Food and Agriculture Organization of the United Nations

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ARAB FORUM FOR RURAL ADVISORY SERVICES (AFRAS)

COUNTRY BRIEF – BAHRAIN

OVERVIEW OF THE AGRICULTURAL SECTOR

Agricultural land in Bahrain accounted for 10.3 percent of the country's total land area in 2022, while arable land represented 2.7 percent (World Bank, 2022a; 2022b). Farm sizes are relatively small, with 75 percent of holdings not exceeding 3 hectares. Farming families are generally large, with 44 percent comprising 4 to 7 members, and 45 percent having 8 to 11 members.

Employment in the agricultural sector is modest, comprising only 1 percent of total employment in 2023, according to the International Labour Organization estimates (World Bank, 2023b). Sixty percent of the farmers have more than 21 years of experience, indicating a deep-rooted tradition of farming. The demographic profile of Bahraini farmers reveals important structural characteristics; approximately 63 percent of farmers are over the age of 51, and around 20 percent of those are illiterate, posing challenges for the adoption of modern technologies and digital services.

Despite challenges such as water scarcity and limited arable land, Bahrain has taken steps to promote more sustainable and resilient agricultural practices. Bahraini authorities are currently promoting more resource-efficient farming systems, particularly small-scale horticulture (Bahrain Food Monitor, n.d.).

Dates are a major crop in Bahrain and are also exported, while alfalfa is widely grown for animal fodder. Other cultivated crops include figs, mangoes, pomegranates, melons, papayas, turnips, potatoes and tomatoes. Bahrain also produces poultry and dairy products, though primarily for the local market (WOAH, n.d.). Despite this, the value added by agriculture, forestry and fishing to the country's gross domestic product (GDP) was only 0.3 percent in 2023 (World Bank, 2023a).

LITERACY RATE

98 percent
(World Bank, 2023e)

RURAL POPULATION

10 percent
(World Bank, 2023c)

INTERNET USERS

100 percent
(World Bank, 2023d)

POLICY FRAMEWORK FOR RURAL ADVISORY SERVICES[1]

Agricultural extension and innovation have consistently been government priorities in Bahrain, as reflected in the Strategic Plan of the Ministry of Municipalities and Agriculture Affairs. The plan emphasizes farmer training, capacity building of national staff and the transfer of modern technologies, particularly those that enhance the efficient use of water and land resources.

Two key objectives highlight this focus:

- **Strategic objective 5: Agricultural development and the use of modern technologies**
  This objective promotes quality standards for agricultural products and the integration of modern technologies in agricultural information systems. It supports innovation through scientific research and experimentation in vertical farming and soilless agriculture to increase production and reduce harvest losses.
- **Strategic objective 7: Capacity building and development**
  This objective aims to strengthen human resource development in the sector through ongoing training for farmers, equipping them with modern farming practices and raising awareness of the latest agricultural advancements.

The plan also promotes the use of renewable energy, such as solar-powered greenhouses, and the expansion of soilless farming systems to boost productivity. An example is the Food Security Initiative[2] launched under the directives of King Hamad bin Isa Al Khalifa. The initiative allocates 40 hectares of land equipped with soilless systems to establish model projects in modern agriculture, which are intended to be replicated by farmers and private agribusinesses.

In support of agricultural innovation, Bahrain has also established the Agricultural Incubator Centre as a training hub to develop national capabilities and enhance their technical skills, contributing to national agricultural productivity.

The general outline of Bahrain's ongoing agricultural extension strategy (not yet formally published) includes:

1. enhancing the technical skills of Bahraini farmers by providing them with accurate agricultural information to help them improve their farming practices;
2. transferring appropriate agricultural technologies to farmers, aiding them in developing their farming operations, thereby increasing agricultural production;
3. reducing production costs for farmers by supplying them with agricultural information that helps them use production inputs efficiently and adopt cost-effective agricultural technologies;
4. developing agricultural technologies for farmers to increase agricultural production within the same land area;
5. focusing on extension programmes that promote environmental sustainability, providing farmers with technologies and agricultural practices that consider the preservation of the agricultural environment and consumer health, aiming for sustainable agriculture;
6. encouraging farmers to diversify their crop composition, including not only vegetables, fruits and fodder, but also ornamental plants;


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1 For the purpose of this brief, the terms "Extension Services" and "Rural Advisory Services" (RAS) are used interchangeably. While "extension" traditionally refers to public sector-led dissemination of agricultural knowledge, RAS encompasses a broader, more pluralistic system that includes both public and non-public actors. RAS refer to "all the different activities that provide the information and services needed and demanded by farmers and other actors in rural settings to assist them in improving their livelihoods by developing their technical, organizational and management skills and practices."

2 No official or publicly available documentation has been issued regarding this initiative to date.


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7. promoting the introduction of new crops to farms, enriching the agricultural environment's biodiversity, and increasing the farmers' income;
8. encouraging private sector investment in the agricultural sector;
9. implementing extension programmes that support the efficient use of irrigation water;
10. carrying out programmes that promote the use of treated wastewater; and
11. connecting research centres with farmers, both locally and internationally, by transferring their outputs to the farmers and conveying the farmers' problems that require research to the centres.

The Buthoor Al Bahrain initiative aimed to expand green spaces and promote urban and environmental sustainability across Bahrain. The campaign for this initiative was led by the Ministry of Municipalities Affairs and Agriculture in partnership with UN-Habitat and the Food and Agriculture Organization (FAO). Over the course of three months (from October to December 2024), more than 13 000 young plants were distributed across 57 areas in the kingdom. The initiative supported Bahrain's national environmental goals, including efforts to double the number of trees to 3.6 million by 2035, while fostering community engagement and environmental awareness (Bahrain Food Monitor, 2025; Ministry of Municipalities, 2024).

INSTITUTIONAL LANDSCAPE OF RURAL ADVISORY SERVICES

Agricultural extension and advisory services in Bahrain are delivered through a range of public, private and non-governmental actors, each contributing to knowledge transfer, technical support and capacity building for farmers and producers.

The public sector

The primary provider of rural advisory services (RAS) is the Ministry of Municipalities Affairs and Agriculture, which delivers services through two main arms:

- Plant production extension, which is led by the Assistant Agency for Agricultural Affairs, through the Agricultural Production Department (Agricultural Services and Statistics Section) and the Agricultural Incubator Centre.
- Animal production extension, which is provided by the Assistant Agency for Animal Resources through the Animal Production Department (Animal Production Section).

The ministry provides a comprehensive range of extension services to support farmers and agricultural producers across Bahrain. The agricultural extension system is structured as a single administrative unit, represented by an Extension Support Group, which coordinates the delivery of services across different regions. These services include technical advisory support, regular field visits and the implementation of extension programmes through demonstration plots, field days and observation fields. Field visits are typically conducted once per week in each agricultural region, but can also be arranged based on specific farmer requests or in response to production challenges requiring targeted support. Additional visits may be conducted for rural monitoring purposes as part of the local agricultural production management framework.

The ministry also organizes seminars, workshops and training sessions aimed at building the farmers' capacities and keeping them informed of best practices and new technologies. Additionally, it supports producers by offering subsidized inputs such as high-quality seeds and seedlings, modern irrigation systems and plastic covers. Field services, including land plowing, are also provided to assist with production activities.

Other key public institutions include:

- Bahrain Polytechnic, which offers an agricultural apprenticeship programme;
- Arabian Gulf University and the University of Bahrain, which contribute by providing training, capacity building for agricultural staff and extension consulting services;
- National Initiative for Agricultural Development (NIAD); and
- Ministry of Education, through its agriculture extension department.


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The private sector

The private sector contributes to RAS in Bahrain primarily through agricultural input suppliers. These suppliers offer consultations on the inputs they supply to their customers and companies that provide agricultural services, such as landscaping, tree relocation and other forms of on-site technical support.

The Ministry of Municipalities Affairs and Agriculture is promoting private sector investment in agriculture by offering incentives and has allocated land in Hoora A'ali to seven companies to cultivate crops using modern techniques, including soilless farming and AI systems (Bahrain News Agency, 2020a).

Non-governmental organizations (NGOs)

- Bahrain Garden Club, which offers training to its members and participates in agricultural exhibitions;
- Bahraini Farmers' Cooperative Society;
- Animal Breeders' Cooperative Society; and
- Bahrain Agricultural Engineers Society.

Extension and innovations

Agricultural extension has adopted several programmes, including incentive programmes that distribute certain production inputs aimed at encouraging farmers to transition from open-field to protected agriculture by providing subsidized agricultural covers. Moreover, modern irrigation materials and supplies have been distributed to encourage farmers to switch from flood irrigation to drip and sprinkler systems, as well as soilless farming.

Furthermore, seminars, lectures, field days, demonstration farms, advisory visits and training courses have been organized to change the knowledge, attitudes and practices of farmers and those interested in agriculture towards sustainable farming practices that enhance the efficient use of agricultural resources such as water and land.

There are some partnerships and bilateral collaborations between the different entities. For example, the Ministry of Municipalities Affairs and Agriculture conducted training courses for the Ministry of Education's staff on protected farming systems, landscaping and soilless farming techniques.

Additionally, there is a Memorandum of Understanding (MoU) between the Arabian Gulf University and the Ministry of Municipalities Affairs and Agriculture in the field of agricultural technology transfer. Similarly, cooperation exists between the ministry and Bahrain Polytechnic to implement the agricultural apprenticeship programme, which aims to supply the labour market with well-trained agricultural professionals.

One of the most innovative and impactful initiatives in the field of extension and RAS in Bahrain is the establishment of the **Agricultural Incubators Centre** in 2012, the first of its kind in the region. This centre was created with the goal of training agricultural entrepreneurs, national cadres, and individuals interested in various agricultural fields, enhancing their technical skills to contribute effectively to national agricultural production. Since its establishment, the centre has trained a total of 1 408 individuals through two key programmes.

The first is the **Entrepreneurial Support Programme**, which ran from 2016 to 2019 and supported 17 aspiring agricultural entrepreneurs (10 women and 7 men) over two training cycles, each lasting 24 months. The programme focused heavily on soilless farming systems, engaging 10 of the trainees in this innovative production method. Additional training topics included the production of organic fertilizers from agricultural waste, the preparation of agricultural media mixes, the propagation of ornamental and fruit-bearing plants, and the drying and cultivation of medicinal and aromatic plants. Advanced techniques such as tissue culture for orchids and date palms were also covered.

The second is the **Agricultural Technical Training Programme**, which targets a broader audience seeking to develop practical agricultural skills. Notable examples include training 11 widows from the Royal Humanitarian Foundation (RHF) in soilless vegetable cultivation over a full agricultural season, as well as training agricultural curriculum teachers from the Ministry of Education in hydroponic methods. The programme has also provided instruction in good agricultural practices (GAP) to a group of farmers, aiming to enhance both the quantity and quality of local agricultural produce. Additionally, members of various community groups have received training in vegetable crop production, and tree propagation and care.

A notable example of successful local models in implementing modern agricultural systems is Dar Aqua Company, which uses aquaponics techniques for integrated vegetable and fish production. The company was recognized for its innovative approach, receiving the Best Agricultural Production Project award in the third session of the King Hamad Prize for Agricultural Development (Bahrain News Agency, 2020b).

Digital initiatives

Bahrain benefits from strong infrastructure in roads and telecommunications, with widespread internet coverage across the kingdom. This ensures that farmers – regardless of their location or scale of operation – have access to digital services. However, digital illiteracy among some segments of the farming community remains a barrier to fully leveraging digital agricultural extension and advisory services.

Several online platforms currently provide agricultural information and support. Notable examples include the website of the Ministry of Municipalities Affairs and Agriculture and the National Initiative for Agricultural Development (NIAD). These platforms aim to enhance knowledge-sharing and improve access to technical guidance. NIAD aims to revitalize Bahrain's agricultural sector by uniting national efforts, addressing challenges like water and land scarcity, and promoting modern, sustainable farming practices. It also supports agricultural workers, green area expansion, agro-industries and capacity building through training and education.

Efforts are also underway to engage the private sector in digital solutions, particularly in e-marketing of agricultural products in partnership with farmers, as part of a broader strategy to strengthen value chains and market access.

In parallel, the adoption of alternative and tech-enabled agricultural practices is gaining momentum. Hydroponic farming and aquaculture are becoming increasingly popular. Notable examples include Dar Aqua, and Peninsula Farms, which produces both hydroponic vegetables and goat milk (Government of Bahrain, 2025).

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