboratory research, a pre-requisite to publish in peer-reviewed journals and complete their dissertations.

The fellows will receive hands-on training to enhance their technical knowledge and skills, attend and give talks during conferences, network and gain practical work experience. Mentoring will be a key component of the Program. ICBA scientists will help fellows in designing their experiments, monitoring field and laboratory research, and analyzing data.

#### The Program offers a variety of options:

- Part-time postgraduate placements (Master's and PhD students)
- Full-time postgraduate placements (Master's and PhD students)
- Post-Doc fellowships

Master's students attending short and medium-term placements will work on the Center's current research projects; Post-Doc fellows and PhD students will also be attached to on-going research projects, but will have in



addition the opportunity to research on their own projects if they could cover an additional research operational fee (see Costs section).

ICBA's target is to establish a number of fellowships under each thematic area.

#### **ICBA Fellowship Program will:**

- Enhance fellows' capacity to research in the domain of agriculture for saline and marginal environments
- Increase agricultural professionals' awareness about biosaline agriculture
- Contribute to improving the food security of populations living in marginal environments
- Build local capacity in developing countries with marginal environments as the fellows, once they go back to their country, will bring in the experience and skills they learn at ICBA

## Thematic Areas

ICBA Fellowship Program offers research opportunities in areas related to the following five core themes:

### **1. Assessment of natural resources**

ICBA employs modeling and analytical tools to assess land and water resources in marginal areas under different agricultural production systems, and to recommend best management practices to farmers, policymakers and other practitioners. ICBA scientists carry out soil and water analysis, hydrological modeling, and study sea water intrusions and impact on groundwater quality. The Center tests innovative technologies to save water, desalinate saline water and use treated wastewater and to improve controlled irrigation systems and soil properties in marginal environments. Under this theme, ICBA will accept fellows researching on the following topics:

- Sustainable management of land and water resources
- Water and land assessment in marginal environments
- Innovative use of poor quality water and efficient irrigation systems
- Land resources management and restoring degraded land
- Soil amendments for marginal environments

### **2. Climate change impact and management**

ICBA researchers investigate the impact of climate change in marginal and saline environments with a

focus on early drought monitoring, and formulate recommendations for adapting agricultural production systems. Through space-based earth observations and dynamic modeling, ICBA contributes to a better understanding of future climate conditions, availability of water resources and possible changes in crop production. Under this theme, ICBA will accept fellows researching on the following topics:

- Analysis/interpretation of downscaled climate change data to determine indices most linked to crop growth and water use
- Nature of droughts under climate change conditions and how these differ from those experienced in the last 30 years
- Extreme climatological events and their impacts on water availability
- Modeling the impacts of climate change on ground and surface water resources
- Modeling the impacts of climate change on the growth and yield of key staple and economic crops

### **3. Crop productivity and diversification**

ICBA is a leading research center for long-term field trials on palm tree, production of forages (grasses and halophytes), and stress-tolerant crops like sorghum, pearl millet and quinoa. The Center's gene bank assembles a unique collection of genetic resources of plant species from a wide range of marginal environments. These genetic resources help ICBA researchers to develop new high-yielding and resilient crop varieties through genetic engineering. Under this theme, ICBA will accept fellows researching on the following topics:

- Evaluation of crops for food, feed and fuel under climate change impacts in marginal environments
- Assessment, conservation and utilization of biodiversity and new genetic resources important for marginal environments
- Assessment of the impact of salinity on date palm varieties and identification of salt-resistant varieties
- Genetically improve crops important economically and tolerant to marginal environments
- Develop salt-tolerant seeds production programs for marginal environments
- Development of systems for alternative water use for production of field crops and high value crops under marginal conditions
- Optimize productivity, water use efficiency, and design and energy use of protected agriculture in marginal environments

## 4. Aquaculture and bioenergy

ICBA works to develop best management practices for biofuel integrated aquaculture systems, in which brine and desalinated water are reused. Scientists also investigate how to use sea water to cultivate micro- and macro-algae for biomass and energy production. Under this theme, ICBA will accept fellows researching on the following topics:

- Design and implementation of Integrated Agri-Aquaculture Systems in hot and dry areas
- Assessment of the crop potential of multi-purpose halophytic species under seawater irrigation in marginal environments
- Evaluation of halophytic species for biofuel production
- Economic feasibility and market potential of agricultural production systems based on seawater

## 5. Policies for Resilience

ICBA analyzes policies and undertakes socioeconomic studies on food security and nutrition, as well as water and land management in marginal environments, in order to provide recommendations to national, regional and global partners. The Center supports Gulf Cooperation Council governments in drafting strategies on soil and water salinity management. It also assesses ways of enhancing agricultural value chains. Under this theme, ICBA will accept fellows researching on the following topics:

- Country strategy and policy preparation
- Policy and economic drivers to groundwater over-abstraction in different countries
- Economic analysis of the costs of groundwater and surface water
- Possible climate change adaptation strategies in countries
- Impacts of droughts on water resources and food production and strengths/failures of existing mitigation planning schemes

## Eligibility

ICBA Fellowship Program is open to Master's students, PhD students and Post-Doc researchers. All nationalities, regardless of their race, gender and religion are eligible to apply. Young women researchers are strongly encouraged to apply. Applicants must be proficient in English and available full-time (40 hours per week) during the entire duration of the fellowship.

ICBA will accept applications on a yearly basis and select the candidates based on the pre-approved selection criteria with the donor.

## Indicative Costs

When ICBA accepted the first postdoctoral fellows in 2013, funding was provided by ICBA's core budget. As today ICBA wishes to expand the program, the Center is seeking financial support to increase the number of fellows it could host. The following table provides estimated costs for the programs offered at ICBA:

Option	Postgraduate		Post-Doc
Who can apply	Master's Students	PhD Students	Post-Doc Fellows
Duration	3-12 months	6-36 months	12-24 months
<b>Direct Costs</b>	<b>4,700* USD per month</b>	<b>4,700* USD per month</b>	<b>4,700* USD per month</b>
Fellow remuneration (including housing and transport allowance)	4,200 USD per month	4,200 USD per month	4,200 USD per month
Miscellaneous (including visa, medical and life insurance...)	500 USD per month	500 USD per month	500 USD per month
<b>Indirect Costs</b> (including supervision and ICBA overheads)	<b>2,000 USD per month</b>	<b>2,000 USD per month</b>	<b>2,000 USD per month</b>
<b>Total Costs</b>	<b>6,700 USD per month</b>	<b>6,700 USD per month</b>	<b>6,700 USD per month</b>
Optional <sup>1</sup> : Research Operational Fee	Not applicable	15,000 USD	15,000 to 30,000 USD

\* Ticket costs as applicable

ICBA has on-site accommodation available for up to 16 people. The Center can provide accommodation to Master's and PhD students at a nominal cost.

If you are willing to support establishing a fellowship with ICBA under any one of the above options, or require additional information, please contact us at:

[capacity-building@biosaline.org.ae](mailto:capacity-building@biosaline.org.ae)

<sup>1</sup> Post-Doc fellows and PhD students will be involved in ICBA's ongoing projects. However, they will have the opportunity to research on their own projects if they could cover an additional research operational fee.



**International Center for Biosaline Agriculture  
(ICBA)**

PO Box 14660, Dubai, United Arab Emirates  
Tel: +971 4 336 1100, Fax: +971 4 336 1155  
Email: [icba@biosaline.org.ae](mailto:icba@biosaline.org.ae)  
Website: [www.biosaline.org](http://www.biosaline.org)

Copyright © 2017 ICBA (International Center for  
Biosaline Agriculture)

All rights reserved. ICBA encourages fair use of this  
material for non-commercial purposes with proper  
citation.