

WELCOME MESSAGE OF H.E.  
PROF. YERLAN A. BAIDAULET  
DIRECTOR GENERAL OF IOFS

OUTCOMES  
OF THE 5TH IOFS  
GENERAL ASSEMBLY

THE ROLE OF ACSAD  
IN ACHIEVING ARAB FOOD  
SECURITY

OIG FOOD SECURITY DAY  
IS TO BE A REALITY  
IN 2023



المنظمة الإسلامية للأمن الغذائي  
Islamic Organization for Food Security  
l'Organisation Islamique pour la Sécurité Alimentaire



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# FOOD SECURITY HUB



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**Dear Readers!**

**W**e are pleased to introduce you to the tenth edition of the IOFS Food Security Hub, where we covered IOFS's significant events and initiatives from October through December 2022.

Within the review period, the most crucial event was the 5th IOFS General Assembly held in Tunis, Republic of Tunisia, on 10-11 October 2022, where member states discussed essential programs for the further development of agriculture and food security, especially in Africa.

The IOFS also participated in the Crans Montana Forum in Geneva, Switzerland on 16-18 November 2022. As a result of the Forum, IOFS signed two significant MoUs. The highlight of the event included the IOFS being presented with the CMF Award 2022 for launching a science-based 10-year Strategy in a short period of time and for organizing transparent and effective results-oriented mechanisms to strengthen food security in OIC member states. The CMF Prize brings together major contemporary champions of peace, freedom, and social and economic progress. Previous recipients of the award include former US President Barack Obama, former Soviet General Secretary Mikhail Gorbachev, current Turkish President Recep Tayyip Erdogan, former German Chancellor Angela Merkel, two former UN Secretaries General Kofi Annan and Boutros Boutros-Ghali and other outstanding leaders who have shown devotion to a noble cause.

Another memorable event included the celebration of IOFS Day on 12 December 2022, during which the organization presented the results of all the work accomplished during the year and the main outcomes of the "Year of Africa". The diplomatic corps and experts from more than 20 countries, as well as representatives of international media arrived in Astana to participate in the forum. Moreover, as an accord to 2022 as the Year of Africa, IOFS recently organized a Regional Workshop on Food Security Governance in the largest and most populated country in Africa, Nigeria.

Following the celebration, the 10th Executive Board Meeting of the IOFS convened on 13 December 2022. The IOFS welcomed the Honorable Board comprised of members from the following states: the State of Qatar (as the Chairman of the Executive Board), the UAE, the Republic of Tajikistan, the Islamic Republic of Pakistan, the Republic of Cameroon, the Republic of the Gambia, the Republic of Kazakhstan (permanent member), and the Director-General of IOFS (Non-Voting member), and the Kingdom of Saudi Arabia as Non-Voting Honorary Chairman of the Executive Board. The Board was presented with a report on the activities of the organization and implementation of the OIC food security agenda from June 2022 to date. In the 11 months of 2022, the IOFS held 19 events, which covered the participation of 45 OIC member countries in offline and hybrid formats.

Finally, to reflect and wrap up the year, the IOFS took part in a press briefing at the Central Communication Service under the President of the Republic of Kazakhstan on the outcomes of the year and the IOFS Day celebration. A delegation of Heads of Foreign Media representatives from the Union of OIC News Agencies also participated in the briefing. The delegation arrived to Kazakhstan for an information tour organized by the IOFS in cooperation with the Ministry of Foreign Affairs of the Republic of Kazakhstan in honor of IOFS Day and the Independence Day of the Republic of Kazakhstan.

This Food Security Hub edition also presents information and analytical articles, including on the issues of ensuring food security of the Arab countries, the role of agricultural biotechnologies in urban and small-scale development, the impact of climate change on crop structure in member countries, IOFS efforts on the development of Plant and Animal Genetic Resources in the OIC geography and other.

We wish you a pleasant reading!

**IOFS Director General**  
**Yerlan A. Baidalet**

الغذائي للبلدان العربية، ودور التقنيات الحيوية الزراعية في التنمية الحضرية والصغيرة، وتأثير تغير المناخ على بنية المحاصيل في البلدان الأعضاء، وجهود المنظمة الإسلامية للأمن الغذائي على تنمية الموارد الوراثية النباتية والحيوانية في جغرافية منظمة التعاون الإسلامي وغيرها.

نتمنى لكم قراءة ممتعة!

مدير عام المنظمة

البروفيسور يرلان بيدوليت

المنظمة في 12 ديسمبر 2022. وعقب الاحتفال، انعقد الاجتماع للمجلس التنفيذي العاشر في 13 ديسمبر 2022.

وأخيرا، وللتأمل في السنة، شاركت المنظمة في مؤتمر صحفي في دائرة الاتصالات المركزية برئاسة رئيس جمهورية كازاخستان حول نتائج السنة والاحتفال بيوم المنظمة. علاوة على ذلك، ومراعاة لعام 2022 باعتباره عام أفريقيا، نظمت المنظمة ورشة عمل إقليمية حول حوكمة الأمن الغذائي في أبوجا، نيجيريا.

تقدم هذه الطبعة أيضا معلومات ومقالات تحليلية، بما في ذلك قضايا ضمان الأمن

## القراء الأعزاء!

يسعدنا أن نقدم لكم النسخة العاشرة من مجلة مركز الأمن الغذائي للمنظمة الإسلامية للأمن الغذائي، حيث قمنا بتغطية الأحداث والمبادرات الهامة للمنظمة من أكتوبر حتى ديسمبر 2022.

خلال الفترة المشمولة بالاستعراض، كان الحدث الأكثر أهمية هو الجمعية العامة الخامسة للمنظمة التي عقدت في تونس، الجمهورية التونسية، في الفترة 10-11 أكتوبر 2022. تشمل الفعاليات والزيارات المهمة الأخرى للمنظمة الإسلامية للأمن الغذائي من ضمنها مشاركة المنظمة في منتدى كرانس مونتانا في جنيف، سويسرا في الفترة من 16 إلى 18 نوفمبر 2022. كما تم الاحتفال بيوم

pays Arabes, le rôle de la biotechnologie agricole dans le développement des villes et des petites villes, l'impact du changement climatique sur les modèles de cultures dans les pays membres, les efforts de l'IOFS pour développer les Ressources Génétiques Végétales et Animales dans la géographie de l'OIC et autres.

Nous vous souhaitons une très bonne lecture !

Directeur Général de l'IOFS

Prof. Yerlan A. Baidaulet



## OUTCOMES OF THE FIFTH GENERAL ASSEMBLY OF THE ISLAMIC ORGANIZATION FOR FOOD SECURITY (10-11 OCTOBER, 2022)



The two-day event of the Fifth General Assembly of the Islamic Organization for Food Security (IOFS) commenced in an online format in Tunis, Republic of Tunisia from 10-11 October 2022.

On 10 October 2022, there was a preparatory meeting attended by Senior Officials from various Member States, who had deliberated on all points under Agenda Items, including:

- أ. Report of the Director-General
- ب. Membership
- ج. Report on the Financial Matters
- د. IOFS Strategic Programmes: an overview of the implementation
- هـ. Election of Members of the Executive Board
- و. Afghanistan Food Security Programme: a flow review
- ز. Year of Africa: a flow review
- ح. Other institutional matters
- ط. Adoption of Resolutions of the 5th General Assembly

On the 11th of October 2022, the Ministerial Session was held, and was coordinated with His Excellency Mr. Yerbol Karashukayev, Minister of Agriculture of the Republic of Kazakhstan, in his capacity of Chairman of the 4th IOFS General Assembly, which was held in September 2021. He provided the initial remarks to assure of his country's unwavering support to the IOFS, as the host of the Organization, and to transfer the Chairmanship to His Excellency, Mr. Mahmoud Elies HAMZA, Minister of Agriculture of the Republic of Tunisia, and Chairman of the 5th IOFS General Assembly.

The meeting was also addressed by Their Excellencies Mr. Hissein Brahim Taha, Secretary General of the Organization of Islamic Cooperation (OIC), and Ambassador Gabriel Ferrero y de Loma – Osorio, Chairperson of the Committee on World Food Security (CFS).

Then, His Excellency Mr. Yerlan Baidaulet, IOFS Director General, provided the Report of all the activities that have been implemented since the 4th General Assembly. The Director General noted that since September of 2021 there have been positive dynamics in the development of IOFS programs and the active involvement of Member States in addressing common food security issues. He added, that it was therefore, remarkable that despite the constraints caused by Covid-19 in 2020-2021, the IOFS continued the process of consolidating its structures in a sustainable manner. This, among other things, led the Organization, in the reporting period, to mostly hold its events in an offline format.

## Main Outcomes of the 5th General Assembly

At the solemn IOFS gathering, Member States discussed important programmes to further develop agriculture and address food insecurity particularly in Africa. These included:

- a) **OIC Food Security Reserve System (FSRs)**, which has been envisioned by the OIC agenda since 1981. The main purpose of the FSRs is to facilitate access to food resources in the Member States by forming regional food reserves to guarantee supplies in times of food shortage and by monitoring and forecasting the situation. The IOFS Secretariat, following a corresponding research study, proposes the establishment of six regional Food Reserves.
- b) **the Grain Fund**, which is geared towards increasing intra-OIC economic cooperation, particularly, in the field of agricultural development and food security with emphasis on funding and grain supply. It should be underscored that the Grain Fund can become an important tool for Member States to avoid different factors that destabilize the grain market price policy, while reducing the price risk of purchase of agricultural products, as well as currency risk in attracting loans from international financial institutions. It is also envisioned that this Fund, when fully replenished, would provide for strengthening ties with Islamic financial institutions through the IOFS to attract investment in agricultural development and food security, including the development of food safety production and value chain.
- c) **Transformation and growth of the International Islamic Food Processing Association (IFPA)**. IFPA is to be given an additional impetus to advance Pillar 4 of the IOFS Strategic Vision 2031 that is devoted to OIC Food Industry Development, which is the foundation of the relationship between the IOFS and Investment Promotion Agencies (IPAs). IFPA is the IOFS subsidiary that is focused on business-to-business (B2B) relationships, and it is important in enhancing the private sector, particularly, in African Member States. During the IOFS DG visit to Tunis, the organization signed an agreement with the Director of IFPA. All 18 Kazakhstan food unions are supportive of the transformation and strengthening of IFPA, as this will give them an opportunity to attract new investments and will have a positive effect on the economy of Kazakhstan.

- d) **The Sheep Farming Fund** is an investment project focused on establishing value chains and shall providing sustainable intra-OIC supplies of top-quality meat. IOFS shall facilitate financing from institutional investors of OIC Member States with the support of member countries' IPAs. Upon successful implementation, this commodity fund is to be replicated in other OIC countries, such as Somalia, Sudan, etc.
- e) **Annual IOFS Civil Society Forum**, as the Article 07 of the IOFS Statute provides the mandate for establishing closer collaboration with any non-governmental regional and international organizations concerned with agriculture, rural development and food security, the 5GA discussed providing the ground for the IOFS to initiate an Annual Civil Society Forum in close strict collaboration and coordination with the Member States. The GA requested, in this context, the IOFS Secretariat to explore, discuss and promote local and contextualised solutions and commitments for emergency response, recovery and preparedness, and longer-term initiatives that address the food security crisis and future risks, sharing lessons learned, challenges, and opportunities with relevant civil society entities in coordination with the Member States.
- f) **IOFS Center for Plant and Animal Genetic Resources**, bearing in mind that numerous and diverse conflicts around the world are among the main causes for destruction of important food security and agricultural development infrastructures, including the eminent loss of ICARDA's genetic collection stored in Aleppo, Syria, and destruction of the National Gene Bank of Plants in Ukraine, the 5GA invited Member States and relevant Institutions to strengthen the actions at national and local levels for the acquisition, conservation and sustainable use of plant genetic resources and improvement of animal genetic resources to enhance food production and agricultural development. In this context, the IOFS, considering the Almaty Forum Decla-

ration, on establishing an International Center for Plant and Animal Genetic Resources, requested member states to consolidate efforts in establishing a storage facility of agricultural genetic resources within the OIC Geography.

- g) **The Ministerial Session of the 5th General Assembly welcomed** Tajikistan as a full-fledged IOFS Member State and expressed gratitude to the Republic of Chad for signing the IOFS Statute, increasing the number of Member states to 37. During the session, Turkmenistan voiced its willingness to become an Observer Member to the IOFS. And Azerbaijan has stated that all domestic measures are being taken for the country to be a full-fledged IOFS Member States
- h) Finally, it is important to note that the 5GA was also instrumental in Electing New Members of the Executive Board. As such, the Board was elected in the following composition:
- the State of Qatar 9 (as Chairman of the Executive Board of IOFS)
  - the UAE,
  - the Republic of Tajikistan,
  - the Islamic Republic of Pakistan,
  - the Republic of Cameroon,
  - Republic of the Gambia,
  - Republic of Kazakhstan (permanent member),
  - and the Director-General of IOFS (Non-Voting Member)
- The Kingdom of Saudi Arabia was elected as Non-Voting Honorary Chairman of the Board.

Against this backdrop, we estimate that the future plans and activities of the IOFS for 2022-2023 would provide an effective platform for reviewing challenges and providing prospects for various solutions in sustainable food and agriculture development in OIC Member States.



## ملخص

### نتائج الجمعية العامة الخامسة للمنظمة الإسلامية للأمن الغذائي

التدابير المحلية لكي تكون البلاد دولة كاملة العضوية في المنظمة الإسلامية للأمن الغذائي.

ح. وأخيراً، تجدر الملاحظة أن الجمعية العامة الخامسة قد كانت مفيدة أيضاً في انتخاب أعضاء جدد في المجلس التنفيذي. وتم على هذا النحو انتخاب المجلس بالشكل التالي:

- دولة قطر ٩ (بصفتها رئيس المجلس التنفيذي للمنظمة الإسلامية للأمن الغذائي)
- دولة الإمارات العربية المتحدة
- جمهورية طاجيكستان
- جمهورية باكستان الإسلامية
- جمهورية الكاميرون
- جمهورية غامبيا
- جمهورية كازاخستان (عضو دائم)
- والمدير العام للمنظمة الإسلامية للأمن الغذائي (عضو غير مصوت)

تم انتخاب المملكة العربية السعودية رئيساً فخرياً لمجلس الإدارة دون التمتع بحق التصويت.

وبناءً على ما سبق، نقدر أن الخطط والأنشطة المستقبلية للمنظمة الإسلامية للأمن الغذائي للفترة ٢٠٢٢-٢٠٢٣ ستوفر منصة فعالة لمراجعة التحديات وتوفير آفاق لمختلف الحلول في التنمية الغذائية والزراعية المستدامة في الدول الأعضاء في منظمة التعاون الإسلامي.

انطلق الحدث الذي دام يومين للجمعية العامة الخامسة للمنظمة الإسلامية للأمن الغذائي بتنسيق عبر الإنترنت في تونس العاصمة، الجمهورية التونسية، يومي ٠١ و ١١ أكتوبر ٢٠٢٢.

ناقشت الدول الأعضاء خلال الاجتماع الرسمي للمنظمة الإسلامية للأمن الغذائي برامج مهمة لمواصلة تطوير الزراعة ومعالجة انعدام الأمن الغذائي خاصة في إفريقيا. وشمل ذلك ما يلي:

- نظام احتياطي الأمن الغذائي لمنظمة التعاون الإسلامي (FSRs)
- صندوق الحبوب
- تحويل ونقل الجمعية الإسلامية العالمية لتصنيع الأغذية (IFPA)
- صندوق تربية الأغنام
- منتدى المجتمع المدني لسنوي للمنظمة الإسلامية للأمن الغذائي
- مركز المنظمة الإسلامية للموارد الوراثية النباتية والحيوانية

ز. رحبت الدورة الوزارية للجمعية العامة الخامسة بطاجيكستان كدولة كاملة العضوية في المنظمة الإسلامية للأمن الغذائي وأعربت عن امتنانها لجمهورية تشاد لتوقيعها على النظام الأساسي للمنظمة الإسلامية للأمن الغذائي، وهو ما ساهم في زيادة عدد الدول الأعضاء ليصل إلى 37 دولة. وأعربت تركمانستان خلال الدورة عن استعدادها لأن تصبح عضواً مراقباً في المنظمة الإسلامية للأمن الغذائي. وصرحت أذربيجان أنه يتم اتخاذ جميع

## RÉSUMÉ

### RÉSULTATS DE LA CINQUIÈME ASSEMBLÉE GÉNÉRALE DE L'ORGANISATION ISLAMIQUE POUR LA SÉCURITÉ ALIMENTAIRE

L'événement de deux jours de la cinquième Assemblée générale de l'Organisation islamique pour la sécurité alimentaire (IOFS) a été lancé dans un format en ligne à Tunis, République de Tunisie, du 10 au 11 octobre 2022.

Lors de la réunion solennelle de l'IOFS, les États membres ont discuté d'importants programmes visant à développer davantage l'agriculture et à lutter contre l'insécurité alimentaire, notamment en Afrique. Il s'agit notamment des programmes suivants :

- a) **Système de réserve de sécurité alimentaire de l'OCI (FSR),**
- b) **Le Fonds de céréales,**
- c) **Transformation et relocalisation de l'Association internationale islamique de transformation des aliments (IFPA),**
- d) **Le Fonds pour l'élevage des moutons,**
- e) **Forum annuel de la société civile de l'IOFS,**
- f) **Centre de l'IOFS pour les ressources génétiques végétales et animales,**
- g) **La session ministérielle de la 5ème Assemblée générale a accueilli le Tadjikistan en tant qu'État membre à part entière de l'IOFS et a exprimé sa gratitude à la République du Tchad pour avoir signé le statut de l'IOFS, portant ainsi le nombre d'États membres à 37. Au cours de la session, le Turkménistan a exprimé sa volonté de devenir un membre observateur de l'IOFS. L'Azerbaïdjan**

a déclaré que toutes les mesures nationales étaient prises pour que le pays devienne un membre à part entière de l'IOFS.

- h) Enfin, il est important de noter que la 5e Assemblée générale a également permis d'élire les nouveaux membres du conseil d'administration. Ainsi, le Conseil a été élu dans la composition suivante :
  - 1) L'État du Qatar 9 (en tant que président du conseil d'administration de l'IOFS)
  - 2) Les Émirats arabes unis,
  - 3) La République du Tadjikistan,
  - 4) La République islamique du Pakistan,
  - 5) La République du Cameroun,
  - 6) La République de Gambie,
  - 7) La République du Kazakhstan (membre permanent),
  - 8) Le Directeur général de l'IOFS (membre non-votant)

Le Royaume d'Arabie Saoudite a été élu président honoraire sans droit de vote du conseil d'administration.

Dans ce contexte, nous estimons que les plans et activités futurs de l'IOFS pour 2022-2023 constitueraient une plateforme efficace pour examiner les défis et offrir des perspectives de solutions diverses en matière de développement alimentaire et agricole durable dans les États membres de l'OCI.



## IMPACT OF CLIMATE CHANGE ON AGRICULTURAL CROPPING PATTERN IN EGYPT



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### Introduction

Climate change and global warming have become one of the most pressing environmental concerns and the greatest global challenges in many life sectors. Agriculture is one of the most climate-sensitive sectors that are directly affected by changing of the temperature and the precipitation. The impact of climate change on agriculture could result in problems with food security and may threaten the livelihood activities upon which much of the population depends. Climate change can affect crop yields (both positively and negatively), as well as the types of crops that can be grown in certain areas, by impacting agricultural inputs such as water for irrigation and amounts of solar radiation that affect plant growth. Optimization of cropping pattern in Egypt the climate change risks, is highly researchable. The main objective of this research is to improve agriculture water management and cropping patterns under the climate change risks by optimizing the cropping pattern of the main strategic crops in Egypt.

### Crop Rotation

Crop rotation can be defined as "the decision to plant a sequence of crops in successive years on the same piece of land, while sustaining crop succession requirements" (Hildreth & Reither, 1951; and Mohamad & Said, 2011). Heady (1948), tried to see the foremost profitable rotation of feed grains and forage crops by presenting a theoretical answer for the selection of output that maximizes farm profits exploitation the iso-revenue and iso-cost curves, through obtaining the very best iso-revenue in line with the iso-cost curve.

Studies on crop rotations were tackled by many researchers using various mathematical techniques, such as Linear Programming (LP), Non-linear programming (NLP), multi-objective linear programming model (MOLP), and linear optimization model (LOM).

Non-linear programming (NLP) was utilized via specialists to figure out the ideal cropping pattern for Egypt. A study via Ismail and Ata (2005) modelled the ideal crop mix for Egypt utilizing a non-linear objective capacity that tried to amplify net benefit, subject to various direct imperatives ashore, water assets, work and capital. Information for the period 1990-2003 on 45 harvests were modelled. The outcomes of the study recommended that the proposed best cropping pattern for Egypt can build net return by EGP 410 million contrasted with the existing pattern. In like manner, Aly et al. (2007) utilized a NLP model to figure out the optimal cropping pattern for desert in Egypt that relies on

upon ground water by boosting the net income for every unit of irrigation ground water.

CropRota – A Model to Generate Optimal Crop Rotations from observed land use - is among the LOM. CropRota generate optimal crop rotations for the particular scale by joining agronomic criteria and historical crop mixes at field, farm, or regional scales. Uwe (2009) applied and validated the model and empirical crop mix data for a case study region in Austria (Schönhart, 2009).

### Farming system in Egypt

As per the Sustainable Agricultural Development Strategy Towards 2030 (SADS, 2009), the per capita use of water will be approximately reduced from 711.0 m<sup>3</sup> in 2008 to 550 m<sup>3</sup> in 2030. The Egyptian economy has depended intensely on the horticultural area for nourishment, sustain, fibre and different items. It furnishes job for in the vicinity of 55% and utilizes 30% of the labour power, helps more or less 17% of the GDP and 20% of all outside trade profit. The recorded impart from creature protein is in the vicinity of 21 g/day in 1997 and is wanted to ascent to 24g for every capita by 2017, while the base proposed impart by FAO is something like 30 g/day/person (SADS, 2009).

Egyptian farming is nearly entirely obsessed on irrigation. Over 90% of Egypt is desert. The farming land base adds up to in the vicinity of 3.5 million ha (8.4 million feddan) which represented something like 3.5% of the aggregate region in 2007 (SADS, 2009). About 3 276 000 ha (7.8 million feddan) lie inside the Nile Basin and Delta, while 210 000 ha (500 000 feddan) are rainfed or in the desert springs (oases). Of the aggregate range of the Nile Basin and Delta, in the ballpark of 2 268 000 ha (5.4 million feddan) are old lands and 1 008 000 ha (2.4 million feddan) are new reclaimed lands (El-Nahrawy 2011).

Based on soil characteristics and water resources, Agricultural lands in Egypt can be categorized into four agro-ecological zones might be distinguished as follows:

- **Old land:** The old land is found in the Nile Valley and Delta Regions. It blankets an aggregate territory of 2.25 million ha and is portrayed by alluvial soils (mud to loamy). The Nile is the fundamental source of water.
- **New land:** Recovery of this land was begun in the early 1950s and is proceeding. It is located principally on both the east and west sides of the Delta and scattered over different territories in the nation. It blankets 1.05 million ha. Nile water is the primary using irrigation system; however in some betray territories groundwater is the main source of water.

• Oases: Oases are portrayed by alluvial, sandy and calcareous soils. They blanket a sum region of 40,000 ha. Underground water is the principle source for irrigation.

• Rainfed areas: These incorporate pretty nearly 0.17 million ha of area spotted in the north waterfront ranges, where precipitation varies between 100 and 200 mm every twelve-months. Conventional soil ripeness administration can expedite the mining of supplements from the dirt because of a deficient provision of supplements, to supplement uneven characters and to natural tainting through the over-requisition of composts (FAO, 2005).

Throughout three consecutive seasons; the winter, summer and nili, cultivation of crops happens contingent upon the watering system cycle. Winter season products (counting wheat, barely, beans and clover) are irrigated throughout the period October – December, and are gathered in May. Emulating the winter, yields of the summer season are irrigated from April – June and are reaped in October. Those incorporate rice, cotton, maize and sugar cane. The watering system of Nili season crops happens throughout the months of July and August and harvest happens in November. Products of the Nili season are mostly comparative to summer harvests (primarily maize, peanuts, and cotton). Vegetables and foods grown from the ground are developed throughout the entire year, contingent upon their kind (El Sayed, 2012)

## Case study

Tanta area is selected to investigate the impact of climate change on agriculture pattern at Egypt. Tanta is located 94 km north to Cairo and 130 km southeast of Alexandria. It is the capital of the Gharbia Governorate and the main railroad hub of the Nile Delta. The average annual rainfall is about 50 mm and the mean daily temperature ranges between 6.5 to 33.5°C. Three crops grown in Tanta are selected to carry out this study, which are: Wheat, Maize, and Rice.

## Methodology

CROPWAT 8.0 requires information on the meteorological station (country, name, altitude, latitude and longitude) together with climatic data (temperature, minimum and maximum), humidity, wind speed and sun hours. In the other hand, CROPWAT calculate the radiation and ETo using the FAO Penman-Monteith approach. CROPWAT 8.0 requires information about the average rainfall at the selected station and then calculating effective rainfall data using many approaches. In this study the USDA S.C. Method is chosen to calculate the effective rainfall.

Four climate change scenarios are selected to study the impact of climate change on the agriculture pattern, which are the following:

- Scenario One (SC1): In this scenario, the precipitation is assumed to +10% increases and the temperature is assumed to +1 °C increase.
- Scenario Two (SC2): In this scenario, the precipitation is assumed to -20% decreases and the temperature is assumed to +3 °C increase.
- Scenario Three (SC3): In this scenario, the precipitation is assumed to -10% decreases and the temperature is assumed to +1 °C increase.
- Scenario Four (SC4): In this scenario, no change is assumed for precipitation and the temperature is assumed to +2 °C increases.

The results show that Wheat yield in Tanta is not very sensitive to climate change where the crop yield is projected to slight decrease under the climate change scenarios; whereas the maxi-

mum yield reduction (0.3 %) is occurred at the SC 2 (The Worst Scenario). In the other hand, the increasing of temperature is more effective in yield reduction than decreasing of precipitation as observed in the results from SC 3 and SC 4.

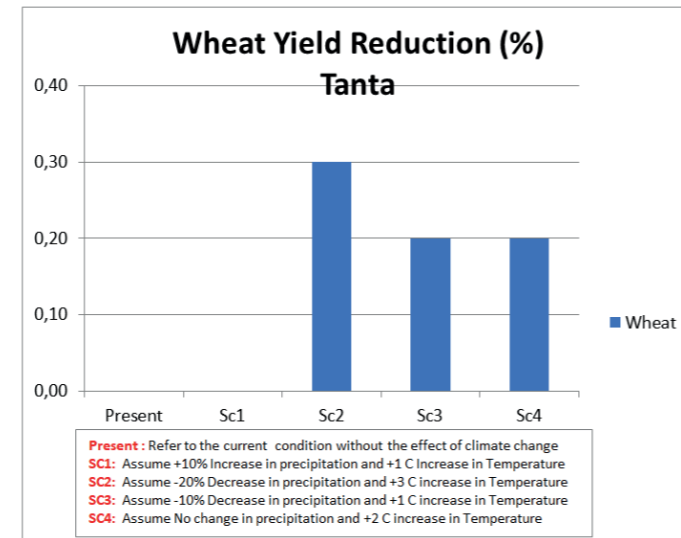


Figure 1: Wheat yield reduction under the effect of climate change

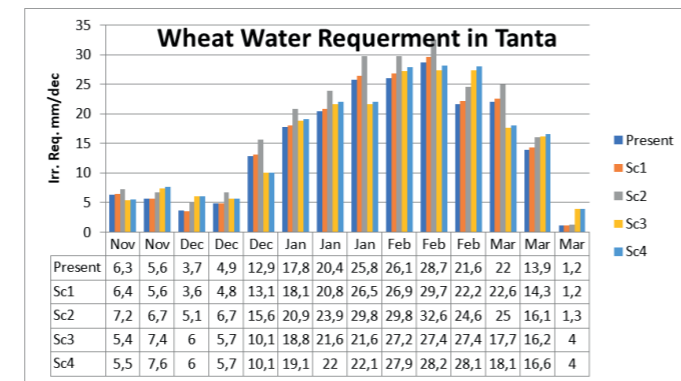


Figure 2: Monthly crop water requirement (CWR) for wheat in Tanta

## CONCLUSION AND RECOMMENDATIONS

- In general, this study indicated that CROPWAT can be successfully used to assess potential impacts of climate change on cropping pattern in the three studies countries. The model is user friendly and easy to use.
- Agricultural cropping pattern should be enhanced to cope with the anticipated climate change. Adoption of improved agricultural practices and technologies is one of the effective solutions to cope with the constraints imposed by future climate change.
- CROPWAT is a tool Model used to have pre prediction to the impact of climate change on the agriculture pattern in the future, so it's better to use real data for climate, soil and crop that measured for the three studies countries rather than using the available data in the FAO database in order to have model results that reflect the actual values of crop water requirement and yield reduction.
- The model activities in this research focus only on effects of climate change on crop water requirement. More constrains should be taken in consideration in future research to include social, political, economic aspects in optimizing the cropping pattern.

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## ملخص

### تأثير تغير المناخ على نمط الزراعة في مصر

د. عمر البدوي

مركز البيئة والتنمية للمنطقة العربية وأوروبا

التي يعتمد عليها الكثير من السكان. يمكن أن يؤثر تغير المناخ على غلة المحاصيل (سلبا وإيجابا)، وكذلك أنواع المحاصيل التي يمكن زراعتها في مناطق معينة، من خلال التأثير على المدخلات الزراعية مثل مياه الري وكميات الإشعاع الشمسي التي تؤثر على نمو النبات. تحسين أنماط المحاصيل في مصر، من هذا البحث هو تحسين إدارة المياه الزراعية وأنماط المحاصيل في ظل مخاطر تغير المناخ من خلال تحسين نمط المحاصيل للمحاصيل الاستراتيجية الرئيسية في مصر.

أصبح تغير المناخ والاحتباس الحراري أحد أكثر الاهتمامات البيئية إلحاحا وأكبر التحديات العالمية في العديد من قطاعات الحياة. الزراعة هي واحدة من أكثر القطاعات حساسية للمناخ والتي تتأثر بشكل مباشر بالتغيرات في درجة الحرارة وهطول الأمطار. ويمكن أن يؤدي تأثير تغير المناخ على الزراعة إلى مشاكل تتعلق بالأمن الغذائي وقد يهدد أنشطة كسب الرزق

## RÉSUMÉ

### Impact du Changement Climatique sur le Modèle de Culture Agricole en Egypte

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Le changement climatique et le réchauffement planétaire sont devenus l'un des enjeux environnementaux les plus urgents du monde dans de nombreux domaines de la Vie. L'agriculture est l'un des secteurs les plus sensibles au climat, directement touché par l'évolution des températures et des précipitations. L'impact du changement climatique sur l'agriculture peut en-

traîner des problèmes de sécurité alimentaire et menacer les activités de subsistance dont dépend la majorité de la population. Le changement climatique peut affecter les rendements des cultures (tant positive que négative) ainsi que sur les types de cultures qui peuvent être cultivées dans certaines régions, en affectant les intrants agricoles, comme l'eau pour l'irrigation et la quantité d'ensoleillement qui affecte la croissance des plantes. L'optimisation des modèles de cultures en Égypte face au risque de changement climatique constitue un domaine de recherche très prometteur. L'objectif principal de cette étude est d'améliorer la gestion de l'eau agricole et les modèles de cultures sous le risque du changement climatique en optimisant les modèles culturels des principales cultures stratégiques en Egypte.

## THE ROLE OF ACSAD IN ACHIEVING ARAB FOOD SECURITY

NOVEMBER 2022



The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) is one of the organizations of the League of Arab States, which operates according to an integrated strategy for its activities based on the Joint Arab Economic Action Charter, the development goals of the third millennium and the Arab agricultural development strategy. The activities of the Arab Center focus on conducting studies and research, providing expertise, advice, and training, and working on the practical application of the results of research and studies.

The Arab Center "ACSAD" works to achieve its programs and plans through technical departments in plant resources, livestock, water resources management, and land uses. ACSAD has many achievements in the field of the development of drought-tolerant and high-yielding varieties of wheat and barley. The wheat and barley breeding program have been given particular importance to its effective contribution to achieving Arab food security, as wheat production represents about 45.2% of the grain production in the Arab world and about 3.5% of global wheat production, and the productivity of this crop is still less than its global counterpart.

The food gap appears as a result of the inability of the growth rates of domestic food production to keep up with the growth rates of food consumption. Bridging the Arab food gap depends mainly on joint Arab action and integration by providing resources and capabilities that enhance collective investments, as the size of the food gap ranges between 50% in cereals and 30% in meat and dairy, which leads to the transformation of Arab countries into enormous purchasing powers, which represents a drain on their financial resources, which appears as a deficit in their trade balances.

Taking into account all the issues mentioned above, it can be said that the issue of Arab food security represents one of the essential elements of national security due to the political and security dimensions which food exporting countries can badly exploit. Therefore, the problem of achieving food security is a problem that requires the use of modern systematic solutions to deal with it.

### The role of ACSAD in Arab agricultural development and achieving food security:

The Arab center "ACSAD" has effectively contributed to reducing the food gap in the Arab world by developing improved

varieties of wheat and barley (85 varieties), which have been adopted and cultivated in various Arab countries, characterized by their high productivity, excellent tolerance to drought and disease resistance, which contributes to improving Arab food security. ACSAD has a genetic bank of drought-tolerant fruit trees (olives, pistachios, almonds, figs, and vines). During the last ten years, the Arab countries were provided with 3 million seedlings of drought-tolerant cuttings and seedlings and about 4,000 kg of seeds of drought-resistant fruit trees, in addition to supporting in establishing the infrastructure for nurseries and mother orchards for fruit trees in the Arab countries,

ACSAD established a network for research and development of the palm tree network, through which it carried out many research activities, qualifying Arab cadres, providing scientific consultations, conducting field studies for the development of palm trees, making better use of natural and human resources, focusing on developing human resources working in the field of sustainable development, preserving the environment and natural resources, and transferring technology suitable for Arab conditions, and disseminating successful experiences through various training programs implemented by the Human Resources Development and Technology Transfer Department.

ACSAD began applying the conservation agriculture system, which works to correct the environment of the prevailing agricultural systems, increasing the net economic returns of the production systems, especially under rain-fed conditions, within the concept of sustainability and reducing the sensitivity of agricultural systems to climate changes and the frequency of droughts.

ACSAD also develops a regional early warning system for desertification in cooperation with the German Agency for Technical Cooperation (GIZ) and with the German Trier University to monitor positive or negative changes in the land cover, identifying the most sensitive and vulnerable areas to degradation at the regional and national level, and preparing land degradation maps. The Arab world as a whole was studied, and the most vulnerable areas to degradation were identified. This study relies on preparing a mathematical model to analyze the change in vegetation cover appropriately and providing an archive of satellite images for long periods regularly, ranging from one day to several days.

Due to the low production efficiency of agricultural animals in the Arab region, ACSAD worked on developing livestock in the Arab world by focusing on improving breeds in its annual work

plans, which led to an increase in their productivity of milk and meat. It established laboratories for artificial insemination and embryo transfer and implemented an improvement program for sheep and goats, which are characterized by their adaptation to difficult dry and semi-arid environmental conditions. ACSAD also worked on the development and care of camels and Arabian horses, as it was able through his programs and projects (genetic improvement and maintenance of small ruminants, the development and use of artificial insemination and embryo transfer techniques, research and development of camels and horses, fodder development and animal nutrition, inventory and characterization of animal genetic resources), to contribute to the development of livestock in the arid and semi-arid Arab regions in the existing production systems. In addition, the establishment of laboratories for artificial insemination and embryo transfer, the production of semen straws, and the distribution of tens of thousands of them for sheep and goats to Arab countries to cross-breed local breeds to improve their economically important productive characteristics. Given the importance of all kinds of forage in increasing livestock productivity, surveys of forage resources for thirteen Arab countries have been updated, and the necessary proposals have been developed to bridge the fodder gap.

ACSAD is one of the first organizations to raise the slogan "Arab Water Security" and worked to achieve this slogan by building an integrated decision support system (DSS) in managing water resources and using the integrated approach in water demand management, preparing unified Arab water charts and maps, and working on developing methodologies suitable for optimizing the utilization of rainwater through the construction of mountain water dams, to provide additional

water sources to be used in irrigation and rehabilitating vegetation in degraded areas.

ACSAD works to deepen the state of knowledge about the rain system and surface runoff in arid and semi-arid Arab regions and semi-surface and deep ground recharge. It also works to develop water resources in mountainous and desert areas to achieve optimum utilization of surface runoff water for sustainable rural development, in addition to its capability of developing an experienced model that helps to choose the optimal areas for applying different rainwater harvesting technologies. He implemented many water harvesting projects and held Arab and international seminars and conferences to disseminate this knowledge.

Based on ACSAD awareness of the dimensions of the water issue in the Arab region, ACSAD prepared an integrated water resources management project in which it could summarize its vision and experience to support Arab countries in achieving their water security and ensuring sustainable development.

ACSAD works to disseminate the results of research and studies through cooperation with ministries of agriculture, Arab agricultural research centers, and regional and international organizations, as well as through scientific conferences, workshops, and training courses that it organizes in its training centers that it created, starting from the long-term group courses to training opportunities for individuals, in addition to holding workshops and issue scientific reports and bulletins. ACSAD relied on technical cooperation as one of the effective means of implementing its programs and activities by establishing links and close ties with many Arab and international organizations and bodies and scientific research centers in many countries of the developed world.

## ملخص

### دور أكساد في تحقيق الأمن الغذائي العربي نوفمبر 2022

تظهر الفجوة الغذائية نتيجة عدم قدرة معدلات نمو الإنتاج الغذائي المحلي على مواكبة معدلات نمو استهلاك الغذاء. يعتمد سد الفجوة الغذائية العربية بشكل أساسي على العمل والتكامل العربي المشترك من خلال توفير الموارد والإمكانات التي تعزز الاستثمارات الجماعية، حيث يتراوح حجم الفجوة الغذائية بين 50% في الحبوب و30% في اللحوم والألبان، مما يؤدي إلى تحول الدول العربية إلى قوى شرائية هائلة، مما يمثل استنزافاً لمواردها المالية، الذي يظهر كعجز في موازينها التجارية.

مع الأخذ في الاعتبار جميع القضايا المذكورة أعلاه، يمكن القول إن قضية الأمن الغذائي العربي تمثل أحد العناصر الأساسية للأمن القومي نظراً للأبعاد السياسية والأمنية التي يمكن أن تستغلها الدول المصدرة للغذاء بشكل سيء. لذلك فإن مشكلة تحقيق الأمن الغذائي هي مشكلة تتطلب استخدام حلول منهجية حديثة للتعامل معها.

المركز العربي لدراسات المناطق الجافة والأراضي القاحلة (أكساد) هو أحد منظمات جامعة الدول العربية، التي تعمل وفق استراتيجية متكاملة لأنشطتها تستند إلى ميثاق العمل الاقتصادي العربي المشترك والأهداف الإنمائية للألفية الثالثة واستراتيجية التنمية الزراعية العربية. تتركز أنشطة المركز العربي على إجراء الدراسات والبحوث، وتقديم الخبرات والمشورة والتدريب، والعمل على التطبيق العملي لنتائج البحوث والدراسات.

يعمل المركز العربي «أكساد» على تحقيق برامجه وخطته من خلال الأقسام الفنية في الثروة النباتية، والثروة الحيوانية، وإدارة الموارد المائية، واستعمالات الأراضي. أكساد لديها العديد من الإنجازات في مجال تطوير أصناف القمح والشعير المقاومة للجفاف وعالية الغلة. وقد أولى برنامج تربية القمح والشعير أهمية خاصة لمساهمته الفعالة في تحقيق الأمن الغذائي العربي، حيث يمثل إنتاج القمح حوالي 45.2% من إنتاج الحبوب في الوطن العربي وحوالي 3.5% من إنتاج القمح العالمي، ولا تزال إنتاجية هذا المحصول أقل من نظيره العالمي.

## RÉSUMÉ

### Le rôle de l'ACSAD dans l'Assurance de la Sécurité Alimentaire Arabe Novembre 2022

Le Centre Arabe pour les Etudes des Zones Arides et des Terres Sèches (ACSAD) est l'une des organisations de la Ligue des Etats Arabes, qui fonctionne selon une stratégie intégrée pour ses activités, basée sur la Charte d'Action Economique Arabe Commune, les objectifs de développement du troisième millénaire et la stratégie de développement agricole Arabe. Les activités du Centre Arabe se concentrent sur la réalisation d'études et de recherches, fournissant expertise, conseil et formation, et travaillant sur l'application pratique des résultats des recherches et études.

Le Centre Arabe «ACSAD» travaille à la réalisation de ses programmes et plans à travers des départements techniques en ressources végétales, élevage, gestion des ressources en eau et utilisation des terres. ACSAD a de nombreuses réalisations dans le domaine du développement de variétés de blé et d'orge tolérantes à la sécheresse et à haut rendement. Le programme de sélection du blé et de l'orge revêt une importance particulière en raison de sa contribution efficace à la garantie de la sécurité alimentaire dans les pays Arabes. En effet, la production de blé représente environ 45,2% de la production céréalière du monde Arabe et environ 3,5% de la production mondiale de blé, et la pro-

ductivité de cette culture reste inférieure à celle de son homologue mondiale.

Le déficit alimentaire résulte de l'incapacité de la production alimentaire nationale à suivre le taux de croissance de la consommation alimentaire. La réduction du déficit alimentaire Arabe dépend largement de l'action conjointe et de l'intégration des pays Arabes par la fourniture de ressources et de possibilités qui améliorent l'investissement collectif, puisque l'ampleur du déficit alimentaire varie entre 50 % pour les céréales et 30 % pour la viande et les produits laitiers, ce qui se traduit par un énorme pouvoir d'achat des pays arabes, qui draine leurs ressources financières et se manifeste par un déficit de leur balance commerciale.



À la lumière de toutes les questions susmentionnées, on peut dire que la question de la Sécurité Alimentaire dans les pays Arabes est l'un des éléments les plus importants de la sécurité nationale en raison des aspects politiques et sécuritaires que les pays exportateurs de produits alimentaires peuvent abuser. Parvenir à la sécurité alimentaire est donc un problème qui requiert le recours à des solutions systémiques modernes pour y remédier.



## OIC FOOD SECURITY DAY IS TO BE A REALITY IN 2023



**ABDULA MANAFI MUTUALO,**  
*IOFS Senior Liaison Officer*

 **Abdula Manafi Mutualo**  
10 de Dezembro de 2013 · 

An historical moment: the signing of Statute establishing the OIC Food Security Organization to be based in Astana, Kazakhstan.



**W**hen on 10 December 2013 I witnessed the signing by Member States of the Organization of Islamic Cooperation (OIC) of the Statute of the Islamic Organization for Food Security (IOFS), newest Institution within the Islamic bloc, I was far from entertaining the idea that, one day, I would be one of its proud staff members.

In fact, on that day in Conakry, the capital of the Republic of Guinea, during the holding of the 40th Session of OIC Council of Foreign Ministers (CFM), the IOFS was officially welcomed into the international arena to deal with a particular delicate subject that is dear to all OIC Member States, which is food security, and to a larger extent, agricultural development.

The date therefore that counts as official would be 11 December, as all resolutions of the 40th CFM were unanimously adopted by participating Member States. It is, in this vein, that the IOFS recognizes the date as the official launch date of its very existence.

### A Model Replicated

It is well known that there is "World Food Day", which is an international day celebrated every year worldwide on October 16th to commemorate the date of the founding of the United Nations Food and Agriculture Organization (FAO) in 1945. It was established by FAO's Member Countries at the Organization's 20th General Conference in November 1979. The Hungarian Delegation, led by the former Hungarian Minister of Agriculture and Food Dr. Pál Romány, played an active role at that Session by suggesting the idea of celebrating such day worldwide. It has since been observed every year in more than 150 countries, raising awareness of the issues behind poverty and hunger. The day is celebrated widely by many other organizations concerned with hunger and food security, including the World Food Programme, the World Health Organization and the International Fund for Agricultural Development.

In this context, one may argue that having a separate OIC Food Security Day would be redundant due to the existing October



16th celebration. We at the IOFS think otherwise, as we believe that on the World Food Day many important issues of concern to OIC Member States are far from being appropriately addressed, with particular emphasis on food safety in its halal format.

With that in mind, we decided to replicate the FAO model and proposed that 11th of December be celebrated as OIC Food Security Day. As such, a dedicated resolution was approved by the 5th IOFS General Assembly that was held on 10-11 October 2022 in Tunis, Republic of Tunisia, and the same reads as follows:

*Having the good experience of the United Nations to mark the special dates with OIC in order to promote, through awareness and action, the objectives of the Organization;*

*Bearing in mind the Report of the 9th Executive Board Meeting of the IOFS on 10 June 2022,*

*Believing the importance of the empathizing and defining the exact date to promote worldwide awareness and action towards better food security among all OIC Member States;*

*Taking into account the date of the adoption of the Statute of the IOFS during the 40th Council of Foreign Ministers in Conakry, the Republic of Guinea on 09-11 December 2013,*

**Recommends** marking every 11th December as the OIC FOOD SECURITY DAY starting in the present year of 2022;

**Proposes** the Chairman of the current Session of IOFS General Assembly to kindly liaise with the OIC General Secretariat towards endorsement of this celebratory date by the 49th Session of the Council of Foreign Ministers of OIC to be held

in *Nouakchott, Islamic Republic of Mauritania, in 2023;*

**Requests** the IOFS Secretariat to inform all OIC Member States and Institutions with the recommendation of convening appropriate events to celebrate the date now established;

How to celebrate?

Considering that the aforementioned Resolution needs to be endorsed by the CFM, we believe that the date will officially start to be observed in 2023, which will also coincide with the 10th Anniversary of IOFS Statute.

The IOFS is to call on all governments, the private sector, academia, and civil society and individuals to design appropriate projects within the context of food security to mark that important day. Such initiatives may be workshops, essay and painting contests, sport activities, and above all, humanitarian food assistance for those that have less to eat on daily basis. In fact, one of the main focuses on marking the OIC Food Security Day should be the advocacy and raising awareness on the need for concerted and committed efforts for the accessibility of food to become a norm in the OIC geography.

We therefore believe that all stakeholders within the OIC geography are called to work together in solidarity to prioritize the right of all people to food, nutrition, peace and equality. Indeed, every one of us, including youth, can work towards an inclusive and sustainable future, showing greater empathy and kindness in our actions.

Astana, 15 November 2022

## ملخص

### يوم الأمن الغذائي لمنظمة التعاون الإسلامي سيصبح حقيقة واقعة في عام 2023

الأعضاء في منظمة التعاون الإسلامي، وهو الأمن الغذائي، وإلى حد كبير، التنمية الزراعية.

وبالتالي فإن التاريخ الذي يعتبر رسمياً هو 11 ديسمبر، حيث تم اعتماد جميع قرارات مجلس وزراء الخارجية الـ 40 بالإجماع من قبل الدول الأعضاء المشاركة. وفي هذا السياق، تعترف المنظمة الإسلامية للأمن الغذائي بهذا التاريخ باعتباره تاريخ الإطلاق الرسمي لوجودها.

عندما شهدت في 10 ديسمبر 2013 توقيع الدول الأعضاء في منظمة التعاون الإسلامي (OIC) على النظام الأساسي للمنظمة الإسلامية للأمن الغذائي (IOFS)، أحدثت مؤسسة داخل الكتلة الإسلامية، كنت بعيداً عن التفكير في فكرة أنني سأكون يوماً ما أحد موظفيها.

في الواقع، في ذلك اليوم في كوناكري، عاصمة جمهورية غينيا، خلال عقد الدورة الـ 40 لمجلس وزراء خارجية منظمة التعاون الإسلامي، تم الترحيب رسمياً بالمنظمة الإسلامية للأمن الغذائي في الساحة الدولية للتعامل مع موضوع حساس خاص عزيز على جميع الدول

تقريباً دليلاً وديماً لجميع الدول الأعضاء في منظمة التعاون الإسلامي: الأمن الغذائي، وبالتحديد، التنمية الزراعية.

La date officielle est donc le 11 décembre, puisque toutes les Résolutions de la 40e session du CMAE ont été adoptées à l'unanimité par les États Membres participants. C'est dans cet esprit que l'IOFS considère cette date comme date d'entrée en vigueur officielle de son existence.

## RÉSUMÉ

### La Journée de la Sécurité Alimentaire de l'OIC deviendra une Réalité en 2023

Lorsque j'ai assisté à la signature du Statut de l'Organisation Islamique pour la Sécurité Alimentaire (IOFS), la plus récente institution du bloc Islamique, par les États Membres de l'Organisation de la Coopération Islamique (OCI) le 10 décembre 2013, je n'aurais jamais cru être un de ses fiers employés.

En effet, ce jour-là, à Conakry, capitale de la République de Guinée, lors de la 40e session du Conseil des Ministres des Affaires Étrangères (CMAE) de l'OCI, l'IOFS a été officiellement accueillie sur la scène internationale pour traiter d'un sujet par-

## PARTICIPATION OF OIC MEMBER COUNTRIES IN IOFS PROGRAMS IN 2022



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The Islamic Organization for Food Security (IOFS) is a specialized institute of the Organization of Islamic Cooperation, whose main mission is to ensure food security in the member countries, as well as the development of sustainable agriculture. To achieve these objectives, the IOFS implements 16 strategic programs in 5 main pillars.

This article would analyze the activity of the OIC member countries that participated in the IOFS's events in 2022.

In 2022, IOFS held 20 events involving participation of the OIC member countries. It is important to note that in 2022 all 20 events were held offline or in a hybrid format, while only 2 events in 2021 were hosted in a hybrid format, the rest 22 were held online.

Within Food Security Governance Program in 2022 IOFS held 3 events, in which 40 OIC member countries participated, including Bahrain, Bangladesh, Benin, Burkina Faso, Cameroon, Chad, Comoros, Cote d'Ivoire, Djibouti, Egypt, Guinea, Gambia, Guinea-Bissau, Iraq, Jordan, Kazakhstan, Kyrgyzstan, Lebanon, Libya, Mali, Maldives, Mauritania, Morocco, Mozambique, Niger, Nigeria, Palestine, Saudi Arabia, Somalia, Senegal, Sierra Leone, Sudan, Tajikistan, Togo, Tunisia, Turkiye, UAE, Uganda, Uzbekistan, and Yemen. Events were held in Abu Dhabi (UAE), Cairo (Egypt), and Nigeria (Abuja).

The last event in 2022 "Regional training workshop on strategic planning and policy development in food security" was held on December 21-22 within the Food Security Governance program in Nigeria, Abuja. 14 OIC member countries participated in the event: Niger, Mali, Senegal, Cote d'Ivoire, Benin, Togo, Burkina Faso, Cameroon, Gabon, Guinea, Gambia, Nigeria, Guinea-Bissau, and Sierra Leone.

Under the Food Balance Database program, one event was held in 2022 with the participation of 10 OIC member countries, including Benin, Burkina Faso, Chad, Côte d'Ivoire, Guinea Bissau, Guinea, Mali, Niger, Senegal, and Togo. The event on development of a database on agricultural statistics "Agricultural Database Development for Better Policy Making and Ensuring Food Security" was held in Niamey, Republic of Niger, in 18-19 May, 2022.

Within the Food Security Reserves one event was held with the participation of Kazakhstan, Azerbaijan, Turkiye, Kyrgyz Republic, Tajikistan, and Turkmenistan.

IOFS organized and conducted 2 activities under the Development of National Gene Banks program during the reporting period for 19 OIC member countries, including Azerbaijan, Bangladesh, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Gabon,

Gambia, Guinea Bissau, Kazakhstan, Mozambique, Niger, Nigeria, Senegal, Tajikistan, Togo, Tunisia, Turkmenistan, and Uzbekistan.

Four events held under the OIC Strategic Commodities program were attended by 24 countries, including Afghanistan, Azerbaijan, Bangladesh, Egypt, Iran, Jordan, Kazakhstan, KSA, Kyrgyzstan, Lebanon, Libya, Malaysia, Morocco, Nigeria, Pakistan, Palestine, Qatar, Senegal, Tajikistan, Tunisia, Turkiye, UAE, Uganda, and Uzbekistan.

A total of 14 countries participated in three activities under the Healthy food & Safe Food Ecosystem program. These countries include Egypt, Jordan, Kazakhstan, KSA, Lebanon, Malaysia, Morocco, Pakistan, Palestine, Qatar, Tajikistan, Tunisia, Turkiye, and UAE.

Under the Water Management in Agriculture and Bio & AgriTech Development programs one event was held on each: Capacity Building for Farmers on Water Management in Agriculture for farmers in Niger in 16-17 May, 2022, and Kazakhstan-Pakistan-Turkiye Youth Forum on Biotechnology in 13-15 September 2022, in Pakistan, with participation of 3 OIC member countries: Kazakhstan, Pakistan, and Turkiye.

Within International Islamic Food Processing Association (IFPA) program in 2022 were held 2 events: Roundtable discussion on agri-food investment opportunities through Islamic finance and IFPA Forum "An open platform for OIC trade and investment" in 9-10 November 2022 with 8 OIC member countries participated, including Kazakhstan, KSA, Morocco, Oman, Pakistan, Qatar, Tajikistan, and UAE.

Under the OIC Food System Talent Development program was held one event: High-level Food Security Forum, with the participation of 16 OIC member countries: Bangladesh, Burkina Faso, Niger, Nigeria, Turkey, UAE, Oman, Sudan, Egypt, Uganda, Kyrgyzstan, Lebanon, Pakistan, Kazakhstan, Qatar, Tunisia. The High-level Food Security Forum included one session devoted to exploring investment opportunities in the agri-food sector under the National Food Sectors Development in Cooperation with State Investment Agencies program.

The analysis shows that in 2022 IOFS activities covered 45 OIC member countries participated in both offline and hybrid format. Kazakhstan, Tajikistan, Tunisia, KSA, Morocco, and UAE are the most involved member countries, with 8 for Kazakhstan and Tajikistan, 7 for Tunisia and 6 events for KSA, Morocco, and UAE respectively. Azerbaijan, Bangladesh, Pakistan, Qatar, and Uzbekistan were also among actively participating countries, each taking part in 5 events.

Afghanistan, Bahrain, Comoros, Djibouti, Iraq, Maldives, Mauritania, Somalia, Sudan, and Yemen were among less involved countries, with **one** event each. Burkina Faso, Cameroon, Cote d'Ivoire, Gabon, Gambia, Guinea Bissau, Iran, Niger, Oman, Togo, and Turkmenistan, were also the least involved countries, having participated in only **two** events during that period.

Overall, most of the involved OIC countries were quite active, with each country participating in an average of **three** activities. More detailed statistics are given in Figures 1 and 2.

Figure 1. Number of events per country (part 1)

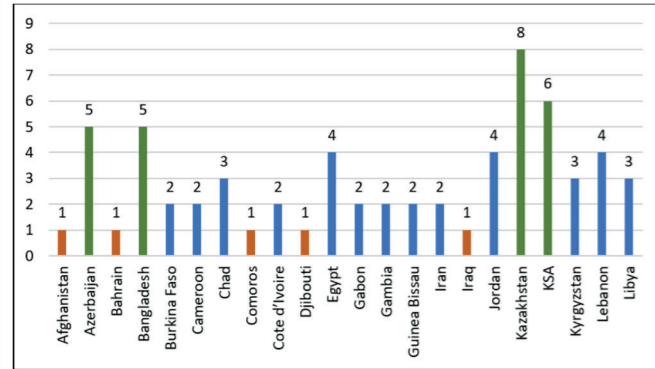
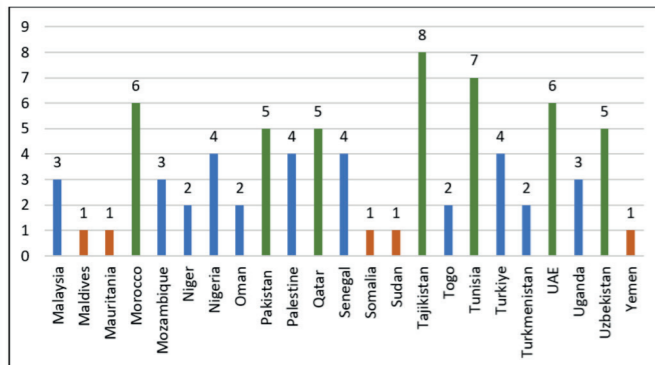


Figure 2. Number of events per country (part 2)

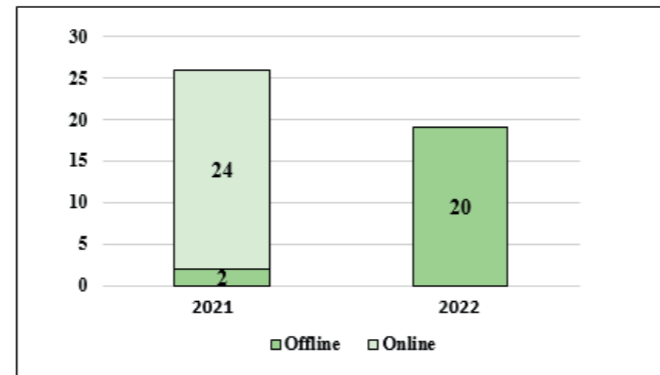


States that have participated in a greater number of activities have had higher results, benefits, and positive outcomes. These benefits and positive results have been and will be obtained, including through the exchange of knowledge and best practices, conducting joint researches, training and workshops; initiating and implementing joint projects aimed at introducing new technologies; attracting and encouraging investments to support the development of food security; obtaining technical assistance, developing R&D and strengthening national capacities in the field of agricultural research, and institutional and human resources, pooling resources in the technological and scientific sectors, etc.

Even though the IOFS is a young organization, there has been a positive dynamic of the development of IOFS programs and the active interest of member countries in addressing common issues on food security in recent years.

As noted earlier, due to the Covid-19 restrictions, most of the events in **11 months of 2021** were held online, and only **2** events out of **24** were held in hybrid format, while in **2022** all the events were held in person or in hybrid format.

Figure 3. IOFS activities in 11 months of 2021-2022



The first IOFS event in **2022** was the “**IOFS Strategic Commodities and Food Safety Forum**” in Doha, State of Qatar in cooperation with the Ministry of Municipality of the State of Qatar on **14-16 February, 2022**. The event brought together ministers, decision-makers, opinion-leaders, and leading scientific experts worldwide to discuss strategic commodities and food safety issues and better understand environmental, nutritional, agricultural, demographic, socio-economic drivers, and outcomes of the intra-OIC food security system.

During the Forum the representatives of Azerbaijan, Bangladesh, Egypt, Nigeria, Pakistan, Kazakhstan, Malaysia, Uganda, Uzbekistan, Tunisia, Turkey, Tajikistan, Kyrgyzstan, United Arab Emirates, the Kingdom of Saudi Arabia, Senegal, and the State of Qatar have shared their country experiences in wheat, rice, cassava development and the status of food safety and healthy food among the supply chain.

Another vivid example of the IOFS's effective activities was the **High-level Food Security Forum** held in Almaty, Kazakhstan on **8-9 June 2022**. The hybrid event jointly organized by IOFS and Kazakh National Agrarian Research University, brought representatives of more than **20** countries, and attracted more than 1000 participants. The Forum created a dynamic platform for multi-stakeholder dialogue to explore food security game-changing innovations and high-impact solutions and to engage in policy dialogue and knowledge sharing on food security and nutrition globally and in targeted OIC geographic areas.

The IOFS High-Level Forum was successfully concluded by adopting the Almaty Declaration. Government officials of Member States of the Organization of Islamic Cooperation (OIC), representatives of OIC institutions, academia, international organizations, and the private sector reaffirmed commitment to the objectives of the IOFS and support for its initiatives in the areas of food security and agricultural development, the proposed inclusion of food security education programs in the curriculums at agrarian educational establishments in the different OIC Member States while developing the well-being of small-scale farmers and the economic growth of their respective countries via their extension capacity, which may be beneficial and contribute directly to improve the food and nutrition security indicators, and encourage, in this context, governments to emphasize the role of universities and support their extension activities.

In conclusion, it can be noted that the IOFS programs have been successfully implemented and have contributed to the development of food security in the member countries, and became an effective platform for finding and making common decisions on sustainable food and agriculture development in OIC member countries.

## ملخص

### مشاركة البلدان الأعضاء في منظمة التعاون الإسلامي في برامج IOFS في 2022

ستحلل هذه المقالة نشاط الدول الأعضاء في منظمة التعاون الإسلامي التي شاركت في أحداث المنظمة الإسلامية للأمن الغذائي في 11 شهرا من عام 2022 ضمن البرامج الاستراتيجية للمنظمة.

المنظمة الإسلامية للأمن الغذائي (IOFS) هي منظمة متخصصة تابعة لمنظمة التعاون الإسلامي، وتمثل مهمتها الرئيسية في ضمان الأمن الغذائي في الدول الأعضاء وتطوير الزراعة المستدامة. تنفذ المنظمة الإسلامية للأمن الغذائي 16 برنامجا استراتيجيا في 5 ركائز رئيسية لتحقيق هذه الأهداف.

## RÉSUMÉ

### Participation des pays membres de l'OIC aux programmes de l'IOFS en 2022

L'Organisation Islamique pour la Sécurité Alimentaire (IOFS) est un institut spécialisé de l'Organisation de la Coopération Islamique, dont la mission principale est d'assurer la sécurité alimentaire des pays membres, ainsi que le développement d'une agriculture durable. Pour atteindre ces objectifs, l'IOFS met en œuvre 16 programmes stratégiques dans 5 piliers principaux.

Cet article analysera les activités des pays membres de l'OIC qui ont participé aux activités de l'IOFS au cours des **2022** dans le cadre des Programmes Stratégiques de l'IOFS.



# THE ROLE OF AGRICULTURAL BIOTECHNOLOGY IN THE DEVELOPMENT OF CITIES AND SMALL FARMS



RASHA ALJHANI

## Introduction

Biotechnology refers to a set of tools that utilizes living organisms or parts of living organisms to make or modify a product or improve plants and animals for specific uses. Agricultural biotechnology refers to the improvement of crops and livestock through the use of biotechnology tools such as conventional plant breeding, tissue culture, molecular breeding or marker-assisted selection, genetic engineering, and molecular diagnostic tools (Anthony and Ferroni, 2012). Agricultural biotechnology can also be defined as a collection of scientific techniques used to enhance plants, animals, and microorganisms through a succinct understanding of DNA to improve agricultural productivity. Generally, biotechnology begins with the ability to identify genes with advantages on certain crops and their ability to work with such characteristics to improve crops and livestock (Zilberman et al., 2014). It enables improvements that would otherwise be impossible with traditional species-related crossing.

Changing climatic patterns due to the impacts of global warming is considered one of the biggest threats to food security on the planet. Areas that were considered food baskets less than two decades ago are becoming less productive due to either low rainfall rates or extreme climatic patterns that can no longer sustain rainfed agriculture and conventional crops (Zilberman et al., 2014). In came biotechnology which has grown in use to address challenges in all areas of agriculture, from production to processing (Sexton & Zilberman, 2011). Biotechnology has been employed in areas such as plant breeding to enhance and stabilize yields, enhance the crops' resistance to pests, diseases, and abiotic stresses such as cold and drought, and improve the food's nutritional content. For instance, agricultural biotechnology has been used to develop cheaper and disease-free planting materials for crops such as cassava, potato, and banana and has grown to create new tools for the diagnosis and treatment of diseases that infect plants and animals and to measure and conserve genetic resources.

Biotechnology has also risen to be used in the speeding up of breeding programs for plants, livestock, and fish to enhance the range of traits that are addressable. Moreover, biotechnology is also changing animal feeds and feeding practices to enhance animal nutrition and cut down on waste in the environment (Anthony & Ferroni, 2012). The use of biotechnology has also found its way into the field of disease diagnosis and the production of vaccines that help fight against common animal diseases. It indicates that biotechnology is a lot more than just genetic engi-

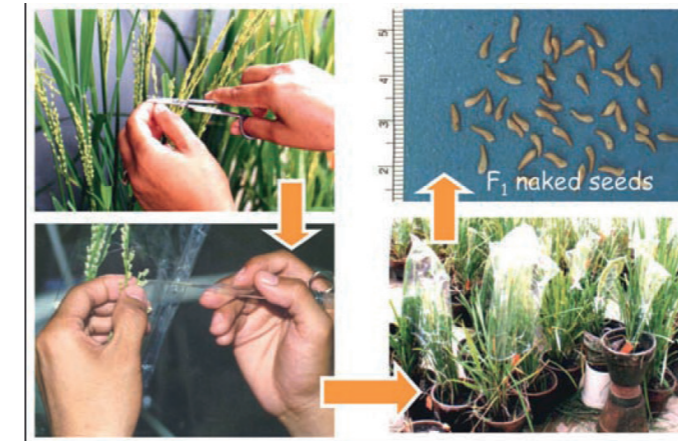
neering, with a myriad of areas that are changing the field of agriculture and food production (Sexton and Zilberman, 2011). For instance, genomics is proving to be revolutionary in the human understanding of the functioning of genes, cells, organisms, and ecosystems, which in turn continues to open horizons for genetic resource management and marker-assisted breeding.

## Conventional Plant Breeding

Since the start of agriculture nearly eight or ten thousand years back, farmers have often found ways to alter the genetic makeup of crops that they grow. For instance, the farmers selected their best-looking seeds and plants and saved them for planting the following season (Anthony and Ferroni, 2012). The major features that outlined this selection process were rapid growth, increased yield, resistance to pests and diseases, and better-quality fruits, which altered the area of domesticated plant species. The rise of plant breeding was an outcome of the information that crop plants could be artificially mated to enhance the plant characteristics such that desirable characteristics from a variety of different plants could be put together to come up with better-quality offspring (Sexton & Zilberman, 2011). The development of plant breeding in the 20th century led to an increase in the knowledge base amongst plant breeders, informing them of the ways of selecting superior plants and breeding them to come up with new and enhanced crop varieties.

The move has, in turn, enhanced the productivity and the quality of the plants grown for food, fiber, or feed. Although conventional plant breeding has been historically used to develop new varieties of crops for hundreds of years, it is no longer able to sustain the huge global demand for produce amid the ever-increasing population, decline in agricultural resources such as water and land, and the ever-falling yield curve of staple crops, prompting the need to come up with, and utilize new crop improvement technologies (Anthony & Ferroni, 2012). These crop improvement technologies are built on the idea that despite the ability of living organisms to enhance themselves naturally and adapt to changing conditions in their environment, it takes many decades before any detectable improvement can be felt (Anthony & Ferroni, 2012). As such, technology has come in handy to support the domestication and breeding of plants to develop crops that fit the need and likings of different groups of people.

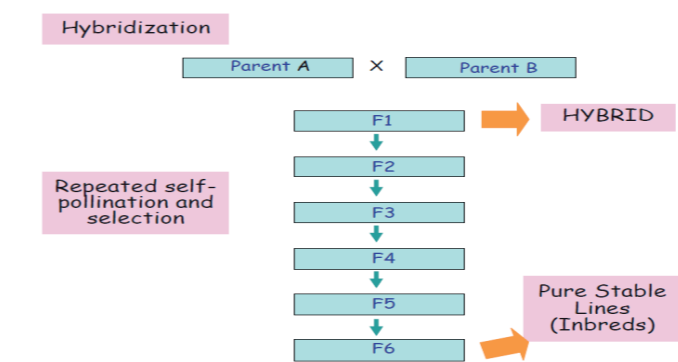
Figure 1: Steps in Conventional Breeding. Source: Alfonso (2007)



## Mutation Breeding

One of the most important aspects of plant breeding is the art of cognizing desirable traits in plants and incorporating these traits into future generations of plants. In 1920, researchers found that they could vastly enhance the number of mutations through the exposure of plants to X-rays and other chemicals that induce mutation. However, it was until the Second World War that mutation breeding was accelerated as nuclear age technologies grew in availability (Barrows et al., 2014). In this era, plants were exposed to alpha particles, protons, neutrons, and gamma rays to develop useful mutations that could enhance yield and resistance to pests, diseases, and drought while also using chemicals such as sodium azide and ethyl methanesulphonate to cause mutation. Mutation breeding still continues to be implemented in the world today, with more than 3000 different varieties obtained courtesy of mutation breeding (Anthony & Ferroni, 2012). Crops that are part of the staple human diet, such as common bean, barley, maize, wheat, sugarcane, soybean, and tomato, alongside other equally important crops, have over the years been improved to have characteristics that are agronomically desirable.

Figure 2: Pure Line Development in Conventional Breeding. Source: Alfonso (2007)

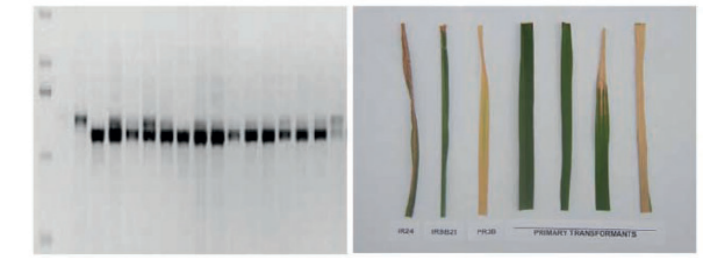


## Molecular Markers

Traditionally, breeding involves the selection of plants or animals individually on the basis of a number of measurable or visible traits. For example, the examination of an organism's DNA enables scientists to use molecular markers in the selection of plants or animals possessing a desirable gene even when there exists no visible trait (Sexton & Zilberman, 2011). The technology has increased the precision and efficiency of breeding, such as the use of molecular markers by the International Institute of Tropical Agriculture to come up with bruchid-resistant cowpeas,

Cassava Mosaic Disease resistant cassava, and disease-resistant white yams, among others (Barrows et al., 2014). Molecular markers are also used to identify undesirable genes that can be removed in future generations of plants and animals, ensuring that only the desirable characteristics are passed from one generation to the next to ascertain better yields and production.

Figure 3: Molecular marker-assisted breeding. Source: Alfonso (2007)



## Tissue Culture

Tissue culture refers to the laboratory regeneration of plants from other plants that are disease free. It is a technique that is employed to enable the reproduction of planting materials that are disease-free (Barrows et al., 2014). For instance, tissue culture has led to the production of crops such as pineapples, mangoes, bananas, citrus, papaya, and coffee.

Figure 4: Rice Culture. Source: Alfonso (2007)



## The Changing Debate Around Food Security

The growing human population has created increased pressure to produce more food to meet the population's needs. However, the growing construction of urban centers, sometimes in arable land, and the changing climatic patterns continue to negatively impact the ability to produce more food. For instance, the global food supply chain, especially wheat and other cereals, has been vastly hurt by the ongoing war in Ukraine, resulting in food prices shooting up and people from the developing world who depend on these imports having to contend with increased prices or go hungry (Serageldin, 1999). The meaning of the word food security continues to change over the years, with new definitions cropping up after every few years. However, each definition puts sharp emphasis on the availability of food and supply of the same at global levels. According to the International Food Policy Research Institute, food security exists when all members of the human race have access, both physical and economic, to enough safe and nutritious food that satisfies the dietary needs and food preferences of the population to support an active

and healthy lifestyle (IFPRI, 2022). The definition by IFPRI is the general consensus that the United Nations and The World Bank have all adopted in the definition of the term.

According to the World Bank, there exist four main dimensions of food security, namely physical availability of food, economic and physical access to food, food utilization, and stability of the other three dimensions over time. The physical availability of food looks at food security from the supply side, with the main determinant of food security being the level of food production and net trade and stock levels (World Bank Group, 2022). Economic and physical access to food argues that an adequate supply of food at either national or international levels is not a guarantee of food security at the household level. Growing concerns regarding inadequate food access have created an increased policy focus on aspects such as income, expenditure, markets, and prices in the achievement of food security objectives (World Bank Group, 2022). Thirdly, food utilization is generally understood as the manner in which the body utilizes various nutrients in food. Good care and feeding practices, diet diversity, intra-household income, and food preparation all result in enough intake of nutrients and sufficient energy. All these, alongside proper biological utilization of food consumed, food utilization determines people's nutritional status. Finally, stability of the three dimensions over time demands food security beyond the moment, such that even when one's food intake is adequate today, they are still considered to be food insecure when they have insufficient access to food on a periodic basis which risks a worsening of their nutritional status (Serageldin, 1999). Various factors, such as advanced weather conditions, economic factors, such as unemployment and rising food prices, and political stability, are all likely to affect an individual's food security status.

The changing debate around food security can be best understood from two major aspects, namely, the green revolution and sustainable agriculture. Green revolution argued that as the population grows and land becomes limited, there is a need for new technologies focused on enhancing yields to deal with the rising case of food insecurity. Massive breakthroughs in plant breeding from the 1950s resulted in an increase in yield potential, beginning with maize hybrids before further extending to rice varieties in Asia and Central America, where there existed a reliable supply of water (Dookun, 2001). The implementation of the green revolution had several positive impacts, such as the increase in food production, which resulted in a surplus in the food market, leading to lower prices for food. These lower food prices resulted in benefits for poor people who purchase food and a rising number of food-insecure residents of urban areas. While initially touted as a possible solution to food insecurity, the green revolution proved to be quite costly such as the need for a regular supply of water and purchase of inputs which also meant that it could not work in the dry parts of the world (Serageldin, 1999). Today, the productivity of the green revolution has since been reduced due to limited opportunities for cultivated areas and the falling rates of groundwater availability alongside the decline in soil fertility and the build-up of pests and diseases.

Sustainable agriculture refers to farming in sustainable ways that meet our society's present-day food and textile needs without hurting the ability for current or future production. Modern systems of agriculture need to be sustainable economically, environmentally, and socially such that it has room for farms of all sizes while also producing diverse food ranges, fuels, and fibers adapted to the local conditions and fulfilling the needs of the regional markets (Graff & Zilberman, 2012). Sustainable agriculture can be achieved through the use of modern science-based practices that maximize output and profit while minimizing the damage that the practice has on the environment. Sustainability

also means that the entire system is resilient to threats such as droughts, floods, and other vagaries of nature brought about by changing climatic patterns (Dookun, 2001). The main discussion regarding food security revolves around how to ascertain that sustainable methods are implemented even when it results in lower food production or dependency on technology to stay feasible. However, progress has been made to come up with better and more sustainable ways to ensure that agriculture and technology can be carried out sustainably.

## Results

The adoption of scientifically altered seeds in development gives more promise in dealing with the scourge of food insecurity. GMOs are showing immense promise in the quest for food security, not only in terms of the quantity of food available but also in the matter of affordability and nutritional value (Dookun, 2001). However, this embrace is faced with challenges, such as misinformation on the content of GMOs and the long-term health impacts of their consumption. These are issues that have been addressed and remain central to the decisions that policymakers make as they attempt to come up with sustainable methods of food production that ensure the quantity and availability of food while also conserving the environment (Zilberman et al., 2014). Food security debates should focus on not only the availability of food but also other areas such as affordability, consumer perception of the options available, and the impacts of the production methods on the environment.

## Conclusion

Food security amid changing global supply chains due to wars and changing climatic patterns calls for a rethink of the agricultural sector. Increased investment in agricultural biotechnology and doing so in sustainable ways is the best solution to an otherwise rising danger to global food security, from nutrition to affordability of food. It is crucial that policymakers come up with ways to support the safe implementation of genetically modified organisms and change consumer perception of their importance and effectiveness in combating global hunger, especially in the third world. Rising population and urban sprawl will continue to wreak havoc on available land for agriculture, and weather patterns, which means that changing the policies around sustainability practices in agriculture is the best solution to an impending social and food crisis in the future.

## Recommendations

### EMBRACE SUSTAINABLE AGRICULTURE

The progress that agricultural biotechnology has had in the field of crop and animal production cannot be overstated. The development of cities means that there exists a market for both small-scale and large-scale farmers to explore and supply farm produce. Therefore, environmentally friendly ways of sustainable agriculture, such as proper water management, minimization of air and water pollution, storing carbon on farms, promoting biodiversity, and enhancing resilience to extreme weather (Azure et al., 2019). Food security demands that a society is able to support itself with nutritious food products that can be afforded by many members of the population (Van Tuijl et al., 2018). As such, it means that there is a need for high-yield crops grown in environmentally friendly ways whose products are priced in a manner that is affordable to the members of the particular community or society.



Figure 5: Sustainable Agriculture in a City. Source: Azunre et al. (2019)

A total embrace of sustainable agriculture, economically, environmentally, and socially sustainable agriculture means that while production goes up to meet the demand, the demand is met in a manner that limits the negative impacts on the environment while also ensuring that prices of farm products do not rise beyond the reach of the average residents of the city (Azure et al., 2019). The use of agricultural biotechnology should be limited to methods that have been tried and tested and proven to not have adverse impacts on the consumers of the produce and the environment itself to allow sustained production (Van Tuijl et al., 2018). For instance, the integration of crops and animal production systems limits wastage as some farm produce can be used as feed for the animals, with animal waste used as manure for the farms, reducing resource wastage and carbon footprint, which prevents adverse weather patterns and long-term climatic events.

Beyond the strategies for changing production practices and preserving natural resources, sustainable agriculture also demands a commitment to making changes to existing public policies, social values, and economic institutions. As such, change strategies must understand the complex reciprocal and ever-changing link between agricultural production and the larger society (Mishra et al., 2018). It involves understanding that the food system goes way past the farm and inculcates an interaction between individuals and institutions with often contrasting and competing goals. These individuals and institutions include farmers, input suppliers, researchers, unions, farm advisors, consumers, retailers, processors, and policymakers (Van Tuijl et al., 2018). It is essential to note that the relationships among these actors are subject to change over time as new technologies result in changes at economic, social, and political levels (Azure et al., 2019). There is then a need for a wide diversity of strategies and approaches to come up with a more sustainable food system, ranging from specific and concentrated efforts to

change policies and practices that prove unsuccessful in favor of those that are likely to have better outcomes.

Moreover, there is a need to reform vital institutions, rethink economic priorities and challenge social values that have been widely held as the norm. Areas in need of change include land use policies, labor policies, food and agriculture policies, and the role of consumers and the food system in creating a sustainable food system (Mishra et al., 2018). The greatest area is to acknowledge the vital role played by consumers in the creation of a sustainable food system (Van Tuijl et al., 2018). For instance, consumers send strong messages to producers, retailers, and others in the food supply system. For instance, consumer choices are greatly impacted by the cost of food and its nutritional quality; hence sustainable agricultural practices should be focused on strategies that widen consumer perspective in a bid to enable them to consider factors such as environmental quality, social equity and resource use in their shopping decisions.

## Promote Safe GMO Substitutes

Research in the alteration of plant DNA has grown over the years courtesy of agricultural biotechnology, which has, in turn, come up with better crops that can withstand tough conditions and have better yields. However, in many countries, especially in the developing world, the embrace of GMO crops has been slow due to misinformation on the safety of these organisms, which has created a cloud of uncertainty around their implementation (Aerni, 2018). It is the role of the researchers and policymakers to come up with proper ways of ascertaining that all GMO crops grown have passed through rigorous testing stages to ascertain safety (Zilberman et al., 2018). The promotion of GMO seeds should be based on factual information on the benefits and dangers that they come with to limit the cloud of uncertainty and reassure consumers.

## ملخص

## دور التكنولوجيا الحيوية الزراعية في تنمية المدن والمزارع الصغيرة

كتبه: رشا الجهني

لتنفيذها ونجاحها. في هذه الورقة، أذاع عن دعم التكنولوجيا الحيوية الزراعية في محاولة لرفع الغطاء عن أفضل الممارسات التي يمكن أن تساعد المدن على التعايش مع الزراعة المستدامة التي تدعم البيئة والاحتياجات الاجتماعية والاقتصادية لسكانها.

لقد غيرت التكنولوجيا جميع جوانب حياتنا تقريباً، ولم تتخلف الزراعة عن الركب. أدى نمو قطاع التكنولوجيا الحيوية في الزراعة، بفضل سنوات من البحث، إلى رفع الغطاء عن بدائل تربية المحاصيل والحيوانات وإنتاجها، مما أدى إلى غلات عالية الجودة والكمية. ومع ذلك، لم تأت هذه دون حصة عادلة من التحديات

## RÉSUMÉ

## LE RÔLE DE LA BIOTECHNOLOGIE AGRICOLE DANS LE DÉVELOPPEMENT DES VILLES ET DES PETITES EXPLOITATIONS AGRICOLES

La technologie a transformé pratiquement tous les aspects de nos vies, et l'agriculture n'a pas été épargnée. La croissance du secteur biotechnologique dans l'agriculture, grâce à de nombreuses années de recherche, a levé le voile sur des options alternatives pour la culture et la production végétale et animale, ce qui a permis d'obtenir des rendements élevés en qualité et en

quantité. Toutefois, sa mise en œuvre et son succès n'ont pas été exemptes de difficultés. Dans cet article, je plaide en faveur de la biotechnologie agricole, dans le but de jeter la lumière sur les meilleures pratiques qui peuvent aider les villes à coexister avec une agriculture durable qui soutient l'environnement et les besoins socio-économiques de ses habitants.



## IOFS ROUND TABLE ON SUSTAINABLE WATER MANAGEMENT AT THE CAIRO WATER WEEK



AMINA AKHMETZHANOVA,  
IOFS Programme Manager

A round table on "Policy Guidelines for Sustainable Water Management in Agriculture in OIC member countries" was organized by the IOFS in collaboration with the Islamic Development Bank as a side event of the Cairo Water Week 2022. The activity is a part of the IOFS program on "Water Management in Agriculture." The round table aimed to raise awareness for collective and integrated actions, as well as to discuss essential aspects addressing cross-sectoral issues that impact the state of water and food security, to present OIC countries' and international organizations' experience, good international practices, and concrete policy solutions and recommendations implemented for ensuring food security through sustainable water management in agricultural development.

The roundtable gathered representatives of governmental authorities of OIC member states, who were involved in developing policy frameworks and strategies in water management, as well as heads and experts of international organizations. The presenters made valuable contributions to the discussion of guidelines for sustainable water management in agriculture during the round table.

**Dr. Samia El-Marsafawy** (Agricultural Research Center, Ministry of Agriculture and Land Reclamation, **Egypt**) gave an overview of the Egyptian agriculture sector, noting that with a cultivated area of 4.1 million hectares and cropped area of 7.4 million hectares, the sector contributes to 15% to the GDP and 20% to the country's exports. Dr. Samia El-Marsafawy informed on success stories of good agricultural practices for effective water management at the field level, which included the production of short-duration varieties and production of drought tolerant varieties of rice and sugar cane, precision land leveling using laser leveling, dry sowing method, and modification of cropping patterns depending on each agro-climatic zone conditions.

**Mr. Shawkat Al-Kadhumi** (Head of the Section for Water Management, Ministry of Agriculture of the Republic, **Iraq**) presented the experience of Iraq on sustainable irrigation water management through the participation of water users). He noted the critical role of the contribution of the beneficiary farmers in fulfilling the responsibilities of management, operations, and maintenance and the high need for ensuring justice in distributing water among the beneficiaries. The presentation concluded with proposals for strengthening the water user associations in Iraq by expanding the scope of the associations' work, increasing the associations' contribution to bearing part of the burdens, development of a sustainable system of empowerment and

incentives to support and strengthen water user associations, motivating farmers to form associations, and strengthening the association's financial resources.

**Eng. Hisham Al-Hisa** (Head of Section for Water Management, Ministry of Agriculture, **Jordan**) presented water management for food and agricultural development in Jordan, which is the second most water-scarce country in the world. The speaker shared the experience of Jordan on water users association management, the objective of which was to involve farmers in irrigation water management through water user associations. At the same time, "the water users associations shall be responsible for managing the retail water for irrigation purposes, so that the limits of their responsibility are from the supply points to the intakes of the agricultural units and include operation, distribution, maintenance, water price collection, monitoring and control of violations, and protection of infrastructure and facilities", the speaker noted.

**Mr. Adnan Nassar** (Head of Treated Wastewater Use Division, Non-conventional Water Resources Reuse Department, Ministry of Agriculture, **Palestine**) presented the agricultural water resources management in Palestine. He explained the strategic objectives related to water within the agricultural development program, which include increasing the amount of conventional and non-conventional water available to farmers and livestock breeders and improving the efficiency of its management. He also expanded on interventions carried out by the Ministry of Agriculture to achieve the strategic objective related to water and food security, which includes ensuring the optimal use of water and the use of modern irrigation systems and means, determining the use of water resources allocated to agriculture, conducting periodic examinations and analyzes of agricultural water and determine its suitability for agriculture, and so on.

**Dr. Nisreen Al-Lahham** (Expert of AOAD Middle Region Office in Cairo – Egypt, **Arab Organization for Agricultural Development, AOAD**) presented her organization's activities to promote sustainable water management in agriculture. The speaker also analyzed institutional coordination problems between water and agricultural sectors, including institutional challenges in the Arab region. The speaker concluded the presentation by emphasizing that there is a need to increase understanding of the interlinkages in the water, energy, and food nexus because a Nexus-based adaption approach – which integrates a Nexus perspective into climate change adaptation plans and an adaptation perspective into development plans – is crucial for effective adaptation.

**Dr. Marwan Al Raggad** (Executive Director, **Inter-Islamic Network on Water Resources Development and Management, INWRDAM**) presented on WEFE Nexus as a catalyst for water policy making in the OIC. He started by highlighting the Resolutions of INWRDAM II Congress (February 2020), which states that “Underscored the significance of a comprehensive Water Energy Food Ecosystem Nexus approach as an important contributor to national and regional economies. The approach should be taken to a regional scope by identifying economically viable and repeatable project implementation ideas”. Mr. Marwan Al Raggad shared his organization’s experience regarding projects within the WEFE Nexus hub, which include WEFE solutions (SMART DESERT Project, Rainwater harvesting policy dialogue in Jordan, Climate Smart Agriculture (Mercy Corps), INWAT: Innovative Reuse of treated wastewater in MENA (EU), Promotion of nature-based solution in the fight against drought (UNDP), flood risk reduction in arid basins (TUM); WEFE Knowledge Hubs and Databases, as well as White and Position papers.

**Mr. Fadi Farasin** (Assistant Director General, Statistical, Economic and Social Research and Training Centre for Islamic Countries, **SESRI**) presented on the topic named “Towards Sustainable Agriculture Water Management in OIC Member Countries”. He highlighted that agricultural water withdrawal in OIC countries stands very high and water use efficiency needs to be improved since a considerable gap exists between OIC countries in terms of water-use efficiency (WUE) exist - 33 OIC member countries have WUE values below the world average. The presenter concluded with recommendations towards sustainable water management in agriculture, which include “integrating water governance with climate actions and agrifood policies; data collection and set up targets and key indicators to track progress; broaden funding opportunities; Knowledge sharing, collaborative activities in research, policy and management support.

**Dr. Ismail Abdelhamid** (Director of Programmes and Projects Office, **Islamic Organization for Food Security, IOFS**) presented IOFS water management activities under “Water Management in Agriculture” Program, which mission is to enhance water management in agriculture by encouraging modern technologies and adopting sustainable policies. The focus areas of the program include providing information on best practices in sustainable water management in agriculture, promotion of key policy solutions for sustainable water management in agriculture, including support for the use of water-saving technologies in agriculture, rational water use, infrastructure improvements; promotion of key policy instruments for enhancing access to water resources and irrigated lands. Dr. Ismail Abdelhamid shared his organization’s experience in promoting sustainable water management in agriculture through training, including a training program for the West African and Central Asian member countries and a training workshop on capacity building for farmers on the management of water in agriculture in Niger.

**Mr. Jean-Marc Faurès** (Regional Programme Leader of the **Food and Agriculture Organization of the United Nations, FAO**) presented the highlights of the FAO Water Scarcity Initiative in support of water and food security in the NENA Region, the overall goal of which was to pursue water and food security for sustainable development in an environment of increasing water scarcity and climate-related risks. He explained working clusters for enhanced partnership and collaboration, which include Resilience and Climate Change Adaptation, Water Productivity Tools and Analytics, Non-Conventional Water Resources, and Water Governance. He also shared in detail the results of the “WEPS-NENA” project under the Water Scarcity Initiative for Near East & North Africa regarding water accounting and water productivity. The presenter concluded his speech by sharing an

interactive platform for inter-regional knowledge sharing regarding water scarcity.

**Dr. Omar Badawy** (Regional Director, Land Management Programme, **Center for Environment and Development for the Arab Region and Europe, CEDARE**) started his presentation with a definition of food shortage and its world overview, analysis of food, and world grain stock prices. Furthermore, the speaker elaborated on water pollution factors, including using fertilizers and pesticides, burying various wastes in unqualified areas, exploration and extraction of oil and natural gas, accidents of giant oil tankers, and others leading to groundwater being severely depleted. The presenter shared information on sustainable agricultural practices, including climate smart agriculture (adapting to the effects of climate change), converting agricultural waste into biofertilizers, organic farming, natural pest control, etc. He shared his organization’s experience in several activities in Egypt, including developing pastoral communities on the north-west coast.

**Dr. Khalil Ammar** (Principal Scientist - Hydrology/Hydrogeology, **International Center for Biosaline Agriculture, ICBA**) presented an overview of national policy guidelines for sustainable water resources management in selected OIC countries. He highlighted the key challenges for sustaining water in agriculture in many OIC countries, such as the increasing effect of climate change on agriculture and water resources, farmland degradation due to salinization and sodicity, growing water stress, and population growth. The presenter highlighted the importance of strengthening the water policy environment via mechanisms for institutionalizing monitoring, evaluation, and regular informed policy review and update; policy direction on agricultural water utilization corresponding with the sub-sectors of water withdrawal status and pollution hazard; provisions for mitigating the impacts of climate change and climate variability on water availability. The speaker concluded with recommendations, including the need to update the agriculture, nutrition, and food security policy framework with long-view policy objectives and strategies; align the water policy framework with the SDGs; update and align the policy with related policies on climate change; operationalize the stipulated technical, institutional, and legal instruments.

**Mrs. Rawya Mansour** (Chairperson, **Ransco Organic company**) represented the private sector. She shared her experience of proven success at using irrigation to produce different crops expressing that “Organic, smart farming is internationally certified and conserves up to 30% water and is a safe alternative for chemical fertilizers”. She presented her experience in using irrigation at a farm level, stating that up to 30% of conservation is achieved with drip irrigation. The speaker shared the key trial results of using a technology of “biochar,” including an 11% increase in productivity (compared to traditional agriculture), 18% cost reduction (compared to the use of chemical fertilizers), and 30% water conservation (compared to non-drip agriculture).

### Key Findings and Takeaways.

As a result of the Round Table presentations and discussions, the following recommendations for improving water management in agriculture were agreed upon:

- **Recommendation 1.** There is a need for a shift in policy approaches from a sectoral focus to an integrated approach with policy coherence among the sectors that uses knowledge of the interlinkages to maximize gain, optimize trade-offs, and avoid negative impacts. Water management, agriculture, nutrition, and food security policy frameworks shall be updated with long-view policy objectives and strategies.

- **Recommendation 2.** Adoption of reforms to policies, laws, regulations, and institutional structures improves effectiveness of environment and natural resources management. It is important to strengthen water regulations to establish incentives for farmers to improve their water use and lessen water consumption.

- **Recommendation 3.** Access and continuous training of farmers to information on water-saving technologies, as well as institutional transparency are crucial. Providing special consideration to farmers and their water management practices has proven to be extraordinarily beneficial for enhancing water productivity.

- **Recommendation 4.** Use of non-conventional water sources is becoming an important factor for increasing water availability in

agriculture. The re-used water for agricultural lowers pressure on fresh water and encourages a more sustainable use of water resources.

- **Recommendation 5.** Empowering water-users associations through supportive policy and legal environment, as well as technical training is important.

**As a result of the round table discussions, it was concluded that it is essential for policymakers to prioritize initiatives that increase the agricultural sector’s water efficiency and enhance resilience to water risks. Combining water and food security policy objectives requires more inclusive ideas. Sustainable water management in agriculture can be a crucial driver for resilience, adaptation, and mitigation of climate change.**

**CAIRO WATER WEEK** | **IsDB** | **البنك الإسلامي للتنمية** | **Islamic Development Bank**

**ROUND TABLE**  
**POLICY GUIDELINES FOR SUSTAINABLE WATER MANAGEMENT IN AGRICULTURE IN OIC MEMBER COUNTRIES**

**16 OCTOBER 2022** | **9:30AM-1:00PM**

**Cairo Water Week 2022 Side Event**

**Policies**



## ملخص

وفلسطين، والمنظمات الإقليمية والدولية، والمنظمة العربية للتنمية الزراعية، والشبكة الإسلامية لتنمية وإدارة الموارد المائية، ومركز البحوث الإحصائية والاقتصادية والاجتماعية والتدريب للدول الإسلامية و منظمة الأغذية والزراعة للأمم المتحدة، ومركز البيئة والتنمية للمنطقة العربية وأوروبا، والمركز الدولي للزراعة الملحية، وشركة رانسكو أورجاني للقطاع الخاص.

ونتيجة لمناقشات المائدة المستديرة، تم التوصل إلى أنه من الضروري لوضعي السياسات إعطاء الأولوية للمبادرات التي تزيد من كفاءة استخدام المياه في القطاع الزراعي وتعزيز القدرة على الصمود في مواجهة مخاطر المياه. يتطلب الجمع بين أهداف سياسة الأمن المائي والغذائي أفكاراً أكثر شمولاً. يمكن أن تكون الإدارة المستدامة للمياه في الزراعة محركاً حاسماً للمرونة والتكيف والتخفيف من تغير المناخ.

## RÉSUMÉ

**Une Table Ronde sur les «Directives politiques pour la gestion durable de l'eau dans l'agriculture dans les pays membres de l'OCI»** a été organisée par l'IOFS en coopération avec la Banque Islamique de Développement en marge de la Semaine de l'Eau du Caire 2022. L'activité fait partie du programme IOFS sur «La gestion de l'eau dans l'agriculture». L'objectif de la table ronde était de sensibiliser à l'action collective et intégrée et de discuter des principaux aspects du traitement des questions intersectorielles affectant l'eau et la sécurité alimentaire, en présentant l'expérience des pays de l'OCI et des organisations internationales, les meilleures pratiques internationales, ainsi que les solutions politiques concrètes et les recommandations visant à garantir la sécurité alimentaire par la gestion durable de l'eau dans le développement agricole.

La table ronde a réuni des représentants des autorités gouvernementales des États Membres de l'OCI, à savoir l'Égypte, l'Irak, la Jordanie et la Palestine, ainsi que des organisations régionales et internationales telles que l'Organisation Arabe

نظمت المنظمة الإسلامية للأمن الغذائي مائدة مستديرة حول «المبادئ التوجيهية للسياسات للإدارة المستدامة للمياه في الزراعة في البلدان الأعضاء في منظمة التعاون الإسلامي» بالتعاون مع البنك الإسلامي للتنمية كحدث جانبي لأسبوع القاهرة للمياه 2022. النشاط هو جزء من برنامج IOFS حول «إدارة المياه في الزراعة». وهدفت المائدة المستديرة إلى زيادة الوعي بالإجراءات الجماعية والمتكاملة، فضلاً عن مناقشة الجوانب الأساسية التي تتناول القضايا المشتركة بين القطاعات التي تؤثر على حالة الأمن المائي والغذائي، وعرض تجارب بلدان منظمة التعاون الإسلامي والمنظمات الدولية، والممارسات الدولية الجيدة، وحلول السياسات الملموسة والتوصيات المنفذة لضمان الأمن الغذائي من خلال الإدارة المستدامة للمياه في التنمية الزراعية.

جمعت المائدة المستديرة ممثلين عن السلطات الحكومية للدول الأعضاء في منظمة التعاون الإسلامي، ومصر، والعراق، والأردن،

**pour le Développement Agricole (OADA), le Réseau Inter-Islamique pour le Développement et la Gestion des Ressources en Eau (INWRDAM), le Centre de Recherches Statistiques, Économiques et Sociales et de Formation pour les Pays Islamiques (SESERIC), l'Organisation des Nations Unies pour l'Alimentation et l'Agriculture (FAO), le Centre pour l'Environnement et le Développement de la Région Arabe et de l'Europe (CEDARE) et le Centre International pour l'Agriculture Biosaline, ICBA et le Secteur Privé Ransco Organic company.**

**À l'issue des tables rondes, il a été conclu qu'il est essentiel que les décideurs politiques accordent la priorité aux initiatives qui augmentent l'efficacité de l'eau dans le secteur agricole et améliorent la résilience aux risques liés à l'eau. Combiner les objectifs de la politique de l'eau et de la sécurité alimentaire nécessite des idées plus inclusives. La gestion durable de l'eau dans l'agriculture peut être un facteur crucial de résilience, d'adaptation et d'atténuation du changement climatique.**

## IOFS EFFORTS ON THE DEVELOPMENT OF PLANT AND ANIMAL GENETIC RESOURCES WITHIN THE OIC GEOGRAPHY



**MAKPAL BULATOVA,**  
IOFS Programme Manager

It is critical to emphasize that the year 2022 has been extremely productive and successful for the IOFS programmes, with various projects and activities in food security and agriculture integrating the OIC Member States with OIC Institutions and International Organizations to achieve the best possible results toward enhancing human and institutional capacity of the countries.

Within the framework of the "IOFS Year of Africa 2022" Implementation Plan, the IOFS has carried out a number of activities in the domains of water management, agricultural statistics database development, food security policy development, and plant genetic resource development in the OIC Member States that were well designed considering the needs and requirements of the African countries.

The Development of National Gene Banks in the OIC Member States as part of the IOFS 3rd Pillar focusing on Capacity-building of the countries is the core concept aiming for better production, better nutrition, and a better life for the constant development and achieving sustainability, food safety, and security in the nations. The programme focuses on making awareness of the proper conservation and sustainability and maintaining the genetic diversity of seeds, cultivated plants, farmed, and domesticated animals, and their related wild species.

The preservation of characterized and documented plant and animal genetic resources in genebanks is a stable and reliable way to guarantee their availability to current and future generations for direct use as well as for research purposes and plant breeding. The critical importance of the gene banks is of concern of the IOFS to promote the building of sustainable crop production systems in the Member States, creation of the platform for interaction and sharing best practices, as well as facilitation in exchanging the plant and animal genetic resources for the benefit of one another for the better biological diversity and sustainable livelihoods of the communities.

### Plant Genetic Resources (PGR)

Plant genetic resources (PGR) play a critical role in ensuring global food and nutrition security. They have been a solid foundation for crop development since the dawn of agriculture. De-

spite the fact that crop yields have increased dramatically over the last few centuries, human interference in the environment and the introduction of new cultivars have threatened the resource base of crop wild relatives. Climate change, land degradation, soil erosion, pest and disease outbreaks, genetic erosion, and other issues affecting agriculture and food production today are just a few examples. Each of these issues endangers the ability to produce food in a sustainable manner. Daily food security is becoming increasingly dependent on depleting and disappearing natural resources.

The IOFS since 2020 have been addressing significant issues of the genetic resources to the Member States organizing meetings of the PGR professionals bringing international expertise for discussion of ways of cooperation and its benefits exploring the main concerns and challenges of the countries, especially of those which have not established proper gene banks and depend on the international centers and universities and institutes with limited capacity.

In 2022 the IOFS as part of the stated "IOFS Year of Africa" organized training workshops for African PGR professionals in Tunis with the support of the Ministry of Environment of the Republic of Tunisia in the premises of the National Gene Bank of Tunisia from 20-28 June 2022 for Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Gabon, Senegal, and Togo for acquiring knowledge on the Gene Bank Management and Operation. Another successful training was conducted in the Republic of Turkiye from 26-30 September 2022 in collaboration with the Turkish for Cooperation and Coordination Agency (TIKA) and Ministry of Agriculture and Forestry of the Republic of Turkiye based on the Turkiye Seed Gene Bank for The Gambia, Guinea Bissau, Mozambique, Nigeria, Uzbekistan, Azerbaijan, Kazakhstan, Bangladesh, and Tajikistan.

Based on discussions during the events, the participants have pointed out the increasing stresses on agricultural systems that have resulted in an intensification of the use of natural resources for agricultural production. Many have raised concerns about the future of food and nutrition security, especially for smallholder farmers and their communities. The existing seed system in the countries appears not sustainable and is inefficient as well.

Strengthening and building resilience in agriculture through the safeguarding and sustainable use of agrobiodiversity has become a priority.

The IOFS within the Programme focuses on further enhancing the networking among scientists and experts, as well as establishing strong cooperation within the countries, implementing the programme with collaborative actions and projects.

### Animal Genetic Resources.

The variability of genes, traits, and breeds of the various animal species that play a role in food and agriculture is referred to as animal genetic resources for food and agriculture. This one-of-a-kind component of biodiversity is a critical resource for agricultural development and the global fight against hunger.

In regard to animal genetic resources, the IOFS conducted the International Workshop on the "Role of Animal Genetic Resources in Ensuring Food Security and Improving Livestock Production" on 13-14 September 2021 with 140 participants from government officials, academia, and representatives of scientific and research institutions of OIC Member States. The experts highlighted that livestock and animal genetic resources play key roles in the OIC region in terms of food and nutrition security, agricultural development, providing employment, rural development, and supporting small livelihoods.



The event gave the opportunity for experts to discuss the current challenges, the state of the genetic resources of cattle, small ruminant, sheep and goat, camels; reviewed ongoing programs and research activities for the in vivo and in vitro conservation; introduced the practices on the use of assisted reproduction technologies (ART) in breeding and selection; and focused on the research of molecular genetic evaluation of breeds and populations.

According to some experts, countries' animal breeding strategies are in the research stage and focus primarily on scientific activities; notwithstanding, it is essential to include real farmers as beneficiaries for the use of breeding programs to develop livestock production and enhance the productivity qualities of livestock types. It emphasized the necessity of developing a Plan of Action for AnGRs management and conservation within the OIC.

As following up actions, in 2023 the IOFS is planning to organize training on the conservation and Sustainable use of Animal Genetic Resources for Food and Agriculture in Entebbe, Uganda focusing on certain countries such Chad, Comoros, Djibouti, Mozambique, Somalia, Sudan, and Uganda with the hosting support of National Animal Genetic Resources Centre & Data Bank (NAGRC&DB) of Uganda.

### ملخص

الموارد الوراثية النباتية (PGR) في عام 2022، نظمت المنظمة الإسلامية للأمن الغذائي كجزء من «عام أفريقيا» ورش عمل تدريبية للمهنيين الأفارقة في مجال الموارد الوراثية النباتية في تونس بدعم من وزارة البيئة في الجمهورية التونسية في مقر البنك الوطني للجينات في تونس من 20-28 يونيو 2022 لبروكينا فاسو والكاميرون وتشاد وكوت ديفوار، الغابون والسنغال وتوغو لاكتساب المعرفة حول إدارة وتشغيل بنك الجينات. تم إجراء تدريب ناجح آخر في الجمهورية التركية في الفترة من 26 إلى 30 سبتمبر 2022 بالتعاون مع الوكالة التركية للتعاون والتنسيق (TIKA) ووزارة الزراعة والغابات في الجمهورية التركية بناء على بنك الجينات للبذور التركية لغامبيا وغينيا بيساو وموزمبيق ونيجيريا وأوزبكستان وأذربيجان، وكازاخستان وبنغلاديش وطاجيكستان.

جهود المنظمة الإسلامية للأمن الغذائي في تطوير الموارد الوراثية النباتية والحيوانية في جغرافية منظمة التعاون الإسلامي

في إطار خطة تنفيذ عام أفريقيا «IOFS Year of Africa 2022» نفذت المنظمة العديد من الأنشطة في تطوير بنوك الجينات الوطنية في الدول الأعضاء في منظمة التعاون الإسلامي كجزء من الركيزة الثالثة للمنظمة الإسلامية للأمن الغذائي التي تركز على بناء قدرات الدول الأعضاء. ويركز البرنامج على التوعية بالحفظ والاستدامة المناسبين والحفاظ على التنوع الجيني للبذور والنباتات المزروعة والحيوانات المستأنسة والأنواع البرية ذات الصلة.

يعد الحفاظ على الموارد الوراثية النباتية والحيوانية المميزة والموثوقة في بنوك الجينات طريقة مستقرة وموثوقة لضمان توافرها للأجيال الحالية والمستقبلية للاستخدام المباشر وأغراض البحث وتربية النباتات.

العلمية والبحثية لمنظمة التعاون الإسلامي. وسلط الخبراء الضوء على أن الثروة الحيوانية والموارد الوراثية الحيوانية تلعب أدواراً رئيسية في منطقة منظمة التعاون الإسلامي فيما يتعلق بالأمن الغذائي والتنمية الزراعية والتوظيف والتنمية الريفية ودعم سبل العيش لصغار المزارعين.

### RÉSUMÉ

#### Les efforts de l'IOFS sur le développement des Ressources Génétiques Végétales et Animales dans la géographie de l'OIC.

Dans le cadre du **plan de mise en œuvre de «l'Année de l'Afrique 2022»**, l'IOFS a mené un certain nombre d'activités dans le **Développement des Banques Nationales de Gènes dans les Etats Membres de l'OIC**, conformément au troisième Pilier de l'IOFS axé sur le renforcement des capacités des Pays Membres. Le programme vise à sensibiliser à la bonne conservation, à la durabilité et au maintien de la diversité génétique des semences, des plantes cultivées, des animaux agricoles et domestiques, et des espèces sauvages qui leur sont associées.

La préservation de ressources génétiques végétales et animales caractérisées et documentées dans des banques de gènes est un moyen stable et fiable de garantir leur disponibilité pour les générations actuelles et futures à des fins d'utilisation directe, de recherche et de sélection végétale.

#### Ressources Phytogénétiques (RPG)

En 2022, l'IOFS, dans le cadre de l'Année de l'Afrique de l'IOFS, a organisé des ateliers de formation pour les professionnels africains des ressources phytogénétiques à Tunis, avec le soutien du Ministère de l'Environnement de la République de Tunisie,

فيما يتعلق بالموارد الوراثية الحيوانية، عقدت المنظمة الإسلامية للأمن الغذائي ورشة عمل دولية حول «دور الموارد الوراثية الحيوانية في ضمان الأمن الغذائي وتحسين الإنتاج الحيواني» في الفترة من 13 إلى 14 سبتمبر 2021 بمشاركة 140 مشاركاً من المسؤولين الحكوميين والأوساط الأكاديمية وممثلي المؤسسات

dans les locaux de la Banque Nationale de Gènes de Tunisie, du 20 au 28 juin 2022, pour le **Burkina Faso, le Cameroun, la Côte d'Ivoire, le Gabon, le Sénégal, le Tchad et le Togo**, afin d'acquies des connaissances sur la gestion et le fonctionnement de la Banque de Gènes. Une autre formation réussie a eu lieu en République de Turquie du **26 au 30 septembre 2022** en collaboration avec l'Agence Turque de Coopération et de Coordination (TIKA) et le Ministère de l'Agriculture et des Forêts de la République de Turquie, à la **Banque de Gènes de Semences de Turquie pour la Gambie, la Guinée Bissau, le Mozambique, le Nigeria, l'Ouzbékistan, l'Azerbaïdjan, le Kazakhstan, le Bangladesh et le Tadjikistan.**

En ce qui concerne les ressources génétiques animales, l'IOFS a organisé un Atelier International sur le «**Rôle des Ressources Génétiques Animales dans la Sécurité Alimentaire et l'Amélioration de la Production Animale**» les 13 et 14 septembre 2021 avec 140 participants provenant de fonctionnaires gouvernementaux, d'universitaires et de représentants d'institutions scientifiques et de recherche des Etats Membres de l'OIC. Les experts ont souligné que le bétail et les ressources génétiques animales jouent un rôle clé dans la région de l'OIC en termes de sécurité alimentaire et de nutritionnelle, de développement agricole, d'emploi, de développement rural et de soutien aux petits moyens de subsistance.





## STRATEGIC PLANNING AND POLICY DEVELOPMENT IN FOOD SECURITY IS THE FOCUS OF IOFS-HOSTED WORKSHOP IN THE LARGEST AND MOST POPULATED COUNTRY IN AFRICA



**BAKYTZHAN ARYSTANBEK,**  
IOFS Programme Manager



IOFS organized a two-day regional training workshop on strategic planning and policy development in food security in cooperation with the Ministry of Agriculture and Rural Development of Federal Republic of Nigeria with support of Islamic Development Bank (IsDB) in Abuja, Nigeria from 21-22 December 2022.

The workshop brought together over 100 participants attending physically and 20 participants joining online, that included government officials from 13 OIC member countries in West and Central Africa, representatives of national research institutions, private sector and international organizations. It provided an interactive platform to discuss policy convergence and strengthen coordination at the regional and national levels for exchange and accumulation of the OIC Member States' experience in food security governance, developing coherent policy frameworks and resilient inter-sectoral government systems.

The Agenda began with an opening address of the Honorable Minister of State for Agriculture and Rural Development of the Federal Republic of Nigeria delivered by the Permanent Secretary Dr. Ernest A. Umakhihe, who stated: "I am happy that the IOFS has not deviated from the core principle to provide expertise and technical know-how to Member States on aspects of sustainable agriculture and Rural Development in addressing current issues threatening food security in the world, particularly in the Africa region".

The Director General of IOFS, H.E. Prof. Yerlan A. Baidaulet in the keynote speech, welcomed the participants of member states and hosting country of Nigeria to the IOFS-organized activity, gave an overview of IOFS strategic programs and highlighted the urgency of improving policies, programmes and interventions for addressing food insecurity problems, promote the responsive agriculture and enhance the sustainable food systems within OIC geography.

He also stated: "Today's event is being organized under the IOFS "Year of Africa" with the key objective to build the capacity of government officials on basics and practices on strategy development, legislation improvement, creation of government inter-sectoral mechanisms (high-level council/commission) on food security. It is to note that upon successful implementation of "Year of Africa", the IOFS will strengthen the support to programming activities in Africa under the "Africa Food Security Initiative (AFSI)".

The opening session also included the welcoming speech of H.E. Mr. Mamadou Alpha Bah, Acting Director of Regional Hub of Islamic Development Bank (IsDB) in Abuja who stressed on IsDB's long-term efforts to addressing food insecurity problems among OIC member countries, especially in Africa, through the launch of Food Security Response Program.

The workshop was contributed with informative presentation dedicated to the IOFS Program on "Food Security Governance" and importance of institutional framework and policy coherence in food security, as well as experience of governments of OIC countries in governing national food systems, in particular, i) national experience of Nigeria in food security governance; ii) National Food and Nutrition Security Policy and Inter-sectoral coordination & monitoring in Bangladesh; iii) Policy reforms and supply security governance in Turkiye Republic.

Subsequently, the event was enriched with presentations of international organizations. Namely, the expert of International Food Policy Research Institute (IFPRI) shared the IFPRI's experience in implementation of Strategy Support Program for food security and agricultural development in Nigeria and National policies and strategies for food, land and water systems transformation. Another contribution was of the expert of Permanent Interstate Committee for drought control in the Sahel (CILSS) who familiarized participants with Progress on Food and Nutrition Security Policies and Strategies in CILSS area. Also the expert of Hamad Bin Khalifa University elaborated on policy options to manage the dynamics of food-water-energy nexus in a desert climate, especially in Middle East countries.

It shall be emphasized that the first day of the event was greatly supported content-side with experience of hosting country of Nigeria in various segments of food security storage and governance domain. Particularly, national experts shared the Nigerian experience in the development and implementation of National Multi-sectoral Plan of Action for Food & Nutrition (NMPFAN) 2021-2025 and Policy reforms to agricultural development in Nigeria. In addition, representatives of Nigerian national institutions shared on significance of biodiversity in food security, such as Seed Bank Development in Nigeria, Genetic Resources Conservation for Food & Nutrition Security in Nigeria, as well as Needs for implementation of Centre of Excellence (CoE) in Cassava production in Nigeria.

The first day of the workshop had a special outcome emphasizing the importance of multi-stakeholder and participatory approach within the designing of food security policies, necessity of strengthening the strengths of national agricultural potential, and ensure the proper implementation and monitoring of the impact of applied strategies by member countries.

The second day of the event was enriched by the first session where Islamic Development Bank familiarized participants with its launched Food Security Response Program (FSRP) and its role to address the global food security crisis in OIC member countries. And the expert of Hamad Bin Khalifa University shared the ways of managing Food Security in Times of Uncertainty: Taking a Nexus Approach of Humanitarian-Development-Peace.

The special session that was led by international experts of Sustainable Food Systems of Ireland (SFSI) provided the deep background of reforms taken by the Irish Government that have been leading the country being number one as per the Global Food Security Index, as well as familiarize with global food security practices and tools at the local level.

The expert of American University of Beirut made an overview of AUB's Food Security Education Program that was the only one that provides a good opportunity for government officials to study comprehensive domain of food security and goes beyond the agricultural field. Later, the IOFS Program Manager shared the presentation on the concept of Wholesale Distribution Centers and their role in sustainable food supply chains and behavioral insights for incorporating into policies and strategies.

Nigerian National Institutions emphasized on the importance of Agricultural Research in addressing food security in IOFS West African countries; the creation of Food Security Reserve System for Value Chain Development and implementation in Nigeria and Synopsis of the IOFS Programme of Action in Nigeria and expectations.

The IOFS Secretariat also conducted a survey among participants to evaluate the content of the event and receive the feedback of beneficiaries for further consideration in future IOFS activities. Also, the IOFS ensured to provide the Workshop report which will be comprised of the presentations from the training, discussions and outcomes of the event.

At the end of the workshop, the IOFS Director General Prof. Yerlan Baidaulet and Engr. A.G. Abubakar, Director of Federal Department of Agriculture, made concluding remarks. In fact, the IOFS Director General outlined the necessity of joint close collaboration among member states in the domain of food security governance and ensured providing the inter-governmental umbrella in this aim by the IOFS.





## ملخص

خبرات الدول الأعضاء في منظمة التعاون الإسلامي في مجال حوكمة الأمن الغذائي وتطوير أطر سياسات متماسكة وأنظمة حكومية مرنة بين القطاعات.

أظهرت ورشة العمل اهتمامًا كبيرًا من الدول الأعضاء في مجال الحوكمة والاستراتيجية للنظم الغذائية الوطنية، وسلّطت الضوء على أهمية برامج المنظمة الإسلامية للأمن الغذائي التي سيتم تنفيذها في غرب ووسط إفريقيا بالتنسيق الوثيق لإشراك المنصات الموجودة بالفعل في الجماعة الاقتصادية لدول غرب إفريقيا واللجنة الدائمة المشتركة بين الدول لمكافحة الجفاف في منطقة الساحل. كما أكدت أمانة المنظمة الإسلامية للأمن الغذائي على تقديم تقرير ورشة العمل الذي سيتألف من العروض المقدمة خلال الورشة والنقاشات والنتائج جنبًا إلى جنب مع خلاصات ورش العمل السابقة في أبوظبي يومي ٢٤ و ٢٥ مايو ٢٠٢٢ وفي القاهرة يومي ٢٠ و ٢١ سبتمبر ٢٠٢٢.

## RÉSUMÉ

### Atelier Régional sur la Planification Stratégique et l'Élaboration de Politiques en matière de Sécurité Alimentaire dans le pays le plus grand et le plus peuplé d'Afrique

L'IOFS a organisé un atelier de formation régional de deux jours sur la planification stratégique et l'élaboration de politiques en matière de sécurité alimentaire en coopération avec le Ministère de l'Agriculture et du Développement Rural de la République Fédérale du Nigeria avec le soutien de la Banque Islamique de Développement (BID) à Abuja, Nigeria, du 21 au 22 décembre 2022.

L'atelier a attiré plus de 100 participants en présentiel et 20 participants en ligne, dont des fonctionnaires gouvernementaux de 13 pays membres de l'OIC en Afrique Occidentale et Centrale, des représentants d'instituts nationaux de recherche, du secteur privé et d'organisations internationales. Il a fourni une plateforme interactive pour discuter de la convergence des politiques et renforcer la coordination aux niveaux régional et na-

### ورشة عمل إقليمية حول التخطيط الاستراتيجي ووضع السياسات في مجال الأمن الغذائي في إحدى أكبر الدول الأفريقية وأكثرها اكتظاظًا بالسكان

نظمت المنظمة الإسلامية للأمن الغذائي ورشة عمل تدريبية إقليمية لمدة يومين حول التخطيط الاستراتيجي وتطوير السياسات في مجال الأمن الغذائي بالتعاون مع وزارة الزراعة والتنمية الريفية في جمهورية نيجيريا الاتحادية بدعم من البنك الإسلامي للتنمية في أبوجا، نيجيريا، يومي ٢١ و ٢٢ ديسمبر ٢٠٢٢.

ضمت ورشة العمل أكثر من ١٠٠ مشارك حضروا فعليًا و ٢٠ مشاركًا حضورًا عبر الإنترنت، بمن فيهم مسؤولون حكوميون من ١٣ دولة عضو في منظمة التعاون الإسلامي في غرب ووسط إفريقيا وممثلي مؤسسات البحث الوطنية والقطاع الخاص والمنظمات الدولية. وشكلت هذه الورشة منبرًا تفاعليًا لمناقشة تقارب السياسات وتعزيز التنسيق على المستويين الإقليمي والوطني من أجل تبادل وتراكم

tional pour l'échange et l'accumulation de l'expérience des États membres de l'OIC dans la gouvernance de la sécurité alimentaire, le développement de cadres politiques cohérents et de systèmes gouvernementaux intersectoriels résilients.

L'événement a montré un grand intérêt des pays membres pour le renforcement de la gouvernance et du domaine stratégique des systèmes alimentaires nationaux et a souligné l'importance des programmes de l'IOFS à mettre en œuvre en Afrique de l'Ouest et du Centre en étroite coordination avec les plateformes déjà existantes de la CEDEAO et du CILSS. Le Secrétariat de l'IOFS a également assuré qu'il fournira un rapport de l'Atelier, qui comprendra les présentations de l'événement, les discussions et les résultats, ainsi que les conclusions des ateliers précédents à Abu Dhabi les 24-25 mai 2022 et au Caire les 20-21 septembre 2022.

## IOFS DIRECTOR GENERAL VISITS AND MEETINGS DURING OCTOBER – DECEMBER 2022

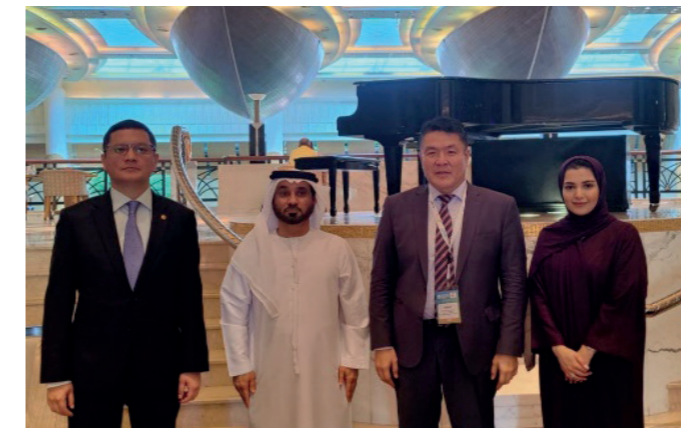
### IOFS DIRECTOR GENERAL MET WITH THE MINISTER OF AGRICULTURE OF KAZAKHSTAN



On October 03, 2022 IOFS Director General, H.E. Mr. Yerlan A. Baidalet held a bilateral meeting with Chairman of the IOFS General Assembly, Minister of Agriculture of the Republic of Kazakhstan, H.E. Mr. Yerbol Karashukeyev. Officials discussed overall outcomes of Kazakhstan's chairmanship of the IOFS, achieving organisation's goals and challenges related to implementation of the IOFS' 16 strategic programs.

The parties highlighted importance of implementing projects aimed at strengthening mutual trade and supply chains between OIC member states, as well as emphasized importance of humanitarian initiative of the organization, particularly implementation of Afghanistan Food Security Program.

### IOFS DIRECTOR GENERAL HAD SEVERAL MEETINGS IN UAE, DUBAI



On October 6, 2022, IOFS Director General H.E. Yerlan A. Baidalet during the visit to Dubai had meetings held on the sidelines of Future Food Forum opens in Dubai. The third edition of the event gathered participants to discuss issues related to sustainability, food security, retail supply chain management, digital technologies and the future of farming.

During the meeting, with Chairman of UAE Food & Beverage Manufacturers Group (FBMG) Mr. Saleh Lootah IOFS Director General discussed organizing an Inaugural IFPA Forum named 'Open Platform for OIC Trade and Investments' on November 10 in Dubai, UAE with participation of about 700 guests. This IOFS – IFPA joint event will focus on discussion of intra-OIC Trade corridors and trade opportunities, food investment in value chain prospects and other crucial agricultural and food security related subjects.

Further meetings were held with several major food companies such as IFFCO, Al Ghurair company, which is one of the largest diversified business groups with operations in seven distinct industry sectors including foods production. On the meeting with Deputy Minister of Climate Change & Environment, H.E. Eng. Mohammed Mousa Alameeri IOFS Director General accompanied by the Consulate General of Kazakhstan in Dubai, H.E. Mr. Rauan Zhumbek, discussed current implementation of the MoU-Action Plan with MOCCAE.

### IOFS DIRECTOR GENERAL MEETS FAO COUNTERPART AND ASSURED OF OBSERVER STATUS AT THE COMMITTEE ON WORLD FOOD SECURITY AT THE LAST DAY OF ITS 50TH SESSION



On 13 October 2022, His Excellency Mr. Yerlan Baidautet, Director General of the Islamic Organization for Food Security (IOFS), was received by His Excellency Mr. QU Dongyu, Director General of the Food and Agriculture Organization of the United Nations (FAO), at the latter's Office in Rome to exchange views on how to strengthen bilateral cooperation between these two multilateral inter-governmental Organizations working for ensuring food security, sustainable agriculture, and rural development. During the meeting, the two sides agreed to furthering consultations on implementing relevant on-ground projects at the common Member States.

Separately and upon the kind invitation of His Excellency Ambassador Gabriel Ferrero y de Loma – Osorio, Chairperson of the Committee on World Food Security (CFS), the IOFS Director General had the opportunity to address the **Special Session on Food Systems Transformations Toward Long-Term Resilience to Global Crises** at the 50th CFS Session that closed today, 13 October 2022, in Rome. In his address, the Director General emphasized, inter alia, that the IOFS was addressing the challenges of current crises affecting food systems through implementation of 16 programmes within the five pillars of the *IOFS 2031 Strategic Vision*.

### IOFS DIRECTOR GENERAL DISCUSSES JOINT INITIATIVES WITH IFAD AND ILRI



On 14 October 2022, IOFS Director General visited the Headquarters of the International Fund for Agricultural Development (IFAD) in Rome and was received by its Associate Vice-President, Programme Management Department, Mr. Donal Brown. The meeting served to, inter alia, follow-up to the virtual technical meeting held on 27 September 2022 between the Institutions' Teams, and it was agreed that there is a need to develop a Joint Action Plan, based on regional approach, to implement activities to benefit common Member States.

The Director General also met with Mr. Iain Wright, Deputy Director of general research and development-Integrated Sciences at the International Livestock Research Institute (ILRI) with whom issues of mutual interest were exchanged in the context of developing joint initiatives in livestock development. Director General was received also by His Excellency Mr. Yerbolat Sembayev, Ambassador of the Republic of Kazakhstan to Italy, at his Office. The Ambassador took the opportunity to brief on important roles he has, particularly as Permanent Representative of his country to United Nations Agencies based in Rome and assured of his personal commitment and support towards IOFS increased involvement with such Agencies.

### MEETING OF THE CHAIRMAN OF THE NATIONAL AGRARIAN SCIENCE AND EDUCATION CENTER



The Chairman of the National Agrarian Science and Education Center (NASEC) Mr. Darkhan Balapanov paid a visit to the Headquarters of the Islamic Organization for Food Security (IOFS) on 21 October 2022 to meet H.E. Prof. Yerlan A. Baidautet, the Director General of the IOFS to discuss the further cooperation between the Institutions.

The Chairman of NASEC thanked IOFS for providing the opportunity for the plant genetic resources professionals of Kazakhstan to participate in the recent training on "Gene Bank Management" held in Ankara from 26-30 September 2022, within the programme on "Development of National Gene Banks in OIC Member States". Participants were introduced to the gene bank operations and best practices of Turkiye in implementing a national strategy on conservation of genetic resources, as well as fruitful deliberations with other scientists from African and Asian OIC Member States.

### MEETING OF THE COORDINATOR GENERAL OF COMSTECH AND THE DIRECTOR GENERAL OF IOFS



IOFS Director General held a meeting with Coordinator General of COMSTECH H.E. Professor Iqbal Choudhary on 26 October 2022, to discuss current joint projects and prospects for enhancing the bilateral relationship of the organizations in the upcoming year. Professor Iqbal Choudhary noted the commendable leadership of IOFS in the programs initiated for food security with OIC countries and its active engagement in Africa. He also emphasized that COMSTECH is fully committed to enhance cooperation with IOFS, particularly in capacity building of research in targeted areas of agriculture and workshops on food security governance.

Both sides highlighted the importance of the joint activities conducted, including the Youth Forum on Biotechnology held from 13-15 September 2022. Moreover, ongoing projects and activities were discussed, such as the Fellowship Program for Research and Training in Food Security of IOFS-COMSTECH. The purpose of the fellowship is to provide opportunities to OIC researchers to perform short/medium term research work or acquire trainings in specialized techniques in Agri-Tech and systematic understanding of Food Security Governance at the relevant advanced research centers in OIC countries.

H.E Director General Yerlan Baidautet and H.E. Professor Iqbal Choudhary highlighted the importance and relevance of food security given the current realities and agreed to strengthen and magnify cooperation of the two institutions.

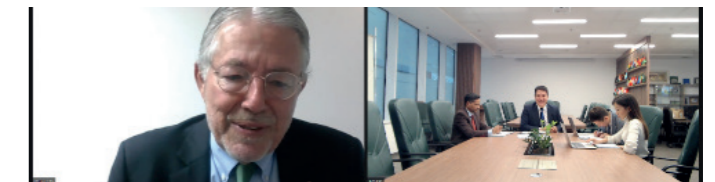
### IOFS - UNAMA MEETING DISCUSSED PROSPECTS FOR COOPERATION IN PROVIDING HUMANITARIAN AID TO AFGHANISTAN



A virtual meeting was hosted between IOFS Director General and UNAMA Deputy SRSg/ Resident Coordinator and Humanitarian Coordinator Dr. Ramiz Alakbarov on 2 November 2022. H.E. Yerlan Baidautet congratulated Ms. Roza Otunbayeva of Kyrgyzstan on her appointment as Special Representative for Afghanistan and Head of UNAMA, and expressed confidence, that under her leadership, the unanimous mission of providing assistance to the people of Afghanistan will be achieved.

IOFS shared a presentation on the Organization's Afghanistan Food Security Program. IOFS emphasized that it holds the global mandate and has the authority to establish a humanitarian field office, that will be empowered by all necessary legal, financial and administrative competences in its operations. IOFS Director General shared the implementation aspects of the Afghanistan Food Security Program and expressed hopes for cooperating with UNAMA. Both sides agreed to enhance cooperation.

### DUBAI INTERNATIONAL HUMANITARIAN AID AND DEVELOPMENT EVENT WAS DISCUSSED WITH DIHAD



On 03 November 2022, an online meeting was held between IOFS Director General and His Excellency Ambassador Gerhard Putman-Cramer, Chief Executive Officer, DIHAD Sustainable Humanitarian Foundation.

The Director General of IOFS was invited as a keynote speaker to the Dubai International Humanitarian Aid and Development Event (DIHAD), to be held on the 13-15 March 2023, under the theme, "Energy and Aid: capitalising on available resources." The event is held under the patronage of H.H. Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai.

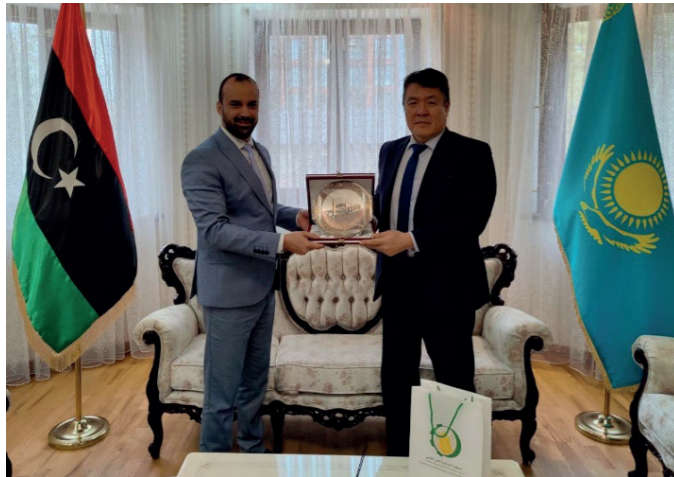
Both sides agreed to strengthen the exchange information to ensure the success of the 2023 Conference and Exhibition.

### IOFS DIRECTOR GENERAL TOOK PART IN THE MEETING OF THE PRESIDENT OF KAZAKHSTAN WITH HEADS OF FOREIGN DIPLOMATIC MISSIONS



IOFS Director General attended the meeting of President Kassym-Jomart Tokayev on 4 November 2022 with Heads of Foreign Diplomatic Missions. Welcoming the participants, the Head of State called meetings with the diplomatic corps a good tradition aimed at strengthening bilateral and multilateral cooperation.

### IOFS MEETING WITH THE AMBASSADOR OF THE STATE OF LIBYA TO THE REPUBLIC OF KAZAKHSTAN



On November 7, 2022, IOFS Director-General visited the Embassy of the State of Libya and met with H. E. Mr. Alaadin Adbusalam Lehwaiik, Ambassador of the State of Libya to the Republic of Kazakhstan.

The two Officials reviewed the current state of IOFS-Libya bilateral relations, and H.E. Ambassador particularly highlighted the ongoing efforts of IOFS to address food security challenges and poverty alleviation in the OIC geography, specifically during food crises hardships that influence OIC countries, vulnerable to food insecurity, that are heavily dependent on the commodity imports.

Before the end of the fruitful meeting H. E. Libyan Ambassador expressed the State of Libya's willingness to cooperate actively with IOFS towards the technical implementation of the indicated programs and pointed out the role of the hosting country for further development of the Organization within the OIC region.

### MEETING OF IOFS WITH THE AMBASSADOR OF THE ALGERIAN PEOPLE'S DEMOCRATIC REPUBLIC TO THE REPUBLIC OF KAZAKHSTAN



On November 14, 2022, H.E. Prof. Yerlan A. Baidaulet Director-General of IOFS visited the Embassy of the Algerian People's Democratic Republic and met with H.E. Mr. KAMEL FENNICHE, Ambassador of the Algerian People's Democratic Republic to the Republic of Kazakhstan. During this meeting, H.E Prof. Baidaulet started by Congratulating the opening of the Embassy of Algerian People's Democratic Republic in Kazakhstan and expressed the wish that this step will constitute a new impetus to strengthen the bilateral relations between Kazakhstan and Algeria and also with the IOFS.

### IOFS ANNOUNCES HUMANITARIAN CONVOY TO AFGHANISTAN IN A BRIEFING TO MEMBER STATES ON AFSP IMPLEMENTATION



On 14 November 2022, the Islamic Organization for Food Security (IOFS) held a virtual Conference on Implementation of the Afghanistan Food Security Programme (AFSP) with the participation of Member States of the Organization of Islamic Cooperation (OIC), OIC General Secretariat, and the International Committee of the International Crescent (ICIC).

The Opening Session was addressed by Mr. Ramiz Alakbarov, Deputy Special Representative of the Secretary-General, Resident and Humanitarian Coordinator, United Nations Assistance Mission in Afghanistan (UNAMA), and H.E. Amb. Tarig Bakheet, OIC Assistant Secretary General for Humanitarian, Social & Cultural Affairs, Special Envoy of OIC Secretary General for Afghanistan, who were unanimous in congratulating the IOFS for its efforts in that country, as well as ensuring their respective Organizations' support for the successful implementation of AFSP.

### IOFS HOSTS MEETING WITH THE EMBASSY OF TURKMENISTAN TO THE REPUBLIC OF KAZAKHSTAN



On 21 November 2022, a meeting was held between IOFS and the Embassy of Turkmenistan at the IOFS Headquarters in Astana, Kazakhstan. The meeting was represented by H.E. Director General of the Islamic Organization for Food Security Prof. Yerlan Baidaulet and the Ambassador of the Embassy of Turkmenistan to the Republic of Kazakhstan, Batyr Durdymuratovich Rejepov. The delegation from the Embassy also included the First Secretary of the Embassy of Turkmenistan Batyrov Shaberdy and the third Secretary of the Embassy Rejepov Ruslan.

### DIRECTOR GENERAL OF IOFS VISITS THE FAISALABAD UNIVERSITY OF AGRICULTURE AND THE CENTER FOR ADVANCED STUDIES IN AGRICULTURE AND FOOD SECURITY IN PAKISTAN



On 23 November HE Director General Prof. Yerlan A. Baidaulet, accompanied by Director of Cooperation and Humanitarian Aid Office, Amb. Daulet Yemberdiev visited Faisalabad Agriculture University (UAF) and the Center for Advanced Studies in Agriculture (CAS) on 23-11-2022. Prof. Dr. Zulfiqar Ali, Director QEC, UAF and Chairman PBG supported the site visit of IOFS delegation further to the start of IOFS-COMSTECH 3-days Wheat Development workshop in Islamabad, where the IOFS Director General inaugurated this event opening ceremony.

### THE DIRECTOR GENERAL OF IOFS HELD SEVERAL MEETINGS WITH HIGH-LEVEL GOVERNMENT OFFICIALS IN PAKISTAN



On 24 November 2022 the IOFS Director General H.E. Prof. Yerlan A. Baidaulet accompanied by Amb. Daulet Yemberdiev, Director of Cooperation and Humanitarian Aid Office, within the visit in Islamabad, the Islamic Republic of Pakistan had several fruitful meetings with the concerned government high officials.

The IOFS Director General had a productive meeting with Chief economist Dr. Nadeem Javaid at the Ministry for Planning, Development & Special Initiative and Co-chairman of China Pakistan Economic Corridor Authority (CPEC). The IOFS Director General H.E. Prof. Yerlan A. Baidaulet also held a meeting with H.E. Amb. Syed Haider Shah Additional Secretary Foreign Office. The meeting was focused on development of bilateral trade relations between two member countries and opening new logistic ways for joint trading. To conclude, the IOFS Director General had a productive meeting with H.E.Mr. Zafar Hasan, Deputy Minister for National Food Security & Research. The meeting discussed the ways of enhancing relationships between IOFS and Pakistan.

### SUDAN ASSURES ITS SUPPORT TO IOFS ON THE SIDELINES OF THE 38TH COMCEC MINISTERIAL SESSION IN TÜRKIYE



On 27 November 2022, His Excellency Mr. Yerlan A. Baidaulet, the Director General of the Islamic Organization of Food Security (IOFS), had bilateral meeting with His Excellency Mr. Gebreil Ibrahim Mohamed Fediel, Minister of Finance & Economic Planning of the Republic of the Sudan, on the sidelines of the 38th Ministerial Session of the Standing Committee for Economic and Commercial Cooperation of the Organization of Islamic Cooperation (COMCEC), being held in Istanbul, Republic of Türkiye.

## ON THE SIDELINES OF THE 38TH COMCEC MINISTERIAL GATHERING IN TÜRKIYE, THE IOFS DIRECTOR GENERAL HELD A NUMBER OF BILATERAL MEETINGS



On Nov. 28, 2022, on the sidelines of the Ministerial gathering, the IOFS Director General had a number of bilateral meetings, including with:

1. His Excellency Mr. Abdou Karim Fofana, Minister of Commerce, Consumer Affairs and SMEs of the Republic of Senegal, and discussed the strengthening the bilateral cooperation that may include an official visit to Dakar, exchange of experts to develop palm-oil, and supporting the development of Senegalese agri-manufacturing and processing industries.
2. His Excellency Prof. Dr. Mohammad Rafiqul Islam, Vice-Chancellor of the Islamic University of Technology (IUT), with whom was agreed the idea of holding a capacity building program on one of the main areas of food security in Dhaka, Bangladesh, in 2023, which may also include a lecture at the IUT on the sidelines of the proposed activity.
3. His Excellency Ambassador Isiaka Abdulqadir Imam, Secretary General of the D-8 Organization for Economic Cooperation, issues of mutual concern in the field of marine aquaculture and "Scaling up Climate Smart Agriculture (SCSA)" formed part of the exchanges with both interlocutors agreeing that a Memorandum of Un-

derstanding and an Action Plan are to be negotiated and signed in near future to institutionalize the bilateral cooperation between the two Organization.

## DIRECTOR GENERAL OF IOFS VISITS SUDAN AND HOLDS SEVERAL HIGH LEVEL MEETINGS



On an official visit to Khartoum-Republic of Sudan, during the period 30 Nov-2 Dec 2022, H.E. Prof. Yerlan Baidaulet the Director General of the IOFS, accompanied by Mr. Aid Said Hussain, Special Envoy for Africa and Mr. Sofian Ben Mouaddeb, Senior Country Manager at the IOFS held a meeting with H.E. Dr. Abu Bakr Omar Al-Bashry Ahmed, Minister of Agriculture and Forestry. He highlighted the potential that Sudan possesses and expressed his wish for IOFS to provide its support to Sudan in implementing programs and policies to improve and sustain food security and further develop the agricultural and rural sector.

The Director General of IOFS then attended the 4th session of the «Khalifa International Awards for Date Palm and Agricultural Innovation 2022,» to which the diplomatic corps based in the Republic of Sudan also participated. During the same day, Prof. Baidaulet, Visited the Headquarters of the Arab Authority for Agricultural Investment and Development (AAAID), where he met H.E. Mr. Mohammed bin Obaid Al Mazrooei, President of AAAID. Prof. Baidaulet, held his last meeting of the day with H.E. Mr. Mohammed Adam Abd El Kareem El Toom, the General Manager of the Agricultural Bank of Sudan, where he was informed by his host about the bank's strategy to implement its plan for food security in Sudan. Mr. El Toom also expressed his desire to develop a positive working relationship with the IOFS in order to assist the bank in achieving its plans.

It should be noted that the DG of the IOFS and his delegation visited the Food & Beverages - DAL Group, one of Sudan's largest and most diverse food firms dedicated to providing basic, staple foods and beverages. The goal of this visit was to observe the company's most significant accomplishments and to encourage it to join IFPA, which could also be a good opportunity for it to expand more its activities by taking advantage of what IFPA offers.

## IOFS CALL FOR BETTER COORDINATION ON FOOD SECURITY MATTERS AT THE 6TH ANNUAL COORDINATION MEETING OF OIC INSTITUTIONS (ACMOI)



Upon instructions of His Excellency Mr. Yerlan Baidaulet, Director General of the Islamic Organization for Food Security (IOFS), Mr. Abdula Manafi Mutualo, IOFS Senior Liaison Officer, attend-

ed the first day of the 6th Annual Coordination Meeting of OIC Institutions (ACMOI), being held at the General Secretariat of the Organization of Islamic Cooperation (OIC) until 15 December 2022.

The IOFS representative participated more at the Economic Affairs Committee, where he called for better coordination among all Institutions towards avoiding duplication of work to effectively spend the scarce financial resources for implementation of appropriate programmes in the field of food security and agricultural development.

## THE IOFS HOLDS SEVERAL HIGH LEVEL MEETINGS DURING ITS OFFICIAL VISIT TO THE FEDERAL REPUBLIC OF NIGERIA



During the first day of the official visit of IOFS to the Federal Republic of Nigeria, H.E. Prof. Yerlan Baidaulet, Director General of IOFS, had a working meeting with Prof. Mrs. Veronica A. Obatolu, Executive Director of the Institute of Agricultural Research and Training of the Federal Republic of Nigeria. His Excellency the Director General of the IOFS, also met with the First Vice President of the Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA), H.E. Mr. Alhaji Farouk Suleiman. Finally, H.E. Director General paid a visit to DAR AL HALAL, which is an advisory, consultancy, trade and investment company, with the objective to promote Halal Trade in Nigeria and between all OIC member states, and operating to open Nigeria to the global halal economy.

## IOFS HIGH-LEVEL BILATERAL MEETINGS CONTINUED IN ABUJA



IOFS Director General H.E. Prof. Yerlan Baidaulet, on the 2nd day of his visit, made an important visit to the respectable Agricultural Research Council of Nigeria (ARCN). The Director General of

the IOFS, was received in audience by the Honorable Minister of State for Foreign Affairs, H.E. Zubairu Dada. Officials reviewed the current state of the bilateral relations between the IOFS and the Federal Republic of Nigeria. H.E. Director General, also had another constructive meeting with H.E. Mustapha Baba Shehuri, Hon. Minister of State of Agriculture and Rural Development, the two officials discussed opportunities to further develop bilateral cooperation, particularly in the area of the valorization of live-stock, and strategic crops in Nigeria.



## ملخص

### زيارات واجتماعات المدير العام للمنظمة الإسلامية للأمن الغذائي خلال الأشهر أكتوبر ونوفمبر وديسمبر 2022

أجرى المدير العام للمنظمة الإسلامية للأمن الغذائي، سعادة البروفيسور يرلان أ. بايدوليت، العديد من الزيارات وعقد جملة من الاجتماعات الهامة خلال الفترة الممتدة من أكتوبر إلى ديسمبر 2022. وشملت الزيارات والاجتماعات ما يلي:

- التقى المدير العام للمنظمة الإسلامية للأمن الغذائي بمعالي وزير الزراعة في كازاخستان
- عقد المدير العام للمنظمة الإسلامية للأمن الغذائي عدة اجتماعات في الإمارات العربية المتحدة ودبي
- التقى المدير العام للمنظمة الإسلامية للأمن الغذائي بنظيره في منظمة الأغذية والزراعة ومنحه صفة مراقب في لجنة الأمن الغذائي العالمي في اليوم الأخير من دورتها الـ 05
- ناقش المدير العام للمنظمة الإسلامية للأمن الغذائي المبادرات المشتركة مع الصندوق الدولي للتنمية الزراعية والمعهد الدولي لبحوث الثروة الحيوانية
- عقد اجتماع مع رئيس المركز الوطني للعلوم والتعليم الزراعي
- عقد اجتماع بين المنسق العام للجنة الدائمة للتعاون العلمي والتكنولوجي (الكومستيك) والمدير العام للمنظمة الإسلامية للأمن الغذائي
- ناقش الاجتماع بين المنظمة الإسلامية للأمن الغذائي وبعثة الأمم المتحدة لتقديم المساعدة إلى أفغانستان آفاق التعاون في مجال تقديم المساعدات الإنسانية لأفغانستان
- التطرق في النقاش إلى فعالية دبي الدولية للإغاثة والتطوير مع معرض ومؤتمر دبي الدولي للإغاثة والتطوير «ديهاد»
- مشاركة المدير العام للمنظمة الإسلامية للأمن الغذائي خلال الاجتماع الذي عقده سيادة رئيس كازاخستان مع رؤساء البعثات الدبلوماسية الأجنبية
- اجتماع المنظمة الإسلامية للأمن الغذائي مع سعادة سفير دولة ليبيا لدى جمهورية كازاخستان
- اجتماع المنظمة الإسلامية للأمن الغذائي مع سعادة سفير الجمهورية الجزائرية الديمقراطية الشعبية لدى جمهورية كازاخستان
- إعلان المنظمة الإسلامية للأمن الغذائي عن إرسال قافلة إنسانية إلى أفغانستان في إطار إحاطة للدول الأعضاء حول تنفيذ برنامج الأمن الغذائي في أفغانستان
- استضافة المنظمة الإسلامية للأمن الغذائي لاجتماع مع سفارة تركمانستان لدى جمهورية كازاخستان
- زيارة المدير العام للمنظمة الإسلامية للأمن الغذائي إلى جامعة فيصل آباد للزراعة ومركز الدراسات المتقدمة في الزراعة والأمن الغذائي في باكستان

- عقد المدير العام للمنظمة الإسلامية للأمن الغذائي عدة اجتماعات مع مسؤولين حكوميين رفيعي المستوى في باكستان
- تأكيد دولة السودان لدعمها للمنظمة الإسلامية للأمن الغذائي على هامش الدورة الـ 83 للجنة الدائمة للتعاون الاقتصادي والتجاري في تركيا
- عقد المدير العام للمنظمة الإسلامية للأمن الغذائي مجموعة من الاجتماعات الثنائية على هامش الاجتماع الوزاري الـ 83 للجنة الدائمة للتعاون الاقتصادي والتجاري
- زيارة المدير العام للمنظمة الإسلامية للأمن الغذائي السودان وعقده لعدة اجتماعات رفيعة المستوى خلال الفترة الممتدة من 03 نوفمبر إلى 2 ديسمبر 2022.
- دعت المنظمة الإسلامية للأمن الغذائي إلى تحسين التنسيق فيما يتعلق بمسائل الأمن الغذائي خلال الاجتماع التنسيقي السنوي السادس لمؤسسات منظمة التعاون الإسلامي (IOMCA) يومي 41 و51 ديسمبر 2022.
- عقدت المنظمة الإسلامية للأمن الغذائي اجتماعات مثمرة رفيعة المستوى خلال زيارتها الرسمية لجمهورية نيجيريا الاتحادية يومي 12 و22 ديسمبر 2022.

## RÉSUMÉ

### VISITES ET RÉUNIONS DU DIRECTEUR GÉNÉRAL DE L'IOFS ENTRE OCTOBRE ET NOVEMBRE 2022

Le directeur général de l'IOFS, S.E. Prof. Yerlan A. Baidaulet, a effectué plusieurs visites et réunions importantes entre octobre et décembre 2022, notamment les suivantes :

- Le Directeur général de l'IOFS a rencontré le ministre de l'Agriculture du Kazakhstan (03.10.2022)
- Le directeur général de l'IOFS a eu plusieurs réunions à Dubaï, aux Émirats arabes unis. (06.10.2022)
- Le Directeur général de l'IOFS rencontre son homologue de la FAO et obtient le statut d'observateur au Comité de la sécurité alimentaire mondiale au dernier jour de sa 50e session. (13.10.2022)
- Le directeur général de l'IOFS discute des initiatives conjointes avec le FIDA et l'ILRI. (14.10.2022)
- Réunion avec le président du Centre national des sciences et de l'éducation agraires. (21.10.2022)
- Réunion entre le coordinateur général du COMSTECH et le directeur général de l'IOFS. (26.10.2022)
- La réunion entre l'IOFS et la MANUA a permis de discuter des perspectives de coopération pour la fourniture d'une aide humanitaire à l'Afghanistan. (02.11.2022)
- L'événement Dubai International Humanitarian Aid and Development a été discuté avec le DIHAD. (03.11.2022)
- Le directeur général de l'IOFS a participé à la réunion du président du Kazakhstan avec les chefs des missions diplomatiques étrangères. (04.11.2022)
- Réunion de l'IOFS avec l'ambassadeur de l'État de Libye auprès de la République du Kazakhstan. (07.11.2022)
- Réunion de l'IOFS avec l'Ambassadeur de la République algérienne démocratique et populaire auprès de la République du Kazakhstan. (14.11.2022)
- L'IOFS annonce l'envoi d'un convoi humanitaire en Afghanistan lors d'un briefing aux États membres sur la mise en œuvre de l'AFSP. (14.11.2022)
- L'IOFS organise une réunion avec l'ambassade du Turkménistan auprès de la République du Kazakhstan. (21.11.2022)
- Le directeur général de l'IOFS visite l'Université d'agriculture de Faisalabad et le Centre d'études avancées en agriculture et sécurité alimentaire au Pakistan. (23.11.2022)
- Le directeur général de l'IOFS a tenu plusieurs réunions avec des responsables gouvernementaux de haut niveau au Pakistan. (24.11.2022)
- Le Soudan assure son soutien à l'IOFS en marge de la 38ème session ministérielle du COMCEC en Turquie. (27.11.2022)
- En marge de la 38ème réunion ministérielle du COMCEC, le Directeur général de l'IOFS a tenu un certain nombre de réunions bilatérales. (28.11.2022)
- Le directeur général de l'IOFS se rend au Soudan et tient plusieurs réunions de haut niveau. (30.11.2022)
- Le Directeur général de l'OISA visite le Soudan et tient plusieurs réunions au haut niveau du 30 novembre au 2 décembre 2022.
- L'OISA appelle à une meilleure coordination sur les questions de sécurité alimentaire lors de la 6ème réunion annuelle de coordination des institutions de l'OCI (ACMOI) les 14 et 15 décembre 2022.
- L'OISA tient des réunions productives de haut niveau lors de la visite officielle en République fédérale du Nigéria les 21 et 22 décembre 2022.

## IOFS ACTIVITIES DURING OCTOBER - DECEMBER

### THE 10TH IOFS EXECUTIVE BOARD: IOFS ACTIVITIES FOR 2022 COVERED 45 OIC MEMBER COUNTRIES



The 10th IOFS Executive Board Meeting of the IOFS convened in a hybrid format on 13 December 2022. The leadership of the Islamic Organization for Food Security welcomed the new composition of the Executive Board that arrived to Astana, Kazakhstan for the 10th IOFS Executive Board Meeting. The Honorable Board is comprised of members from the following states: the State of Qatar, the UAE, the Republic of Tajikistan, the Islamic Republic of Pakistan, the Republic of Cameroon, the Republic of the Gambia, the Republic of Kazakhstan (permanent member), and the Director-General of IOFS (Non-Voting member), and the Kingdom of Saudi Arabia as Non-Voting Honorary Chairman of the Executive Board.

The agenda of the meeting included an overview of the outcomes of the year in the implementation of sustainable food security in the OIC geography, a brainstorming session on prospects for enhancing the IOFS Strategic Plan for 2023, in depth dialogue on the resolutions adopted by the 5th General Assembly of the IOFS, and official statements from the Chair of the Executive Board and the Honorable Members of the Board.

### THE ISLAMIC ORGANIZATION FOR FOOD SECURITY IS PLEASED TO ANNOUNCE A NEW MEMBER OF THE TEAM



Dr. Suat Atan works as a software developer for the Agricultural and Rural Development Institution. He has been developing web apps to manage and analyze the financial and managerial data of agricultural and rural development projects. His prior work experience, from 2011–2016, includes being an expert in the General Directorate of Foreign Economic Relations, Undersecretariat of Treasury-Financial Monitoring of EU-Funded Projects in Turkey.

He currently holds a Ph.D. in Business Administration from Ankara University in Turkey, with a thesis on "Sentiment Analysis on Turkish Stock Market News." He is also the author of three books, published on the topics of data science technologies like Python and R. His research focuses on text mining, machine learning, and natural language processing. He was a postdoctoral fellow in the *Dipartimento di Economia e Statistica "Cognetti de Martini"* in Torino, Italy, with the main research field in text mining and data visualization. Dr. Suat Atan is also tutoring at the TED University Center for Applied Data Science for Network Analytics and Data Mining.

The IOFS aims to develop quantitative and qualitative indicators necessary to monitor and assess the state of food security and agriculture in OIC member states, as well as to compare countries within these indicators. We are confident that Dr. Suat Atan's background and professional experience in software development and data science, particularly in agriculture and rural development, will help IOFS achieve its priority objectives.

We would like to wish Dr. Suat Atan success in all his professional endeavours at IOFS!

### MR. SAID HUSSAIN LID DELIVERED A SPEECH AT A HIGH-LEVEL FOOD SECURITY AND NUTRITION CONFERENCE AT THE AU HEADQUARTERS



On October 10, 2022 Mr. Said Hussain lid, Special Envoy of IOFS in Africa, delivered a speech at a High-level Food Security and Nutrition Conference under the theme "Mobilizing Support for Food and Nutrition Security", at the African Union Headquarters in Addis Ababa, Ethiopia.

The high-level Food Security and Nutrition Conference is organized to advocate for scaling-up efforts to meet the humanitarian imperative across the continent while also investing in addressing the longer term needs as outlined in the global and regional commitments.

Mr. Said Hussain lid introduced the Islamic Organization for Food Security (IOFS), as a specialized institution of the Organization of Islamic Cooperation. He emphasized that the IOFS has a mandate to ensure sustainable food security within OIC geography through socio-economic development and the systematic promotion of targeted programs related to agriculture, science and technology, humanitarian aid, food trade and investment among OIC Member States.

He mentioned some of the activities to mark the Year of Africa 2022 Mission, including:

Mr. Said Hussain lid concluded by stressing that the IOFS also strongly supports African leaders in raising the profile of food security systems reforms on the Continental agenda and pledges its readiness to be part of the continental drive to achieve all objectives.

### IOFS SPECIAL ENVOY FOR AFRICA MEETS AFRICAN UNION COMMISSIONER FOR AGRICULTURE



On 12th of October, 2022 H.E. Josefa Sacko, Commissioner for Agriculture, Rural Development, Blue Economy, and Sustainable Environment (ARBE) of the African Union has received in her Office the IOFS Special Envoy for Africa H.E. Said Hussein lid.

The Special Envoy briefed her on IOFS initiatives and projects in the Member Countries in Africa. During the meeting the Commissioner also explained to the IOFS Special Envoy for Africa the grand initiatives of the AU to ensure food security and building sustainable food systems in the continent.

The two sides agreed to have further discussions and to establish strong bilateral cooperation between IOFS and AU for the benefit of African Countries. Finally, the IOFS Special Envoy for Africa thanked the Commissioner Josefa Sacko and the AU Secretariat for inviting IOFS to the recently concluded High-level Conference for Food security and Nutrition.

### IOFS IN COOPERATION WITH ISDB HELD A ROUNDTABLE ON WATER MANAGEMENT POLICY GUIDELINES AS SIDE EVENT AT THE CAIRO WATER WEEK



On 16 October 2022, IOFS in collaboration with the Islamic Development Bank organized a round table on "Policy Guidelines for Sustainable Water Management in Agriculture in OIC member countries" as a side event at the Cairo Water Week 2022 "Water at the Heart of the Climate Action". The activity was a part of the IOFS program on "Water Management in Agriculture".

Representatives of governmental authorities, including Egypt, Jordan, Palestine, and Iraq, as well as international organizations (AOAD, SESRIC, ICBA, FAO, INWRDAM, CEDARE) and agribusiness (Ramsco Organic) participated in the roundtable to raise awareness for collective and integrated actions and exchange knowledge related to addressing cross-sectoral issues that have impact on the state of water and food security.

Dr. Ismail Abdelhamid, Director of Programmes and Projects Office of the IOFS, gave brief keynote speech on the behalf of H.E. Yerlan Baidalet, the Director General of IOFS, regarding the activities in the framework of the IOFS water management in agriculture IOFS programme.

### PRESS BRIEFING ON THE OUTCOMES OF THE 5TH GENERAL ASSEMBLY OF IOFS





The Islamic Organization for Food Security hosted a briefing on the Outcomes of the 5th General Assembly, in a hybrid format on October 12, 2022 in Astana, Kazakhstan.

The key speakers of the briefing included, Dr. Ismail Abdelhamid, Director of the Programmes and Projects Office, Ambassador Daut Yemberdiyev, Director of the International Cooperation and Humanitarian Aid Office, and Ambassador Murat Tashibayev, Adviser to His Excellency the Director General of IOFS. Journalists from 10 countries gathered at the briefing.

The report of the briefing stated that at the 5th General Assembly of the Islamic Organization for Food Security, member states discussed the adoption of important programs to further develop agriculture and address food security issues in member states. The IOFS briefing also noted that since September 2021, there has been a positive trend in the development of IOFS programs, Member States are actively involved in solving common food security issues.

### IOFS CELEBRATES WORLD FOOD DAY AT OIC BRAINSTORMING SESSION, FOLLOWED BY A MEETING WITH OIC SECRETARY GENERAL AND SIGNING OF AN MOU WITH OIC UNA



To mark World Food Day, on October 16, 2022 a Brainstorming Session was held on the theme "Strategies for Addressing the Current and Future Food Security Needs of OIC Member States" at the OIC headquarters in Jeddah, Saudi Arabia. The event was organized by the OIC General Secretariat, IOFS and IsDB.

The session started with a report on the World Food Security Situation. The report stated that as a result of conflicts, political instability and climate disasters, many countries and regions have been subjected to the threat of food security, affecting millions of people. H.E Director General Yerlan Baidaut reported a Presentation on the Programmes of the Islamic Organization for Food Security towards addressing food insecurity in OIC Member States. The presentation included an overview of the

16 strategies programmes of IOFS, and was concluded with a report on the resolutions adopted on the 5th General Assembly, with the main following outcomes: the celebration of OIC Food Security Day every 11th of December; consideration of requirements for opening IOFS Regional Offices; mandate to work closely with Civil Society and Initiating Annual IOFS Civil Society forum; the Transformation and Growth of the International Food Processing Association (IFPA); Cooperation on conservation and use of plant and animal genetic resources. The proposals and resolutions of IOFS received full approval among all representatives of the Session.

### IOFS ASSISTED IN THE ORGANIZATION OF THE 13TH ARAB PLANT PROTECTION CONGRESS IN TUNISIA



Islamic Organization for Food Security, represented by its Programme Manager Mr. Abdelaziz Hajjaji, co-organized and co-sponsored the 13th Arab Plant Protection Congress in Tunisia on October 16 - 21, 2022. The presentation named "Transboundary Pest Control on crops in IOFS Member Countries" provided an in-depth review of destructive pests such as Desert Locust and the Red Palm Weevil – one of the most formidable insects in the Arab and African regions.

The main objective of the presentation was to provide expertise and technical know-how with the aim to set up technical procedures to assist member countries in dealing with transboundary plant pests. The event brought together specialists and experts in plant protection from member countries.

Mr. Abdelaziz Hajjaji conveyed the greeting message from IOFS Director General H.E. Yerlan A. Baidaut and presented strategic vision of IOFS, Year of Africa global agenda. He also discussed the Transboundary pest control management strategic program, which was warmly accepted by international audience of more than 80 participants.

### IOFS PARTICIPATES AT THE INTERNATIONAL SYMPOSIUM ON FISHERIES AND AQUATIC SCIENCES (SOFAS 2022) IN TRABZON, TÜRKIYE



On October 25–27, Islamic Organization for Food Security participates at the International Symposium on Fisheries and Aquatic Sciences (SOFAS 2022) in Trabzon, Türkiye. The event was organized by the General Fisheries Commission for the Mediterranean (GFCM) of the Food and Agricultural Organization of the United Nations (FAO) in collaboration with the Central Fisheries Research Institute (Ministry of Agriculture and Forestry – Republic of Türkiye).

This symposium gathered around 200 participants, researchers and experts from 22 countries and aims to promote sustainable aquaculture methods and practices for advancement of the industry's development in the Mediterranean and the Black Sea.

### IFPA HELD A ROUND TABLE IN DUBAI ON AGRI-FOOD INVESTMENT OPPORTUNITIES THROUGH ISLAMIC FINANCE



On 9 November 2022, the day before the IFPA Forum in Dubai, the IOFS Subsidiary - IFPA conducted a Round table discussion on agri-food investment opportunities through Islamic finance, led by H.E. Prof. Yerlan A. Baidaut, DG IOFS and Chairman of IFPA. The round table discussion was held at the Dubai Economy and Tourism Department.

The main topic of discussion at the Round table was the opportunities that IFPA members, particularly those from Central Asia, have in terms of attracting Islamic financial resources and investment, their access to the Central Asia region, the main mechanism of operation, contracts used in the agri-food sector, and other issues.

The delegation of its members, primarily from Central Asia, was brought to the round table by IFPA. The delegation was represented by Ms. Gulsum Kenenbayeva Head of International Memberships, IFPA, Mr. Konstantin Nevzorov, President of Oil and Fat Union of Kazakhstan, Ms. Aizhan A. Nauryzgaliyeva, President of Sugar & Food Processing Association, Mr. Raif Safin, CEO Amar Holding Group, Almat Berdenov, Director of Optograd Kazakhstan, Mr. Mohib Ahmet Khan, DG of ATYAB Services in Oman, Shareholders of Faravon Group of Companies and others. All participants were engaged in the discussion, IFPA members raised questions, and speakers provided valuable recommendations and solutions.

### IFPA ANNOUNCED THE RELOCATION OF ITS OFFICE TO DUBAI IN ITS FORUM HELD ON NOVEMBER 10, 2022, ON THE SIDELINES OF FOODTECH SUMMIT UNDER GULFOOD MANUFACTURING FORUM

"IFPA Forum. An open platform for OIC trade and investment" was held at the Foodtech Summit of Gulfood Manufacturing on November 10, 2022. The Forum was organized with the collaboration of F&B Manufacturing Group and FoodTech Valley. The Forum agenda included an opening speech by H.E. Eng.

Mohammed Mousa Alameeri, Assistant Undersecretary, Ministry of Climate Change and Environment, and a keynote address by H.E. Prof. Yerlan A. Baidaut, DG of IOFS, with the most important point being the announcement of the relocation of the IFPA office in Dubai. H.E. Mrs. Latifa El Bouabdelaoui's presentation provided data on OIC trade in the agri-food sector, which served as the foundation for a panel session discussion on the development of intra-OIC agri-food trade and investment, as well as how effectively IFPA could facilitate trade and promote investment through its new geolocation in Dubai. H.E. Saleh Lootah, Chairman of F&B Manufacturing Group, moderated the panel discussion. He had a fruitful discussion on the topic with speakers H.E. Prof. Yerlan A. Baidaut, DG of IOFS, H.E. Latifa El Bouabdelaoui, DG of ICDT, Mr. Mubarak Rashid Al-Sahuti, VP of Commercial Affairs of Hassad Food Qatar, and H.E. Mr. Rauan Zhumabek, General Counsel of Kazakhstan in Dubai and Northern Emirates.



### IOFS PARTICIPATED IN THE CRANS MONTANA FORUM IN GENEVA



On 16 November 2022 the IOFS delegation, headed by H.E. Prof. Yerlan A. Baidaut Director General, participated in the Crans Montana Forum (CMF) at the invitation of H.E. Amb. Jean-Paul Carteron Chairman & Founder of the CFM. The Crans Montana Forum, has been one of the world's leading international institutions since 1986, and has become the most exclusive meeting place for high level Officials and top decision makers from governments and business. This year the Crans Montana Forum's theme was dedicated to the world's unexpected challenges such as the pandemic, war, political instability, financial volatility and the food crisis, and successfully gathered high-level stake-



holders of Food Security from around the world.

On the first day of the Forum, the Director General of IOFS gave a speech and co-chaired the session: One of the World's Major Concerns! Food Security, Geostrategy and Climate Change Threatening Food Security. The program discussed the challenge of delivering sustainable food security for a population of over 9 billion in the coming decades. Moreover, in order to further enhance cooperation between IOFS and CMF, a Memorandum of Understanding was signed between the two parties.

On the sidelines of the forum, the IOFS conducted and attended various important meetings with high-level participants of CMF to discuss strengthening cooperation and exchanging valuable information. H.E. Prof. Yerlan A. Baidaulet was invited to a meeting by the President of Slovenia, Borut Pahor, and held a meeting with Ambassador Jean-Paul Carteron, Chairman and Founder of the Crans Montana Forum and the WDA World Diplomatic Academy. The Director General of IOFS also met with H.E. Dr. George Agyekum Donkor President of the Bank for Investment and Development ECOWAS, H.E. Ahmed Mathobe Nunow Minister of Agriculture and Irrigation of the Federal Republic of Somalia, H.E. Alpha M. Barry Former Minister of Foreign Affairs of Burkina Faso, Mrs. Emanuele Claudia Del Re Special Representative for the Sahel in European Union, and Dr. Conrad Rein, Policy Officer & Co-Chair GPRD Sustainable Agri-Food Systems and Fisheries.

### THE DIRECTOR GENERAL OF IOFS RECEIVES THE CMF AWARD AND SIGNS AN MOU WITH ECOWAS ON THE FINAL DAY OF THE CRANS MONTANA FORUM



The Crans Montana Forum was full of valuable discussions and packed with serious and constructive brainstorming and exchange of knowledge. The last day of the Forum was marked with the signing of another important Memorandum of Understanding between IOFS and ECOWAS Bank for Investment and Development. The IOFS then hosted the official lunch for the high-level guests and participants of the CMF.

To conclude the forum, H.E. Prof. Yerlan A. Baidaulet was presented with the prestigious Prix De La Fondation (CMF Award) 2022 by HRH Prince Jean de Luxembourg at the CMF awarding ceremony. This award is a reflection of the recognition of the increasing role the IOFS and its partners play in implementing the vitally important aspect of the global agenda.

### IOFS-COMSTEC-PARC THREE-DAY EXPERT MEETING ON "CLIMATE RESILIENT WHEAT CROP IMPROVEMENT

### FOR FOOD SECURITY" WITH THE SPECIAL SESSION ON AFGHANISTAN WHEAT ISSUE: THE BREEDING OF NUTRITIOUS AND CLIMATE-RESILIENT VARIETIES



On 23 November 2022, *Three-day Expert Meeting On "Climate Resilient Wheat Crop Improvement for Food Security" with the Special Session on Afghanistan Wheat Issue* was organized by the Islamic Organization for Food Security (IOFS) in partnership with the Ministerial Standing Committee on Scientific and Technological Cooperation of the OIC (COMSTEC) and Pakistan Agricultural Research Council (PARC) in Islamabad, Pakistan at the COMSTEC HQ. The event took place in a hybrid format with the participation of several OIC Member States such as Azerbaijan, Afghanistan, Iran, Kazakhstan, Morocco, Pakistan, Türkiye, and Tunisia, as well as scientists from International Organizations such as ACSAD, ICARDA, ICBA, CILSS, and CIMMYT. Representatives of different countries were able to share their experience in strategies being used in their homelands to tackle the issues of developing new varieties of wheat and adaptation under changing climate.

This expert meeting gave breeders and scientists the opportunity to discuss the major constraints and prospects of wheat cultivation, in relation to possible improved technologies under changing climate that could provide up-to-date and comprehensive information on wheat research.

As a result of the meeting, it was agreed that the Working Group of Experts will be created along with the Action Plan for further development of international cooperation. In addition, within the framework of the IOFS Afghanistan Food Security Program (AFSP), the General Secretariat is determined to implement various projects in which special attention is to be paid to Wheat production in Afghanistan and the enhancement of the capacity of the relevant Research Institute.

### IOFS HIGHLIGHTS FOOD SECURITY ISSUES AT THE SENIOR OFFICIAL MEETING PREPARATORY TO THE 38TH COMCEC MINISTERIAL SESSION IN TÜRKIYE



On 26 November 2022, His Excellency Mr. Yerlan A. Baidaulet, the Director General of the Islamic Organization of Food Security (IOFS), led the Organization's delegation to the Senior Official Meeting Preparatory to the 38th Ministerial Session of the Standing Committee for Economic and Commercial Cooperation of the Organization of Islamic Cooperation (COMCEC), being held in Istanbul, Republic of Türkiye.

In his address, the Director General highlighted the centrality of food security issues within the economic domains and interests of all Member States. In such context and while emphasizing the excellent relationship the IOFS enjoys with COMCEC, he shared his hope in strengthening to even higher ground such bilateral coordination towards ensuring food security, sustainable agriculture, and rural development in the OIC geography within the framework of 16 programmes that are the core tools for the implementing of the IOFS 2031 Strategic Vision.

### IOFS ATTENDS THE 38TH COMCEC MINISTERIAL SESSION IN TÜRKIYE



His Excellency Mr. Yerlan A. Baidaulet, the Director General of the Islamic Organization of Food Security (IOFS), is leading the Institution's delegation attending the 38th Ministerial Session of the Standing Committee for Economic and Commercial Cooperation of the Organization of Islamic Cooperation (COMCEC) being held in Istanbul, Republic of Turkey until 29 November 2022 under the chairmanship of the Turkish Presidency.

The main highlight of the first day, 28 November 2022, was the official opening session, which was addressed by Their Excellencies the President of the Republic of Turkey, Mr. Recep Tayyip Erdoğan, the OIC Secretary General, Mr. Hissein Brahim Taha, the Minister of National Economy of the State of Palestine, as well as the Brunei Darussalam, Republic of Nigeria, and Kingdom of Saudi Arabia, in representation, respectively, of Asian, African, and Arab Groups of the OIC geographic distribution.

### EXPERTS FROM MORE THAN 20 COUNTRIES ATTENDED IOFS DAY IN ASTANA



The Islamic Organization for Food Security (IOFS) celebrated December 12 as IOFS Day, during which it presented the results of all the work accomplished during the year, and also reported on the main outcomes of the "Year of Africa". The diplomatic corps and experts from more than 20 countries, as well as representatives of the international media, arrived in Astana to participate in the forum.

The distinguished speakers included H.E. Ambassador Jean-Paul Carteron, President and Founder of the Crans Montana Forum, Dr. Masoud Jarallah Al-Marri, the Chairman of the IOFS Executive Board from Qatar, Mr. Askar Shokybayev, Director of the Department of the Near, Middle East and Africa of the Ministry of Foreign Affairs of the Republic of Kazakhstan, and the Vice Minister of the Ministry of Agriculture H.E. Mr. Abulkhair Tamabek. The speech of H.E. Mr. Hissein Brahim Taha, Secretary General of the Organization of Islamic Cooperation (OIC) was delivered by H.E. Dr. Ahmad Sengendo, OIC Assistant Secretary General for Economic Affairs. The forum participants noted the position of IOFS as a key platform for coordinating all flows of food security programs in the countries of the Islamic world. The young organization, according to the guests of the forum, has great potential and provides a timely response to the growing global challenges of the food crisis in the world.

### IOFS PARTICIPATES IN THE PRESS BRIEFING AT THE CENTRAL COMMUNICATION SERVICE UNDER THE PRESIDENT OF THE REPUBLIC OF KAZAKHSTAN AND INVITES 10 HEADS OF FOREIGN MEDIA REPRESENTATIVES FROM THE OIC UNION OF NEWS AGENCIES



The Islamic Organization for Food Security participated in a press briefing held at the Central Communication Service under the President of the Republic of Kazakhstan on 14 December 2022. The key speakers, that reported on the main outcomes of IOFS for 2022 included the Chairman of the IOFS Executive Board, H.E. Dr. Masoud Jarallah Al-Marri and H.E. Director General of IOFS Prof. Yerlan A. Baidaulet. A centralized live broadcast was held on the main state channel of the country Khabar, and all major media resources of the country were involved.

The press briefing also welcomed guests from a delegation of Heads of foreign media representatives from the OIC Union of News Agencies. The delegation, comprised of media outlets from more than 10 countries were invited to Kazakhstan by the IOFS in cooperation with the Ministry of Foreign Affairs of Kazakhstan for an information tour in honor of IOFS Day and the Independence Day of Kazakhstan.

## STRATEGIC PLANNING AND POLICY DEVELOPMENT IN FOOD SECURITY IS THE FOCUS OF IOFS-HOSTED WORKSHOP IN THE LARGEST AND MOST POPULATED COUNTRY IN AFRICA

The IOFS organized a two-day regional training workshop on strategic planning and policy development in food security in cooperation with the Ministry of Agriculture and Rural Development of Federal Republic of Nigeria with support of Islamic Development Bank (IsDB) in Abuja, Nigeria from 21-22 December 2022.

The workshop brought together over 60 participants, including government officials from 13 OIC member countries in West and Central Africa, representatives of national research institutions, private sector and international organizations. It provided an in-

teractive platform to discuss policy convergence and strengthen coordination at the regional and national levels for exchange and accumulation of the OIC Member States' experience in food security governance, developing coherent policy frameworks and resilient inter-sectoral government systems.



## ملخص

### الفعاليات الرئيسية للمنظمة الإسلامية للأمن الغذائي خلال أكتوبر ونوفمبر وديسمبر 2022

ملخص جميع الفعاليات الرئيسية للمنظمة الإسلامية للأمن الغذائي خلال الفترة الممتدة من أكتوبر إلى ديسمبر 2022:

- انعقد المجلس التنفيذي العاشر للمنظمة الإسلامية للأمن الغذائي في 31 ديسمبر 2022.
- يسر المنظمة الإسلامية للأمن الغذائي أن تعلن عن انضمام الدكتور سعاد عطان كعضو جديد في فريق المنظمة
- ألقى السيد سعيد حسين عيد كلمة في مؤتمر الأمن الغذائي والتغذية رفيع المستوى في مقر الاتحاد الأفريقي
- اجتمع المبعوث الخاص للمنظمة الإسلامية للأمن الغذائي لأفريقيا مع مفوض الاتحاد الأفريقي للزراعة
- عقدت المنظمة الإسلامية للأمن الغذائي بالتعاون مع البنك الإسلامي للتنمية مائدة مستديرة حول إرشادات سياسة إدارة المياه كحدث جانبي لأسبوع المياه في القاهرة
- عقد مؤتمر صحفي حول نتائج الجمعية العامة الخامسة للمنظمة الإسلامية للأمن الغذائي مع الصحفيين المحليين والدوليين
- احتفال المنظمة الإسلامية للأمن الغذائي بيوم الأغذية العالمي في جلسة العصف الذهني لمنظمة التعاون الإسلامي، وعقدتها لاحقاً لاجتماع مع الأمين العام لمنظمة التعاون الإسلامي وتوقيع مذكرة تفاهم مع اتحاد وكالات أنباء دول منظمة التعاون الإسلامي
- ساعدت المنظمة الإسلامية للأمن الغذائي في تنظيم المؤتمر العربي الثالث عشر لعلوم وقاية النباتات في تونس
- مشاركة المنظمة الإسلامية للأمن الغذائي في الندوة الدولية حول مصائد الأسماك والعلوم المائية (2022 SAFOS) في طرابزون، تركيا
- عقد الرابطة الإسلامية الدولية لتصنيع الأغذية لمائدة مستديرة في دبي حول فرص الاستثمار في الأغذية الزراعية من خلال التمويل الإسلامي
- إعلان الرابطة الإسلامية الدولية لتصنيع الأغذية عن نقل مكتبها إلى دبي في منتداهما المنعقد في 01 نوفمبر 2022، على هامش قمة تكنولوجيا الغذاء في إطار منتدى تصنيع الأغذية في الخليج
- مشاركة المنظمة الإسلامية للأمن الغذائي في منتدى anatoM snarC في جنيف
- استلام المدير العام للمنظمة الإسلامية للأمن الغذائي لجائزة FMC وتوقيعه لمذكرة تفاهم مع الجماعة الاقتصادية

### لدول غرب أفريقيا في اليوم الأخير من منتدى anatoM snarC

- اجتماع خبراء المنظمة الإسلامية للأمن الغذائي واللجنة الدائمة للتعاون العلمي والتكنولوجي والمجلس الباكستاني للبحوث الزراعية (CRAP) لمدة ثلاثة أيام للتباحث حول «تحسين محصول القمح المرن للمناخ من أجل الأمن الغذائي» مع عقد جلسة خاصة حول قضية القمح في أفغانستان: تربية أصناف مغذية ومقاومة للمناخ
- تسليط المنظمة الإسلامية للأمن الغذائي الضوء على قضايا الأمن الغذائي في اجتماع كبار المسؤولين التحضيري للدورة الوزارية الثامنة والثلاثين للجنة الدائمة للتعاون الاقتصادي والتجاري في تركيا
- حضور المنظمة الإسلامية للأمن الغذائي للدورة الوزارية الـ 83 للجنة الدائمة للتعاون الاقتصادي والتجاري في تركيا
- حضر خبراء من أكثر من 02 دولة يوم المنظمة الإسلامية للأمن الغذائي في أستانا في 21 ديسمبر 2022
- شاركت المنظمة الإسلامية للأمن الغذائي في مؤتمر صحفي تم عقده في دائرة الاتصالات المركزية تحت إشراف سيادة رئيس جمهورية كازاخستان في 41 ديسمبر 2022.
- احتضنت المنظمة الإسلامية للأمن الغذائي ورشة عمل لمدة يومين حول التخطيط الاستراتيجي وتطوير السياسات في مجال الأمن الغذائي يومي 12 و 22 ديسمبر 2022 في دولة نيجيريا التي تعد إحدى أكبر الدول وأكثرها اكتظاظا بالسكان في إفريقيا.

## RÉSUMÉ

### ÉVÉNEMENTS MAJEURS DE L'IOFS EN OCTOBRE - NOVEMBRE - DÉCEMBRE 2022

Un résumé de tous les événements majeurs de l'IOFS pendant la période d'octobre à décembre 2022 :

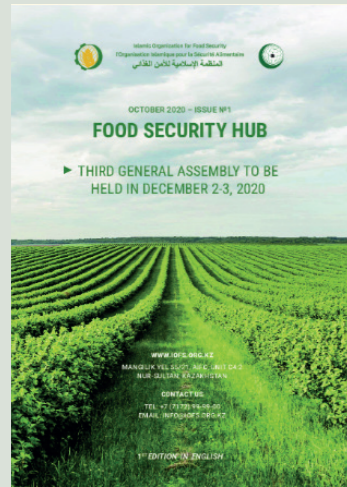
- Le 10ème Conseil exécutif de l'OISA se réunit le 13 décembre 2022.
- L'Organisation islamique pour la sécurité alimentaire a eu le plaisir d'annoncer la nomination d'un nouveau membre dans son équipe, le Dr Suat Atan. (05.10.2022)
- M. Said Hussain Iid a prononcé un discours lors d'une conférence de haut niveau sur la sécurité alimentaire et la nutrition au siège de l'UA.(11.10.2022)
- L'envoyé spécial de l'IOFS pour l'Afrique rencontre le commissaire à l'agriculture de l'Union africaine. (12.10.2022)
- L'IOFS, en coopération avec la BIDD, a organisé une table ronde sur les lignes directrices de la politique de gestion de l'eau en tant qu'événement parallèle à la Semaine de l'eau du Caire. (16.10.2022)
- Un point de presse a été organisé sur les résultats de la 5ème Assemblée générale de l'IOFS avec des journalistes locaux et internationaux. (12.10.2022)
- L'IOFS célèbre la Journée mondiale de l'alimentation lors d'une séance de réflexion de l'OCI, suivie d'une réunion avec le secrétaire général de l'OCI et de la signature d'un protocole d'accord avec l'UNA de l'OCI. (16.10.2022)
- L'IOFS a aidé à l'organisation du 13ème Congrès arabe de protection des plantes en Tunisie. (16.10.2022)
- L'IOFS participe au Symposium international sur les sciences halieutiques et aquatiques (SOFAS 2022) à Trabzon en Turquie. (25.10.2022)
- L'IFPA a organisé une table ronde à Dubaï sur les opportunités d'investissement dans l'agroalimentaire par le biais de la finance islamique. (09.11.2022)
- L'IFPA a annoncé la relocalisation de son bureau à Dubaï lors de son forum qui s'est tenu le 10 novembre 2022, en marge du Food-tech Summit dans le cadre du Gulfood Manufacturing Forum.
- L'IOFS a participé au Forum de Crans Montana à Genève. (16.11.2022)

- Le Directeur Général de l'IOFS reçoit le Prix CMF et signe un protocole d'accord avec la CEDEAO le dernier jour du Forum de Crans Montana. (18.11.2022)
- Réunion d'experts de trois jours organisée par l'IOFS-COMSTECH-PARC sur le thème «Amélioration des cultures de blé résistantes au climat pour la sécurité alimentaire», avec une session spéciale sur le problème du blé en Afghanistan : la sélection de variétés nutritives et résistantes au climat. (23.11.2022)
- L'IOFS met en avant les questions de sécurité alimentaire lors de la réunion des hauts fonctionnaires préparatoire à la 38ème session ministérielle du COMCEC en Turquie. (26.11.2022)
- L'IOFS participe à la 38ème session ministérielle du COMCEC en Turquie.
- Des experts de plus de 20 pays ont participé à la journée IOFS à Astana le 12 décembre 2022. (28.11.2022)
- L'IOFS a participé à un point de presse tenu au Service Central de Communication sous la direction du Président de la République du Kazakhstan le 14 décembre 2022.
- L'IOFS organise un atelier de 2 jours sur la planification stratégique et l'élaboration de politiques en matière de sécurité alimentaire au Nigéria, le pays le plus grand et le plus peuplé d'Afrique, les 21 et 22 décembre 2022.

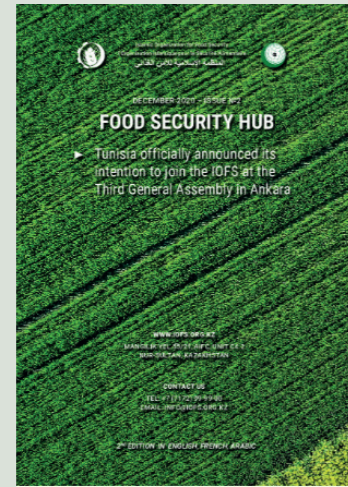
## IOFS MEMORANDUM OF UNDERSTANDING REPORT (FROM JANUARY TO DECEMBER 2022)

#	Party	Date of Sign
1.	Arab Bank for Economic Development in Africa (BADEA)	01 December 2022
2.	Crans Montana Forum	17 November 2022
3.	ECOWAS Bank for Investment and Development (EBID)	18 November 2022
4.	Union of OIC News Agencies (UNA)	16 October 2022
5.	National Institute of Agricultural Research of Tunisia (INRAT)	11 October 2022
6.	The Arab Center for the studies of Arid Zones and Dry Lands (ACSAD)	11 October 2022
7.	Commission on science and technology for sustainable development in the South (COMSATS)	5 October 2022
8.	The Secretariat-General of the Cooperation Council for the Arab States of the Gulf (GCC)	13 September 2022
9.	Arab observatory for human rights	18 September 2022
10.	Alliance for a Green Revolution in Africa (AGRA)	17 September 2022
11.	Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)	9 September 2022
12.	Islamic World Academy of Sciences (IAS)	4 August 2022
13.	Trade Promotion Organization of Iran (TPO)	5 July 2022
14.	Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia	23 June 2022
15.	Atyab International Services	8 June 2022
16.	Integrated Water Plan for the Sahel Region to 2030	8 June 2022
17.	Sustainable Food Systems of Ireland	24 May 2022
18.	Permanent Interstate Committee for Drought Control in the Sahel (CILSS) 2022	16 May 2022
19.	DIHAD Sustainable Humanitarian Foundation	16 March 2022
20.	Hassad food company QCSC	13 March 2022
21.	World Food Programme (WFP)	19 April 2022
22.	The Ministry of Agriculture of the Republic of Kazakhstan	5 March 2022
23.	International Center of Climate Change Technologies (ICCCT)	21 February 2022
24.	Islamic Chamber of Commerce, Industry and Agriculture	14 February 2022
25.	Join Stock Company «National Company «Kazakstan Gharysh Sapary»	16 February 2022
26.	Arab Authority for Agricultural Investment and Development (AAAID)	21 February 2022
27.	Islamic Committee of the International Crescent (ICIC)	13 January 2022

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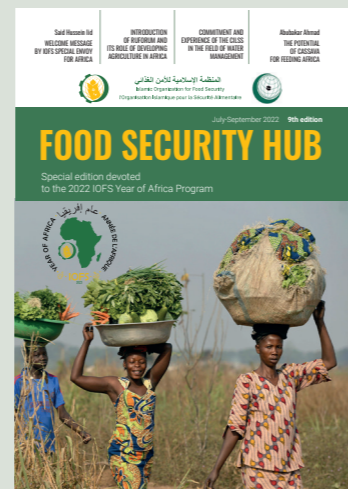
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