



# *Tamkeen*

Empowering Arab Women Scientists





# Innovation in Agriculture Key to Future Food Security

The United Nations estimates that the global population will grow to 9.7 billion by 2050, and the Middle East and North Africa (MENA) region is forecast to add around 235 million people.

According to the Food and Agriculture Organization of the United Nations (FAO), food production will need to go up by as much as 60% either through an increase in crop yields per unit area or an expansion in arable land to meet the demand.

However, scientists warn that industrial agriculture might be reaching its limits to produce enough food for a growing population. What is more, yields of major crops are projected to fall by 25% and more by 2050.

Climate change also threatens future food production as variable rainfall and extreme weather events are likely to result in further decreases in yields of major crops.

This brings into question whether traditional agricultural methods and crop species are suited to cope with food production targets.

With an estimated 800 million people undernourished globally already, there are serious concerns about future food security and nutrition.

As regions that suffer from undernourishment, water scarcity and soil degradation are likely to see a larger population growth, they face greater risks to food security and nutrition.

In the MENA, the most water-scarce region in the world, food demand has consistently grown faster than production over the past decades. As a result, the region is increasingly dependent on food imports, particularly cereals.

Agricultural research has been a major factor in increasing global food production by as much as 80% since the mid-1960s, with more than half of the increase having happened in developing countries.

The global food system will need considerable improvement and innovation to feed more people nutritiously and sustainably by 2050.





## Women as Drivers of Success and Innovation

In recent years study after study has shown that gender-balanced teams improve innovation and productivity. The latest research also confirms that women are critical to innovation.

One study, for example, found that the proportion of women in teams is positively linked with the teams' success. Science is also more likely to be breakthrough as a larger number of women researchers in teams facilitates greater creativity and innovative thinking. Researchers also reported that teams' collective intelligence rose with the number of women in the groups.

Another large-scale, multi-country study found that gender-balanced teams were the most likely to experiment, be creative, share knowledge, and fulfill tasks. The study also reported that the most confident teams had a slight majority of women (60%).

Not only are women creative innovators, but they are also excellent leaders. Research shows that the more women there are in senior management, the better organizations perform. This is particularly true of organizations that are focused on innovation.

One study to this effect found that higher female representation in senior roles leads to better performance in organizations that have innovation as part of their strategy.

A separate study, which measured 2,360 businesses worldwide over six years, also concluded that companies with one or more women on the board delivered, among other things, better growth.

## Arab Women in Science

Women make up more than 40% of the workforce in countries where agriculture is a key contributor to GDP, including the MENA countries. However, they do not enjoy the same level of access to training, agricultural inputs and land as men.

Not only does this prevent them from reaching their full potential, but also costs communities and economies. FAO reckons that if women had as much access to resources as men, agricultural yields could increase by up to 30%, helping to alleviate food insecurity for some 150 million people globally.



Because women's role in food production is rarely recognized officially, they also do not benefit enough from extension and training services that would teach them about new technologies. A recent FAO survey found that in Egypt only 1% of extension officers are women.

Not only are women underprivileged in agriculture, they are also underrepresented in agricultural research and innovation.

Empirical evidence shows that there is a disproportionately low number of women working in senior scientific and managerial positions, especially in the MENA region.

The average share of women scientists across the MENA region stands at 17%, which is the lowest in the world. This gender gap is most visible in the staffing of agricultural research and extension organizations. As a result, there is a concern that policy and investment priorities might not be as effective as they could be because they do not fully incorporate gender perspectives. Given women's role in agricultural production and consumption, potential benefits are being lost when they are needed most.

### Some of the challenges faced by Arab women scientists in the MENA region:

1. In many countries higher education generally falls short of equipping graduates with a skill set critical for research and innovation
2. Low levels of funding in the research and development sector result in poor prospects for graduates willing to pursue research careers
3. Gender stereotypes still hold strong
4. There are limited training and development opportunities
5. Lack of women-friendly networks hinders collaboration and knowledge sharing

# Empowering Women Scientists and Leaders of Tomorrow

ICBA has partnered with the Bill & Melinda Gates Foundation and the Islamic Development Bank to devise a pioneering program *Tamkeen* to address challenges facing women scientists in the MENA region.

*Tamkeen* is a fellowship program designed to help women scientists develop a set of critical skills and competencies to excel in research and leadership roles. Targeting women scientists in the UAE, Oman, Jordan, Egypt, Lebanon, Palestine, Morocco, Tunisia, and Algeria, the program will help to improve their research and leadership potential to become future leaders in science.

The program will also facilitate knowledge exchange and networking among women scientists throughout the region by empowering groups of women champions and building a critical mass of pathfinders, visionary leaders, and change agents, ultimately contributing to better and more women-centered solutions for improved food security and nutrition.

## Building MENA women researchers' capabilities

Build skills and capabilities to enhance Arab women scientists' access to leadership roles

Build skills and capabilities to enhance Arab women scientists' research excellence and impact

## Creating a regional network of Arab women researchers

Facilitate networking, knowledge exchange and collaboration between Arab women researchers in the region within and across disciplines

## Link regional researchers with international counterparts

Through opportunities for attachments with international institutions and participating in regional and international conferences, facilitate the sharing of best practice and creation of mutual opportunities and collaboration

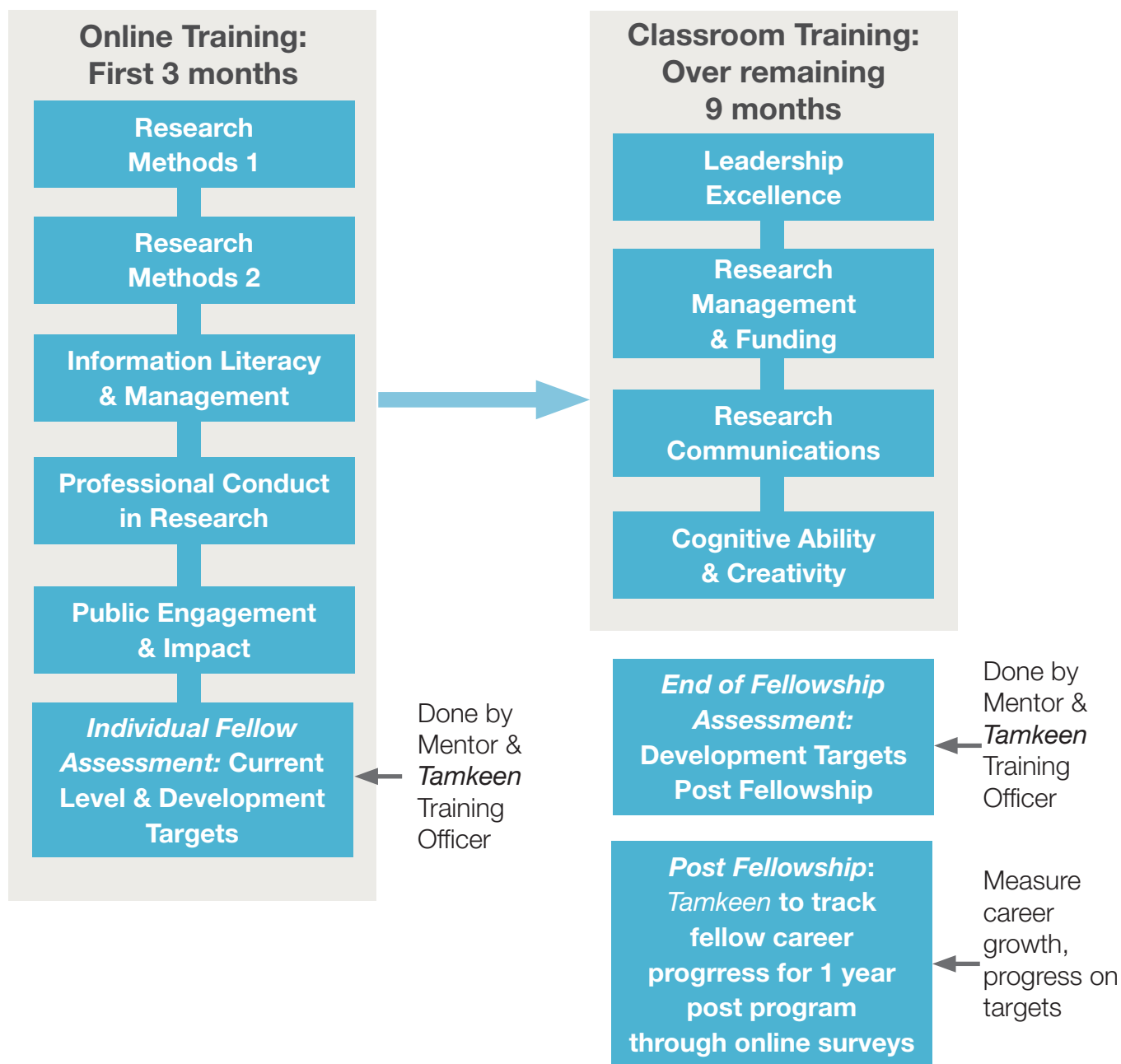
## Place R&D and women's contributions high on the region's agenda

Create a forum to discuss regional R&D challenges and provide a collective voice for Arab women researcher vis-à-vis policy-makers

Foster gender perspectives to agricultural research in the MENA region

The program's long-term goal goes beyond capacity development, and includes improved food security and nutrition, a better research and development landscape, and economic and social benefits of a narrowed gender gap in the region.

*Tamkeen*: One-year fellowship with a focus on training, mentoring and exposure.



## Sponsorship Opportunities

*Tamkeen* will offer one-year fellowships to women scientists from Algeria, Egypt, Jordan, Lebanon, Morocco, Oman, Palestine, Tunisia and the UAE. The program will seek to attract 20 fellows per country for each one-year fellowship cycle. The cost of each one-year fellowship is estimated at 25,000 USD.

If you wish to contribute to the program or support it in any other way, please contact us at:

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



## About ICBA

International Center for Biosaline Agriculture (ICBA) is an international, non-profit research-for-development organization that aims to strengthen agricultural productivity in marginal and saline environments through identifying, testing and facilitating access to sustainable solutions for food, nutrition and income security.

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