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Arab-African Cooperation in the Field of Food Security

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Introduction

Food security with its various pillars is considered one of the most pressing issues that the Arab and African regions need to address through strengthening coordination and cooperation in an integrated and sustainable manner that safeguards rights and results in meeting the interests of both regions.

This paper briefly presents the food security situation in the Arab and sub-Saharan African regions including the development in the production and foreign trade of the main food commodities, available for consumption , the food gap, and self sufficiency ratios of these commodities. Furthermore, the paper reviews the fisheries sector in both regions including the production, trade, processing and marketing. It also sheds light on the challenges and limitations confronting the sector and potential areas of cooperation between both regions in the fields of food security and sustainable development of fisheries., The paper is refer to production data for year 2011 and to foreign trade data for the year 2010 in view of the difficulties encountered in obtaining data beyond theses years for Sub Saharan African countries.

1. Arab and African Food Security Situation

1.1 Production of the Main food Commodities in the Arab and African Regions

The Arab region produces about 52.3 million tons of grains representing 43.3% of the sub-Saharan African production, which totals about 121 million tons as presented in Table No. (1).

Table No. (1): Production of a Some Fodder Commodities (million tons)

Commodity	Arab Counties	Sub-Saharan African
Grains Group	52.28	120.78
Wheat	24.55	5.96
Barley	5.94	2.01
Maize	6.99	58.59
Rice	6.16	22.23
Sorghum	6.98	17.10
Refined Sugar	3.20	6.49
Vegetable Oils	2.16	5.57
Potatoes	14.17	15.72
Total Legumes	1.34	12.64
Total Vegetables	53.01	33.56
Total Fruits	31.80	66.80
Total Meat	8.38	15.65
Read Meat	4.80	12.72
Poultry	3.58	2.93
Fish	4.11	5.84
Eggs	1.61	2.11
Milk and Milk Products	27.30	20.37

Source: Arab Organization for Agricultural Development, Arab Food security Status 2012 and Food and Agriculture Organization (FAO) 2011.

While the majority of the Arab countries are located in dry or semi-dry areas, their production of the various agricultural products, poultry, dairy products, eggs and fish is considered high in relation to the population in comparison to sub-Saharan African countries.

It should be noted, however, the production of meat and dairy products in both regions is not commensurate with the livestock herd size that is estimated at about 341 million head in the Arab region and about 629 million head in sub-Saharan African countries. It is clear that there is room for improving the animal production in both regions through better management of and good investment in value chains.
Table (2) shows that the productivity of the majority of the food commodities in the Arab region is less than those at the world level , although they exceeds Those in sub-Saharan African countries. The comparatively reduced productivity in both regions is however, attributed to the agricultural technology gap. It appears, however, that this gap is less in the Arab region. It is noteworthy, however, that the reduced productivity of some of the agricultural crops in the Arab region compared to sub-Saharan African countries is due to rainfall scarcity and fluctuations.

Table No. (2): Main Food Crops Productivity-2011 (ton/hectare)

Commodity	Arab Counties	Sub-Saharan African	International
Grains Group	1.63	1.47	3.56
Wheat	2.60	2.20	3.00
Maize	4.80	1.80	5.20
Sorghum	0.50	1.10	1.40
Barley	1.00	1.80	2.60
Rice	8.70	2.00	4.40
Sugarcane	103.40	56.60	70.80
Sugar Beet	54.60	14.30	48.80
Peanut	0.70	0.90	1.65
Sesame	0.30	0.60	0.49
Sunflower	1.40	1.10	1.30
Soybean	2.90	1.20	2.52

Source: Arab Book for Agricultural statistics, Volume 32
Food and Agriculture Organization (FAO) website.

1.2 Main Agricultural Crops Post-Harvest Losses:

The agricultural and fisheries production is subjected to major losses through the value chain including production, harvesting and post harvesting, transportation, manufacturing, storage and marketing. However, food waste takes place at the end of the value chain; at the consumer level, which is more for wealthy community segments compared to poorer segments. The global food loss and waste have been estimated at about 1.3 billion tons annually amounting to about USD 1 trillion, whereas food waste by consumers in wealthy countries have estimated at about 222 million tons per annum.

The annual losses of grains in Arab countries have been estimated at about 7 million tons representing about 13% of the total regional cereal production. The amount and percentage of losses in grains and other crops vary between countries. According to the Food and Agriculture Organization (FAO) for the year 2013, the losses in grain crops in sub-Saharan Africa is estimated at about USD 4 million, which is equivalent to food requirement of about 48 million people. Moreover, the World Bank (WB) data for the year 2011 suggest that the storage losses in sub-Saharan African countries for the maize and the grains crops range between 7 - 8%and 10-20%, respectively.

1.3 Foreign Trade of Food Commodities

The foreign trade value of food commodities for the Arab region is estimated at about USD 64.4 billion in 2010 as shown in Table No. (3) with the exports comprising about 24%. On the other hand, this was estimated at about USD 29.57 billion in sub-Saharan Africa with the exports comprising about 30%.

Table No. (3): Quantity and Value of Main Food Commodities Exports

Commodity Group	Arab Counties		Sub-Saharan African	
	Quantity (ton x 1,000)	Value (USD Million)	Quantity (ton x 1,000)	Value (USD Million)
Grains Group	2,093.5	1,187.2	3,118.9	862.8
Wheat and Flour	569.5	208.6	472.6	210.4
Maize	84.2	20.3	1,577.8	428.6
Rice	1,135.9	878.6	788.6	182.7
Barley	58.1	17.4	7.2	6.4
Potatoes	591.7	220.2	69.7	23.4
Legumes	368.2	318.4	599.9	363.8
Vegetables	4,229.5	2,669.7	332.7	233.2
Fruits	4,029.5	3,129.1	2,985.9	1,943.0
Refined Sugar	1,927.0	1,330.7	2,205.7	1,291.3
Vegetable Oils	921.0	1,364.9	830.2	839.2
Rad Meat	73.0	205.8	72.3	306.1
Poultry	92.1	172.9	71.9	131.8
Fish	841.1	2,134.7	951.9	2,604.5
Table eggs	83.9	233.7	9.9	24.5
Milk and milk products	4,979.8	2,010.8	274.8	145.4

Source: Arab Organization for Agricultural Development, and Food and Agriculture Organization (FAO), 2010.

The Arab region's main food commodities imports is estimated at about USD 49.4 billion with the grains group constituting about 38.6% of the total .On the other hand, the same reached about USD 22.5 billion for sub-Saharan African countries with the grains group constituting about 39.6% of the total as presented in Table No. (4).

Table No. (4): Development of the Main Food Commodities Imports

Commodity Group	Arab Counties		Sub-Saharan African	
	Quantity (ton x 1,000)	Value (USD Million)	Quantity (ton x 1,000)	Value (USD Million)
Grains Group	65,189.62	19,065.22	26,452.50	8,907.10
Wheat and Flour	32,611.43	8,262.98	15,673.20	4,434.10
Maize	15,947.93	3,670.38	1,489.90	416.90
Rice	4,844.39	4,293.75	8,514.70	3,811.00
Barley	9,475.23	2,322.30	64.20	21.10
Potatoes	459.51	329.04	241.30	79.20
Legumes	1,354.61	1,055.15	448.90	299.10
Vegetables	2,552.93	1,631.23	486.90	208.90
Fruits	4,851.77	3,059.90	377.90	203.30
Refined Sugar	8,090.85	4,766.56	4,469.50	2,427.90
Vegetable Oils	4,574.40	6,095.08	4,414.30	4,401.80

Read Meat	1,071.72	3,449.83	69.95	189.17
POultry	1,726.47	3,069.38	1,021.35	1,192.65
Fish	810.80	1,604.26	2,563.02	2,847.15
Table eggs	155.70	237.98	55.68	97.29
Milk and milk Products	12,313.59	4,995.22	2,908.60	1,654.00

Source: Arab Organization for Agricultural Development, and Food and Agriculture Organization (FAO), 2010.

1.4 Average Per Capita Share of Available for Consumption Food Commodities

The average per capita share of available for consumption of food commodities in sub-Saharan African countries is less than that in Arab countries as shown in Table No. (5), which is reflected clearly on the per capita share of calories, protein and fats.

Table No. (5): Average Per Capita Share of Available for Consumption of food Commodities (Kg/year)

Commodity Group	Arab Counties	Sub-Saharan African
Wheat and Flour	156.5	55.1
Maize	66.3	69.2
Rice	28.5	35.2
Vegetables	137.6	41.0
Fruits	89.3	75.3
Refined Sugar	29.4	22.3
Vegetable Oils	14.5	10.8
Read Meat	16.0	15.5
Poultry	14.8	4.5
Fish	11.3	9.3
Eggs	4.7	2.2
Milk and milk Products	103.9	47.8

Source: Arab Organization for Agricultural Development, and Food and Agriculture Organization (FAO), 2011.

The average per capita share of calories in the Arab region is estimated at about 3,013 kilo calorie, it is estimated at 86.8 grams of protein and 74.6 grams of fats. On the other hand, this is estimated at about 2,200 kilo calorie, 59 grams of protein and 56 grams of fat in sub-Saharan African countries.

The percentage of undernourished people to the total population In sub-Saharan African countries is estimated at about 26.8% compared to 2.6% is North Africa. This ranges between 1 to 7 % in many Arab countries. However, undernourishment may exceed the latter range to range between 22 and 30 % in some countries such as Sudan, Djibouti and Yemen.

1.5 The Food Gap and Food CommoditiesSelf Sufficiency Ratios

The gap has reached about USD 34.3 billion in the Arab region in 2010, whereas it was estimated at about USD 13.7 billion in sub-Saharan Africa. This could be due to the low quantities food commodities imports despite the low per capita share of available for consumption and calories compared to Arab countries. Table No. (6.

Table No. (6): Quantity and Value of The Main Food Commodities Gap

Commodity Group	Arab Counties		Sub-Saharan African	
	Volume (Million Ton)	Value (USD Million)	Volume (Million Ton)	Value (USD Million)
Total Grains Group	63.100	17,878.000	23.300	8,044.300
Wheat and Flour	32.000	8,054.400	15.100	4,223.600
Maize	16.000	3,650.100	(0.100)	(11.600)
Rice	3.700	3,415.200	7.700	3,628.300
Barley	9.400	2,304.900	0.100	14.700
Potatoes	(0.100)	108.800	0.200	55.800
Total Legumes	1.000	739.800	(0.200)	(64.700)
Total Vegetables	(1.700)	(1,038.400)	0.200	(24.300)
Total Fruits	0.800	(69.200)	(2.600)	(1,739.700)
Refined Sugar	6.200	3,435.900	2.300	1,136.600
vegetable Oils	3.700	4,730.200	3.600	3,562.600
Total Meat	2.600	6,140.500	0.900	943.800
Red Meat	1.000	3,244.000	(0.002)	(1,17.000)
Poultry Meat	1.600	2,896.500	0.900	1,060.800
Fish	0.030	(530.400)	1.600	242.600
eggs	0.100	4.300	0.000	72.800
Dairy Products	7.300	2,984.400	2.600	1,508.600
Grand Total		**34,380.900**		**13,738.500**

Source: Arab Organization for Agricultural Development, and Food and Agriculture Organization (FAO), 2010.
Note: Figures between parentheses reflects surplus.

The grains' group represents 49.6% of the overall food gap in the Arab region, followed by vegetable oils representing 13.1%, refined sugar representing 9.5%, meat representing 9.0%, dairy products representing 8.3%, and finally poultry meat representing 8.0%. On the other hand, the grains' group ranks first on the food gap in sub-Saharan African countries representing 51.7%, followed by vegetable oils representing 22.9%, dairy products representing 9.7%, refined sugar representing 7.3%, meat and chicken representing 6.8%,and finally fish representing 1.6%.

Based on the data included in Table No. (6), it can be concluded that the gap in wheat represents 45% of the grains group gap value and 23.4% of the total food commodities gap value in Arab countries. On the other hand, this represents about 52.5% of the grains group gap value and 30.7% of the total food commodities gap value in sub-Saharan African countries.

It can also be concluded that vegetables constitute about 63.4% of the surplus value in food commodities in Arab countries, whereas fish and fruits constitute around 32.4% and 4.2%< respectively. On the other hand, fruits constitute about 89.4% of the surplus value of food commodities in sub-Saharan African countries, followed by legumes, red meat and vegetables constituting around 3.3%, 6.0% and 1.3%, respectively correspondingly.

The self-sufficiency ratios in Arab countries are considered low in three groups of the food commodities where sugar, vegetable oils and grains does not exceed 50%, as given in Table No. (7), whereas it exceeds 66.5% for the remaining food commodities with the exception of legumes. The self-sufficiency ratios insub-Saharan African countries are also considered low for wheat and flour, which does not exceed 27.4%, whereas it exceeds 59.8% for the remaining food commodities.

Table No. (7): Self-Sufficiency Rates of The Main Food Commodities

Commodity Group	Arab Counties	Sub-Saharan African
Refined Sugar	33.4	82.8
Vegetable Oils	36.8	59.8
Grains Group	45.0	81.4
Wheat and Flour	43.0	27.4
Legumes	55.5	101.0
Poultry	66.5	74.4
Milk and milk Products	77.7	88.5
Meat	83.0	100.0
Eggs	96.0	97.5
Fruits	97.5	104.2
Fish	100.7	76.5
Potatoes	101.7	98.9
Vegetables	102.7	99.5

Source: Arab Organization for Agricultural Development, and Food and Agriculture Organization (FAO), 2010.

2. The Fisheries Sector in Arab and Sub-Saharan African Countries

More than 1.5 billion people around the world rely on fish as their primary food source especially in developing countries, where around 95% of those who depend on fish live in . The importance of the fisheries sector in both regions stems from the fact that the two regions are endowed with huge fish resources. However, these resources require sustainable development to ensure its effective contribution for achieving food security.

The Arab region is well endowed with vast fish resources where its coasts extend to about 22.7 thousand kilometers and its fish rich continental shelf of about 608 thousand square kilometers, in addition to numerous fresh water bodies such as lakes, rivers, swamps and internal water courses the surface area of which is estimated at around 3 million hectares. Furthermore, the total length of rivers crossing the Arab region is estimated around 16.6 kilometers. Sub-Saharan Africa is similarly well endowed with vast resources where itsinternal water courses represented by the River Nile extending to about 6,671 kilometers, Congo River extending to about 4,700 kilometers, Niger River extending to about 4,180 kilometers,Orange River extending to about 1,800 kilometers, Senegal River extending to about 1,430 kilometers, Tana, Victoria, Albert and Chad, lakes. This is beside the coastal shores ,and aquaculture c. The significance of the fisheries sector in sub-Saharan African countries stems from the fact that it provides around 19% of the consumed animal proteins.

2.1 Fish Production

The Arab fish production is estimated at around 4.1 million tons, with three countries namely; Egypt, Morocco and Mauritania, contributing to around 75% of it. Aquaculture, which is mainly located in Egypt, contributes around 25% of the total fish production in the Arab region. However, this is less than its international equivalent, which is estimated at around 41% as shown in Table No. (8). On the other hand, fish production in sub-Saharan Africa is estimated at around 5.8 million tons in 2011, 77% of which is produced in 12 countries. Aquaculture, which is mainly located in Nigeria, Uganda, Kenya and Ghana, contributes around 6.8% of the total fish production in sub-Saharan African countries, which is considered modest compared to its contribution at the international or Arab levels.

Table No. (8): Fish Production in Arab and Sub-Saharan African Countries and Worldwide (Million Tons)

Region	2010		2011		Total 2011 Produce	Aquaculture Contribution (%)
	Fisheries	Aquaculture	Fisheries	Aquaculture		
Arab Countries	3.14	1.00	3.06	1.01	4.10	25.60
Sub-Saharan African Countries	5.40	0.36	5.44	0.39	5.83	6.79
World	88.60	59.90	91.90	63.60	155.50	40.90

Source: Arab Book for Agricultural statistics, Volume 32
Food and Agriculture Organization (FAO) website.

2.2 Challenges and Limitations Confronting Fish Production and Utilization of Available Production Capacities

The challenges and obstacles confronting development of fisheries in Arab and sub-Saharan African countries can be summarized as follows:

- Dominance of traditional in land fishing in both regions, and dependence on traditional fishermen who are suffering from lack of funding for fishing supplies (nets, boats and engines, snow, etc.).
- • Lack of experience and lack of knowledge in the areas of aquaculture. And the slow improvement and development of appropriate techniques for fish farming. In addition to the absence of the pilot development projects in this area.
- Deterioration of the marine fish stocks and in many internal fresh water courses in both regions due to over fishing or pollution.

It is noteworthy that the European Union for Nature Conservation had warned of the extinction of more than one fifth on the marine organisms in the African lakes and rivers. This was concluded from an EU-conducted study, which lasted for five years, that included studying numerous organisms living in fresh watersi.The study, which covered 191 fish types, classified 45% of the marine organisms in Lakes Victoria, which crosses Tanzania, Uganda and Kenya, as endangered species. It also classified 11 types of fishas endangered species in Lake Barombi-Mbo in Cameron.

The Arab region is not better off, wheremalpractices are exercised in the utilization of the marine fish reserves and in the internal fresh water bodies in some Arab countries. A study conducted by the Arab Organization for Agricultural Development in 2010 for evaluating the fish stock in internal lakes in the Republic of Sudan concluded that fish stock in Sinar and Gabal Awleya'aDam Lake in the middle of Sudan is limited and required development.

- The inefficient utilization of the abundant fish stock in some countries in both regions resulting from the limited resources available to fishermen, limited knowlegde or technology transfer, limited or lack of investments. The abovementioned study conducted by Arab Organization for Agricultural Development showed that the fish stock in Lake Nuba north of Sudan is utilized in an inefficient manner. The study concluded that the current fishing activity in the lake does not exceed 2,000 tons per annum although the fish stock projections estimated that and safe fishing is around 22,000 tons per annum.

- Limited or lack of fishing facilities and infrastucture in harbors.

- The inability to practice high or deep sea fishing despite the abundance of the fish stock as a result of the outdated and backward fishing fleet. The FAO report on the State of Fisheries and aquaculture in the World for 2012 showed that about 61% of the fishing ships in Africa are not equipped with engines compared to less than 7% in Europe and the Near East.

- Lack of comprehensive and accurate databases and statistics on fisheries sector as related to resources and stocks in natural catches.

- Lack of investment maps for guiding entrepreneurs to invest in the areas of fishing, aquaculture, fish processing and marketing in both Arab and sub-Saharan African countries.

    - weak capabilities of fishermen organizations (unions, cooperatives and other in physical, technical and regulatory areas, which limit their ability to provide the necessary funding for fishermen and solve their other professional problems.

- Limited credit facilities offered to fishermen from the various funding sources.

lack of expertise and poor capacity building in most Arab and African countries in the areas of fishing and fish farming.

- Absence or weakness or lack of updating laws and legislation governing fishing operations and the protection of living aquatic resources and aquaculture..

- I llegal fishing by foreign fishing fleets in sovereign states' territorial waters, which negatively impacts many African and Arab countries' economy and fish stock. The "Green Peace" International Organization and The Department for International Development (DFID), estimate these losses for sub-Saharan African countries to exceed USD 1 billion annually.

3.2 Fish Trade and Marketing

Fisheries in Arab countries achieve an annual surplus estimated at around USD 696 million, whereas it achieves a deficit of around 25% of the total fish domestic demand in sub-Saharan African countries. Arab countries export around 875.7 thousand ton of fish and its products with a value of about USD 2.35 billion as presented in Table No. (9), whereas sub-Saharan African countries' exports reached around 1,203 thousand ton with a value of about USD 2.67 billion

Table No. (9): Arab and Sub-Saharan African Countries Fish Exports

Region	2010		2011	
	Quantity (Ton x 1,000)	Value (USD Billion)	Quantity (Ton x 1,000)	Value (USD Billion)
Arab Countries	841.1	2,134.7	875.7	2,350.7
Sub-Saharan African Countries	1,149.9	2,604.5	1,202.7	2,671.6

Source: Arab Book for Agricultural statistics, Volume 32, Food and Agriculture Organization (FAO) website.

Despite availability of the resources required for improving and increasing fish production in the Arab and African regions, many countries in both regions rely on imports for meeting local shortages in fish and fish products production. Imports of these countries are primarily f comprise fresh, refrigerated or frozen fish, in addition to salted, smoked and canned fish. The Arab countries fish imports in 2011 was estimated at around 0.8374 million tons totaling about USD 1.7 billion as given in Table No. (10). On the other hand, the sub-Saharan African countries fish imports in 2011 was estimated at around 2.3 million tons totaling about USD 2.6 billion. African countries fish imports are concentrated mainly in Nigeria, Ivory Coast, Mauritius, South Africa with 33.9%, 14.2, 10.6, 9.5 and 7.4 share, respectively.

Table No. (10): Arab and Sub-Saharan African Countries Fish Imports

Region	2010		2011	
	Quantity (Ton x 1,000)	Value (USD Million)	Quantity (Ton x 1,000)	Value (USD Million)
Arab Countries	810.8	1,604.3	837.4	1,745.0
Sub-Saharan African Countries	2,563.0	2,847.0	2,341.1	2,649.4

Source: Arab Book for Agricultural statistics, Volume 32
Food and Agriculture Organization (FAO) website.

Fish and fish products marketing systems and their institutional frameworks responsible for supervising fish marketing and trade operations in Arab and African countries differ according to their development from one country to another. They also differ according to the source and methods of production . In general, local marketing of fish and fish products in Arab countries is carried out through several marketing channels the most important of which are collection and open markets (off-loading locations) through which fish is sold to wholesalers, whom then sell to middlemen, retailers and supermarkets before, finally, reaching consumers.

However, in some countries, produce is directly sold to consumers through open and semi-wholesalers markets. It should be noted, however, that many of the open markets in Arab and African countries lack the necessary infrastructure such as ice and refrigeration, sanitation facilities and fish placing beds, which results in deterioration of the supply quality. In addition, open markets lack packing and classification of fish in accordance with specifications and standards where the various sizes are all mixed in boxes or refrigerators leading to poor returns.

According to the International Fish Center (July 2009), around 25% of the fish caught in African countries does not reach the consumers, is not marketed, gets contaminated and rots due to poor handling, processing and transport capacities. It is possible, however, to reduce the post-fishing losses by about 50%, and to increase the nutrition and economic value of fish products through modern marketing and processing technologies. Estimates suggest that an added economic value of about USD 350 million per annum and around an additional 350 thousand tons of fish adequate for supplying fish to 35 million consumers with 10 kilograms of fish annually could be achieved should 50% of the fish traders in Africa utilize the aforementioned technologies.

The marketing systems for fish and its products in **sub-Saharan Africa countries** are similar to their equivalent in many Arab countries. In general, these face several technical, institutional and human resources' limitations. Some of these are related to the prevailing marketing systems and policies in each country, whereas others relate to the restrictions and conditions imposed by exporting countries on fish imports, especially hygiene conditions and standards. The issues differ from one country to another according to the fish sector significance and the development of the marketing systems. The following is a brief presentation of the main problems and constraints:

- Weakness of the marketing systems and their inability cope with the local production developments and the international economic and trade developments.
- Weakness of the national legislations regulating fish marketing and trade operations.
- High marketing margins due to multiple marketing channels and, the high marketing commission of middlemen and market monopoly by a limited number of wholesalers over a large portion of the produce.
- Unavailability of supply and demand information in local markets resulting in poor competition.
- Exaggeration of importing countries in applying technical, specifications and standards obstacles, impeding the flow of fish products to international markets.
- Weak infrastructure for handling, g and storage of products in the landing sites and fishing ports
- limited qualified staff and poor training programs directed towards the productive sectors and promotional and marketing and regulatory .Limited qualified human resources and poor capacity building programs directed towards strengthening production, marketing, promotion and control sectors.
- Limited attention to marketing studies and information systems relating to local, African, Arab and international markets.
- Limited access to international markets or penetrating new ones for Arab and African fish products due weak promotion programs and inability to meet quality assurance , standard and specifications requirements.

2.4 Fish Manufacturing

Fish processing in Arab and African countries is divided into three types as follows:

- Traditional type where treatment is accomplished on the boat/ship or near the landing site through salting and drying, and fermentation, which is widespread in sub-Saharan Africa countries.

- Semi-Industrial type, which includes salted, dried and smoked fish manufacturing units and manufacturing of canned and frozen fish and its derivatives (i.e. fish powder and oil), which operated under hygienic conditions and in a focused manner when raw fish is gathered and manufactured in specialized units.

- Industrial type where modern means and equipment are used within developed administration and technical systems with adequate quality control systems in place.

In general, the main problems and constraints confronting fish processing in both regions can be summarized in the following:

- Limited use of modern technology in fish manufacturing.

- Outdated canning and freezing units.

- Limited trained human resources and technical expertise.

- Shortage of the raw materials essential for factories (fish and aquatic organisms) in the required quantity and quality.

- Shortage or lack of quality assurance laboratories and non-compliance with hygiene conditions and risk management systems.
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- Limited investments directed towards fish manufacturing sector in the two regioons.
-
- It is critical to improve the specifications and quality control systems , rural fish manufacturing development, intensification of technical training in the areas of fish preservation and manufacturing for updating the traditional system, and modernizing existing industries in order to develop fish manufacturing operations..

3. Areas of Arab African Cooperation for strengthening Food Security and Developing the Fish Sector

Cooperation between Arab and Sub-Saharan Africa countries in the areas of food security and fish development has to be complementary and transparent, and it should take into consideration available resources in their various forms, infrastructure, institutional framework, and investment and rights guarantees and safeguards in a manner that ensures mutual benefits to all parties. The private sector should be the corner stone of this cooperation in both areas and Governments need to contribute sponsorship role through issuing regulations that enable investments in a manner that fulfills the strategic interests of both regions.

3.1 Cooperation in Implementation of the Joint Action Plan on Agricultural Development and Food Security in Africa and the Arab region

This includes:

- Cooperation in the area of intensifying agricultural production through development of Jiont Africa Arab agricultural projects for producing and trading of agricultural commodities, production inputs and increasing joint agricultural investment efficiency in the agricultural and fish sectors. This can be achieved through attracting Arab and African private sectors for investing in theArab and African regions, improving the investment environment, developing agricultural investment maps in Arab and African Countries that clarifies agricultural investment areas and projects and providing agricultural and fish data bases and information.

- Cooperation in the field of establishing strategic reserves for main food commodities, developing storage systems and establishing an Arab African network for strategic food reserves.

- Cooperation in the area of facilitating and strengthening Arab African agricultural trade.

- Cooperation in the area of improving field irrigation systems and irrigation water use rationalization .

- Cooperation in the area of the development of rural infrastructures.
- These cooperation areas can be culminated through:
- Establishing an Arab-African company for cereals production.
- Establishing an Arab-African company for vegetable oils.
- Establishing an Arab-African company for sugar.
- Establishing an Arab-African company for agricultural equipments and implements
- 3.2 **Cooperation in the area of Fish Development**
- This may include:

- Assessment of the fish stocks.
- Improvement of infrastructure such fishing harbors and landing sites.
- Manufacturing of ships and fishing equipments .
- Developing fish industries.
- Cooperation in the areas of fishing and aquaculture.
- Cooperation in the areas research and fishing and aquaculture technology transfer.
- Capacity building in the area of sustainable development of fish stock.
- Establishing an Arab-African company for sea fishing.
- Establishing an Arab-African company for aquaculture.
- Establishing an Arab-African company for fish processing.

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