Standing Committee
for Economic and Commercial Cooperation
of the Organization of Islamic Cooperation (COMCEC)

COMCEC

Proceedings of the 21st Meeting of the

COMCEC Agriculture Working Group

"Ensuring the Sustainability of Agricultural Inputs to Combat Food Insecurity in OIC Member Countries''

COMCEC COORDINATION OFFICE

November 2023

PROCEEDINGS OF THE 21st MEETING OF THE

COMCEC GRICULTURE WORKING GROUP

ON

"Ensuring the Sustainability of Agricultural Inputs to Combat Food Insecurity in OIC Member Countries"

(October 12th-13th, 2023, Ankara, Türkiye)

COMCEC COORDINATION OFFICE

November 2023

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Introduction

The 21st Meeting of the COMCEC Agriculture Working Group was held on 12-13 October 2023 in Ankara, Türkiye, with the theme of **"Ensuring the Sustainability of Agricultural Inputs to Combat Food Insecurity in OIC Member Countries".**

The representatives of 9 Member States, which have notified their focal points for the Agriculture Working Group, attended the Meeting. The representatives of the SESRIC and IOFS further attended the meeting.

Mr. Selçuk KOÇ, Deputy Director General of the COMCEC, delivered an opening speech and gave the floor to Assoc. Prof. Dr. Davut KELEŞ, Head of Department at Ministry of Agriculture and Forestry, Chairperson of the Meeting. The representative of the COMCEC Coordination Office (CCO) made a presentation on "COMCEC Agriculture Outlook 2022". During the presentation, the participants were informed about the general overview of the agriculture sector in the OIC Member Countries through focusing on macro agricultural indicators. Prof. Dr. Celal Taşdoğan shared the framework, importance and methodology of the research. Following the introductory presentations on the report, country cases were presented. Prof. Dr. Orhon Can DAĞTEKİN made a presentation on the observations, findings and challenges faced by the countries in Egypt and Kyrgyzstan which were obtained through field visits. The country cases of Türkiye and the Netherlands, carried out as desk analyses, were also discussed with a similar approach and topics. The research team also presented the final draft of the report. In the introduction part, the study's main objectives and details about Agricultural inputs. The representatives of the Member States have shared their experiences and achievements and considered the current level of development of sustainable agricultural inputs and the challenges as well as possible policy options related to various aspects of sustainable agricultural inputs. During the policy debate session, Dr. DAĞTEKİN summarized the main points of the policy recommendations that was included in the research report. After intensive deliberations, the AWG has come up with a set of challenges and the policy options for sustainable agricultural inputs in the member countries. The efforts exerted by the international institutions on sustainable inputs and food security were also reflected in the discussions.

Opening Session

In line with the tradition of the Organization of the Islamic Cooperation (OIC), the Meeting commenced with the recitation from the Holy Quran. Afterwards, Mr. Selçuk KOÇ, Director at the COMCEC Coordination Office welcomed all participants. Mr. KOÇ invited Assoc. Prof. Dr. Davut KELEŞ, Head of Department at Ministry of Agriculture and Forestry to chair the Meeting. Mr. KELEŞ welcomed all the participants to the 21st Meeting of the Agriculture Working Group and expressed his best wishes for successful deliberations. He also gave brief inform the participants about the programme of the Meeting.

The COMCEC Agriculture Outlook 2022

Prof. Dr. Erdoğan GÜNEŞ, Consultant at the COMCEC Coordination Office, summarized the key features of COMCEC Agriculture Outlook 2022, which was published in December 2022.

Prof. Dr. GÜNEŞ informed the participants that his presentation addressed four main components, namely macro indicators, selected sectoral indicators and state of food security as well as climate change as the main driver of food insecurity.

Regarding progress in terms of macro agricultural indicators, he expressed that the top ten OIC member countries produced nearly 80% of the total agricultural value added in the OIC region. He added that Indonesia alone accounted for nearly 20% of OIC agricultural GDP. Regarding trends in growth rates, he highlighted that, over the last two decades, both agriculture (3.9) and overall economy (4.3) of OIC grew faster than the world (2.7 and 2.9). Average annual agricultural growth rate between 1994 and 2019 was highest in Africa, followed by Arab and Asian groups. With respect to overall economic growth, the African group had again highest growth followed by Asia and Arab groups.

Prof. Dr. GÜNEŞ pointed out that over the last three decades the share of agricultural employment in total employment has decreased substantially from 41% to 27% in the world and from 43% to 31% in OIC member countries.

Prof. Dr. GÜNEŞ stressed that, in 2020, OIC agricultural exports amounted to 146 billion USD and were 63% of the imports, which amounted to 232 billion USD. He added that the share of OIC in world agricultural exports increased from 6,8% to 9,7% from 2000 to 2015. The share of OIC in world agricultural imports increased from 12% to 15% from 2000 to 2015.

Moreover, Prof. Dr. GÜNEŞ underlined that in 2020 OIC member countries produce 14% of world cereals, 39% of oil crops, 20% of fruits and 14% of world vegetables. He added that OIC member countries produce 14% of the world's beef and buffalo meat, 26% of sheep and goat meat and 11% of poultry meat. OIC member countries are responsible for 25% of world's non-capture fish production and 22% of capture fish production.

Prof. Dr. GÜNEŞ expressed that almost one third of all agricultural area and over one fifth of the arable area in the world are in OIC member countries. While for Africa and Asia total land and agricultural land shares in OIC are similar, for Arab group, share in OIC agricultural land is lower than share in total land.

Regarding the renewable water potential in the OIC by sub-regions, Prof. Dr. GÜNEŞ informed the participants that OIC member countries have 13.3% of the world's total. Taking into account the fact that OIC member countries have 28% of the world's total agricultural area, the majority of the member countries face water scarcity. At the sub-regional level, renewable water resources disperse unequally in the OIC. Moreover, the ratio of renewable water resources to the agricultural land varies considerably among its sub-regions.

Prof. Dr. GÜNEŞ concluded his presentation by giving information on the state of food insecurity in the OIC Member Countries. Prof. Dr. GÜNEŞ underlined that, unfortunately, statistics on food security are available only for 25 of the 57 OIC member countries. They also underestimate food insecurity, as countries where data is not available face relatively higher levels of hunger. With these limitations in mind, FAO estimates about 800 million undernourished in the world, slightly down from over 900 million at the beginning of the millennium. 180 million or about quarter of the world's hungry are in the OIC member countries.

Overview of the Report and Analysis of the Survey Results

In the first session, Dr. Celal TAŞDOĞAN, as the team leader, presented the current landscape regarding sustainable agriculture and food security and introduced the methodology of the report.

Dr. TAŞDOĞAN underlined the importance of acknowledging the similarities and differences between member countries in the OIC to establish effective policy measures. Due to various economic and regional factors, member countries face different challenges and utilize different approaches to achieve agricultural sustainability to different levels.

The principles of sustainable agriculture were shared as follows:

- Integrating biological and ecological processes into food production processes
- Reducing the use of non-renewable inputs
- Reducing external costs by increasing the know-how of human capital
- Efficient use of collective capacities to solve common problems in agriculture and natural resources

The key fields that were discussed were namely "**Water, Land, Labor, Fertilizers and Manure, Seed, Pesticides, Infrastructure and Government Expenditure, Emissions and Forest Land and Trade**". The club convergence analysis indicated the level of sustainability regarding different aspects of agriculture differed among members and various policy approaches can be utilized to improve food security. Details on each of those pillars and country clubs were presented.

Selected results of the survey conducted to measure attitudes toward sustainable agriculture were discussed. The results showed strong support for the idea of strict protection of vital resources such as soil and water, pest control could be considered a controversial issue among respondents and the use of chemicals is considered harmful, while there is strong support for the idea that agriculture should be done in harmony with nature and that new technology and machinery should be adopted.

The key challenges faced by member countries were summarized as follows:

- Inefficient agricultural resource management
- Need for using modern inputs
- Underdeveloped land market
- Limited modern finance
- Insufficient infrastructure
- Weak of rural roads' network and accessibility
- Underdeveloped the irrigation system, electricity facilities
- Climate Change

To combat those challenges, policy recommendations were presented by Dr. DAĞTEKİN. The recommendations covered a wide range of topics such as employment, clean nature, trade, cooperation, technology, conservation, organic agriculture, and fertilizers. Adopting efficient production techniques needs from a social, cultural, educational and health perspective, taking appropriate measures under subsidies and various protection methods as governments, careful planning and encouraging sustainable practices in agriculture, establishing certain standards and rules especially for products that are subject to foreign trade were highlighted.

Apart from those, promoting institutional and technical capacity to ensure coordination and sustainability of initiatives among public institutions and organizations, developing a smart agriculture system for effective monitoring and evaluation to better understand the impact of productivity increases and reducing costs, disseminating drip irrigation, water harvesting, water management and dry farming practices and determining a transformation strategy that prioritizes food security and access to food were deemed crucial.

Developing the conservation agriculture practices, encouraging the expansion of organic agriculture and introducing circular agriculture practices that provide input for fertilizer and renewable energy production by reusing agricultural wastes while encouraging the use of organomineral fertilizers were also recommended policies.

Selected Case Studies: Egypt, Kyrgyzstan, Türkiye, The Netherlands

The case countries were presented by Dr. DAĞTEKİN. The Netherlands was selected as a benchmark country with effective sustainable agriculture and policies along with OIC Member countries. Egypt was selected as a country with effective production methods and once an agricultural powerhouse, which faces challenges such as fragmentation in agricultural land. Similarly, Kyrgyzstan with its landlocked mountainous region and fragmented agricultural land which homes vast water resources were discussed.

The main challenges faced by Egypt were discussed as follows:

1. An abolition of subsidies on agricultural loans and hence the increase in interest rates on its agricultural loans has a negative effect.
2. A decline in roles of cooperatives, which led to high production costs in addition to the cancellation of the agricultural cropping system, which led to increase the size of the food gap in the main crops which has to be covered by imports.
3. The fragmentation of agricultural holdings, and the dominance of dwarf holdings pose risk as negligence in the maintenance of agricultural economic resources through land clearing along with poor service operations and wasteful irrigation and poor drainage may be challenging.

Challenges faced regarding sustainable agriculture in Kyrgyzstan were different.

1. Energy needs in Kyrgyzstan are largely met through fossil fuels and the use of biofuels remains limited.
2. Salinization and waterlogging inefficiencies in the irrigation network, lack of moisture in the soil, remote and stony areas, settlement expansion, lack of productive seeds, exposure to natural disasters hamper agricultural production.
3. Access to financing and social networks that can disseminate knowledge in the sector are limited combined with the terrain which requires planned effort regarding logistic infrastructure.

Issued experienced in Türkiye were shared as follows.

1. The fragmentation of agricultural lands through inheritance leads to a reduction in the size of holdings and thus to a decrease in agricultural productivity. The shrinkage of

agricultural holdings causes significant problems of economies of scale and production tends towards decreasing yields.

2. Excessive price hikes in basic production inputs such as fertilizers, pesticides, seeds, agricultural machinery, and diesel fuel have significantly reduced the profits of agricultural enterprises. This has led to losses for some agricultural businesses.
3. Although the use of agricultural machinery in Türkiye has shown significant improvements over the years, the contribution to agricultural production and productivity remains low compared to the volume growth when evaluated together with the average age, technological level and the size of the area suitable for machinery use.
4. The desired level of farmer training and the use of modern agricultural technologies has not been achieved. For these reasons, farmers' knowledge and capital accumulation have been insufficient. Small-scale agricultural enterprises do not have the financial resources required for modern agricultural tools and equipment and modern agricultural production techniques.
5. Considering that approximately 70% of agricultural holdings combine animal and crop production, specialization is not widespread in agricultural enterprises.
6. One of the most important problems of Türkiye's agricultural sector is the smaller average size of agricultural land compared to developed countries and the existence of unemployment in rural areas.

Although the Netherlands has adopted policies to promote sustainable agriculture, Mr. DAĞTEKİN noted the country is also facing distinct challenges:

1. To obtain maximum benefit, raw materials obtained at minimum cost are processed with maximum efficiency.
2. Dependence on weather conditions, animal and plant diseases are still a major risk and this has a direct impact on producers' incomes. Individual small-scale producers can be powerless in the face of large purchasers.
3. Fishing is part of the cultural history of the Netherlands and the main source of income for some villages. However, the fishing grounds are being devoted to sustainable energy and nature conservation measures and their size is gradually decreasing.
4. Although the government has concrete targets to reduce greenhouse gas emissions by 3.5 megatons by 2030 according to the CAP and the Paris Framework Agreement, industrial livestock farming has been increasing in the country.

Dr. DAĞTEKİN highlighted the importance of cooperation and harmony among different stakeholders in the production process along with harmony in an international level.

Experiences/Perspectives of the Member States and International Institutions

Member Country Presentation

Experiences of Türkiye

Ms. Hümeyra YAMAN from Türkiye made a presentation on "Breeding Practices and Technologies in Türkiye". She focused on the breeding practices and technologies employed in Türkiye's agricultural sector. She pointed out that Turkiye's diverse climate and landscape enable the country to produce a wide range of agricultural products. She informed that Türkiye is a major producer of grains, renowned for top-quality fruits and vegetables and leads globally in hazelnut production.

Then, she introduced the General Directorate of Agricultural Research and Policies (TAGEM) with 129 years of R&D experience and 32 years of corporate culture. She mentioned about TAGEM's structure includes 49 Research Institutes and 24 institutions affiliated to other general directorates of the Ministry, which have been granted research authorization. She highlighted that TAGEM's objectives are the preservation of genetic resources, ensuring the diversity of Türkiye's agriculture, innovation through research and development, driving advancements in agricultural practices and developing agricultural policies.

She mentioned that the Institute is actively carrying out various breeding programs to develop new crop varieties and biotechnological approaches are also integrated into breeding studies to increase crop improvement. He also said that harnessing the power of molecular markers to conduct meticulous studies has resulted in precise and effective advances in crop development.

She also mentioned about the Turkish Seed Gene Bank, which plays a crucial role in conserving plant genetic resources. This gene bank holds an impressive collection of around 60,000 accessions, contributing to the overall 310,000 materials stored across 32 Gene Banks under TAGEM's oversight.

He concluded his presentation by saying that the Institute work closely with farmers, the private sector, and research institutions to advance sustainable food production and enhance food security collectively.

Experiences of International Organization

Islamic Organization For Food Security (IOFS)

Mr. Abdula Manafi Mutualo, Advisor,at Coordination & Cooperation Department in the Islamic Organization for Food Security (IOFS) delivered a presentation on "Report on IOFS Activities and Initiatives to the 21st Meeting of the COMCEC Agriculture Working Group (AWG)".

Mr. Manafi shared highlights from the 2022 and 2023 IOFS programs and activities, underscoring the tangible and substantial achievements made in these endeavors in OIC geography. He placed a strong emphasis on strategic commodities, with a particular focus on key staples such as wheat, rice, and cassava. He also elucidated the latest advancements of IOFS in leveraging agricultural technology in member countries and emphasized IOFS's proactive stance in adapting to the challenges posed by climate change. Finally, he concluded his presentation with a passionate call for recommendations from COMCEC.

COMCEC Financial Support Programs

Mr. Ali ORUÇ, expert at Programs and Projects Department of COMCEC Coordination Office, made a presentation on COMCEC Project Support Programs.

Mr. ORUÇ started his presentation by providing general information on the COMCEC Project Support Programs, namely COMCEC Project Funding (CPF), COMCEC COVID Response and COMCEC Al-Quds Program.

After that, he explained objectives and main characteristics of CPF. Accordingly, he informed the participants that more than 130 projects have been implemented by 29 countries and 6 OIC Institutions. He emphasized that more than fifty countries benefited from the output of the project activities.

Mr. ORUÇ also provided details about the supported themes under the agriculture area. He stated that the CCO supports the projects, which are formulated in line with the sectoral themes that are formulated in accordance with the COMCEC policy recommendations.

Reminding that the project submission period is still open, Mr. ORUÇ recommended the participants to review the application documents particularly the Project Preparation and Submission Guidelines as well as supported sectoral themes before designing and submitting their project proposals. Moreover, he informed the participants about online project submission and highlighted the critical steps for this process.

Mr. ORUÇ concluded his presentation with providing brief information about the agriculture projects under CPF conducted in 2023.

Closing Remarks

The Meeting ended with closing remarks of Assoc. Prof. Dr. Davut KELEŞ, Chairperson of the Meeting from Ministry Of Agriculture And Forestry of the Republic of Turkey and Mr. Can AYGÜL, Head of Department at the COMCEC Coordination Office.

In her closing remarks, Assoc. Prof. Dr. Davut KELEŞ conveyed his appreciations to all the presenters and participants for the fruitful deliberations made during the meeting.

Afterwards, in his closing remarks, Mr. AYGÜL expressed his thanks and appreciation to all participants for their contributions to the discussions throughout the meeting.

The meeting ended with vote of thanks.

Annex-I

21st MEETING OF THE

COMCEC AGRICULTURE WORKING GROUP

(October 12-13, 2023)

"Ensuring the Sustainability of Agricultural Inputs to Combat Food Insecurity in OIC Member Countries"

DRAFT AGENDA

Opening

1. "Ensuring the Sustainability of Agricultural Inputs to Combat Food Insecurity in OIC Member Countries" (Scope, Conceptual Framework and Methodology)

2. Lessons Learnt from the Selected Case Studies

3. Experiences/Perspectives of the Member States, International Institutions, Private Sector, and NGOs on the Subject

4. COMCEC Project Support Programs

5. Policy Debate Session: Formulation of Policy Recommendations for the 39th COMCEC Ministerial Session

Closing

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Annex-II

PROGRAMME

21st MEETING OF THE COMCEC AGRICULTURE WORKING GROUP
(October 12 -13, 2023, Ankara)

"Ensuring the Sustainability of Agricultural Inputs to Combat Food Insecurity in the OIC Member Countries"

October 12th, 2023

09.00-09.30 **Registration**

09.30-09.35 **Recitation from Holy Qur'an**

09.35-09.45 **Opening Remarks**

09.45-10.05 **COMCEC Agriculture Outlook 2023**

- *Presentation by Prof. Erdoğan GÜNEŞ*
  Consultant
  COMCEC Coordination Office (CCO)

10.05-10.15 Discussion

10.15-10.55 **Presentation of the Draft Research Report**

- *Presentation by Prof. Dr Celal TAŞDOĞAN*
  Consultant
  COMCEC Coordination Office

10.55-11.15 Discussion

11.15-11.30 **Coffee Break**

11.30-12.10 **Lessons Learnt from the Selected Case Studies and the Policy Options**

- *Presentation by Prof. Dr Celal TAŞDOĞAN*
  Consultant
  COMCEC Coordination Office

12.10-12.30 Discussion

12.30-14.00 **Lunch**

14.00-15.00 Experiences/Perspectives of the Member States

- *Sharing Experiences and Good Practices in Ensuring the Sustainability of Agricultural Inputs*

- *Discussion*

15.00-15.15 Coffee Break

15.15-15.45 Experiences/Perspectives of International Institutions

- *Presentation by The Islamic Organization for Food Security (IOFS)*
  Mr. Abdula Manafi Mutualo
  Advisor

- *Discussion*

15.45-16.30 Utilizing the COMCEC Project Support Programs

- *Presentation by COMCEC Coordination Office*
  Mr. Ali ORUÇ
  Expert

- *Discussion*

October 13th, 2023

10.30-12.00 Policy Debate Session: Formulation of Policy Recommendations for the 39th COMCEC Ministerial Session on Ensuring the Sustainability of Agricultural Inputs to Combat Food Insecurity in the OIC Member Countries

There will be a policy debate session to come up with a set of policy recommendations to ensure the sustainability of agricultural inputs to combat food insecurity in the OIC Member Countries

Discussion

12.00-12.15 Closing Remarks and Family Photo

12.15-14.30 Lunch

14.30-19.00 Social Program

Annex- III

LIST OF PARTICIPANTS

21st Meeting of the Agriculture Working Group

(12-13 October 2023, Ankara-TÜRKİYE)

A. MEMBER COUNTRIES OF THE OIC

PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

- Mr. HADJ SAID AMOKRANE

Deputy Director of Field Crops, Ministry of Agriculture and Rural Development

- Mr. TRIA MILOUD

Responsible For Studies and Synthesis, Ministry Of Agriculture and Rural Development

REPUBLIC OF COTE D'IVOIRE

- Mr. ANGUI PASCAL

Director General, Ministry of Agriculture

REPUBLIC OF GAMBIA

- Ms. FATOU JAMMEH TOURAY

Deputy Permanent Secretary for Projects and Programs, Ministry of Agriculture

- Ms. SABINA K MENDY

Principal Statistician, Department of Planning/ Ministry of Agriculture

ISLAMIC REPUBLIC OF IRAN

- H.E. Assoc. Prof. Dr. MOHAMMAD KHALEDI

Director General of Planning and Economic Affairs, Ministry of Jihad-e-Agriculture

- Dr. EBRAHIM JAVDAN

Assistant professor, Agricultural Planning, Economic and Rural Development Research Institute (APERDRI). Tehran. Iran.

SULTANATE OF OMAN

- Dr. SAIF ALI ALKHAMISI

Director of Plant Production Research Center, Ministry of Agriculture & Fisheries Wealth and Water Resources

- Mr. KHAIR ALBUSAIDI

Director of Date palm and Plant Production Department, Ministry of Agriculture, Fisheries Wealth and Water Resources

KINGDOM OF SAUDI ARABIA

- Dr. RAJEH ALRAGAS

D.G of Economic Affairs, Ministry of Environment Water and Agriculture

REPUBLIC OF SUDAN

- Ms. AFAF MOHAMED MOHAMDANİ

Deputy Head of Mission, Sudan Embassy Ankara

REPUBLIC OF TOGO

- Mr. ATSU DZUNYO EKLOU

Head of Technical Department, Ministry of Agriculture, Livestock and Rural Development

- Mr. DAOUDA SALAMI

Head of Seed Strategies Section, Ministry of Agriculture, Livestock and Rural Development

TÜRKİYE CUMHURİYETİ

- Assoc. Prof. Dr. DAVUT KELEŞ

Head of Department, Ministry of Agriculture and Forestry

- Dr. HUMEYRA YAMAN

Director, Ministry of Agriculture and Forestry

B. THE OIC SUBSIDIARY ORGANS

STATISTICAL, ECONOMIC, SOCIAL RESEARCH AND TRAINING CENTER FOR ISLAMIC COUNTRIES (SESRIC)

- Mr. ABDULHAMİT ÖZTÜRK

Researcher, SESRIC

- Mr. ELNADAWİ OSMAN MOHAMMAD ELFAKI

Receptionist, SESRIC

- Ms. ALİA SHARİFY ORTAQ

Project Officer, SESRIC

ISLAMIC ORGANIZATION FOR FOOD SECURITY

- Mr. ABDULA MANAFI MUTUALO

Advisor at Coordination & Cooperation Department, Islamic Organization for Food Security (IOFS)

C. COMCEC COORDINATION OFFICE

- Mr. SELÇUK KOÇ

Acting Director General, COMCEC Coordination Office

- Mr. CAN AYGÜL

Head of Department, COMCEC Coordination Office

- Mr. MEHMET ASLAN

Head of Department, COMCEC Coordination Office

- Mr. MEHMET CELALETTİN AKTAŞ

Head of Department, COMCEC Coordination Office

- Mr. GÖKTEN DAMAR

Expert

- Ms. ÖZGÜL YÜKSEL

Coordinator

- Mr. OZAN LİF

Coordinator

- Mr. HAKAN USLU

Coordinator

- Mr. Selim UYAR

Registration and Accommodation Coordinator

Annex- IV

THE POLICY RECOMMENDATIONS OF THE 21st MEETING OF THE AGRICULTURE WORKING GROUP

The COMCEC Agriculture Working Group (AWG) has successfully held its 21st Meeting on 12th-13th October , 2023 in Ankara, Türkiye with the theme of "Ensuring the Sustainability of Agricultural Inputs to Combat Food Insecurity in OIC Member Countries." During the Meeting, Agriculture Working Group, made deliberations on sustainability of agricultural inputs. Accordingly, the participants has come up with some policy recommendations.
The policy recommendations are as follows:

Policy Recommendation 1: Promoting conservation agriculture practices with a view to managing agricultural ecosystems for sustainable productivity, increased profitability and food security that protects natural resources and the environment.

Rationale: Soil management practices in sustainable agriculture are designed to make soils used in farming more productive, healthy and sustainable, to conserve natural resources, to increase soil fertility and to improve the quality of life of farmers. Conservation Agriculture mainly aims to increase productivity on arable land while at the same time rehabilitating degraded land.
The three principles of Conservation Agriculture are;

- Minimization of soil disturbance : Reducing mechanical interventions to the soil and switching to direct sowing without soil disturbance,
- Providing permanent organic cover on the soil surface: Ensuring permanent soil organic cover with crop residues and/or cover crops,
- Ensuring crop diversity: It is the realization of diversity in the crop pattern included in the crop rotation.

Policy Recommendation 2: ***Encouraging drip irrigation, water harvesting, drought tolerant crops, non convential water management and dry farming practices that support effective use of water resources and water saving, and the participation of agricultural producers in the application processes.***

Rationale: Water is one of the main inputs for agricultural activities, and productivity can be enhanced with the right irrigation methods. In many cases, water resources, which are vital for the agricultural sector, are not used properly in agricultural activities, over-consumed and polluted with harmful chemicals in high doses, and many wrong practices threaten the ecosystem. Sustainable agriculture aims to use water efficiently and irrigation methods and water saving technologies are used to reduce the impact of agricultural activities on water resources. An appropriate irrigation method needs to be selected by considering factors such as soil characteristics of the land, quantity and quality of irrigation water, topographic situation, land shape and size, plant type, climate characteristics, irrigation costs and social and cultural characteristics of the region. Countries experiencing water scarcity will also turn to the use of non-traditional water resources to partially alleviate water scarcity. Non-conventional water resources are either produced as a product of specialized processes such as desalination or, when used for irrigation, require appropriate pre-use treatment and/or appropriate soil-water-plant management strategies. In water-scarce environments, such water resources are accessed through desalination of seawater and highly brackish groundwater, collection of rainwater, and use of marginal quality water resources for irrigation. Marginal quality water used for irrigation consists of wastewater, agricultural drainage water and groundwater containing different types of salts. In addition, drought has become endemic worldwide due to climate change. This situation raises serious concerns, and important work is being done on developing "drought-tolerant crops" through molecular breeding and genetically modified approaches. On the one hand, there is an increasing demand to produce enough staple food crops (wheat, rice and corn) to meet the growing population, and on the other hand, it is necessary to optimize the yield stability for main crops or locally important crops. Therefore, the production of drought-tolerance crops is becoming increasingly important.

Policy Recommendation 3: Supporting effectively use of organomineral fertilizers and organic pesticides, which provide greater productivity and production increases compared to the use of chemical fertilizers and pesticides, and also contribute to the improvement of plant health and soil.

Rationale: Organomineral fertilizers contain plant nutrients and organic matter together, which are found in chemical fertilizers, so that the nutrient content can be presented in a more standardized form. In organomineral fertilizers, plant nutrient minerals such as Nitrogen (N), Phosphorus (P), Potassium (K), Sulphur (S), Zinc (Zn) and organic matter from humic-fulvic acid and compost are combined together and used as base fertilizer. Organomineral fertilizers produced in the form of "organic matter + mineral fertilizer" by taking advantage of the positive effects of organic materials on soil fertility, on the one hand, reduce the loss of nutrients by washing and on the other hand, increase the effectiveness of the minerals used by improving the fertility elements of the soil. In addition, organic pesticides are considered important for plant and soil health. Generally derived from natural sources and minimally processed, organic pesticides are derived from plants such as neem, pyrethrum (pyrethrums), rotenone or ryania (botanical insecticides), or minerals such as boric acid, cryolite or diatomaceous earth.

Policy Recommendation 4: Developing a smart agriculture system for effective monitoring and evaluation to better understand the impact of productivity increases and reducing cost as well as environmental compatibility

Rationale: Smart Agriculture Technologies, which are used in planting, irrigation, agricultural spraying, making various measurements, and harvesting of lands, and which are used to operate many separate units such as drones, robots, sensors, data analysis systems, cloud systems, and Internet of Things as an integrated system, play a very important role for the sustainability of the agricultural sector. All innovative practices are within the scope of smart agriculture practices or agriculture 4.0. With the developing agricultural technologies, productivity increases while costs decrease. Through these technologies, it will be possible to make progress in terms of both the sustainability of the agricultural sector and the overcome climate change in countries where smart agricultural practices have become widespread.

Policy Recommendation 5: Improving circular agriculture practices through using a minimum amount of external input or reusing agricultural wastes to ensure fertilizer and renewable energy production.

Rationale: Circular agriculture means keeping agricultural biomass and the wastes and residues generated by food processing processes within the food system as reusable resources. Circular agriculture includes practices that ensure the future of food supply and access to safe food. The basic principle of circular agriculture is the optimal use of land or resources to meet the need. In order to make the best use of the fields to be planted, diversity is increased by planting successive crops and adding mixed crops to the rotation. The residues (leaves and stems) of the crops produced in these fields are used as feed for livestock and bio-fertilizer for the soil. In this sense, circular agriculture practices presents a wide range of benefits such as recycling and waste reduction, biodiversity conservation, climate change mitigation, etc.

Policy Recommendation 6: Encouraging the use of closed farming methods and technologies by private sector enterprises with a view to ensuring better control of environmental factors, increased productivity and continuous production in the off-season.

Rationale: Closed farming is a method of agriculture in which plants are grown in a controlled environment. When growing plants in controlled environments such as greenhouses, vertical farms, soil less farming systems, etc., the use of land, water, pesticides and other chemicals required to grow the plants is reduced. Closed farming technologies offer advantages such as better control of environmental factors, increased productivity and continuous production in the off-season.

Policy Recommendation 7: Strengthening the coordination and sustainability of initiatives among public institutions and organizations by taking into account the data and evidence-based risk predictions developed by the initiatives at the beginning of the implementation processes

Rationale*:* Different approaches among authorities and regulations regarding land use plans and sustainability of the ecosystem lead to the priority targets determined within the framework of water resources management, sustainable agricultural input use, natural disaster risk management, and biodiversity protection. Therefore, foresight-based approaches focusing on the development of the legal and institutional structure and the provision of needed financial resources need to be developed. Taking into account the data and evidence-based risk predictions developed by the initiatives at the beginning of the implementation processes will strengthen the effectiveness of institutional and technical capacity.

Policy Recommendation 8: Supporting small-scale farmers, peasants and households in effective management their agricultural activities by capacity building, training, access to market information and customised financial products to optimize their decision-making process also disseminating technology and facilitating eco-friendly but relatively costly solutions.

Rationale: Small-scale farmers, peasants, and households, as a separate segment of any national economy include for significant number of contributors to food production in most of the OIC regions. Although majority of the smallholders are aware about the technological advances either in irrigation, organic practices, they are financially marginalized to access these tools on the grassroots level. Supporting them in effective agricultural management ensures a more consistent food supply, increasing rural development, health and nutrition, and improving overall national food security. This issue is not related only to the improvement of local agriculture but also addresses broader issues of economic development, sustainability and regional resilience. It is an investment in the well-being of communities and contributes to global efforts to eradicate hunger and poverty. Creating accessible financial tools and incentives could create diffusion of these practices also help financial inclusivity.

Policy Recommendation 9: Increasing to use Certified Seed Production and Improved Seeds in Agricultural Production in order to enhance productivity and to support food security.

Rationale: Certified seed production is a process that guarantees quality and genetic integrity. These seeds are typically certified and made available for sale by an official authority. Certified seeds are produced, stored, and marketed in compliance with established standards. This process ensures that agricultural products are more reliable in terms of consistency, productivity, and quality. Additionally, Improved seeds are the seeds of plants developed using genetic engineering and traditional selection methods. These seeds are developed to increase crop productivity, enhance disease resistance, and adapt to climatic conditions. Improved seeds contribute significantly to increasing food production, helping to feed the growing population. Certified seed production and improved seeds are integral components of sustainable agricultural practices. These seeds require less water, fertilizers, and chemical pesticides, reducing environmental impacts. Furthermore, the increase in productivity necessitates less land use, thus contributing to forest conservation.

Instruments to Realize the Policy Recommendations:

COMCEC Agriculture Working Group: In its subsequent meetings, the Working Group may elaborate on the above-mentioned policy areas in a more detailed manner. Working Group may work on a prioritization and sequencing of the policy areas.

COMCEC Project Funding: Under the COMCEC Project Funding, the COMCEC Coordination Office calls for projects each year. With the COMCEC Project Funding, the Member Countries participating in the Working Groups can submit projects to be financed by the COMCEC. For the above-mentioned policy areas, the Member Countries can utilize the COMCEC Project Funding and the COMCEC Coordination Office can support financing the successful projects in this regard. These

projects may include training programs, study visits, workshops, organizing seminars, peer-to-peer experience sharing, needs assessments and producing promotional materials/documents.