

SDG02

Zero Hunger

END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE



ZERO HUNGER

- **PROJECTS AND RESEARCH ON ZERO HUNGER**
- RESEARCH
- PROJECTS
- **COLLABORATION FOR AGRICULTURAL EMPOWERMENT**
  - FAIR TRADE LEBANON EXPLORES AGRICULTURE & AGROECOLOGY WITH BALAMAND STUDENTS
  - ANIMATED FILM ON VERTICAL FARMING WITH UN-ESCWA
  - CIVIL SOCIETY SUPPORT CAMPAIGN
- BALAMAND COMMUNITY MOBILIZES TO SUPPORT FAMILIES IN SOUTH LEBANON

PROJECTS AND RESEARCH ON ZERO HUNGER

RESEARCH

During the reporting period, University of Balamand researchers conducted interdisciplinary studies addressing critical dimensions of SDG 2: Zero Hunger, including food security, food safety, nutrition, sustainable agriculture, and resource-efficient food production.

8
Research Publication



Research on food safety and consumer protection assessed the occurrence and exposure risks of glyphosate residues in commercially available cornflakes in Lebanon and the United Arab Emirates. The findings contribute to evidence-based food safety monitoring, consumer protection, and public health safeguarding [5].

To better understand the social consequences of food insecurity, researchers examined the relationship between household food insecurity and health outcomes among children. The studies demonstrated the impact of food insecurity on quality of life, mental well-being, and eating behaviors, generating evidence that can inform policies and interventions aimed at reducing hunger, malnutrition, and health inequalities among vulnerable populations [7].

In the area of nutrition and health, researchers investigated the role of diet and nutritional supplementation in infertility management, highlighting the importance of adequate nutrition in supporting reproductive health and overall well-being [6].

To advance sustainable food production systems, UOB researchers explored the potential of microalgal biorefineries as innovative sources of food-related and bio-based resources. Supporting circular economy principles, this work contributes to the development of sustainable alternatives that reduce pressure on conventional agricultural systems [8].

Research on agricultural residues such as wheat husk ash and vegetable fibers promote waste reduction, resource efficiency, and more sustainable production systems [1,3,4]. Additional research examined the relationship between binge eating disorder and metabolic syndrome, highlighting the role of nutrition-related behaviors and their implications for public health and well-being [2].

11 SDG2
Initiatives and News Items

Collectively, these publications contribute to advancing food safety, nutrition, food security, sustainable resource management, and innovative approaches to sustainable production systems, all of which support the achievement of SDG 2: Zero Hunger [1–8].

SDG02 Publications

[1]. Adekanle, A. A., Okunade, E. A., Alo, B. A., ... Barraj, F., & Azab, M. (2026). *Mechanical and microstructural evaluation of lime-wheat husk ash blend for clay subgrade stabilization*. Frontiers in Built Environment.

[2]. Alagha, M., Al-Alam, F., Saroufine, K., ... Nahas, N., & Ghadieh, H. E. (2025). *Binge Eating Disorder and Metabolic Syndrome:* Shared Mechanisms and Clinical Implications. Healthcare (Switzerland).

[3]. Arairo, W., Arayro, J., & Saba, M. (2025). *Thermal performance of mortars with agricultural waste*. In Advances in Bio-Based Materials for Construction and Energy Efficiency.

[4]. Arairo, W., Khatib, M., Affan, H., ... Sraj, O., & Saba, M. (2025). *Experimental and analytical investigation for mechanical behaviour of vegetable fiber reinforced concrete*. European Journal of Environmental and Civil Engineering.

[5]. Bou-Mitri, C., Dagher, S., Makkawi, A., ... Houri, A., & Hassan, H. F. (2026). *Occurrence and exposure assessment of glyphosate residues in cornflakes from Lebanon and the United Arab Emirates*. Food Control.

[6]. Fares, K. S., Abi-Tayeh, G. H., Whaibeh, E. R., ... Matar, Y. M., & Mrad, M. A. (2025*). The role of diet and food supplements in infertility management in the Eastern Mediterranean Region: A narrative review.* International Journal of Reproductive BioMedicine.

[7]. Ghadban, E., Fekih-Romdhane, F., Khachan, J., ... Obeid, S., & Hallit, S. (2025). *The relationship between household food insecurity and quality of life among children aged 7–13 years: Effects of parent-reported disordered eating, anxiety and depression*. BMC Public Health.

[8]. Obeid, S., Yehya, S., & Arairo, W. (2025). *Microalgal biorefinery: A way towards sustainability and circular economy*. In Social System Reforms to Achieve Global Sustainability.

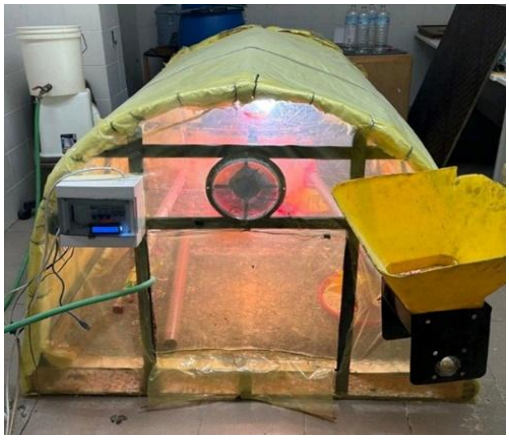
PROJECTS

Advancing Food Security: UOB Students Create Smart Poultry Nursery Prototype:

In July 2026, students from the Department of Agriculture at the Issam Fares Faculty of Technology developed a **Fully Smart Poultry Nursery**, demonstrating the University's commitment to innovation-driven solutions for food security and sustainable agricultural production.

Developed by students Moussa Moussi and Mohamad Chehadeh under the supervision of Dr. Ibrahim Chanbour, the prototype integrates automation and Internet of Things (IoT) technologies to monitor and control poultry production conditions, including temperature, humidity, lighting, water supply, and feed distribution.

During a 30-day testing period, the smart nursery achieved a **14% increase in poultry weight gain** while reducing respiratory and foot-related diseases. By improving production efficiency, animal welfare, and resource management, the project demonstrates how digital agriculture technologies can enhance local food production and support long-term food security.



This initiative reflects UOB's emphasis on experiential learning, applied research, and technology-based agricultural innovation that contributes directly to SDG 2 targets.

50.000

Seedlings Distributed

14%

Improved Poultry Productivity

COLLABORATION FOR AGRICULTURAL EMPOWERMENT

Access To Food Security Knowledge

Through the Agricultural Value Chain Development Center (AVCDC) and its development partners, the University of Balamand actively supports farming communities across Akkar by strengthening agricultural knowledge and promoting sustainable farming practices.

The University provided agricultural inputs and delivered training programs on:

- Integrated Pest Management (IPM)
- Good Agricultural Practices (GAP) systems.
- Sustainable crop management techniques
- Agricultural productivity enhancement

These interventions strengthened farmers' technical capacities, improved agricultural

productivity, promoted environmentally responsible farming methods, and enhanced the resilience of rural livelihoods.

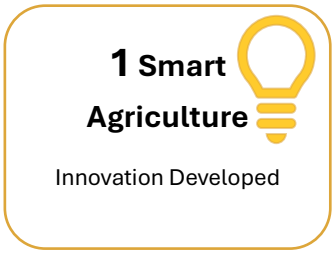
UOB contributes directly to improving food availability and strengthening local food.

By empowering producers with practical skills, agricultural inputs, and access to technical expertise, the University contributed to improving food availability, strengthening local value chains, and enhancing the resilience of farming communities across Akkar.

National Hunger Initiatives:

As part of its commitment to strengthening national food security and agricultural sustainability, the University of Balamand distributed **50,000 seedlings** to agricultural producers throughout Akkar. The seedlings were produced in the University's plant nursery established under the USAID-supported **LINQ Project**, implemented by Land O'Lakes. By providing farmers with quality planting materials, the initiative supported local agricultural production, enhanced crop diversification opportunities, and strengthened agricultural value chains.





The program contributed to:

- Increased local food production capacity.
- Improved agricultural productivity.
- Enhanced resilience of farming communities.
- Greater food availability in vulnerable regions.
- Support for sustainable rural livelihoods.
- Implemented during a period of food security challenges in Lebanon, this initiative strengthened community resilience and supported sustainable agricultural development.

Fair Trade Lebanon Explores Agriculture & Agroecology with Balamand Students

At the University of Balamand, business students got a chance to see agriculture through a different lens: one that goes beyond profits and markets. Fair trade Lebanon guided them through a lively discussion on agroecology, fair trade, and the often-unseen role of gender in farming communities across Lebanon.

The session invited students to connect classroom concepts to real-world challenges: how ecosystems, local livelihoods, and long-term sustainability are all intertwined, and how their future business decisions could shape food systems in meaningful ways.

Gender dynamics, access to resources, and decision-making power in rural communities sparked thoughtful debate, revealing how fairness and inclusion are as critical as crop yields. For many, it was a revelation: agriculture is more than just planting and selling, it's about people, choices, and the connections that hold communities together.

Through the Eco North project, students are not only learning about agroecology, they are experiencing it. They see how sustainable practices, ecological balance, and community engagement can transform rural landscapes and the lives of those who nurture them.



This supports SDG2,5,4 and 12.

Animated Film on Vertical Farming with UN-ESCWA

In 2025, ALBA contributed to SDG 2 through an educational and awareness-raising initiative led by its Graphic Arts and Advertising (AGP) section. In February 2025, the SDG Stories team of the United Nations Economic and Social Commission for Western Asia (ESCWA) approached ALBA to animate one of its educational stories promoting the Sustainable Development Goals.

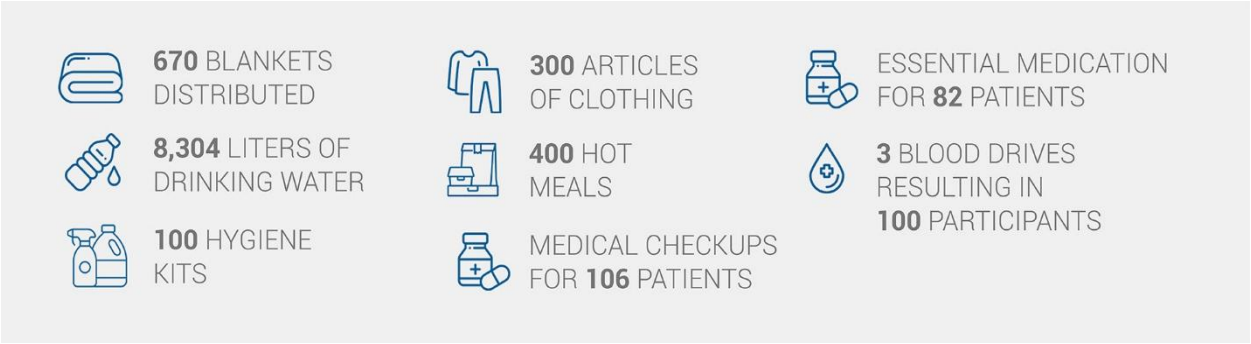
Between September and October 2025, five first-year Master's students in 2D/3D Animation, supported by three faculty members, developed the animated film "Magical Farming", which introduces the concept of vertical farming, highlighting its benefits and applications in sustainable food production. The film was reviewed and approved by ESCWA.

Through creative storytelling and digital animation, ALBA helped raise awareness among young audiences about innovative agricultural solutions, sustainable food systems, and resource-efficient farming practices. The initiative demonstrates how arts, design, and digital media can contribute to advancing food security and sustainable agriculture while supporting public understanding of SDG 2.

ACTIVITY	DATE	PARTICIPANTS	PARTNERS	SDGS
ANIMATED FILM "MAGICAL FARMING" ON VERTICAL FARMING	September-October 2025	5 students, 3 faculty members	United Nations Economic and Social Commission for Western Asia (ESCWA)	SDG 2, 4, 17

Civil Society Support Campaign

The University of Balamand launched the **Balamand Civil Society Support Campaign** in response to the war on Lebanon. With the nation experiencing unprecedented challenges, the university worked to support displaced families and local communities, ensuring that immediate aid reached those most in need. The campaign made a significant impact, notable for:



This initiative was a community-wide effort, with students and staff across all campuses (Koura, Akkar, Dekwaneh and Souq El Gharb) actively participating through volunteer work and donations. Additionally, student clubs organized several donation drives, amplifying the support and resources available for affected communities.

The Office of Student Affairs, in collaboration with the Lebanese Red Cross, organized three blood drives across various campuses, resulting in over 100 participants. Meanwhile, the Civil & Environmental Engineering Department provided its state-of-the-art labs for water testing, aiding organizations in the Lebanese National Water Sector. This collaboration offered expert support and tools for accurate water quality analysis, ensuring safe water access for displaced populations and vulnerable communities. The **Office of Student Affairs** also organized a mental health initiative led by the UOB Psychology Club. The first in a series of workshops, titled “Taking Charge of Your Anxiety and Worry,” provided valuable insights on managing stress and anxiety. These sessions fostered emotional resilience and a sense of community, which were critical during those times of hardship. "As a Higher Education Institution, our commitment extends beyond academics to the very heart of our community. In times of crisis, we must stand together, offering support and compassion to those who are suffering. I want to personally thank our alumni and donors for their generous contributions and our student volunteers for their tireless efforts. Each act of

kindness, no matter the size, strengthens our collective resolve to restore hope and dignity to our people." - Dr. Elias Warrak, President

Through the Balamand Civil Society Support Campaign, the university extended its reach in collaboration with local municipal leaders, the Lebanese Red Cross, and support for displaced families, including those from the Lebanese Army.

As part of this initiative, UOB partnered with the Lebanese Scouts Federation and the International Association of Orthodox Christian Scouts to host an online workshop on psychological support during crises. The workshop, led by the Orthodox National Scout Association, was a key element of the “Peace for Lebanon” campaign, launched by the Arab Scout Organization. It brought together 45 disaster and crisis coordinators from 22 Lebanese scout associations to strengthen resilience and well-being in communities affected by crises. The session, conducted by Mrs. Pascale Kolakez, a counselor at the University of Balamand Counseling Center and a lecturer in the Department of Psychology, covered trauma recognition, intervention strategies, and methods to mitigate the psychological impact of crises.

Balamand Community Mobilizes to Support Families in South Lebanon

In response to ongoing humanitarian needs in South Lebanon, the Patriarchal Monastery of Our Lady of Balamand, in collaboration with the University of Balamand and Our Lady of Balamand High School, organized a community-wide relief initiative to collect food supplies and financial aid for affected families. The campaign was led by university student clubs and high school students, with assistance distributed through the Greek Orthodox Archdiocese of Sidon and Tyre.



The initiative reflects the University community’s commitment to social responsibility, solidarity, and service. Student leaders pledged to continue collecting donations to support affected and displaced families, demonstrating the enduring values of compassion and community engagement. This supports SDG2,1,10,11, and 17.