

**AGRICULTURAL DEVELOPMENT
IN THE OIC COUNTRIES**
*Challenges and Opportunities
For Cooperation*



FIFTH OIC MINISTERIAL CONFERENCE ON FOOD SECURITY
AND AGRICULTURAL DEVELOPMENT

Khartoum, Sudan, 26-28 October 2010

Statistical, Economic and Social Research and Training Centre
for Islamic Countries (SESRIC)

Contents

List of Tables	i
List of Figures	i
1. Introduction.....	1
2. Agricultural Population and Land Use in Agriculture	2
3. Water Resources and Their Use in Agriculture.....	5
4. Agriculture Production and Productivity.....	13
5. Trade in Agriculture Products	19
6. Promoting Intra-OIC Investment in the Agriculture Sector.....	23
7. Concluding Remarks and Policy Implications	26
References	29

List of Tables

Table 1: Land Use in Agriculture, 2007	4
Table 2: Water Resources Indicators, 2007.....	6
Table 3: Water Withdrawal and Water Use in Agriculture, 2007	8
Table 4: Area Equipped for Irrigation and Irrigation Techniques, 2007	10
Table 5: OIC Countries among Top-20 World Producers of Major Agriculture Commodities, 2007.....	18

List of Figures

Figure 1: Population, 2008 (% of Total).....	2
Figure 2: Agricultural Population, 2008 (% of Total).....	3
Figure 3: Structure of Agriculture Area (% of Total), 2007	3
Figure 4: TRWR per Capita (m ³ /year): Top OIC Countries.....	6
Figure 5: TRWR per Capita (m ³ /year): OIC Countries Suffering Water Stress.....	7
Figure 6: Water Dependency Ratio, 2007 (%).....	7
Figure 7: Agricultural Water Withdrawal (km ³ /year): Top OIC Countries	9
Figure 8: Area Equipped for Irrigation (000 Hectares).....	10
Figure 9: Irrigation Area as % of Agricultural Area (OIC Countries with more than 30%).....	11
Figure 10: Irrigation Techniques, 2007 (% of total area equipped for irrigation).....	11
Figure 11: Value Added by Economic Activity (% of GDP)	13
Figure 12: Agriculture Production Index (base year 1999-2001).....	14
Figure 13: Agriculture Production (2000-2008, Million Tons)	14
Figure 14: Agriculture Production: Top 10 OIC Countries (2008, Million Tons)	15
Figure 15: Agriculture Production per Capita (Kilograms)	16
Figure 16: Agriculture Productivity, 2000-2008	16
Figure 17: Fertilizer and Tractor Use.....	17
Figure 18: Exports of Agricultural Products (2000-2007)	19
Figure 19: Exports of Agriculture Products: Top 10 OIC Countries (2007, Million Tons).....	20
Figure 20: Imports of Agricultural Products (2000-2007)	20
Figure 21: Imports of Agriculture Products: Top 10 OIC Countries (2007, Million Tons).....	21
Figure 22: Trade Balance in Agricultural Products (2000-2007, Billion USD).....	22
Figure 23: Most Likely Targeted OIC Countries for Intra-OIC Investment in Agriculture.....	24

1 Introduction

While agriculture is widely known to be a primary economic activity and is assumed to play a major role in the economies of most developing countries, this feature does not stand firm in the case of many OIC countries as well as in the case of OIC countries as a group. On average, the share of agriculture in the total GDP of the OIC countries amounted to only 11.5% in 2007, gradually declining from 17.6% in 1990. In fact, in many OIC countries, agriculture has been slightly replaced over time by services and, to a lesser extent, by industry. This is due to a combination of policy, structural, climatic and geographical factors. These factors include economic transformation and structural diversification efforts in some countries, the increasing migration of agriculture labour force from rural to urban areas seeking higher wages in other sectors, mainly in the services sector, inadequate agricultural investment and infrastructure, low level of agricultural machinery and technology utilization, the fluctuations in world agricultural commodity prices and trade difficulties that many of these countries are still facing in the international commodity markets, and the scarcity of water resources in many OIC countries, which are located in arid and semi-arid sub-regions of West Asia and North-eastern Africa.

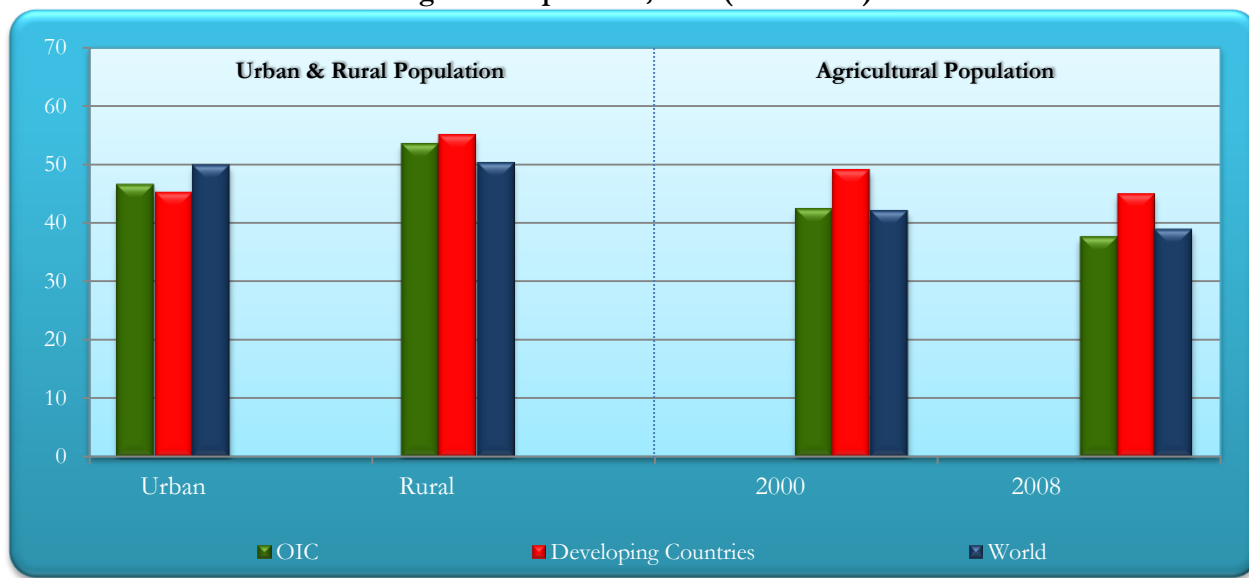
However, employing 37.4% of the total population of the OIC countries in 2008, agriculture is still considered as an important economic activity with high potential to play a significant role in the economic development of many OIC countries. This is particularly true for the 22 OIC least-developed countries (OIC-LDCs), where the agriculture sector accounts, on average, for 25% of their total GDP in 2008, and reaches more than 30% of the GDP in half of them. Moreover, 18 OIC member countries from different climatic regions figure among the top 20 producers of major agricultural commodities worldwide. These commodities vary from cereals such as wheat, rice and maize to tropical/temperate zone commodities such as cocoa, coffee, rubber and sugar. In this respect, the development of a modern agriculture sector in these countries would, therefore, help reduce poverty, secure food sufficiency, provide additional job opportunities for millions, and promote other sectors in the economy that are related to agricultural production.

Given this state of affairs, the present paper highlights the recent state as well as the constraints and challenges of agricultural development in the OIC member countries. It tackles major related issues such as agricultural population and land use in agriculture, water resources and their use in agriculture, agriculture production and productivity and trade in agriculture commodities. It also sheds light on the importance of promoting intra-OIC investment in the agriculture sector and proposes some policy recommendations for enhancing OIC cooperation in this important area.

2 Agricultural Population and Land Use in Agriculture

With a total land area of 3.2 billion hectares and a total population of 1.5 billion in 2008, the 57 OIC member countries account for almost one-fourth of the world's total land area and slightly over one-fifth of its population (24.6% and 22.7%, respectively). They spread over a large geographical area in different climatic regions over four continents. In 2008, rural population in the OIC countries accounted for 53.5% of their total population, compared to 54.9% in the developing countries and 50.2% world average (Figure 1).

Figure 1: Population, 2008 (% of Total)

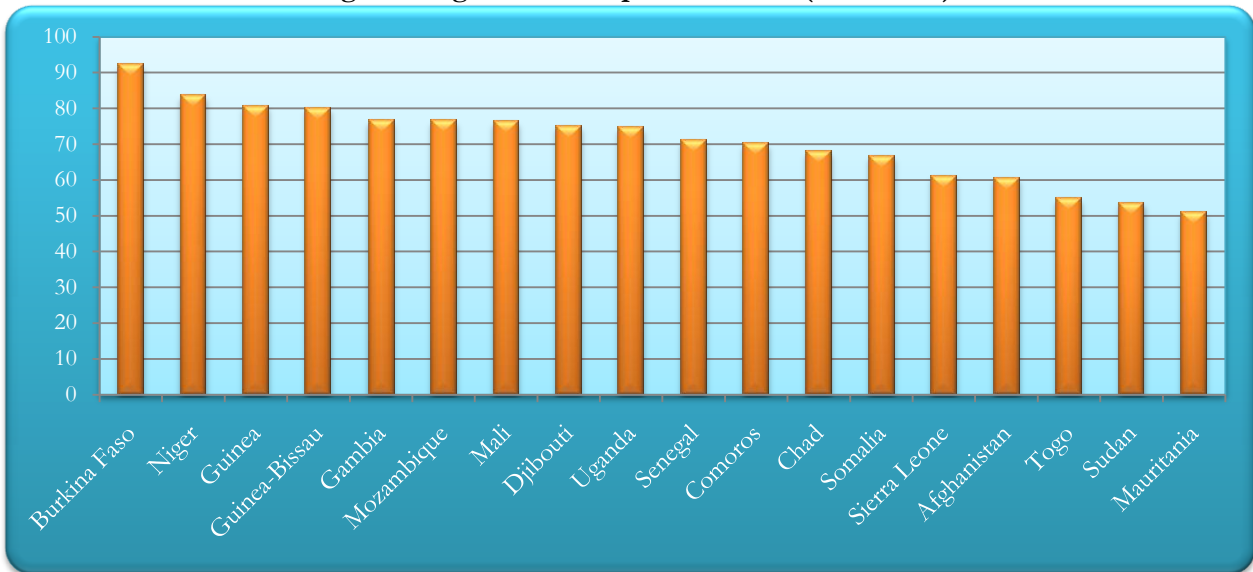


During the period 2000-2008, the total population of the OIC countries increased by an average annual rate of 1.9% against 1.3% of the developing countries and 1.2% of the world total.

In 2008, the agricultural population in the OIC countries accounted for 37.4% of the total population compared to 42.2% in 2000 (Figure 1). This ratio remained below that of the developing countries (44.9%) and the world average (38.8%). Yet, agricultural population is still accounting for more than 50% of the total population in 18 OIC countries, most of them are least-developed countries in Sub-Saharan Africa, and even reached more than 70% in some of these countries like Burkina Faso, Guinea, Guinea Bissau, Gambia, Niger, Djibouti, Uganda, Comoros and Senegal (Figure 2).

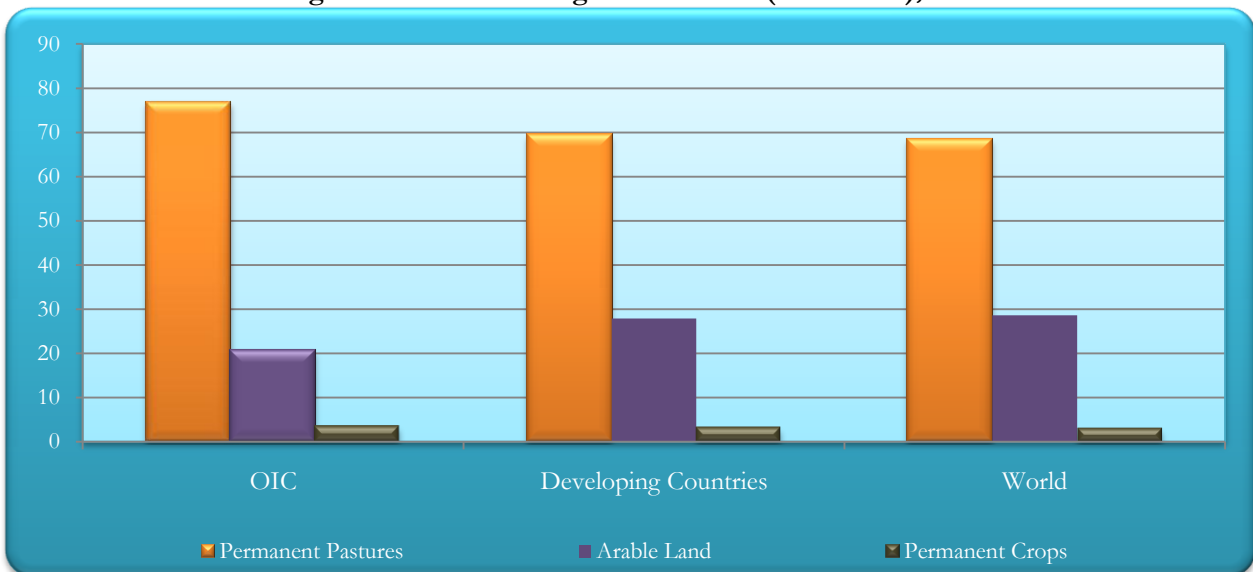
In addition to the agriculture labour force, the effective and productive use of land in agriculture is an essential element in the process of agricultural development. In this connection, the 57 OIC member countries had a total agricultural area of 1.4 billion hectares, corresponding to 36.4% of the total agricultural area of the developing countries and 28.4% of that of the world and accounted for 43.7% of their total land area compared to 38.7% and 37.9% in the case of the developing countries and world average, respectively (Table 1).

Figure 2: Agricultural Population, 2008 (% of Total)



However, the arable land area of the OIC countries amounted to only 290 million hectares, corresponding to 20.7% of their agricultural area, and accounted for 27.1% of the arable land of the developing countries and 20.6% of that of the world. Thus, the percentage of the arable land of the OIC countries in their total agricultural area was lower than that of the developing countries (27.9%) and the world average (28.6%).

Figure 3: Structure of Agriculture Area (% of Total), 2007



In contrast, the permanent crops land of the OIC countries (49 million hectares) accounted for 34.3% of the total permanent crops land in the world and 40.5% of that of the developing countries. Although the permanent crops land of the OIC countries accounted for only 3.4% of their total agricultural area, this ratio was slightly higher than that of the developing countries (3.1%) and the world average (2.9%). As shown in Figure 3, the bulk of the agricultural area in the OIC countries (76.8% or 1.1 billion hectares) is permanent pastureland land used for grazing of livestock.

Table 1: Land Use in Agriculture, 2007

	Agricultural Area		Cultivated Area				Permanent Pasture	
			Arable Land		Permanent Crops			
	Million Hectares	% (1)	Million Hectares	% (2)	Million Hectares	% (2)	Million Hectares	% (2)
OIC Countries	1401	43.7	290	20.7	49	3.4	1076	76.8
Developing Countries	3846	38.7	1071	27.9	121	3.1	2671	69.5
World	4932	37.9	1411	28.6	143	2.9	3378	68.5
OIC as % of:								
World	28.4		20.6		34.3		31.9	
Developing Countries	36.4		27.1		40.5		40.3	

Agricultural area is the sum of arable, permanent crops and permanent pastures land areas.

Arable land is the land under temporary crops, temporary meadows for mowing or pasture, land under market and kitchen gardens, and land temporarily fallow.

Permanent crops land is the area cultivated with crops that occupy the land for long periods and that do not need to be replanted after each harvest. This does not include woodland and forests.

Land use in agriculture in the OIC countries reflects large differences at both the individual country and sub-regional levels. With large agricultural area relative to their total land area, some OIC countries, like Saudi Arabia (80.8%), Kazakhstan (77%), Djibouti (73.4%), Somalia (70.2%) and Turkmenistan (69.4%), have very small arable land areas (less than 10% of their agricultural areas) and even negligible permanent crops land areas. This is due to the fact that the bulk of the agricultural area in these countries is permanent pastureland (more than 90%) used for the grazing of livestock. In contrast, with small agricultural area relative to their total land area, some OIC countries like Egypt, Indonesia, Malaysia, Guyana, Suriname, Cameroon, Jordan, UAE, Qatar and Palestine, have relatively large arable and permanent crops land areas in terms of the percentage of these areas in their agricultural areas.

The share of arable land area in agricultural area was over 50% in 11 OIC countries, namely Bangladesh (88.1%), Egypt (85.3%), Pakistan (78.8%), Benin (76.7%), Suriname (69.9%), Togo (67.8%), Cameroon (65.1%), Turkey (55.6%), Iraq (55%), Comoros (53.3%) and Albania (51.7%). This ratio was less than 10% in 11 OIC countries. In contrast the share of permanent crops land in agricultural area was higher than 30% in only 8 OIC countries, namely Malaysia (73.5%), Maldives (61.5%), Brunei (43.9%), Bahrain (40%), UAE (37%), Comoros (36.7%), Indonesia (32%) and Palestine (30.6%). Moreover, it is observed that permanent crops land is negligible (less than 1%) in 16 OIC countries.

All in all, while the percentage of agricultural area in total land area of the OIC countries is quite higher than that of the developing countries and the world average, the percentage of their arable land area in total agricultural area is still significantly below the average levels of the world and the developing countries. Among other factors, this is due to the unsatisfactory use of land in agriculture, particularly due to the scarcity of water resources and the use of insufficient irrigation systems and techniques.

3 Water Resources and Their Use in Agriculture

Considering that the bulk of the world's water resources is used in agriculture and that the global demand for food is increasing rapidly, the role of water resources management, through efficient irrigation systems and techniques, has recently assumed greater importance in agricultural development and food security. Water is a scarce resource in arid and semi-arid regions where many OIC countries are located, particularly in West Asia and North-eastern Africa where most of the OIC countries in these regions are facing severe pressures due to limited opportunities for the exploitation of new water resources. These pressures are expected to increase in the face of expanding populations and the increased per capita water use associated with economic development, as well as due to the expected negative climate change impacts in the future. Therefore, the efficient use of water resources in agriculture, through improving irrigation systems and techniques, is one of the most urgent needs and prerequisites for sustainable agricultural development and food security in these countries, particularly those in water-scarce regions.

In the light of these challenges, this part of the report briefly highlights the state of water resources and their use in agriculture in the OIC countries with emphasis on the importance of irrigation systems. In this report, a distinction has been made between renewable and non-renewable water resources. Renewable water resources (RWR) are that part of the water resources generated from endogenous precipitation. They are computed on the basis of the water cycle by adding up the long-term average annual flow of rivers and lakes (surface water) and recharge groundwater reservoirs. Total renewable water resources (TRWR) are the total amount of a country's water resources and defined as the sum of internal renewable water resources (IRWR) and external renewable water resources (ERWR), i.e. the incoming flow originating outside the countries' borders.

Non-renewable water resources are groundwater bodies (deep aquifers) that have a negligible rate of recharge on the human time-scale and thus can be considered non-renewable. Although non-renewable water resources are not considered in this report, some OIC countries have a high potential of fossil groundwater reserves such as the Continental Sahara, Murzuk, the Nubian Basin, the Senegal-Mauritania Basin, the Lullemeden Basin in Niger, and the Chad Basin. Also some OIC countries in Middle East and North Africa, such as Jordan, Libya, Saudi Arabia and Bahrain, have very important fossil aquifers, and rely heavily on these resources due to their limited renewable water resources. Therefore, the increasing depletion of these resources risks the long-term sustainable use of these resources since they cannot be renewed.

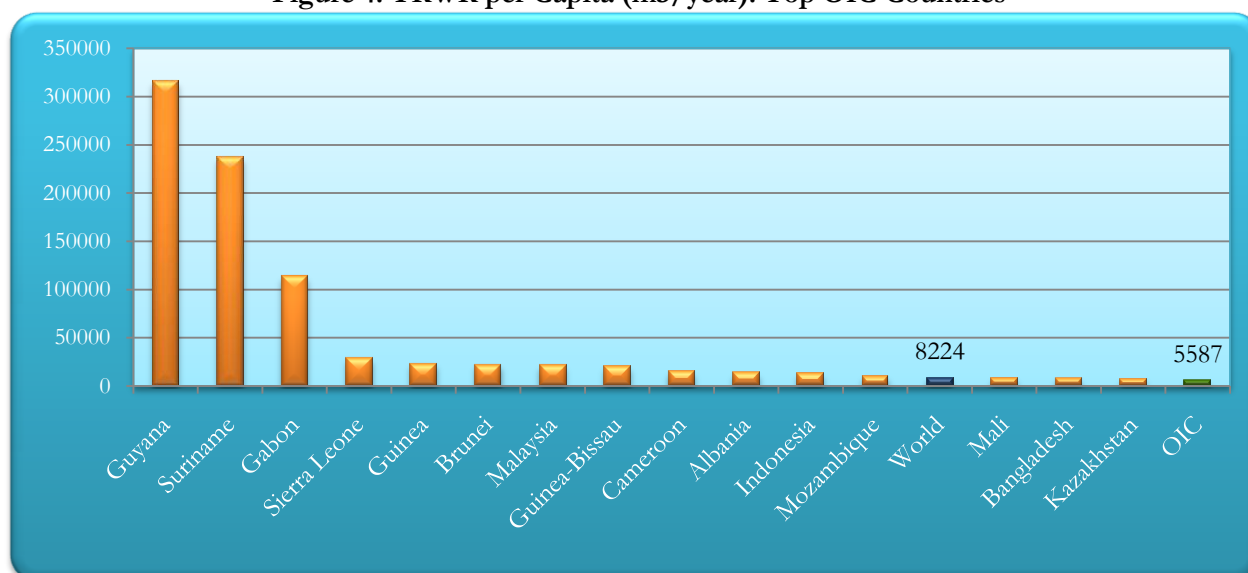
Water scarcity is defined as the imbalance of supply and demand of water. The minimum level of TRWR required for basic domestic, agricultural, and industrial activities is estimated at a threshold of 1700 m³/year per capita. Countries or regions with TRWR/year per capita below this level are considered suffering water stress and those with TRWR/year per capita less than 1000 m³/year are considered suffering water scarcity. When TRWR/year per capita of a country or a region falls below 500 m³, this country or region is considered suffering absolute water scarcity (FAO, UN-Water, FAO, 2007).

Table 2: Water Resources Indicators, 2007

	Average Precipitation in Depth (mm/yr)	IRWR (km ³ /yr)	ERWR (km ³ /yr)	TRWR (km ³ /yr)	TRWR per Capita (m ³ /yr)	Dependency Ratio (%)
OIC Countries	47209	6126.64	2270.42	8397.06	5587	27.04
World	211159	43042.69	11919.86	54864.25	8224	21.73
OIC as % of:						
World	22.4	14.2	19.0	15.3		

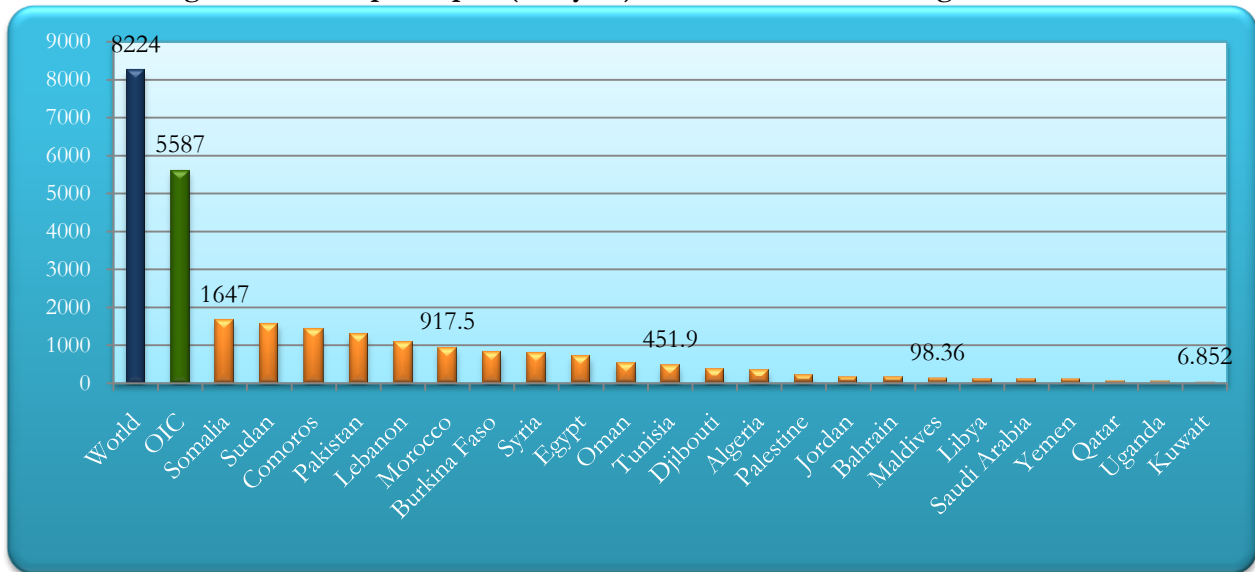
The distribution of water resources within the OIC region is far from being uniform. Land relief, location with respect to the sea, latitude and resulting hydro-climatic conditions, diversity in hydrographical and geological structures are all factors which lead to extremely different water situations in the OIC countries. At the individual country level, while TRWR per capita is higher than the world average of 8224 m³/year in 12 OIC countries, 23 OIC Countries are suffering water stress with TRWR per capita less than 1700 m³/year (Figure 4 and 5).

Figure 4: TRWR per Capita (m³/year): Top OIC Countries



With TRWR per capita less than 1000 m³/year, 18 of these countries are suffering water scarcity. Moreover, with TRWR per capita less than 500 m³/year, 13 of them are suffering absolute water scarcity and are among the poorest countries in the world in terms of water resources (Figure 5). With the highest level of 315.9 km³/year recorded in Guyana and the lowest level of almost 7 m³/year in Kuwait, the figures on TRWR per capita in OIC countries reflect an extreme heterogeneity in the state of water resources in these countries.

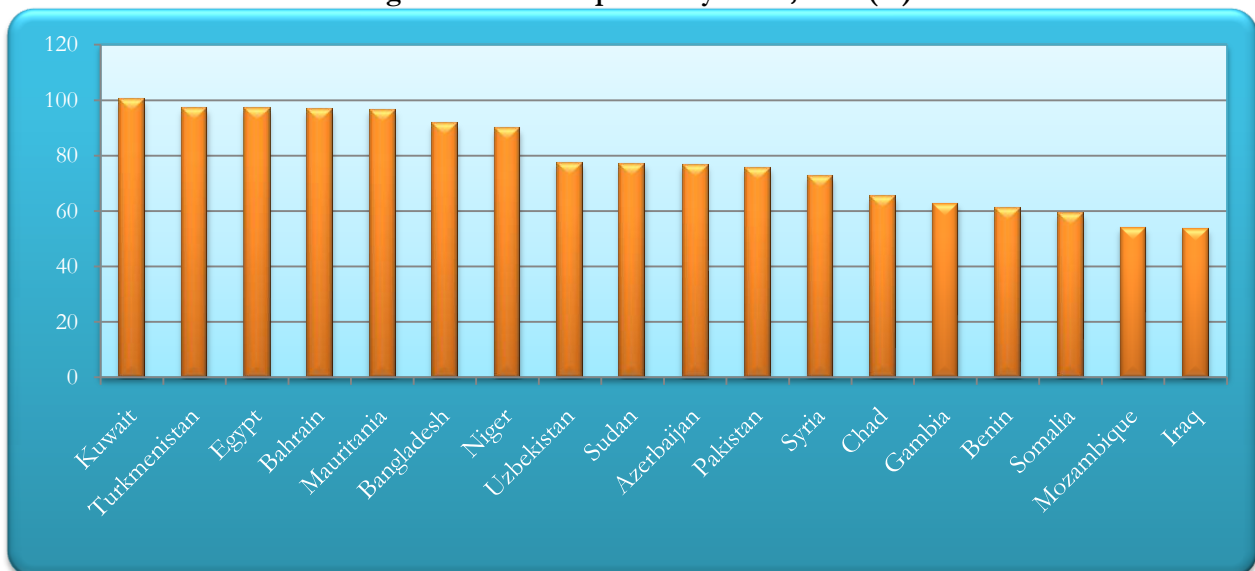
Figure 5: TRWR per Capita (m³/year): OIC Countries Suffering Water Stress



Furthermore, many OIC countries depend to a large extent for their RWR on water flows originating outside their borders (i.e. ERWR). In fact, some large and networks of minor rivers as well as groundwater aquifers play significant role in water resources in many OIC countries. There are eight main international river basins in the OIC region. The Nile, Niger, Senegal, Lake Chad, and Limpopo River Basins in African Region; Euphrates and Tigris River Basin, Aral Sea Basin (Amu Darya and Syr Darya Rivers), and Ganges River Basin in Asian Region.

This situation reflects an average water dependency ratio of 27% in the group of OIC countries as a whole compared to the world average of 21.7% (Table 1). This ratio reached over 50% in 18 OIC countries (see Figure 6).

Figure 6: Water Dependency Ratio, 2007 (%)



In particular, the OIC countries in the Middle East and North-eastern Africa recorded the highest water resources dependency ratios. For example, water dependency ratio reached 100% in Kuwait and 96.6% in Bahrain, where they depend heavily on groundwater aquifer flows from Saudi Arabia. Egypt (96.9%) depends on the Nile River from Ethiopia, and Mauritania (96.5%) on Senegal River. Sudan

(76.9%) also depends on the Nile River from Ethiopia, and Syria (72.4%) depends on Euphrates from Turkey. To a lesser extent, but still over 50%, Somalia (59.2%) depends on Shebelle and Juba rivers, and Iraq (53.5%) depends on Euphrates and Tigris rivers. Some central and south Asian countries like Turkmenistan (97.1%), Uzbekistan (77.4%) and Azerbaijan (76.6%) depend on external water resources, especially from Amu Darya and Syr Darya Rivers, Bangladesh (91.3%) and Pakistan (75.6%) depend on Ganges River from India.

On the other hand, considering the rapid growth of their population, many OIC countries are still facing serious challenges in meeting the increasing demand for water for domestic use, particularly in agricultural activities. In this respect, water withdrawal¹, expressed as a percentage of IRWR, is an indicator on the capacity of the country to rely on its own water sources (i.e. the pressure on the water resources). Roughly speaking, pressure on water resources is considered high when this percentage is above 25%. In this respect, total water withdrawal in the OIC countries accounts for 24.5% of the world total water withdrawal. It makes up 15.3% their IRWR and 11.17% of their TRWR, compared to the world average of only 8.9% and 7%, respectively (Table 3). Therefore, as a group, it seems that the OIC countries do not have a pressure on their water resources since their average water withdrawal as percentage of their IRWR is below the threshold of the pressure on water resources of 25%. However, at the individual country level, 28 OIC countries were suffering pressure on their water resources, where water withdrawal as percentage of their IRWR exceeded 25%.

Table 3: Water Withdrawal and Water Use in Agriculture, 2007

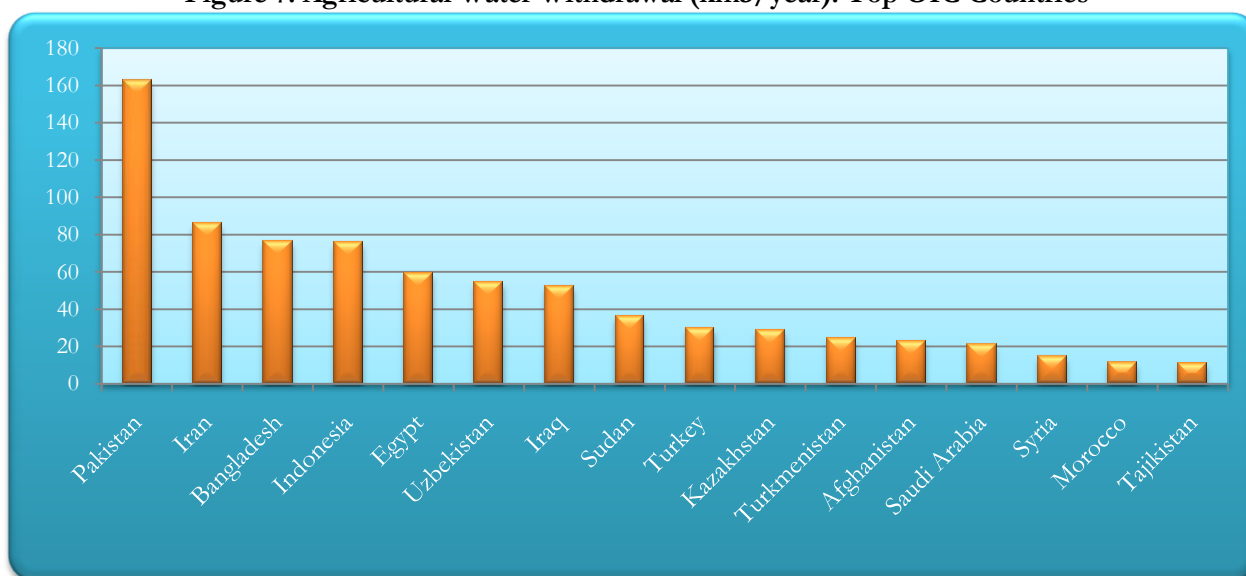
	Total Water Withdrawal			Agricultural Water Withdrawal		
	km ³ /yr	% of IRWR	% of TRWR	km ³ /yr	% of Total Withdrawal	% of TRWR
OIC Countries	934.9	15.3	11.1	837.3	89.6	10.0
World	3818.3	8.9	7.0	2674.2	70.0	4.9
OIC as % of:						
World	24.5			31.3		

In this respect, it should be mentioned that the countries which have values of water withdrawal as percentage of their IRWR above 100% are depending, in addition to their IRWR, on external renewable water resources (ERWR) flowing from outside the country and/or on non-conventional water resources (desalinated water and treated wastewater). These countries may also mine their groundwater resources. In this context, it is worth mentioning that non-renewable groundwater, desalinated water and treated wastewater are used extensively as supplemental water resources in most of these countries, particularly in the Gulf countries, which convert a significant amount of saline water from the sea into drinking-water. According to the World Bank, three of these countries, namely Saudi Arabia, United Arab Emirates and Kuwait are by far the largest users of desalinated water in the Middle East and North Africa (MENA), where they accounted for 77% of the total desalinated water and treated wastewater in the region (WB, 2007). It is also worth mentioning that, due to the scarcity of IRWR in these countries, particularly for the use in agricultural activities, the use of treated wastewater in irrigation is becoming a common practice.

¹ Total water withdrawal is the annual quantity of water withdrawn for agricultural, industrial, and domestic purposes. The use of desalinated and treated wastewater is thus included.

As everywhere else, the bulk of total water withdrawal in OIC countries is used in agriculture activities. In 2007, agricultural water withdrawal² in the OIC countries accounted for 89.6% of their total water withdrawal compared to the world average of 70%, and for 10% of their TRWR compared to the world average of only 4.9% (Table 3). Yet, the distribution of agricultural water withdrawal within the OIC region is far from being uniform. In absolute terms, 16 countries accounted for 91.3% of the total agricultural water withdrawals in all the OIC countries, and only 5 of them, namely Pakistan, Iran, Bangladesh, Indonesia and Egypt accounted for almost 55% (Figure 7).

Figure 7: Agricultural Water Withdrawal (km³/year): Top OIC Countries



On the other hand, the bulk of agricultural water withdrawal is used in irrigation. In this respect, the terms “area equipped for irrigation”, “irrigation area” and “area under irrigation” all refer to the area of land equipped to provide water, other than direct rainfall, to the crops. According to this definition, the total area equipped for irrigation in the OIC countries covers 77.3 million hectares or 27% of that of the world, and accounts for only 5.5% of their total agricultural area compared to the world average of 5.8%. Yet, the total area equipped for irrigation in the OIC countries accounts for 26.7% of their arable land, a level which is quite higher than the world average of 20.3% (Table 4).

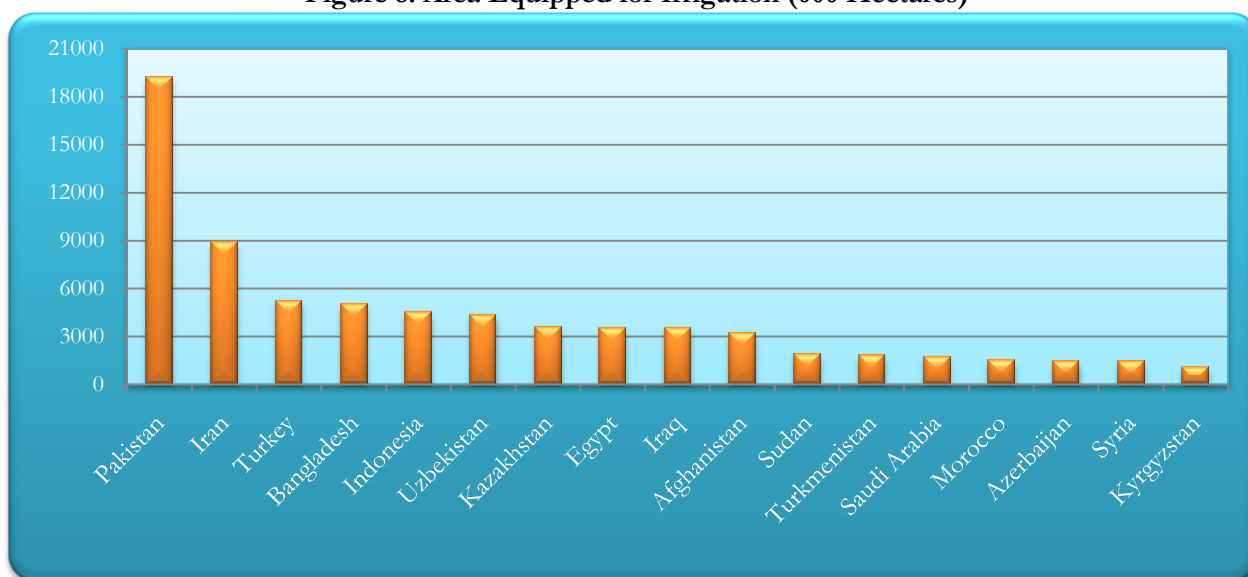
Table 4: Area Equipped for Irrigation and Irrigation Techniques, 2007

	Total Area Equipped for Irrigation			Irrigation Techniques		
	000 Hectares	As % of		As % of Total Area Equipped for Irrigation		
		Agriculture Area	Arable Area	Surface Irrigation	Sprinkler Irrigation	Localized Irrigation
OIC Countries	77316	5.5	26.7	81.8	7.8	3.3
World	286794	5.8	20.3			

However, the distribution of the irrigation area in the OIC region is far from being uniform, where, to a large extent, it reflects the variation in TRWR in these countries. In this respect, it should be mentioned that irrigation plays a crucial role in agricultural production in the countries located in arid and semi-arid regions with low average levels of precipitation like the OIC countries in the Middle East and North Africa.

² Including irrigation and livestock watering.

Figure 8: Area Equipped for Irrigation (000 Hectares)

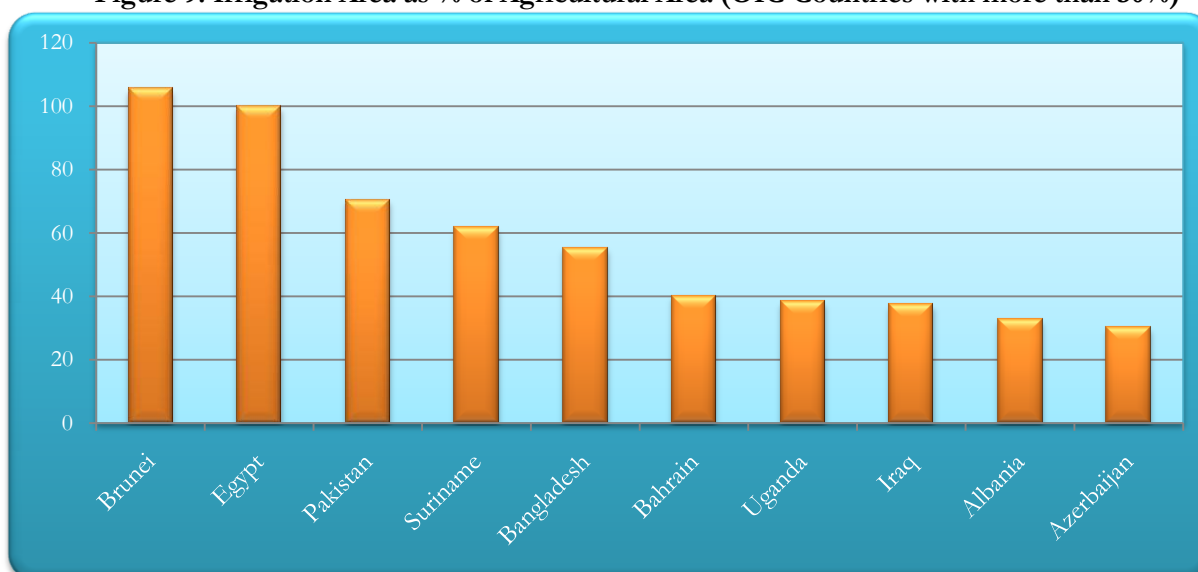


At the individual country level, the bulk of the total irrigation area of the OIC countries is concentrated in 17 countries (Figure 8), which are almost the same top OIC countries in terms of agricultural water withdrawal. Together, these countries accounted for 92.6% of the total irrigation area in all the OIC countries, and only 5 of them, namely Pakistan, Iran, Turkey, Bangladesh and Indonesia accounted for 55.3%.

The share of irrigation area in agricultural land area varies considerably in the OIC countries. It reached more than 30% in only 10 countries (Figure 9) and lower than 1% in 20 countries.

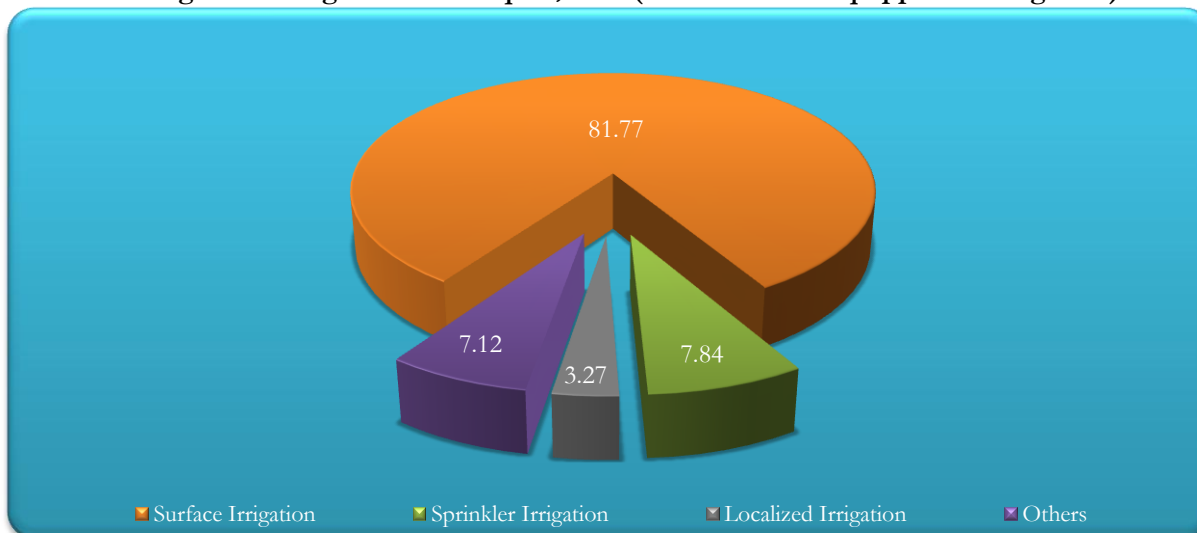
In contrast, while the area under irrigation accounted for more than 50% of the arable land in 22 OIC countries, this ratio was lower than 5% in 18 countries. In fact, the part of the arable land area under irrigation has a crucial role in agricultural production in many OIC countries, particularly those suffering water scarcity in arid and semi-arid regions of the Middle East and North Africa. Therefore, irrigated agriculture and the use of efficient irrigation systems and techniques have a very important and greater role in agricultural development and food production in these countries.

Figure 9: Irrigation Area as % of Agricultural Area (OIC Countries with more than 30%)



In this respect, the available data on the irrigation techniques used in the OIC countries indicate that surface irrigation, which is the most traditional and least water-saving technique, is by far the most widely used technique, practised on 81.8% of the total area equipped for irrigation (Figure 10). This ratio reached more than 50% in 29 OIC countries. Consequently, huge amounts of the water diverted for irrigation in these countries are wasted at the farm level through either deep percolation or surface runoff.

Figure 10: Irrigation Techniques, 2007 (% of total area equipped for irrigation)



In contrast, sprinkler irrigation technique³ is practised on 7.8% of the total area equipped for irrigation in the OIC countries. This technique, which is more water-saving than surface irrigation, is practised on more than 30% of the irrigation area in only 3 OIC countries. On the other hand, localized irrigation technique⁴, which is the most water-saving one, is practised on only 3.3% of the total area equipped for irrigation in the OIC countries. It is practised on more than 30% of the irrigation area in only 2 OIC countries. In Saudi Arabia, sprinkler irrigation technique is by far the most predominant (59.5%), while in Uganda and Jordan, localized irrigation is the most widely used technique; being practised on over half of their irrigation areas (86% and 79%, respectively). In particular, the countries in arid regions, without large rivers, choose to develop the localized and sprinkler irrigation techniques more intensively to save water.

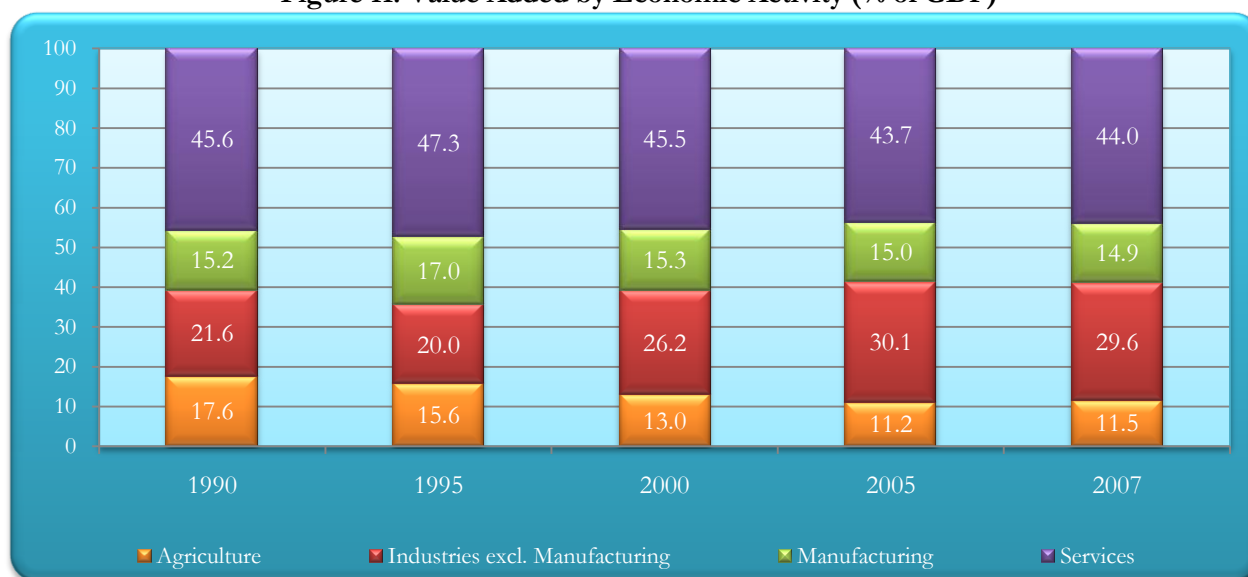
³ It is a method of irrigation by applying water under pressure when the water is sprinkled in the form of artificial rain through lines carrying distribution components: rotary sprinklers, diffusers with permanent water streams and perforated pipes.

⁴ It is a method of irrigation (with different techniques) when water is applied to and causing wetting of only part of the soil in the field at the base of the plant (plant root zone) in small but frequent quantities, i.e. drop by drop. It includes the following terms or systems: trickle irrigation, drip irrigation, daily flow irrigation, drop irrigation and sip irrigation.

4 Agriculture Production and Productivity

Agriculture is widely known to be the primary economic activity and is assumed to play a major role in the economies of most developing countries. However, this feature does not stand firm in the case of many OIC countries. In part, this is due to the inefficient use of land in agriculture in many of these countries due to scarcity of water resources and the use of insufficient irrigation systems. It is also due to other factors such as the increasing migration of agricultural population from rural to urban areas seeking higher incomes, particularly in the services sector. On average, the share of agriculture in the total GDP of the OIC countries amounted to only 11.5% in 2007, gradually declining from 17.6% in 1990 (Figure 11).

Figure 11: Value Added by Economic Activity (% of GDP)



At the individual country level, the share of agriculture in GDP varies quite a lot among the OIC countries. As of 2007, the agriculture sector dominates in only 7 countries, namely Afghanistan, Comoros, Guinea Bissau, Niger, Sierra Leone, Somalia, and Togo, all of which are least-developed countries (LDCs). The highest share of 60.1% is recorded by Somalia and the lowest share of only 0.1% is recorded by Qatar.

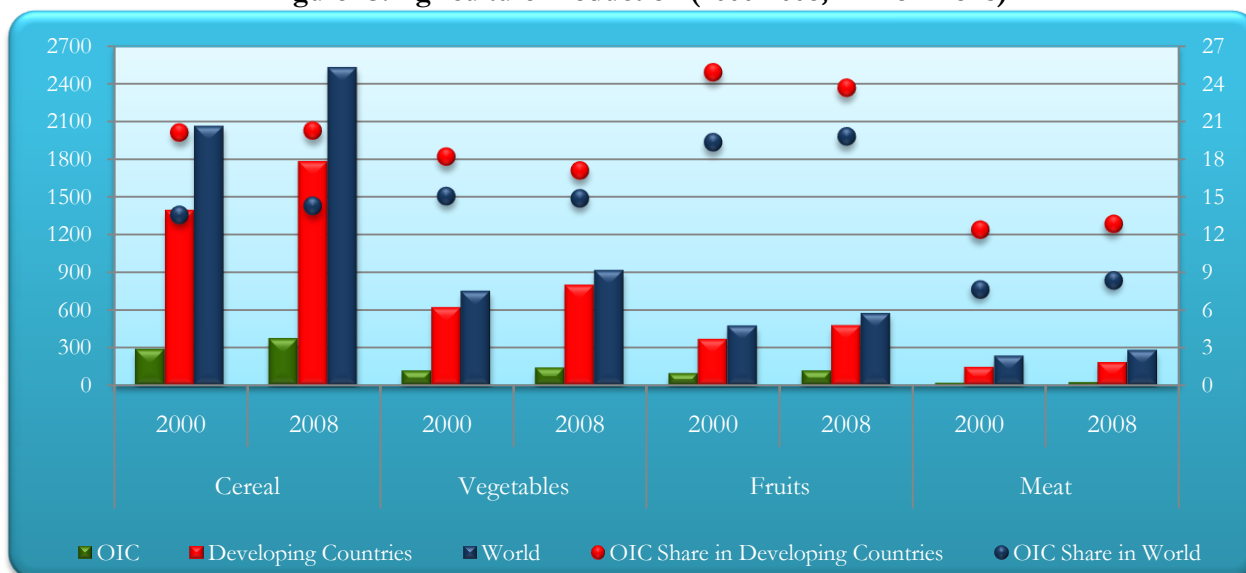
In terms of 2007 agricultural production index of the FAO, although the OIC countries, as a group, were, on average, performing a slightly better than the group of the developing countries and the world average during the period 2000-2007 (Figure 12), as of 2007, there were 25 OIC countries which recorded a lower agriculture production index than that of the world average. Moreover, according to this index, the agriculture production decreased, during the period under consideration, by 50% in Maldives, 39% in Uganda, 31% in Gambia, 25% in Senegal and 21% in Qatar.

Figure 12: Agriculture Production Index (base year 1999-2001)



However, when per capita agriculture production index is considered during the same period, it is observed that the average per capita agriculture production for the OIC countries was slightly increasing and following similar trends of both the world average and the average of the group of the developing countries until 2006. Yet, in 2007, the index for the OIC countries declined significantly (back to 2001 level), falling quite below the averages of both the world and the developing countries. At the individual country level, as of 2007, there were 35 OIC countries which recorded a lower per capita agriculture production index than that of the world average, and 29 countries of them recorded a decrease in their per capita production index.

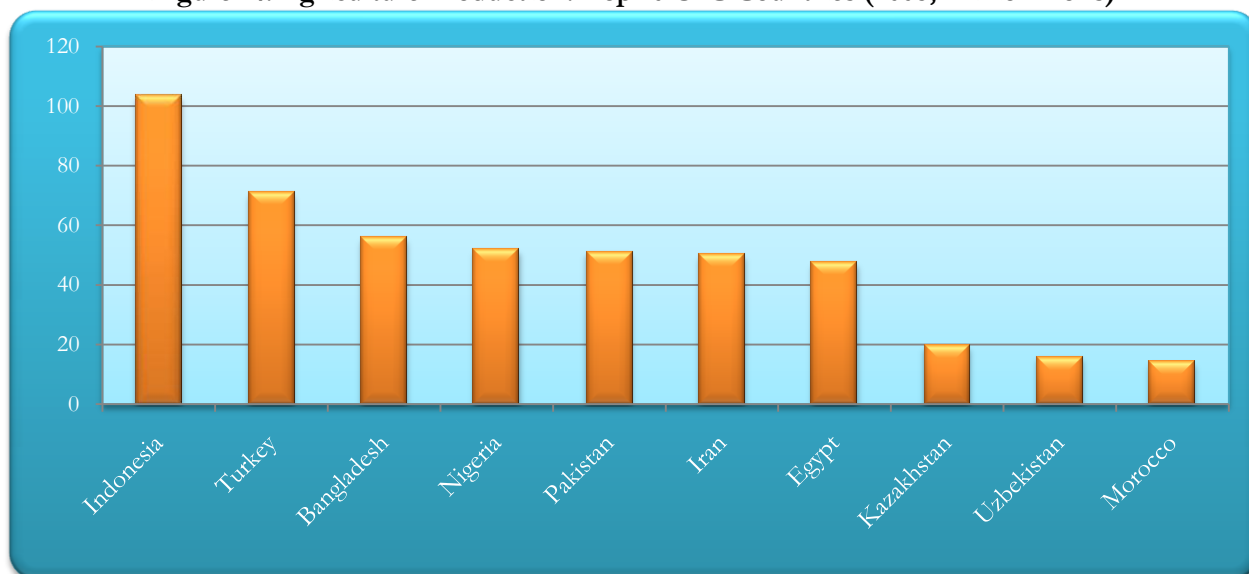
Figure 13: Agriculture Production (2000-2008, Million Tons)



In terms of the volume of agriculture production, as for 2008, the OIC countries accounted for 14.2% of the world total cereals production and 20.2% of that of the developing countries, with a very slight increase compared to their level in 2000 of 13.5% and 20.1%, respectively. In the same year, their share in the world vegetables production recorded at 14.8%, decreasing slightly from 15% in 2000, and their share in the developing countries recorded at 17.1%, decreasing slightly from 18.1% in 2000. The share of the OIC countries in the total production of fruits in the developing countries decreased slightly

from 24.8% in 2000 to 23.7% in 2008. In contrast, their shares in the total production of meat of the world and the developing countries increased slightly from 7.7% and 12.3%, respectively in 2000 to 8.2% and 12.6%, respectively in 2008 (Figure 13).

Figure 14: Agriculture Production: Top 10 OIC Countries (2008, Million Tons)

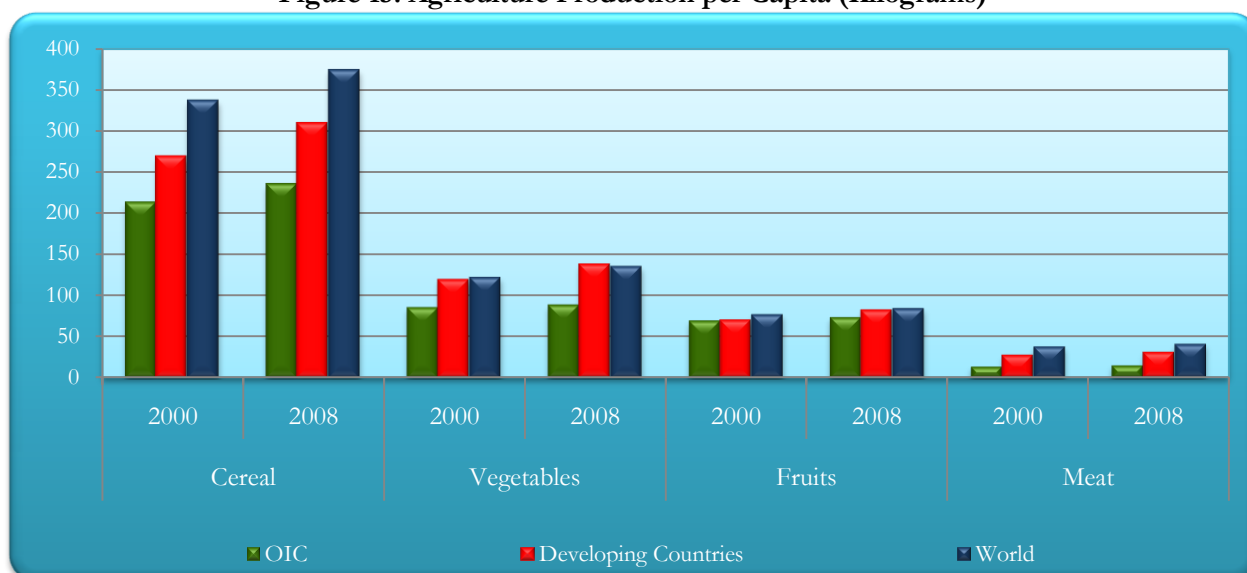


It is also observed that the total OIC agricultural production concentrated in a few member countries, where only 10 countries, namely Indonesia, Turkey, Bangladesh, Nigeria, Pakistan, Iran, Egypt, Kazakhstan, Uzbekistan and Morocco produced 76.2% of the total volume of OIC agriculture production of cereals, vegetables, fruits and meat (Figure 14).

Moreover, although the average production per capita of these agricultural products in the OIC countries, as a group, increased slightly in 2008 compared 2000, the averages of the OIC group were still below the levels achieved by the developing countries and the world average (Figure 15).

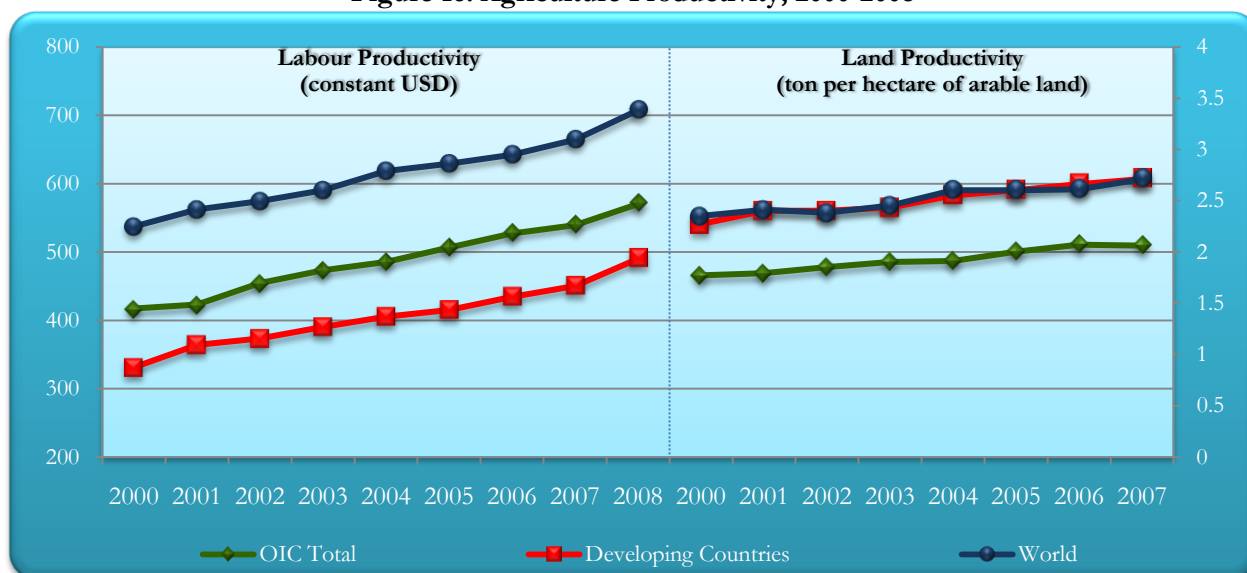
This means that the OIC countries, as a group, do not have the capacity to produce enough agricultural products to meet the demand for food of their growing populations and, thus, rely heavily on agricultural imports, particularly of food products. As pointed out above, since many OIC countries are located in the world's most arid regions, drought causes sharp annual fluctuations in crop and livestock production, which in turn, leads to shortages in food security in many of these countries. On the other hand, the inefficient irrigation systems and use of land in agriculture together with other factors such as the inadequate agricultural investments and technologies led to low levels of agricultural productivity in many OIC countries and in these countries as a group.

Figure 15: Agriculture Production per Capita (Kilograms)



With more than half of their population living in rural areas and most of them depend on agriculture for their income and survival, enhancing agricultural productivity in the OIC countries is very crucial for growth and development, particularly through empowering the rural population with higher levels of income and, thus, reducing the incidence of poverty and food insecurity in these countries. In this respect, as the productivity of any other economic sector, agricultural productivity measures the output obtained per unit of input. As such, agricultural productivity depends on both the quantity and the quality of many inputs such as land, labour, water, machinery, fertilizers and pesticides, etc. However, since measuring the total agriculture factor productivity is beyond the scope of this report, only labour, land, fertilizers and tractors use are investigated.

Figure 16: Agriculture Productivity, 2000-2008

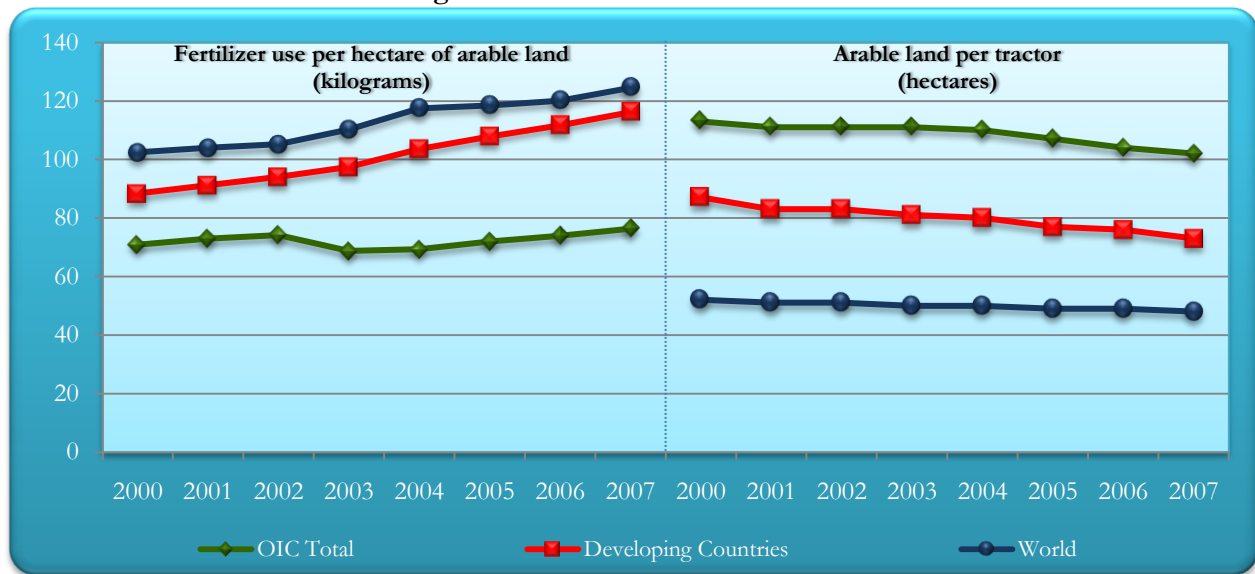


As for labour productivity⁵ in the OIC countries, Figure 16 shows that, during the period 2000-2008, the average agricultural labour productivity in the OIC countries as a group followed in general a similar trend of that of the developing countries and the world average. However, although the levels

⁵ Calculated by dividing agriculture value added at constant USD by the agricultural population.

achieved by the group of OIC countries were higher than those of the developing countries, they remained below the levels of the world average. As for land productivity⁶ in the OIC countries, Figure 16 shows that, during the period 2000-2008, the average land productivity in the OIC countries as a group followed in general a similar trend of the developing countries and the world average. However, although the levels achieved by the group of OIC countries were increasing very slightly, they remained below those of the developing countries and the world average.

Figure 17: Fertilizer and Tractor Use



On the other hand, Figure 17 shows the relatively insufficient use of fertilizers where the average levels of fertilizers use per hectare of the arable land in the OIC countries were below the levels of the developing countries and the world average during the period 2000-2007. On average, only 76 kilograms of fertilizers were used per hectare of arable land in the OIC countries in 2007 compared to 116 kilograms in the developing countries and the world average of 124 kilograms. Moreover, it seems that the use of agricultural machinery in the OIC countries is still insufficient.

This is clear in Figure 17 where, on average, one tractor is still used in more than 100 hectares of arable land in the OIC countries in 2007 compared to 73 hectares in the developing countries and significantly higher than the world average of 48 hectares.

Notwithstanding this state of affairs in the agriculture sector in the OIC countries, a significant number of these countries from different climatic regions figure among the top 20 producers of major agricultural commodities worldwide (Table 5). These commodities vary from cereals such as wheat, rice and maize to tropical/temperate zone commodities such as palm oil, cocoa, coffee, rubber and sugar. However, for many of these countries, particularly those in which the bulk of their exports concentrate on a few of such agricultural commodities, price fluctuations in the international commodity markets may translate into additional risks and challenges. In addition, exporting these primary commodities without or with low value added due to inappropriate processing facilities is also another challenge related to the competitiveness of their commodities in the international markets. In this respect, investments in agriculture processing facilities can be another focal point in addressing agricultural

⁶ Calculated by dividing the volume of agricultural production in tons by the arable land in hectares.

development as well as protecting farmers and creating additional jobs. Together, these factors have significantly influenced trade in agricultural commodities in the OIC countries.

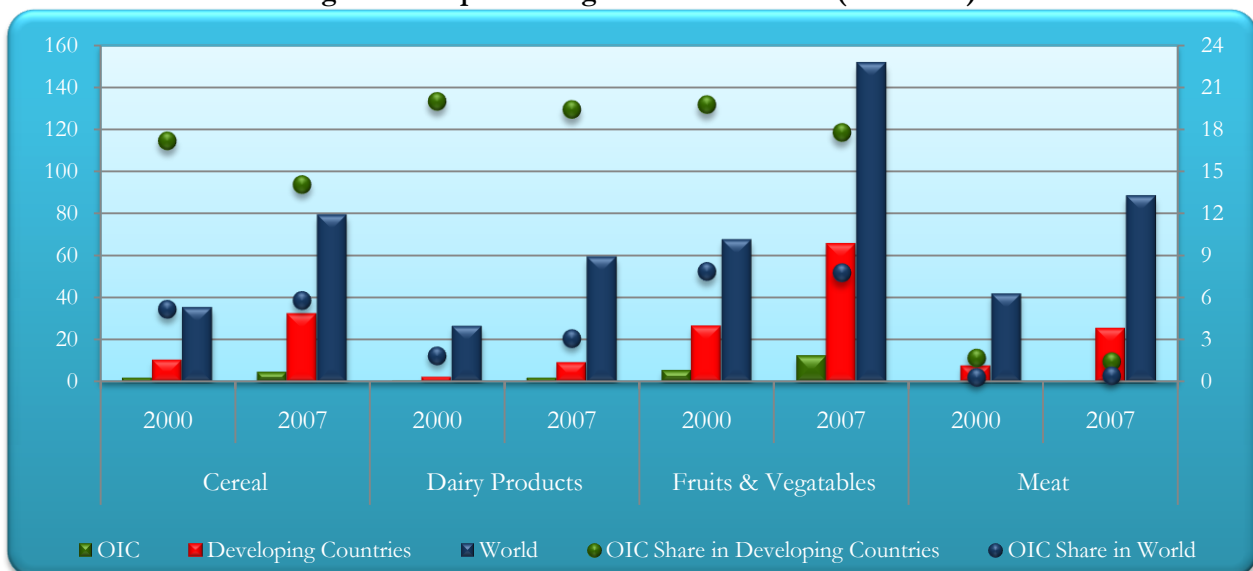
Table 5: OIC Countries among Top-20 World Producers of Major Agriculture Commodities, 2007

Commodities	Cocoa	Coffee	Cotton	Maize	Natural Rubber	Palm Oil	Rice	Soybean	Sugar Beet	Tea	Wheat
Countries											
Afghanistan											20
Bangladesh							4			11	
Burkina Faso			14								
Cameroon	6				14	13					
Côte d'Ivoire	1	11			8	8					
Egypt			12				13		12		15
Gabon					20						
Guinea	17				19						
Indonesia	2	4		8	2	1	3	10		7	
Iran								18	14	10	14
Kazakhstan			18								10
Malaysia	13				3	2					
Mozambique			20							18	
Nigeria	4		13	10	9	3	18	11			
Pakistan			4	18			12				6
Sierra Leone	16										
Syria			8								
Tajikistan			17								
Togo	8										
Turkey			7	12					6	5	8
Turkmenistan			9								
Uganda	19	12								13	
Uzbekistan			6								18

5 Trade in Agriculture Products

In terms of current US dollar, the total cereal exports of the OIC countries amounted to \$4.5 billion in 2007, accounting for only 5.7% of the world total cereal exports with a slight increase by 0.6 percentage points compared to their share in 2000. However, in the same year, the share of OIC countries in the total cereal exports of the developing countries decreased to 14% from 17.1% in 2000. In contrast, although the share of the OIC countries in total exports of dairy products of the world increased from 1.8% in 2000 to 3.1% in 2007, their share in the exports of dairy products of the developing countries decreased slightly in the same period from 19.9% to 19.3%. The total exports of fruits and vegetables of the OIC countries accounted for 17.7% and 7.7% of that of the developing countries and world, respectively, decreasing slightly from 19.6% and 7.8%, respectively, in 2000. With the lowest share in the total exports of both the developing countries and the world, the total exports of meat of the OIC countries accounted for only 1.5% and 0.4% of that of the developing countries and the world, respectively in 2007 (Figure 18).

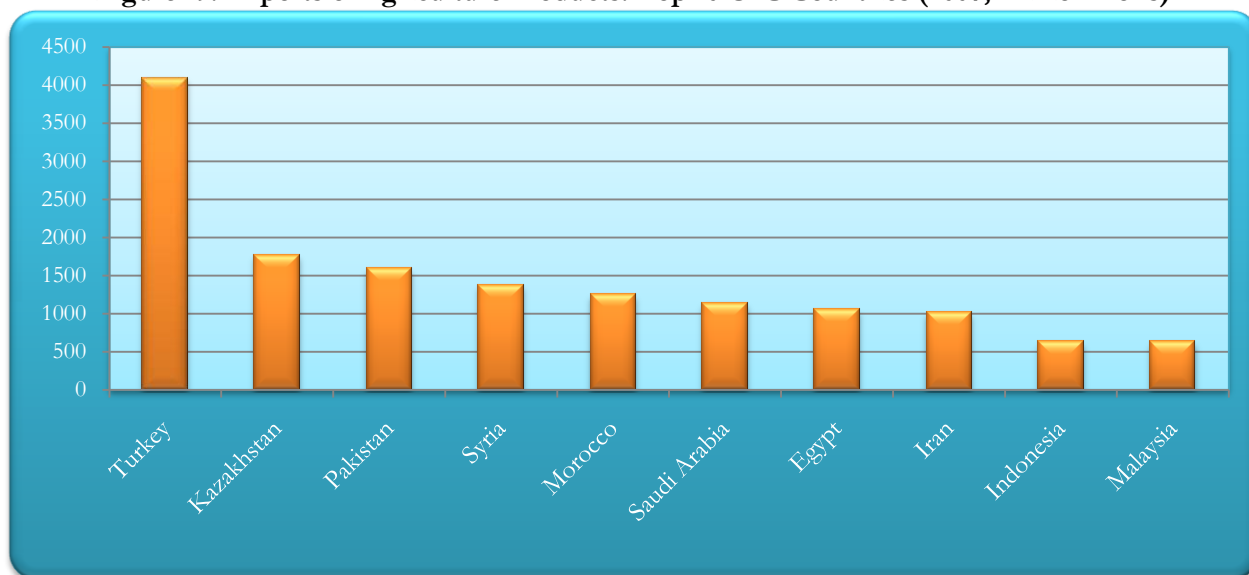
Figure 18: Exports of Agricultural Products (2000-2007)



As in the case of agriculture production, it is also observed that the total exports of agriculture products of the OIC countries concentrated in a few member countries, where only 10 countries, namely Turkey, Kazakhstan, Pakistan, Syria, Morocco, Saudi Arabia, Egypt, Iran, Indonesia and Malaysia accounted for 79.5% of the total OIC agriculture products exports of cereals, dairy products, fruits & vegetables and meat (Figure 19).

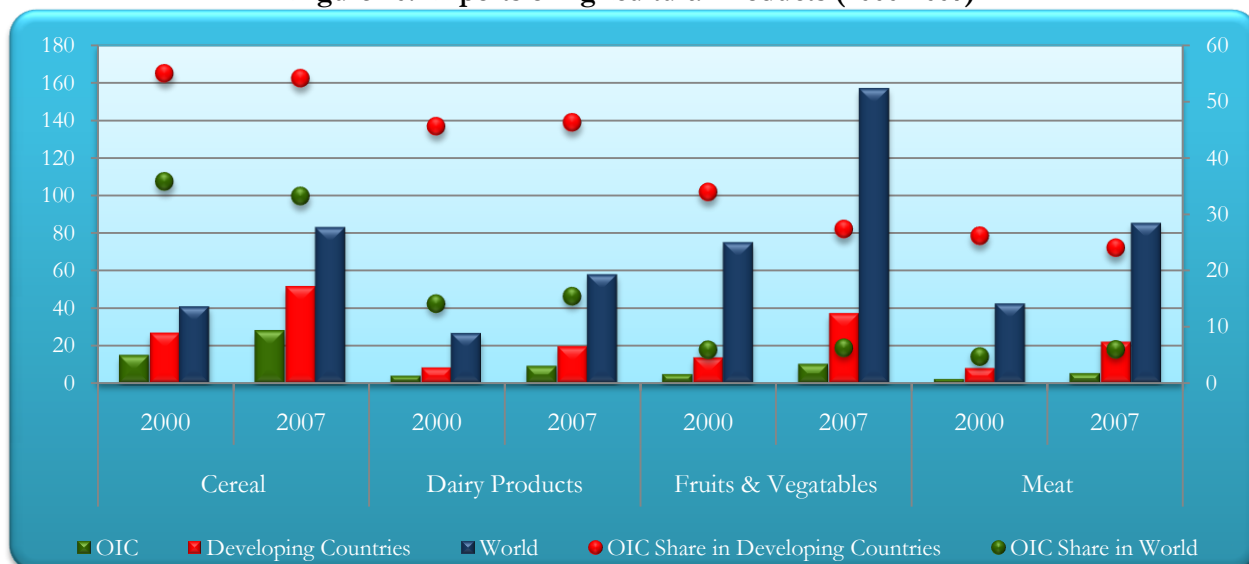
As pointed out above, with insufficient production capacity to produce enough agricultural products to meet the demand for food of their growing populations, the OIC countries, as a group, rely heavily on agricultural imports, particularly of food products. This becomes clear when their shares in total imports and exports of agriculture products of the world and the developing countries are compared. As shown in Figure 20, the share of OIC countries in the total imports of cereals of the developing countries in 2007 was almost 54%, declining slightly from the level of 54.7% in 2000.

Figure 19: Exports of Agriculture Products: Top 10 OIC Countries (2007, Million Tons)



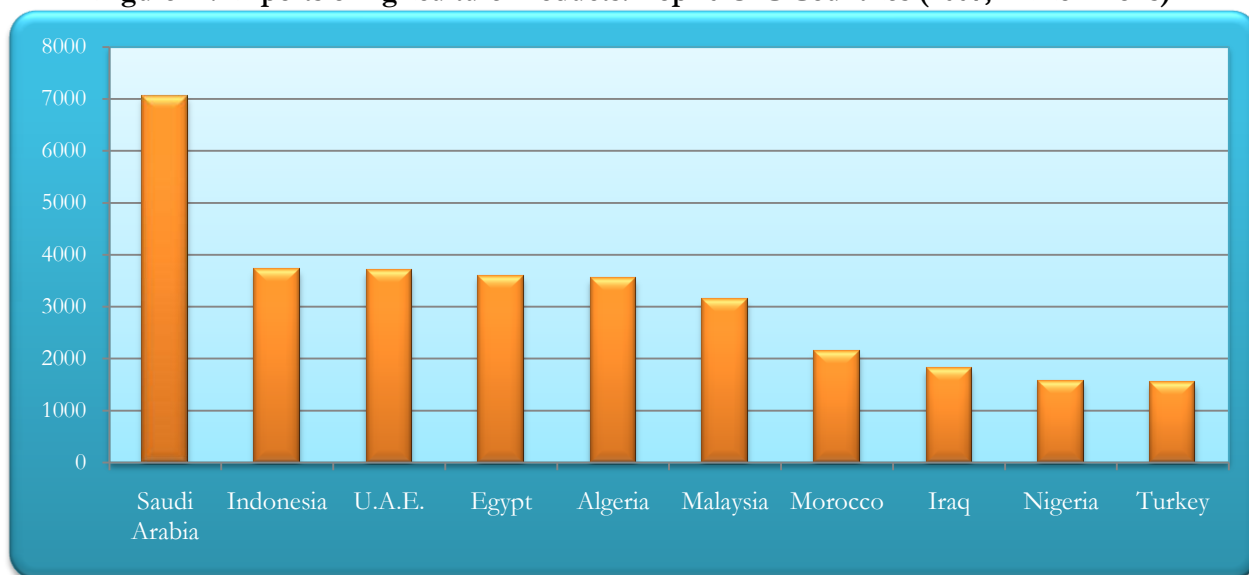
Their share in the world total imports of cereals recorded at 33% in the same year compared to 35.6% in 2000. The total imports of dairy products in the OIC countries accounted for 46.2% of that of the developing countries in 2007 compared to 45.5% in 2000, and their share in the world total also increased from 14.1% in 2000 to 15.4% in 2007. In contrast, while their share in total imports of fruits and vegetables of the developing countries decreased to 27.3% in 2007 compared to 33.9% in 2000, their share in world total imports increased slightly from 6.1% to 6.4% in the same period. Similar situation was observed in case of imports of meat, where while their share in total imports of meat of the developing countries decreased from 26.1% to 24%, their share in world total increased from 4.8% to 6.1% in the same period.

Figure 20: Imports of Agricultural Products (2000-2007)



As in the case of exports of agriculture products, the total imports of agriculture products of the OIC countries concentrated in a few member countries, where only 10 countries, namely Saudi Arabia, Indonesia, UAE, Egypt, Algeria, Malaysia, Morocco, Iraq, Nigeria and Turkey accounted for 61.6% of the total OIC agriculture products imports of cereals, dairy products, fruits & vegetables and meat (Figure 21).

Figure 21: Imports of Agriculture Products: Top 10 OIC Countries (2007, Million Tons)

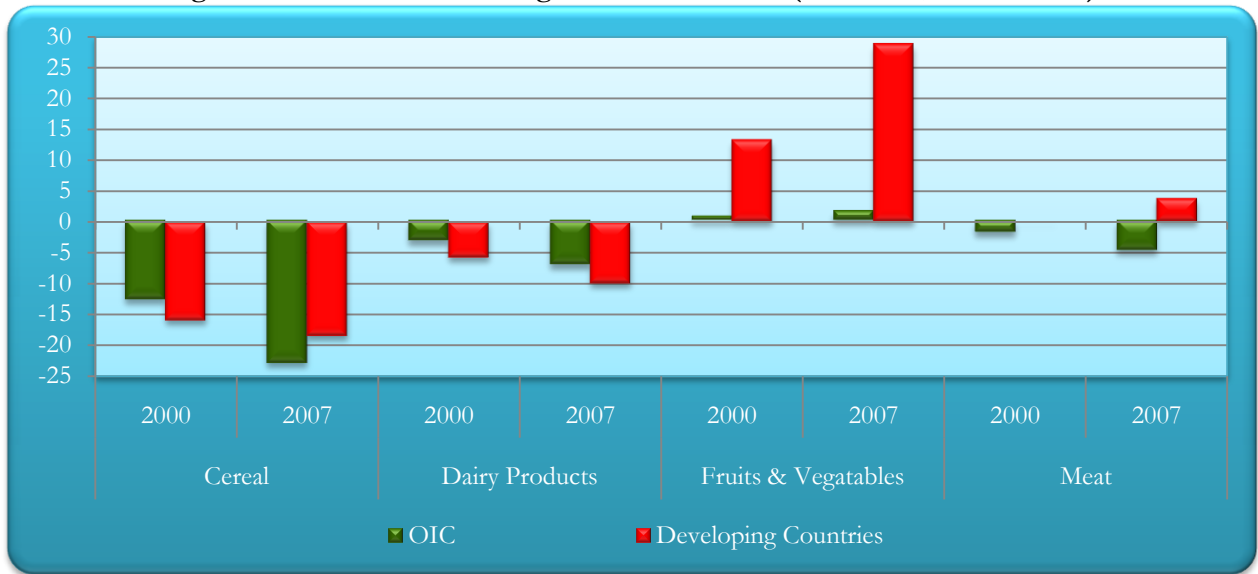


As a result of the high dependence of many OIC countries on imports of agricultural products, the OIC countries as a group recorded significant trade balance deficits in most of these products (Figure 22). In terms of current US dollar in 2007, cereal trade deficit in the OIC countries was significantly higher than the deficit recorded by the developing countries. It increased from \$12.7 billion in 2000 to \$22.9 billion 2007. In the same year, the OIC countries trade deficit in dairy products amounted to \$7.1 billion compared to \$3.3 billion in 2000 and accounted for 71% of the deficit of the developing countries. In contrast, the OIC countries, as a group, recorded a relatively small trade balance surplus in fruits and vegetables compared to the surplus recorded by the developing countries. While the developing countries recorded a trade balance surplus in meat in 2007, the OIC countries recorded a trade balance deficit in the same year amounted to \$4.8 billion compared to their deficit of \$1.9 billion in 2000.

To sum up, when the trade balance of agricultural products (cereals, dairy, fruits, vegetables and meat) of the OIC countries is calculated, it was observed that the OIC countries, as a group, recorded a trade deficit in 2007, which is almost twice the deficit they recorded in 2000. In contrast, a trade surplus has been recorded in the group of the developing countries in the same year. At the individual country level, it was observed that only 6 OIC countries, namely Guinea Bissau, Guyana, Kazakhstan, Pakistan, Turkey and Uzbekistan, recorded a trade balance surplus in the mentioned agricultural products.

This means that the supply of agricultural products, mainly food products, in most OIC countries does not keep pace with the rapidly increasing demand for food due to the rapid increase in their populations, leading to a widening food gap to be filled by imports. Moreover, food shortages due to inadequate rainfall and other adverse climatic conditions continued to affect some OIC countries, which faced food emergencies and were classified as food-deficit countries at the world scale. This, in turn, makes these countries highly vulnerable to any sharp rise in the international food prices in terms of increasing the food import bills and trade deficits, posing serious negative impacts on health and education, and consequently worsening the state of food security through increasing the number of undernourished people.

Figure 22: Trade Balance in Agricultural Products (2000-2007, Billion USD)



6 Promoting Intra-OIC Investment in the Agriculture Sector

In general, agricultural development and food security in a country can be improved by increasing agriculture output, particularly food products, through either increasing agricultural productivity or extension of the arable land area (i.e. bringing more land under cultivation). This, of course, necessitates the availability of appropriate investments in agriculture sector at the national level and/or in terms of foreign direct investments (FDI). However, while investment in agriculture is a well-established economic activity in the developed countries, it is still lagging behind in many developing countries, particularly in the least-developed and low-income countries.

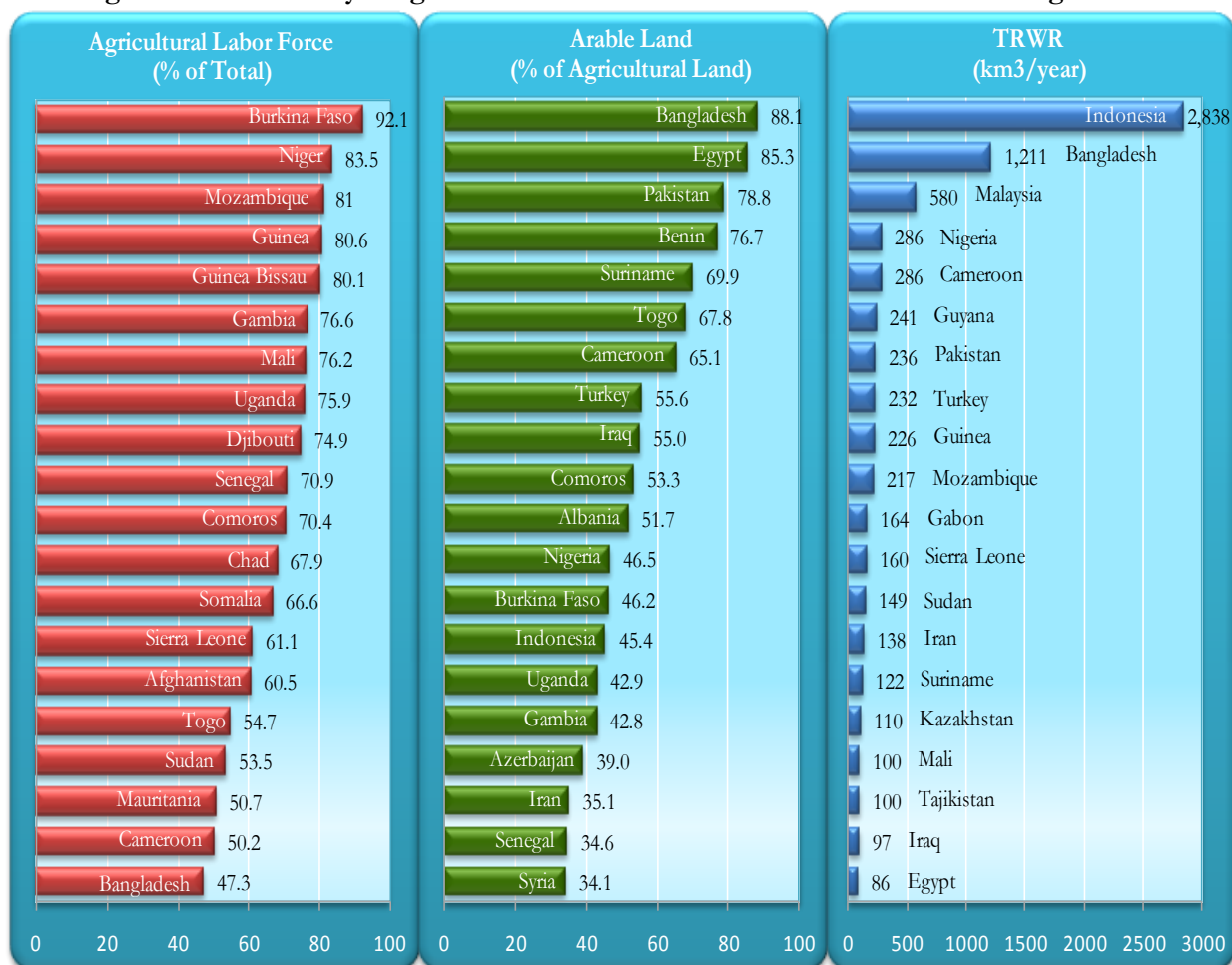
Investment in agriculture-oriented projects in these countries is often regarded as a high-risk investment. In general, this is due to factors related to the weak business and investment climate in most of these countries. These factors include, among others, conflict and political instability, inadequate physical infrastructures such as transportation, telecommunication, agricultural machinery and technologies, and inappropriate financial and banking systems. Accordingly, though they may well-endowed with high potential in agricultural resources such agricultural labour force, arable land and water resources, it is very difficult for many of these countries to gain access to appropriate financing for their agricultural development projects.

This is true in the case of many OIC least-developed and low-income countries where, due to limited financial resources, both domestically and in terms of FDI, the inherent agricultural potential of these countries does not manifest itself in the form of reasonable levels of agricultural development and food security, where most of them are still classified as LIFDCs with high levels of undernourished people. Therefore, intra-OIC investment in agricultural projects should be encouraged, particularly in the member countries which are well-endowed with high potential in agricultural resources. Intra-OIC FDI should be directed to these countries to increase agricultural productivity and/or extension of arable land through the supply of improved seeds, fertilizers, agricultural machinery and modern irrigation systems as well as through the development of agriculture-related infrastructures and processing of agricultural raw commodities, particularly food products with the aim of establishing agro-based industries to improve the state of food security at the OIC regional level.

In this respect, it is well known that some OIC member countries, particularly the GCC member countries, have been recently seeking investment opportunities in the agriculture sector in some OIC least-developed agricultural-based countries. In order to promote and encourage such intra-OIC investment, OIC member countries with high potential in agriculture sector, particularly in terms of agricultural labour force, arable land and water resources should be identified to ascertain their potential for encouraging intra-OIC investment in agriculture sector.

Accordingly, Figure 23 displays the most likely targeted OIC member countries with the potential to attract intra-OIC investment into the agricultural sector, where the top 20 OIC countries in terms of the overall availability of the three main agricultural resources (i.e. agricultural labour force, arable land and water resources) are selected. It is clear that 37 OIC countries (20 of them are least-developed countries) enjoy high potential at least in terms of one of the three-mentioned agricultural resources.

Figure 23: Most Likely Targeted OIC Countries for Intra-OIC Investment in Agriculture



In general, this information highlights the OIC member countries that could be targeted for intra-OIC investments in the agriculture sector. In the light of such information, it could be possible to suggest to which member countries intra-OIC investments could be directed and encouraged. It could be also possible to roughly suggest the type of agricultural inputs that such of these investments should be focused on. On the other hand, in the light of this information it could be possible to suggest some broad recommendations to serve as policy guidelines to which the attention of these countries needs to be drawn in their efforts towards achieving sustainable agricultural development and attracting FDI in the agriculture sector.

In terms of the overall availability of the three main agricultural resources (labour, land and water), it seems that many OIC least-developed countries are exhibiting high potential for attracting intra-OIC investment in the agriculture sector. However, most of these countries need to improve their investment climate in order to be able to attract FDI in their agriculture sector. In particular, they have to increase the levels of their agricultural productivity through investing in the efficient use of water resources in agriculture and introducing modern irrigation systems and agricultural machinery. Thus, the challenge in these countries is to bring more land under cultivation through investing in improved seeds, fertilizers, agricultural machinery and modern irrigation systems as well as through the development of agriculture-related infrastructures and processing of agricultural raw commodities, particularly food products. As such, these countries need to focus on exploiting the unutilised potential

of the existing arable land and water resources through improving the levels of agricultural productivity along with creating a reasonable business and investment environment.

To sum up, the countries displayed in Figure 23 could be considered as the most likely targeted OIC member countries for intra-OIC investment in the agriculture sector, particularly from the perspective of the availability of the main agricultural resources. Yet, there is still a need to identify specific agriculture-oriented projects and investment opportunities in these countries. This, of course, depends on the specific geographical and climatic conditions as well as on the specific features of the land and water resources in each country, and, thus, on the suitable crops to be feasibly cultivated. It should be also noted that, in general, if the other issues related to creating the favourable business and investment environment are resolved, then these countries may be among the top recipients of FDI in the agriculture sector at the OIC regional level.

7 Concluding Remarks and Policy Implications

In many OIC countries, agricultural development is still facing a number of serious constraints and challenges that should be carefully addressed by the relevant national authorities and policy makers as well as the representatives of the private sector in these countries. In this respect, it was observed that, over time, agriculture activity in most OIC countries has been slightly replaced by services and, to a lesser extent, by industrial activity, where the average share of agriculture in their total GDP amounted to only 11.5% in 2007, gradually declining from 17.6% in 1990. In fact, various political, structural, climatic and geographical factors were behind this state of affairs. In the majority of the OIC countries, these factors include the negative impacts of the economic transformation and structural diversification efforts on the agriculture sector, increasing migration of agriculture labour force from rural to urban areas seeking higher wages in other sectors, mainly in the services sector, the scarcity of water resources and the inadequate agricultural investment and infrastructure, the low level of agricultural machinery and technology utilization, the fluctuations in world agricultural commodity prices and trade difficulties that many of these countries are still facing in the international commodity markets.

Together, these factors have adverse impact on the level of agricultural productivity in many OIC countries and on the average level of the group as a whole. Therefore, agriculture production and the supply of agricultural products, mainly food products, in most of the OIC countries did not keep pace with the rapidly increasing demand for food due to the rapid increase in their populations, leading to a widening food gap to be filled by imports. This makes these countries, particularly the 35 OIC LIFDCs, vulnerable to any sharp rise in the international food prices in terms of increasing the food import bills and trade deficits, posing serious negative impacts on health and education, and consequently, worsening the already deteriorated state of food security through increasing the number of undernourished people. Moreover, the internal conflicts in some of these countries caused a great number of farmers to abandon their lands and directly or indirectly affected agriculture production and trade. Meanwhile, food shortages due to inadequate rainfall and other adverse climatic conditions continued to affect some of these countries, which faced food emergencies and were classified as countries in crisis requiring external assistance.

All in all, the major constraints and challenges facing agricultural development, and, thus, food security in the majority of the OIC countries can be summarised as follows:

- Inadequate use of land and water resources, due to the scarcity and insufficient use of water resources and agricultural machinery and technologies.
- Inadequate land tenure and water rights due to the lack of appropriate legal rules and regulations frameworks, as well as problems related to cross-border water sharing agreements.
- Low levels of agriculture productivity and poor access to production inputs and related infrastructure and services.
- Inadequate agricultural investments and limited financial resources and fluctuations in world agricultural commodity prices and other trade difficulties in the international commodity markets.
- Inadequate economic transformation and structural diversification policies and increasing migration of agriculture labour force from rural to urban areas seeking higher wages in other sectors, particularly in services sector.
- Concerns on governance, political and economic stability, weak institutional capacities and administrative bureaucracy, and inadequate agricultural planning and strategies.

However, notwithstanding these constraints and challenges, employing 37.4% of their total population, agriculture is still considered to be a very important and crucial economic sector in many OIC countries with high potential to significantly improve the state of food security in these countries as a group. This is true considering the fact that the 57 OIC countries are dispersed over a large geographical area in different climatic regions over four continents and, as a group, they are well-endowed with potential economic resources in different fields and sectors such as water and arable land, energy and mining, human resources, and a large strategic trade region. Moreover, 23 OIC countries from different climatic regions are figured among the top 20 producers of major agricultural commodities worldwide. These commodities vary from cereals such as wheat, rice and maize to tropical/temperate zone commodities such as palm oil, cocoa, coffee, rubber and sugar.

Therefore, it is commonly believed that there still is a wide scope for the development of a sustainable agriculture and food sector in the OIC countries. Overall, this requires the adoption of long-term strategies as well as medium to short-term plans and programmes at both the national and regional levels along with a process of creating a supportive OIC cooperation and coordination environment. In this context, the following ten recommendations can be made to serve as broad policy guidelines to which the attention of these countries needs to be drawn at both the national and intra-OIC cooperation levels.

- At the national level, efforts should be made to increase agricultural productivity, particularly in food products, through the extension of the arable land area (i.e. bringing more land under cultivation) through appropriate national investments and/or through attracting foreign direct investments (FDI) in the agriculture sector.
- At the OIC cooperation level, efforts should be made to enhance and direct more intra-OIC investment in the agriculture sector, particularly in the OIC agricultural-based countries which are well-endowed with the basic agricultural resources such as arable land and water resources.
- An OIC Agricultural Investment Promotion Agency (OIC-AIPA) is recommended to be established with the aim of encouraging and promoting direct investments into the agriculture sector in the OIC countries through facilitating investment opportunities for investors from both the OIC community and outside.
- An OIC Seed and Crop Improvement Centre (OIC-SCIC) is recommended to be established with the aim of creating, sharing and utilising knowledge and technology to improve agricultural productivity and profitability of farming systems with a view to achieving sustainable food security and reduce poverty in the OIC member countries.
- An online OIC Agriculture Commodity Exchange Market (OIC-ACEM) should be established in order to facilitate trade in agricultural commodities among the OIC member countries and internationally both physically and in terms of tradable securities. This will also work as a market information exchange system on the community-wide food markets. An OIC periodical bulletin related to this endeavour should be published.
- Efforts should be made to promote and enhance investment in agriculture processing facilities to increase the value added of the agricultural commodities of the OIC top producing countries and thus increase the competitiveness of their commodities in the international markets. In this respect, efforts should be made to produce well-known global OIC food brands through providing sufficient financing to the private sector in order to compete in the global markets. To this end, efforts should be made to establish an OIC Agro-Business Fund to encourage investments in food sector and food security programmes.

- An OIC Food Security Program should be initiated and developed for rehabilitation and rebuilding of the agriculture and food sector especially in the OIC least developed and LIFDCs in order to prevent and prepare for natural disasters in the agriculture sector. In this context, policy measures with the aim of protecting the poor from high food prices and food shortages should be considered as an immediate action by the governments of these countries. There is need to build storage facilities like grain houses to serve this need. In addition measures should be taken to put the basic framework of social security programs and safety nets in place. On the other hand, efforts should be made to help the small subsisting farmers to exploit their true potential through establishment of micro-credit facilities both at the national and intra-OIC level.
- The issues of water shortage in the context of food security, public health and sanitation, and access to safe drinking water should be addressed at both the national and OIC cooperation level. In this respect, efforts should also be made to improve the infrastructure and irrigation systems in rural areas through encouraging investment in modern and water-save irrigation system.
- Improving business and investment environment at the national level should be considered a high priority with emphasis on the promotion of OIC investors in member countries through introducing specific measures in national regulatory frameworks. In this respect, efforts should be made to promote and encourage joint investment approaches such as joint trade/investments programmes and strategies and joint entries into OIC markets led by private investment banks.
- An emergency response mechanism should be developed and adopted at both the national and OIC cooperation level to minimise the impacts of climate change and consequence natural disasters like floods, droughts and cyclones, which are causing severe damage to agriculture sector and posing sever threats to the very survival of millions of people across the OIC member countries.

References

- FAO, “Crop Prospects and Food Situation” 2008 & 2009 editions.
- FAO, “State of Food Insecurity in the World (SOFI)” 2008 & 2009 editions.
- FAO, AQUASTAT Database.
- FAO, FAOSTAT Database.
- FAO, UN-Water, “Coping with Water Scarcity”, 2007
- Grimm M. (2009), “Food Price Inflation and Children’s Schooling” Working Paper No. 472, Institute of Social Studies (ISS).
- IMF “World Economic Outlook”, April 2009.
- Rose Stacy & Shahla Shapouri, “Rising Food Prices Intensify Food Insecurity in Developing Countries” USDA, Amber Wave Volume 6, February 2008.
- SESRIC, “Annual Economic Report on the OIC Countries 2009”, November 2009.
- SESRIC, “Economic Problems of the Least-developed and Land-locked OIC Countries, 2009”, March 2010.
- SESRIC, “Enhancing Economic and Commercial Cooperation among OIC Member Countries”, November 2009.
- SESRIC, *Agricultural Development and Food Security in the OIC Countries: Challenges and Opportunities for Cooperation*, February 2010.
- World Bank “Rising Food and Fuel Prices: Addressing the Risks to Future Generations” October 2008.
- World Bank, “Making the Most of Scarcity”, MENA Development Report, 2007.
- World Bank, “World Development Report”, 2008.



Statistical, Economic and Social Research and Training Centre
for Islamic Countries (SESRIC)

Attar Sokak No. 4, 06700 GOP, Ankara, TURKEY
Tel: (90-312) 468 6172 (4 lines) Fax: (90-312) 468 5726
E-mail: oicankara@sesric.org Web: www.sesric.org