

Presented by:

**Prof. Dr. Hami Alpas
(AWG Consultant)
Food Eng. Dept. METU
Ankara-Turkey**

COMCEC STRATEGY
COOPERATION AREA
AGRICULTURE

Increasing
Productivity

Regulatory
Framework &
Institutional
Capacity

Reliable & Up-
To-Date Data

Market
Performance &
Access

OUTLINE-Part I:

- Objectives
- Scope
- Project Approach
- Conceptual Framework
- Methodology & Data Sources
- Global & OIC Overview

OBJECTIVES

- to ensure the sustainability of food supply chains in OIC member states in emergencies such as COVID-19.
- to determine policy recommendations for a more sustainable, responsible, and efficient food supply management system to contribute to food security.
- To highlight the shocking impact of COVID-19 on the sustainability of farm-to-table food supply and food systems with all actors in OIC member countries.

OBJECTIVES

- to evaluate the current situation of the sustainability of food supply chains in OIC member countries in terms of policies, legal framework, coordination, and current practices,
- to provide policy recommendations at national, OIC and global levels to ensure their sustainability by comparing good governance examples.

SCOPE

- a sharp decline in local food production between 2.6-7%,
- logistical problems arising from the lockdown measures.
- 28 OIC member states are classified as low-income food deficit countries by FAO.
- the following COVID-19 pathways is addressed:
 1. *Impacts on food access through reduced household purchasing power*
 2. *Impacts on availability of food, agricultural production and food supply chains*
 3. *Impacts on government capacities to protect vulnerable populations*

CONCEPTUAL FRAMEWORK

- ❖ Food insecurity has always been a global challenge for decades.
- ❖ From the beginning of the year 2020, COVID 19 induced economic shocks, conflicts and food crisis worsened the situation at global level
- ❖ effects of this pandemic on the food supply chain (FSC) were investigated at three stages: primary supply, trade and final demand.



CONCEPTUAL FRAMEWORK-Primary Supply

Primary supply: is the first stage to ensure access to food in a country.

- ❑ change in prices of inputs such as pesticides, fertilizers, seeds, feeds, energy, water, machinery and labor.
- ❑ 35% job loss in the food industry, which employed over a billion people were formally employed in the World (IFPRI,2020).



CONCEPTUAL FRAMEWORK-Trade

Trade:

- price swings in agricultural and food products due to the supply crisis.
- a supply shortage followed by a demand shortage, and this situation catastrophically effected the food security mostly in underdeveloped World (Schmidhuber et al., 2020).



CONCEPTUAL FRAMEWORK-Final Demand

Final Demand: Not only the increase in the food prices but also *decrease in purchasing power of the people caused by economic recession and unemployment* negatively affected food security both at country and global level.



CONCEPTUAL FRAMEWORK-SFSCs

sustainability is a general concept that encompasses three main pillars, namely environment, society and economy.

- *However, since a quantitative assessment of the whole supply chain could not be realised in the context of this report, it was preferred to make a general assessment through secondary research materials.*
- In this report, both primary and secondary research tools and sources were used to reach its goals.

Global Overview of Sustainability of Food Supply Chains (SFSCs)

- the global economy will shrink by more than 5%
- people living in extreme poverty in developing countries could increase by up to 150 million if no interventions are taken immediately.
- The World is “not only facing a global health pandemic but also a global humanitarian catastrophe,”

Table 1 Worldwide Distribution of COVID 19 Cases (as of September 22, 2021)

Country, Other	Total Cases	Total Deaths	Total Recovered
World	230,331,480	4,723,020	207,037,316
Asia	74,481,302	1,103,412	70,558,753
Europe	57,875,090	1,207,438	53,020,682

<https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>

<https://www.worldometers.info/coronavirus/>



COVID-19 Cases and People Vaccinated and Fully Vaccinated in OIC Member Countries

3 October 2021

Confirmed Cases

OIC

34 372 796

14,63% of the global confirmed cases

64 592 new confirmed cases

Confirmed Cases per Million People: 17 698

Growth Factor: 1,01

Daily Exponential Growth Rate: 0,19%

Average Daily Exponential Growth Rate: 2,59%

Pace: 1 new case every 0,98 seconds

Fatal Cases

OIC

603 955

12,58% of the global fatal cases

848 new fatal cases

Case Fatality Rate: 1,76%

Growth Factor: 0,94

Daily Exponential Growth Rate: 0,14%

Average Daily Exponential Growth Rate: 2,13%

Pace: 1 new death every 51,65 seconds

People Vaccinated

OIC

446 685 383

1 934 456 new people vaccinated

People Vaccinated per Million Population: 229 993

Growth Factor: 1,22

Daily Exponential Growth Rate: 0,43%

Average Daily Exponential Growth Rate: 3,29%

Pace: 1 new person vaccinated every 0,0238 seconds

People Fully Vaccinated

OIC

283 456 373

1 078 766 new people fully vaccinated

People Fully Vaccinated per Million Population: 145 949

Growth Factor: 0,71

Daily Exponential Growth Rate: 0,38%

Average Daily Exponential Growth Rate: 2,64%

Pace: 1 new person fully vaccinated every 0,0307 seconds



World

234 918 586

291 256 new confirmed cases

Confirmed Cases per Million People: 29 831

Growth Factor: 0,85

Daily Exponential Growth Rate: 0,12%

Average Daily Exponential Growth Rate: 2,09%

Pace: 1 new case every 0,17 seconds

World

4 801 533

3 971 new fatal cases

Case Fatality Rate: 2,04%

Growth Factor: 0,7

Daily Exponential Growth Rate: 0,08%

Average Daily Exponential Growth Rate: 2,02%

Pace: 1 new death every 10,51 seconds

World

3 598 186 028

6 696 554 new people vaccinated

People Vaccinated per Million Population: 456 914

Growth Factor: 0,86

Daily Exponential Growth Rate: 0,19%

Average Daily Exponential Growth Rate: 3,54%

Pace: 1 new person vaccinated every 0,0061 seconds

World

2 678 533 158

6 594 255 new people fully vaccinated

People Fully Vaccinated per Million Population: 340 133

Growth Factor: 0,91

Daily Exponential Growth Rate: 0,25%

Average Daily Exponential Growth Rate: 6,76%

Pace: 1 new person fully vaccinated every 0,0051 seconds



Confirmed Cases in 56 OIC Countries

7 208 851 Turkey

Fatal Cases in 56 OIC Countries

142 173 Indonesia

People Vaccinated in 57 OIC Countries

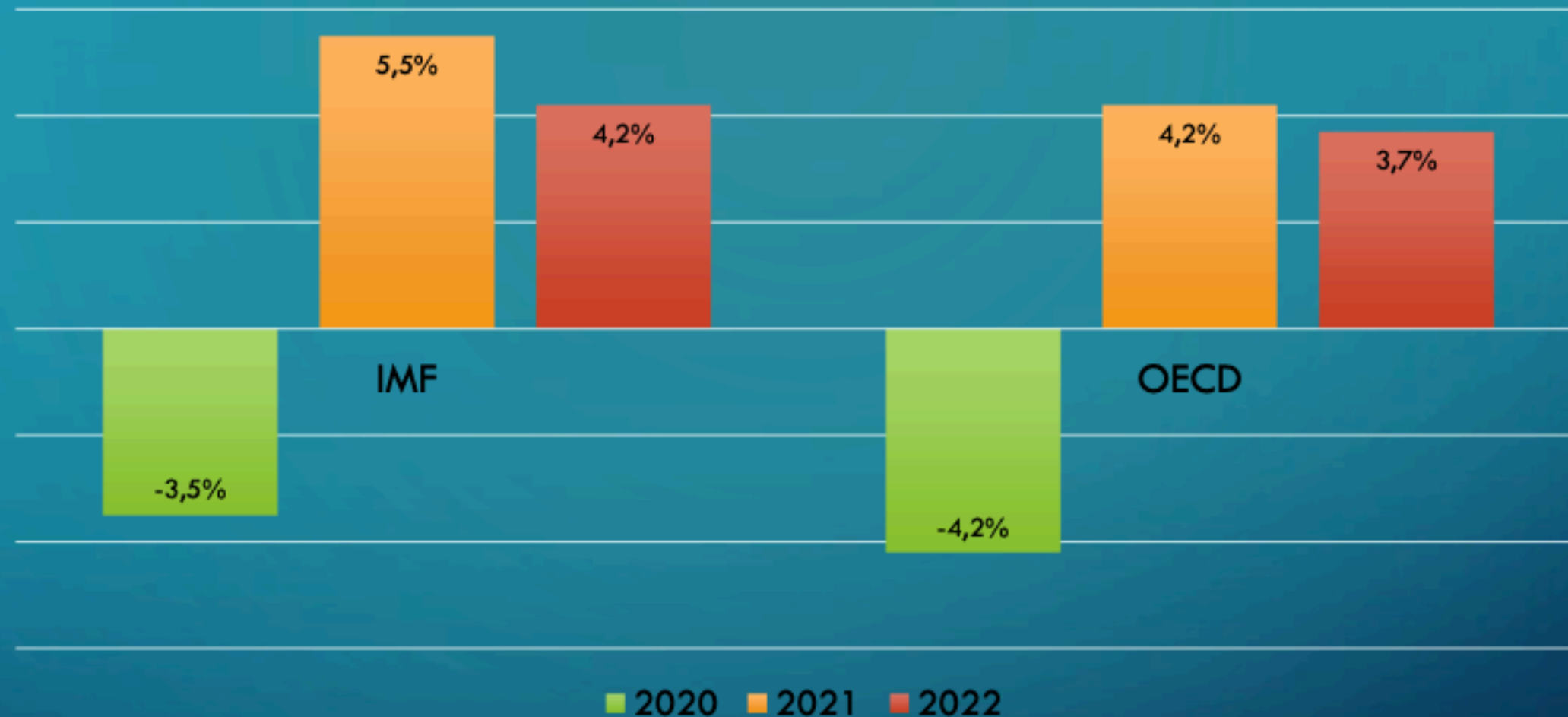
93 780 446 Indonesia

People Fully Vaccinated in 57 OIC Countries

52 676 052 Indonesia



Real GDP Growth Forecasts



- Worst economic performance since the Great Depression in 1929
- Relatively strong recovery is expected for 2021, many countries will not be able to reach pre-COVID-19 levels until 2022 (Moody's Investors Service, 2021)

Sources: IMF, World Economic Outlook Update, January 2021; OECD Economic Outlook, Volume 2020 Issue 2

- <http://www.comcec.org/en/wp-content/uploads/2021/09/1-2-The-Role-of-Islamic-Finance-in-Supporting-MSMEs-against-COVID-19.pdf>

Global Overview of SFSCs

Table 1 Formal Jobs at Risk in Food systems

Where in value chain	Jobs (million)	Livelihoods (million)
Primary production	716,77	2,023,80
Food processing	200,73	484,54
Food services	168,97	339,44
Distribution services	96,34	241,48
Transportation services	41,61	101,05
Machinery	6,51	13,18
Inputs	4,89	11,06
R & D	0,13	0,29
Total	1,280,93	3,214,84
Total at risk due to COVID 19	451,64	1,090,89

- ❖ a 5 to 10% drop in GDP growth would mean an additional 38.2 to 80.3 million people in poor countries falling into the hunger trap.
- ❖ This means the number of hungry people would jump by between 74 and 120 million.

Global Overview of SFSCs

Turbulent Times Ever

Table 1 Food Crises in 2017-2021: Frequency of Inclusion

5 Years	39 Countries; Afghanistan, Bangladesh, Burkina Faso, Brundi, Cameroon, Chad, Comgo, Ethiopia, Gambia, Guinea, Iraq, Kenya, Liberia, Libya, Malawi, Mali, Mozambique, Niger, Nigeria, Senegal, Sierra Lione, Somalia, Sudan, Syria, Uganda, Yemen, Zambia, Zimbabwe
4 Years	10 Countries; Angola, Cote d'Ivoire, Djibuti, Namivia, Pakistan, Palestine, Tanzania, Ukraine
3 Years	3 Countries; Cabo Verde, Lebanon (Refugees), Turkey (<i>Temporary protected irregular migrants</i>)
2Years	5 Countries; Colombia (Refugees), Ecuador (Migrants), Jordan (Refugees), Nepal, South Africa
Once	8 Countries; Congo, Egypt (Refugees), Peru (Migrants), Rwanda, Sri Lanka, Togo, Venezuela

Number of Food Crises and Major Food Crises in Last Five Years

	2016	2017	2018	2019	2020
Food Crises	48	51	53	55	55
Major Food Crises	25	32	33	35	34

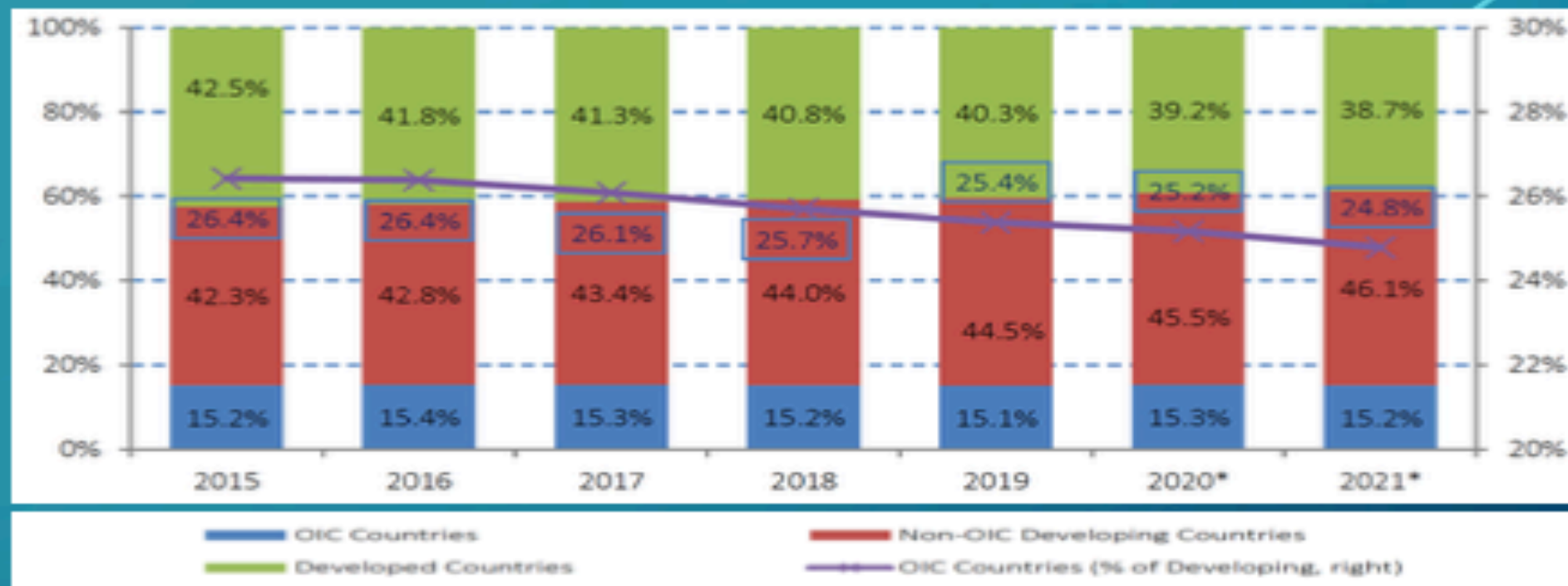
<https://www.wfp.org/publications/global-report-food-crises-2021>

Global Overview of SFSCs

Table 1 Wasting and Stunting prevalence in Children under 5 years in the 10 worst food crises of 2020

Country	Wasting %	Stunting %
Yemen	16,4	46,4
Sudan	16,3	38,20
South Sudan	15,8	15,6
Syria	11,5	27,9
Ethiopia	6,8	36,8
Congo	6,5	36,8
Afghanistan	5,1	36,6
Zimbabwe	2,9	23,5

Comparative Economic Performance (GDP) (PPP in Current USD)



Source: SESRIC (2020, p. 30)

- Increased government expenditures
- Expansionary fiscal policy and increased budgetary deficit
- Monetary policy –quantitative easings
- Increased domestic and foreign debt

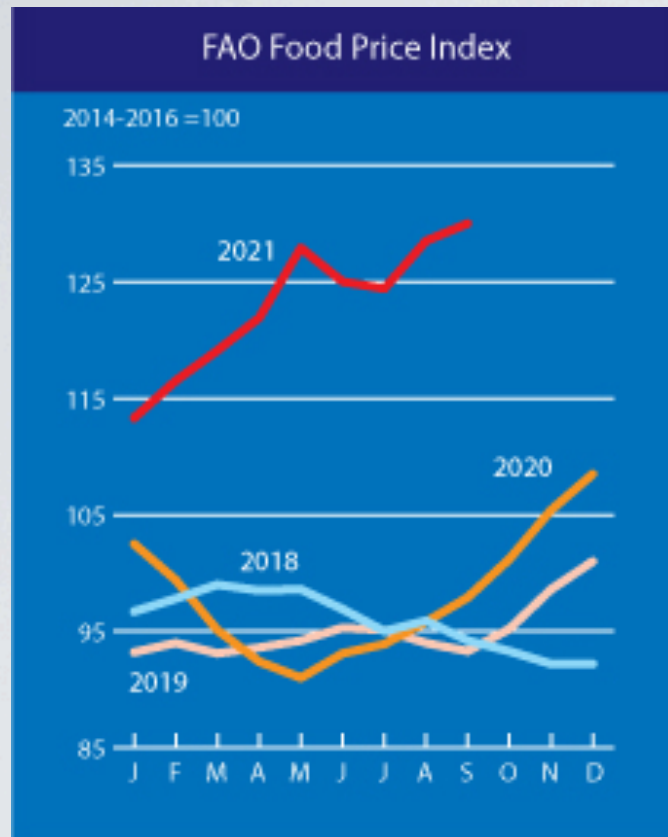
- <http://www.comcec.org/en/wp-content/uploads/2021/09/1-2-The-Role-of-Islamic-Finance-in-Supporting-MSMEs-against-COVID-19.pdf>

Global Overview of SFSCs

Table 11 Numbers of people forecast to be in Crises or worse (Phase 3 or above) in 2021

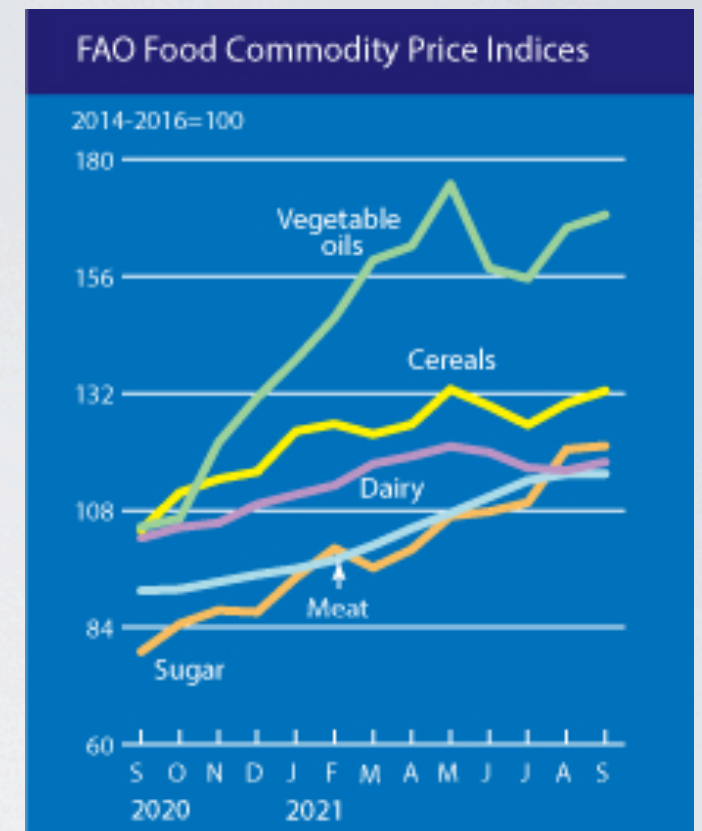
Country	Millions of People
Congo	27,3
Yemen	16,1
Afghanistan	13,2
Ethiopia	12,9
Nigeria	12,8
Haiti	4,4
Zimbabwe	3,4

BAD News ?



FAO Food Price Index rises further in September led by tightening supply conditions and robust demand for staples (wheat and palm oil).

All time record output of cereals in 2021 But below consumption needs-still.



OVERVIEW in OIC-initial efforts

- The OIC has deployed tremendous efforts to intensify joint Islamic action and solidarity in confronting the pandemic since the beginning of the turbulent times:
 - i) the convening of the Health Steering Committee meeting on April 9, 2020,
 - ii) the Second Fiqh Medical Symposium of the International Islamic Fiqh Academy on April 16, 2020,
 - iii) the Executive Committee meeting at the level of Foreign Ministers, held on April 22, 2020, and finally
 - iv) COVID-19 Agriculture Consultative Meeting held on June 30th, 2020.

OVERVIEW in OIC-initial efforts

- It is estimated that more than 25 million increase in the number of unemployed people.

Table 16 Possible Changes in Unemployed Persons in OIC Member States (Million)

2017	2018	2019	2020 (Scenario 1)	2020 (Scenario 2)	2020 (Scenario 3)
44	46	47,1	47,7	53,3	55,4

<https://www.sesric.org/files/article/724.pdf>

OVERVIEW in OIC-extreme poverty

- Without substantial emergency relief, [140 million people could fall into extreme poverty](#),
- 23 million of the people pushed into poverty worldwide are forecasted to be in the SSA region in 2020, with many of them being OIC member countries.

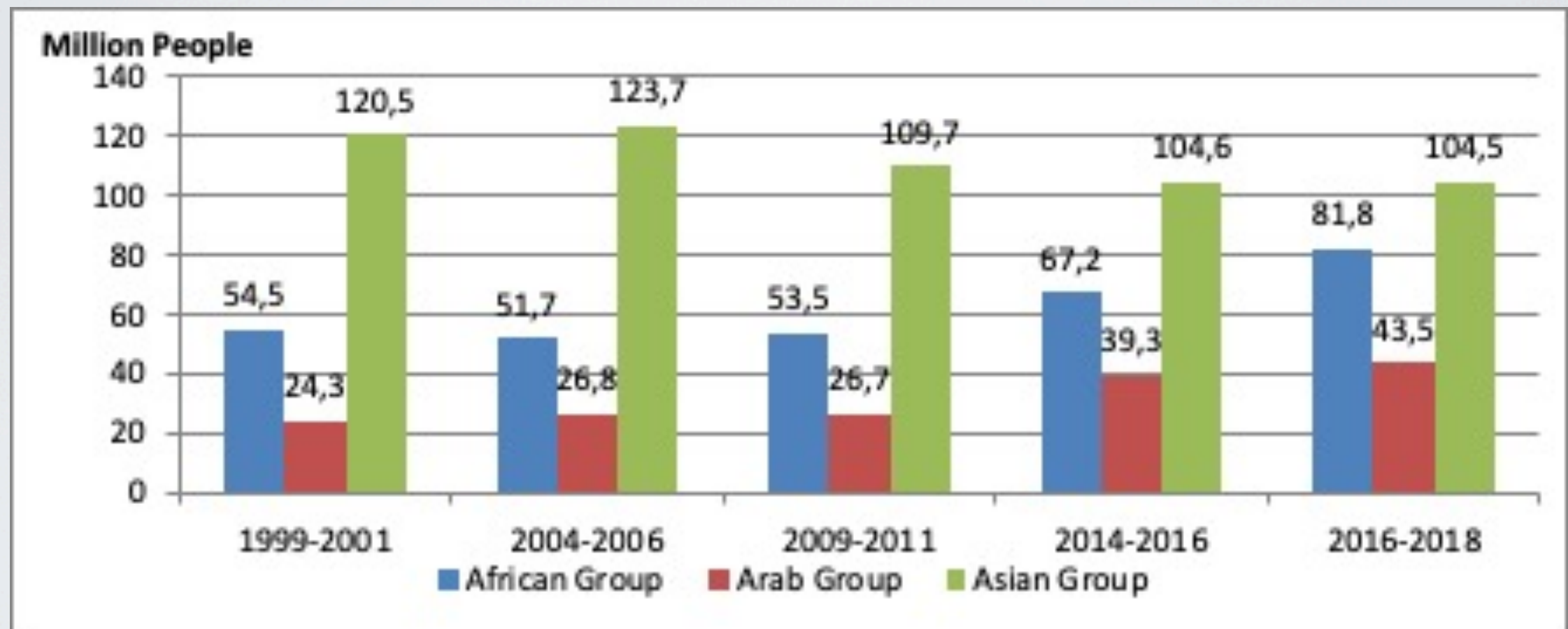
- *Table 18 Impact of COVID-19 global economic crises on extreme poverty*

	World		Africa South of Sahara		South Asia	
	Total Population	Rural Population	Total Population	Rural Population	Total Population	Rural Population
Additional Number of poor (Millions)	145	85	80	38	42	38
Relative Increase in the number of poor (%)	20%	15%	23%	15%	15%	14%

OVERVIEW in OIC-undernourishment + COVID 19

- The latest FAO data pointed out that on average 47.9% of the total population in OIC countries suffer food insecurity problems, quite higher than the world average of 25.4%..

Figure 4 Undernourished People in the OIC by Sub-Regions



OVERVIEW in OIC-Economic recession + COVID 19

- The number of poor in South Asia would increase by 15% or 42 million (Table 19).
- *Table 19 COVID-19 Global Economic Recession (April 2020 IFPRI Global Reference Scenario) Percentage Change from Base Year Values*

	Real GDP	Household Consumption	Export of Goods	Agrifood real value added	Agrifood exports
World	- 5.0	- 1.0	- 20.9	- 1.8	- 24.8
Developed Countries	- 6.2	- 0.1	- 23.5	- 3.1	- 23.8
Developing Countries	- 3.6	- 2.5	- 18.0	+ 0.1	- 30.5
Africa South of Sahara	- 8.9	- 3.2	- 35.2	+ 3.9	- 20.6
South Asia	- 5.0	- 3.7	- 27.1	- 2.0	- 30.7
Southeast Asia	- 7.0	- 4.2	- 27.7	- 2.8	- 31.9
Latin America	- 5.9	- 4.4	- 30.8	- 3.9	- 28.5

OIC Response to COVID 19-A route for a Policy change

- swift and science-based, harnessing knowledge for emergency response, recovery, and resilience that can be based on four research pillars:
 - (1) Sustainable Food Systems;
 - (2) One Health (recognizing the linkages between human, animal, and environmental health);
 - (3) Inclusive public programs for food security and agriculture; and
 - (4) Policies and investments for crisis response, economic recovery, and improved future resilience.

Pushing Hunger up-up-up

- COVID-19 may add an additional 83 to 132 million people to the ranks of the undernourished in 2020
- *Table 20 The Effect of COVID-19 on Hunger in the World: Number of Undernourished People (millions), Three Scenarios*

Years/(Millions)	2019 (base year)	2020	2021	2030
Scenario 1	687,8	778,3	721,7	860,3
Scenario 2	687,8	798,4	739,5	879,0
Scenario 3	687,8	827,9	765,5	909,0
Pre-COVID-19 Scenario	687,8	695,7	704,3	841,4

Consequences for our OIC member states!!!

- people have had to reduce the quantity and quality of the food they consume.
- households in OIC are facing difficulties to access nutritious foods and to healthy diets.
- This jeopardizes the access to the food by the poorest even though food is available.

Consequences for our OIC member states!!!

- the cost of a healthy diet exceeded the international poverty line (established at USD 1.90 purchasing power parity (PPP) per person per day), making it unaffordable for the poor.
- around 57 percent or more of the population cannot afford a healthy diet throughout sub-Saharan Africa and Southern Asia where this is critical for most OIC member states.

OVERVIEW in OIC-Current status of SFSCs in OIC

Table 2 | The prevalence of Food Supply Chains (FSC) in the Food Economy

	Traditional FSC	Transitional FSC	Modern FSC
Approx. prevalence in Africa and South Asia as share of food economy	10,5 %	70,0 %	20 %
Approx. prevalence in Africa and South Asia as share of food economy	5 %	50 %	45 %
Main enterprise type	Home microenterprise	SMEs, wet markets	Supermarkets, large processors
Length	Short, local	Long, rural-urban	Long, rural-urban, international
Use of arrangements	No contracts, no standards	No contracts, public standards	Emerging contracts, private standards
Technology	Labour-intensive	Labour-intensive	Capital-intensive

OVERVIEW in OIC-Effects of COVID 19 on SFSCs in OIC

- *Direct impacts will be strongly felt post-farm*
 - *Dense urban and rural peri-urban areas are likely to be hit largely*
- *Downstream segments of retail and food service will be affected strongly*
- *Food price increases due to COVID-19 is likely due to food shortages*
 - *Economic hardship will proceed COVID-19 responses*

OVERVIEW in OIC-Effects of COVID 19 on Food Supply

- The disruption in the supply will affect the developed countries.

Table 22 Comparison of the overall supply exposure of developing nations to developed nations

Share of levels of overall exposure (% of population)	High Exposure	Intermediate High Exposure	Intermediate Low Exposure	Low Exposure	Total
Arab States	15	15	35	35	100
East Asia and the Pacific	0	10	80	10	100
Europe and Central Asia	30	20	45	5	100
Latin America and the Caribbean	25	25	40	10	100
South Asia	0	25	55	20	100
Sub-Saharan Africa	10	10	50	30	100
Developed World	30	30	30	10	100

OVERVIEW in OIC-Effects of COVID 19 on Food Supply

- most developing regions appear less susceptible to supply shocks,
- However, most labor-intensive farming systems in these regions are hit by COVID-19 labor shortages.
- This jeopardizes their food security.
- Developing countries including India, Indonesia, Ethiopia, Kenya, Mozambique, Rwanda, and Tanzania recorded food price increments of 3.8, 2.5, 3.4, 4.2, 10.5, 19.5, and 12.3%; respectively.

OVERVIEW in OIC-Effects of COVID 19 on Food Demand

- ❖ The population who suffers a loss of income is susceptible to not be able to afford food for their daily needs. **→ SOON Consumption decrease → SOON** a possible higher price of food due to supply disruption.

Table 23 Comparison of the overall demand exposure of developing nations to developed nations

Share of levels of overall exposure (% of population)	High Exposure	Intermediate High Exposure	Intermediate Low Exposure	Low Exposure	Total
Arab States	45	5	30	20	100
East Asia and the Pasific	5	40	30	25	100
Europe and Central Asia	35	15	45	5	100
Latin America	5	20	55	20	100
South Asia	35	40	25	0	100
Sub-Saharan Africa	60	20	15	5	100
Developed World	0	3	27	70	100

OVERVIEW in OIC-Effects of COVID 19 on Food Demand

- ❖ A shock on the food demand by depleting the purchasing power and economic accessibility.
- ❖ Shock to international trade and currency exchange fluctuation rising the local prices, and threatening the food security of the country.
- ❖ The OIC countries, in general, have a higher risk in terms of demand-side exposure meaning the consumption side is the more vulnerable channel of transmissions of the COVID-19 impacts, rather than the production side.

OVERVIEW in OIC-Effects of COVID 19 on Food Demand

Tables 25, OIC with Highest Demand Exposure

Country Name	Share of Food Expenses	Share of Agri Import	Overall Demand Exposure	Severe Food Insecurity Prevalence (%)
Sierra Leone	Int. High	High	High	68,6
Yemen	Int. High	High	High	56,3
Guinea	High	High	High	41,7
Niger	Int. High	High	High	41,0
Mozambique	High	Int. High	High	40,8
Cameroon	High	Int. High	High	39,9
Palestine	Int. High	High	High	34,5
Gambia	Int. High	High	High	28,6
Cote d'Ivoire	High	Int. High	High	28,0
Sudan	High	High	High	14,6

OVERVIEW in OIC-Effects of COVID 19 on Food Demand

Tables 26, OIC with Highest Supply Exposure

Country Name	Share of Intermediate Inputs	Consumption of Fixed Capital/ Worker	Gross Output/ Worker	Share of Agri Export	Overall Supply Exposure	Severe Food Insecurity Prevalence (%)
Guinea	Int. Low	Int. Low	High	High	High	5,4
Syria	Int. Low	Int. High	Int. High	High	High	36,1
Djiboti	High	Low	High	Int. High	High	0,0
Jordan	High	Int. High	Int. Low	Int. High	High	0,0
Afghanistan	Low	Int. Low	High	High	Int. High	31,8
Uganda	Int. Low	Low	High	High	Int. High	3,5
Benin	Int. Low	Low	High	High	Int. High	0,0
Palestine	Int. High	Int. Low	Int. Low	High	Int. High	34,5
Yemen	Int. High	Int. Low	Int. High	Int. High	Int. High	56,3
Maldives	Int. High	Int. Low	Int. High	Int. High	Int. High	0,0

OVERVIEW in OIC-Effects of COVID 19 on Food Demand

Tables 27. Overall Exposure of OIC

Share of levels of overall exposure (%)	High Exposure	Intermediate High Exposure	Intermediate Low Exposure	Low Exposure	Total
Overall Demand Exposure	54,2	14,6	20,8	10,4	100
Overall Supply Exposure	7,0	14,0	52,6	26,3	100

<https://www.sesric.org/files/article/748.pdf>

OVERALL ANALYSIS OF SUPPLY & DEMAND SIDES IN OIC

- ❖ The risk on the demand side also threatens OIC members majorly relying on food imports and fiscally exports of raw commodities (e.g., oil)-MENA region.
- ❖ Food import is threatened due to decreasing revenue from commodity exports, fluctuation of exchange rates, and disruption of the global agri-food chain.



Thank you for your attention...

- **Prof. Dr. Hami Alpas**
- **(AWG Consultant)**
- **Food Eng. Dept. METU**
- **Ankara-Turkey**
- imah@metu.edu.tr**

Making Cooperation Work

COMCEC STRATEGY

For Building an Interdependent Islamic World