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Arab Agriculture in a Globalized World: Constraints and Potentials

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Introduction:

The World Trade Organization (WTO), International Monetary Fund (IMF) and the World Bank are the trinity institutions of globalization that serve to facilitate the creation of an interdependent global economy. By undertaking multilateral negotiations to organize trade relations among countries, the WTO is thought to encourage free trade and do away with old protectionist trade policies. This paper attempts to unfold the status of developing countries after the Uruguay Round as well as highlight the theoretical underpinnings of trade and its implications on agriculture in the Arab world. It will outline the major constraints facing Arab agriculture. In light of the analysis of these constraints, the paper will reach some conclusions about the potential impact of the WTO on Arab Agriculture and propose strategies to cope with the challenges facing Arab Agriculture.

1. Global Trends and Issues of Agriculture:

Despite growing awareness about natural resource management and increase in food production in the 1990s, problems of food security, environmental degradation and poverty still persist. With the increase of technological innovations and efficient means of production, food supply has grown at low prices allaying the worries about rapidly increasing global population rates. However, cheap food prices also pose economic threats on smaller scale agricultures in developing countries, as they cannot keep up with growing forces of competition. The most pressing dilemma is why many people remain poor and hungry when there is such a huge increase in global food production. According to the Task Managers of Chapters 10, 12 and 14 of Agenda 21, around 790 million people are malnourished around the world with their income declining, especially in rural Africa. Such issues have been of great importance in global agendas but are not yet all resolved. Agriculture received much attention by policy makers since it constitutes both a source of income and food for many countries. Thus, issues surrounding agricultural production and trade have been economically and politically charged issues. This can be demonstrated by outlining the evolution of multilateral negotiations that address agricultural concerns of many countries.

1.1 The Agreement on Agriculture (AoA) in the Uruguay Round:

The Agreement on Agriculture concluded in the Uruguay Round was the first international accord of its sort, especially after agriculture was excluded from international negotiations since the General Agreement on Tariffs (GATT) was established in 1947 to regulate international trade. The issue of agricultural sector trade was excluded from the GATT for reasons of national food security and deteriorating agricultural productivity as a result of the expansion in manufacturing economy. Therefore, there were social and political pressures to revive the agricultural sector and protect it from competing international markets. As a result, **agricultural trade was**



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given a special treatment and was exempted from major GATT rules as shown below: "

- Quantitative import restrictions, banned for all other commodities, could be used in the case of agricultural commodities, providing that domestic production of the commodity in question was also subject to certain restrictions, or to domestic price stabilization or price support policies.
- The use of agricultural export subsidies was explicitly permitted, conditional upon the observance of "equitable" market shares; but "equitable" was difficult to define and agricultural export subsidies proliferated.
- Other mechanisms for protecting agriculture, such as variable import levies and domestic subsidies, were not explicitly covered for agricultural policy makers wishing to protect the agricultural sector.[\[1\]](#)

Exempting agricultural trade from GATT conditions offered the green light for the raising levels of international protection of agriculture, especially in the United States and European countries. The US government followed a policy of export subsidization to maintain its market share in agricultural trade. Other countries, depending on exporting agricultural products, faced a decline in their market share, as a result of their unwillingness or incapability to subsidize agricultural exports like their American counterparts.

Thus, trade disputes submitted to the GATT were 60% agriculture-related. Moreover, protectionist policies exercised by developed countries distorted world food markets and depressed prices of agricultural goods to low uncompetitive levels. There were economic factors rather than political that served to integrate agricultural trade within the GATT framework as well; these include issues of comparative advantage, world market instability as discussed earlier and effects of protectionism. In brief, government intervention in protecting the agricultural sector led to the production of a surplus of agricultural products to be sold in the international market; thus, depressing world prices and diverting incentives for production away from comparative advantage. Such protectionist measures also adversely affected farmers in developing countries, where low world prices imposed an artificial low price for domestic products, thus hurting domestic farmers. This also explains why many developing countries became dependent on cheap imported agricultural products for their survival.

All these factors form the underlying forces behind including agricultural trade in the Uruguay Round in 1986. The main objective of integrating agricultural trade was to liberalize trade in agriculture by addressing "import access and export competition under strengthened effective GATT rules and disciplines."[\[2\]](#)



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The parties involved in the Round were the US, the EC and the Cairns group (included developed and developing countries), which all essentially had interests to liberalize trade. The US wished that further liberalization would reduce the rigorous protectionism offered by the EC to its agricultural sector and the EC wanted to settle its political disputes with the US about the same issue. Other developing countries excluded from the Round were concerned about the effect of liberalization on the cost of imported food. It is implicit that the Round was monopolized by the developed countries concerns.

However, it is worth mentioning that developing countries demanded what is known as special and differential treatment within the framework of the Round. This is because agriculture constitutes a major contributor to the development of their respective economies and therefore, GATTs modified liberalizing rules should not interfere with that. Thus, the Agreement on Agriculture reached offered flexibility in the magnitude of cuts in supporting and protecting the agricultural sector in developing countries and gave them a longer time span to achieve the policy changes delineated in the Agreement.

The Agreement aiming at curbing policies that distort global agricultural production and trade focused on three major areas: market access (Article 4), domestic support commitments (Article 6), and export subsidy commitments (Article 9). Each area was subdivided into further policies in attempt to offer operational solutions to agricultural trade.

It is not the purpose of this paper to discuss the details of the rules reached, but it is worth mentioning that Country Schedules were specified with quantitative commitments for each. Of course, certain exemptions took place after continued negotiations on certain crops and circumstances giving opportunities for some countries to compromise tariff concessions; this is especially true for the case of the US and the EC. The Agreement on Agriculture had different provisions for developing and least developed countries compared to developed countries as a safeguarding mechanism.

The WTO was then established as the talks of the Uruguay Round progressed, serving as an institutional framework to monitor the implementation of the terms in the Agreements. The WTO also organizes trade relations among members through multilateral negotiations related to the agreements found in the Final Act.

Since then the WTO operated under the slogan of non-discrimination that guarantees fairness in commercial relation to protect all countries against the unilateral whims of the strong.”[\[3\]](#) The WTO promotes membership emphasizing the importance of openness which is good because it boosts competition, lowers prices and increases choice” and enhances market access for exporters, attracting foreign investment and new accompanying technologies.[\[4\]](#)



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The principles of free trade as adopted by the WTO sound very tempting to the Arab world, particularly small export-reliant developing countries and fuel-exporting countries, which aspire to diversify their exports. The WTO offers facts and figures to make its case stating that GDP per person fell by 1.1% in the 1990s in non-globalizing developing countries and rose by 5.1% for globalizing ones. The belief is that trade leads to welfare, boosting economic growth, reducing poverty and creating a better quality of life.

However, there is huge desperation perceived by a portion of the world community with regards to the WTO performance and its ramifications on the environment, agriculture and social issues in many countries, especially developing and least developed countries. Ubiquitous disappointment among developing countries is evident due to the effects of globalization on their agriculture and food rights. Many countries blame the Uruguay Round and consequent trade implementations for the deterioration of farmers' status and dependence. Discussing such perspectives is useful for reaching conclusions with regards to the potential impact of WTO on Arab agricultural production and trade patterns.

1.2 The Implications of the Agreement on Agriculture(AoA) in the Uruguay Round:

Most developing countries are bitter that many of them lost rather than gained from the Uruguay Round. It is estimated by the United Nations Development Program that under the WTO regime, in the period of 1995 to 2004, 70% of the gains of the Uruguay Round will go to developed countries, with most of the remainder going to some export-oriented developing countries.

Many developing countries oppose a new trade round because they see in it an agenda for liberalization that has to do more with opening up developed economies to greater penetration by northern transnational corporations. New issues proposed by developed countries to be discussed in another round revolve around investment policy, competition policy, government procurement policy, labor standards and environmental standards. As for labor and environmental standards in WTO agreements, developing countries fear that their intent is to serve as barriers to entry of developing countries imports. [5] Moreover, many developing countries complain that their exports still encounter high tariffs and other trade barriers by developed countries. They are also concerned about import barriers in developed countries falling too fast that their preferential treatment will be ended.

Furthermore, as trade barriers have been relatively reduced, many agricultural producers in developing countries have been facing larger competition from industrialized producers. Simultaneously, developing countries have been dealing with declining support services and subsidies to make structural adjustments and achieve liberalization. All such burdens have placed rural poor and small farmers at a disadvantage, whereas larger enterprises and vertically integrated firms have benefited the most. [6]



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It is estimated that the EU raised its exports of agricultural products after the implementation of the Agreement on Agriculture from USD 46.7 billion in 1995 to 54.6 billion in 1997. The US agricultural exports grew from USD 43 billion in 1994 to USD 59.8 billion in 1996. On the other hand, Third World countries were hit, where there has been a general trend toward the concentration of land, marginalization of small farmers and increasing landlessness, unemployment and poverty [7]

Trade liberalization in agriculture causes substantial shifts in agricultural production, which implies a transformation of environmental burdens related to agriculture. Thus, accelerated rates of deforestation are the most likely consequences of the Uruguay Round. This is especially true for developing countries, where their agricultural system relies heavily on land clearing with little use of chemicals. [8]

Moreover, liberalized trade encourages transnational agribusiness and agrochemical corporations. The role of these companies has been evident since the Green Revolution, where they increased their influence on agriculture in the Third World excessively. The Green Revolution is technologically scale neutral since its application is equally effective on large and small farms; however, it is not socially scale neutral. When the cost of investment in capital-intensive productive factors is cheap relative to labor, it becomes more plausible for a farmer to obtain a certain technology. However, the cost of such material inputs is higher for small farmers than large farmers. As a result, a small farmer will continue to produce on the basis of labor-intensive economy, whereas, the larger and richer farmer will adopt technical changes to increase his productivity and income. Ultimately, the Green Revolution in developing countries has led to an increase in income disparity between the rich and the poor.

Similarly, agribusiness and agrochemical corporations today are taking advantage of recent developments in biotechnology to increase farmers' dependence on genetically modified organisms (GMOs) and other farm inputs. Such high-tech proprietary seeds focused on herbicide tolerance and insect resistance imposes on farmers a "package deal" more compelling than the Green Revolution; farmers will have no other alternative but to buy proprietary pesticides from companies that bought their seeds. For instance, seeds known as Terminator" seeds lose their germinating ability preventing farmers from saving seeds to be replanted and thus keeping them hooked to purchase new seeds every planting season. [9] The GMOs by-product effect on both producers and consumers is still uncertain, especially with regards to potential health problems caused by GMOs. Other concerns among developing countries is about having access to new biotechnologies to enable them to produce domestic GM products that can be sold abroad, rather than only consume GM products coming from Northern countries. [10] The concentration of the ownership of the seed industry in the era of globalized agriculture, along with the imposition of intellectual property rights in agriculture and in genetic engineering technology of few big corporations, play a role in raising the cost of production for



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smaller farmers and adding environmental and social pressures.[\[11\]](#) All such factors exacerbate the issue of food security in developing and least developed countries.

The Agreement on Agriculture indirectly addresses food security issues in the clauses on Special and Differential measures realizing that reform programs in the agricultural trade will incur possible negative effects on Least Developed and net-food importing developing countries. Therefore, the Agreement included provisions of food aid to consider requests of financial and technical assistance to improve agricultural productivity and to finance some food imports by international financial institutions when necessary. Such measures were taken to alleviate potential food security issues and to enhance capacity building among agricultural producers in developing countries to expand productivity capabilities.

Certain technical obstacles have emerged , however,narrowing the ability of the above measures to be executed. The Agreement has yet to define the beneficiaries to be monitored, trigger mechanism for assistance,determine the nature of assistance and evaluate the adequacy of existing mechanisms and terms of access to them [\[12\]](#).

As a result of increased trade liberalization due to the Agreements, there are regional variations pertaining to adequate food supplies. The change in external policy environment influences national food security, especially when potential foreign exchange earnings due to trade liberalization do not rise to offset food security issues. Given that cereal prices will increase after the implementation of the Agreement and that developing countries have a 40 % share of world imports implies that there will be a negative impact on food availability in developing countries. This is especially true when developing countries are not expected to make adequate gains via export revenues.

Moreover, 5 to 20% increase in food import bill to the year 2000 was attributed to the Agreement. The food import bill was projected to rise by USD 10 billion in Low-Income countries, where 14% of the rise was attributed to the impact of the Agreement on world market prices.[\[13\]](#) The Agreement is unlikely to influence food aid directly and the reduction in export subsidies and other price support in developed countries is likely to exert pressures on the availability of food stocks and food aid requirements. The impact of the Agreement on Agriculture on food security in developing countries is also relevant to the Arab context, where most Arab countries are food-importing countries, as will be shown below.

2. Background on Arab Agricultural Production and Trade Pattern:

Imports of agricultural products have always exceeded or equated exports in the Arab World. Dependence on food imports has been increasing since the 1970's. This phenomenon persists, despite the fact that the Arab World has massive areas of agricultural land. However, such vast agricultural areas have lacked appropriate



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investment, even in the face of pressing food insecurity in the region. The reasons behind the underemployment of land have to do with lack of capital, human resources and technical skills as well as a stunted structural system to administer agricultural investment.

The rise in world import prices for agricultural products and simultaneous decline in export revenues from Arab agricultural goods exacerbated Arab trade balance and enhanced the burden on their ability to use export revenues for financing development activities. Major agricultural exports of Arab countries are cotton, fruit and vegetables that comprise 70% of their exports. As for the imports, Arab countries depend on foreign cereal, sugar, tea, coffee and vegetable oils. Apparently, Arab countries depend heavily on the external market for the provision of their major nutrients, which implies that increasing world prices for such goods and their paucity will put the Arab countries at a disadvantage. As discussed earlier, the Agreement on Agriculture has implications on the reduction of cereal stocks, as developed countries are facing a cut in export subsidies and price control measures under the Agreement.

In order to cope with the challenge of globalization, Arab countries have to follow certain policies to develop the agricultural sector and address threats of food insecurity. It is important that a greater regional coordination be established to address food security issues, where a collective strategy would reduce overall costs. The promotion of regional integration will also provide a medium to find sources of supply by developing a regional market. Arab Countries have established some collective entities for these purposes. An example is the Arab Incorporation for Investment and Agricultural Development, which was established in 1975 to implement a program for Sudanese agricultural development. However, many factors impeded the success of such programs. Generally, lack of accessibility to technologies, politically challenging investment environments, nepotism and corruption are among many factors that rendered regional initiatives unsuccessful.

All in all, Arab countries still face the problem of food shortage, making the Arab World more dependent on food imports and worsening their estimated \$200 billion debts. Part of this heavy dependence on imports is attributed to the Agreement on Agriculture and consequent liberalization policies. Other reasons are associated with incompetent Arab economic policies that ignore the agricultural sector, allowing it to operate at inefficient levels. The fact that 80% of arable Arab lands are neglected illustrates the previous statement. Thus, issues like urbanization, desertification and population growth need to be addressed by policy makers.

2.1 Arab World Overview for Agricultural Performance:

As shown above, there are many structural obstacles that prevent Arab countries from using their agricultural lands in the most efficient ways to achieve self-sufficiency and



independence. However, developing the agricultural sector in the Arab world is a crucial step towards self-sufficiency as well.

Besides technology, availability of cultivable land and water resources are essential to the process of agricultural development in the Arab World. Lack of water resources and land constitute physical constraints facing Arab Agriculture. Such constraints have affected the extent of agricultural contribution to the economy of Arab countries, where the agricultural sector has become less prominent compared to other sectors with regards to self-sufficiency and employment. Table 1 shows some agricultural statistics for selected Arab countries to give a quick indication of the status and performance of Arab agriculture.

Table 1: Agricultural Statistics for Selected Arab Countries:

Country	1995/2000 Population Growth (%)	1996 Per Capita GDP	Agricultural Land/person (million dunum)	1996 Agricultural Sufficiency (%)	Agricultural Research Balance (million dollars)	1996 Agricultural Exchange in Billion \$	
						Export	Import
Algeria	2.3	1510	2.4	68	13.7	0.1	2.7
libya	3.3	4460	3.3	62	13.1	0.05	1.3
Morocco	1.8	1320	3	87	40.3	0.9	1.7
Tunisia	1.8	2010	4.8	83	15	0.3	0.8
Egypt	1.9	1070	0.5	78	67.6	0.5	3.9
Sudan	2.2	285	3.9	111	3.1	0.6	0.3
Iraq	2.8	1280	2.2	89	-	0.-	1
Jordan	3.3	1640	0.7	55	6.1	0.2	0.7
Lebanon	1.8	4360	0.9	59	3.8	0.1	1.2
Syria	2.5	1120	2.9	100	15.3	0.8	0.8
Palestine	4	1000	1	85	-	-	-
Bahrain	2.2	7	0.6	14	3.2	0.-	0.3
Kuwait	3	21100	0.1	27	-	0.03	1.1
Oman	4.2	4700	0.3	40	-	0.2	0.8
Qatar	1.8	11600	0.3	40	-	0.01	0.3
Saudi Arabia	3.4	7300	1.9	71	-	0.4	4.3
United Arab Emirates	2	16100	0.4	29	-	0.7	2.4
Yemen	3.7	340	0.9	56	6.1	0.1	0.8

Source: International Center for Agricultural Research in the Dry Areas.



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During the period of 1980-1996, the Arab world has relatively registered an improvement in agricultural development, where the level of production grew by 85% and by 14% per capita. As can be judged from the table, Sudan and Syria seem to produce agricultural products that ensure agricultural self-sufficiency, where they registered an index of agricultural self-sufficiency equal to 111% and 100% respectively. However, countries such as Qatar, Bahrain and United Arab Emirates fall behind in their indices of agricultural self-sufficiency, where their indices are 19%, 14% and 29% respectively. Correspondingly, countries with relatively low index of agricultural self-sufficiency are those with imports largely exceeding exports, as these fail to meet the demand for food in their respective countries. Sudan and Syria demonstrate a reasonable agricultural and food import/export balance and at the same time present high values for the index of agricultural sufficiency. Egypt, Tunisia and Morocco are moderately dependent in their food consumption as reflected by the value of the ratio of their imports to exports and their agricultural self-sufficiency indices, as shown in the table above. Generally, oil-exporting countries have low agricultural self-sufficiency indices as well as high agricultural and food imports relative to exports.

Within the framework of liberalization and international trade, it is expected that the rate of agricultural dependency will be high for those Arab countries, which demonstrate high agricultural and food import/export values as well as low agricultural self-sufficiency indices.

2.2 Constraints Facing Arab Agriculture:

To decrease agricultural dependency among countries, the Arab world should recognize the impediments it faces in the process of agricultural development and independence. Land and water are key components for agricultural development in the world in general and in the Arab world, in particular. Below is a detailed outline of each of the physical and institutional constraints facing Arab agriculture.

2.2.1 Water Crisis in the Arab world: The Issues: [\[14\]](#)

The Middle East is one of the most water poor and water stressed regions of the globe. While the region is home to 5% of the people of the world, it has less than 1% of its renewable fresh water. Today's annual per capita availability of fresh water in the region is only one third of its 1960 level (World Bank, 1996), falling from 3,300 cubic meters per person in 1960 to less than 1,250 cubic meters in 1995. This is the lowest per capita water availability in the world. By 2025, this limited availability is likely to drop even to lower levels-- to less than half the 1995 level. This average (1,250 cubic meters), low as it is, can be misleading. With the possible exception of Iraq, Turkey and Iran, all Middle East countries have average per capita renewable fresh water availability levels below the average of 1,250 cubic meters. Some of the Arab Gulf countries and the Palestinians have per capita availability averages that are below 10% of the regional average of 1250 cubic



meters, and even a country that is considered to be relatively water endowed like Lebanon shows an average of 1,200 cubic meters (Table 2).

TABLE B 2: Water Availability and Usage in Arab Countries

Country	Annual Renewable Resources (MCM)	Annual Withdrawals		Per Capita ARR 1995 CM	Water Usage %		
		(MCM)	AS % OF ARR		Domestic	Industry	Agriculture
Algeria	18400	3000	16	655	22	4	74
Egypt	58000	56300	97	1005	7	5	88
Bahrain	N/A	200	N/A	N/A	60	36	4
Iraq	104000	43900	42	4952	3	5	92
Jordan	800	1000	125	213	20	5	75
Kuwait	N/A	N/A	N/A	N/A	64	32	4
Lebanon	4800	800	17	1200	11	4	85
Libya	700	2800	400	130	15	10	75
Morocco	30000	11000	37	1083	6	3	91
Oman	2000	1300	65	1053	3	3	94
Qatar	200	150	750	N/A	36	26	38
Saudi Arabia	2200	3600	164	118	45	8	47
Syria	5500	3300	60	385	7	10	83
Tunisia	4400	3000	68	489	13	7	80
UAE	300	400	133	167	11	9	80
Yemen	3000	3900	130	176	5	2	93
Palestine	1000*	200	100	105	12	13	75
Iran	118300 .	46500	39	1826	4	9	87

Source: World Resources 1992-1993; Pacific Institute for Studies in Development, Environment and Security, Stockholm.

The growth of population and industry are responsible for increasing the demand for water everywhere. This is, however, only one aspect of the problem. Actual physical scarcity, even in the Middle East region, is not the only key issue. Conditions of economic scarcity seem to be more pressing: there is enough water to meet society's need, but there are few incentives for wise and efficient use of this critical resource. Water shortages can be dealt with in a number of ways--increasing supplies and the water system efficiencies and/or through conservation and demand management. The latter are more recent in nature and less used. They are increasingly becoming more urgent and more dependent on using economic instruments such as efficiency prices and conservation compatible incentive regimes. But for these economic instruments to work there should exist an understanding of how these



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instruments work. A macroeconomic context must also be provided that is compatible with micro efficiency and is consistent with standard notions of equity and justice.

A number of questions arise and these need to be answered clearly and conclusively:

Is water different from other commodities? Is its value infinite? Can a price for water be determined much like any other commodity? Can water be traded and shared? Are water wars inevitable? Can reasonable arrangements among riparian be negotiated? What constitutes an equitable distribution of shared resources? These are some of the complex questions that arise about water. There is no area of the world where these passions are stronger or more pressing than in the Middle East where severe water scarcity is compounded by conflict, asymmetries of power, and the exploitation of strategic advantages by the countries of the region.

The water crisis in the Middle East has a lot to do with some general characteristics of water and their peculiarities in the region and still more with the underlying power structure of the state system within the region.

Among the many special complicating characteristics of water that contribute to the crisis , the following are the major ones:

- Water is a scarce resource, of which availability is far below the competing demands for it. This scarcity is more pronounced in some specific areas of the region and within even the same state. It is not uncommon to find areas and groups of people with abundant water and others with no or little amounts. The scarcity issue is about relative scarcity and not absolute scarcity. The physical scarcity is complicated by economic scarcity where actual prices for water are fractions of the true scarcity price (shadow). When prices are below scarcity prices, waste and over use are quickly observed. There are many examples in the Middle East, particularly in Israel where subsidies have engendered a culture of waste.
- Water is fugitive, reusable, stochastically supplied resource and whose production can be subject to economies of scale. In this respect water has many of the characteristics of a common property resource and a quasi public good. The secure supply of water in much of the region, where security is defined as the probability of its availability 9 out of 10 years, is less than 5%. It is rarely recycled, and variability in rainfall is multiples of what it is in other regions.
- Water is typically a non-traded commodity that is rarely sold in a competitive market. There are few overt water markets where suppliers and demanders exchange water. Recently markets in water rights have emerged in several parts of the world; the most notable examples are in Colorado, California and Argentina. But most of these markets are within national



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entities and often represent simulated market solutions. There are only few international examples of water trade, but it is not difficult to conceive schemes that would involve this trade. There is now a rich literature on this subject that can help in designing efficient markets.

- Water values generally differ from the price that would obtain in a free and competitive market. It is often the case that water has social value that is above what private users are willing to pay for it. The allocation of water often reflects national and social policies and priorities towards agriculture, the environment and national security that go beyond promoting the interests of profitable private farmers. Social and policy considerations apart, the diversion of actual prices from their scarcity values is imposing social costs on the domestic economy as well as on neighboring countries.
- Water is not only a desirable commodity; its availability is also critical for life. There are little or no substitutes for it. Furthermore, it is a well-entrenched principle that no matter how scarce water is; every person is entitled to a minimum quantity that is considered consistent with human dignity.
- Very few countries have water supplies that they have to themselves alone that they do not share with others. It is often the case that surface water (rivers) passes through several countries and aquifers are shared. More than 85% of the water available to the respective countries of the region originate outside their borders or is shared in a common aquifer with others. It comes as no surprise that there is no well-defined sharing agreements among riparian and that history is rife with water conflicts. Water is part of the tragedy of the commons.
- While the total water supply may be limited, and, few if any, substitutes exit for it; there exist substantial possibilities for inter-sectoral and interregional substitutions. As well, there are a number of technologies and conservation packages that rationalize demand and raise the efficiency of its use. Part of the water scarcity crisis in the region is the fact that agriculture uses over 70-80% of the total available domestic supply. It is typically the case that other needs are suppressed, but this leaves a wide room for inter-sectoral reallocations.
- While the quantity of water is in short supply in the region, concern for preserving its quality is perhaps more pressing. Syria is more worried about the quality of water that will be left for it after the irrigation schemes that Turkey is contemplating in the South-East Anatolia Project than about the total quantity. Pollution and saline intrusion of the aquifers are being increasingly recognized as critical factors in planning for the future.
- The current allocation of the shared water resources in the region are not the outcome of agreements, negotiations or equitable principles. Rather they reflect the asymmetries of power in existence and the abilities of the strong to impose their wills on the weak. Turkey and Israel, even though one is a



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downstream riparian and the other is an upstream one, both have managed to monopolize and utilize water shares far and beyond any rational allocation system consistent with basic international law governing transboundary resources.

The headwaters of the River Jordan, located in northern Israel, the occupied Golan Heights and Lebanon feed Lake Tiberias; Syrian and Jordanian waters (most importantly the Yarmouk River), meanwhile, and West Bank and Israeli springs feed the Jordan River below Lake Tiberias. As a whole, these elements constitute the Jordan international drainage basin, a naturally defined area that cannot be artificially sub-sectioned. As a result of Israel's occupation of the Golan Heights and its control over southern Lebanon, Israel controls the headwaters of the Jordan River. By its pre-1967 borders, Israel accounts for only 3% of the Jordan basin area; yet it currently has control of the greater part of its waters. At present, Israel is drawing an annual 70-100 million cubic meters (mcm) from the Yarmouk, and is piping 1.5 mcm per day from Lake Tiberias in its National Water Carrier (Rudge 1992). Consequently, the River Jordan, which, in 1953, had an average flow of 1250 mcm per year at the Allenby Bridge (Main 1953), now records annual flows of just 152-203 mcm (Soffer 1994).

2.2.2 Land resources:

Problems facing land resources in the Arab world include:

- Land degradation;
- Soil erosion;
- Creeping soil salinization;
- Desertification
- Loss of sustainability;
- Increased encroachment on limited available land for urban uses;
- Weak land registry system;
- Poor enforcement of laws regarding land management;
- Lack of integrated land use planning;
- Competition among public institutions on land management issues;
- Lack of expertise in integrated land resource management;
- Shortage of decision support systems and planning tools for sound land management;
- Fragmentation of land ownership through inheritance;
- High cost of land reclamation and limited credit mechanisms;
- Lack of physical and biological data about rangelands
- Absence of laws to permit control of grazing in common areas;
- Land tenure in rangelands and forests



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- Lack of knowledge and understanding of the dynamics of social and economic interactions in rangelands;
- Lack of laws to designate and protect national forests and nature preserves;
- Lack of research, inventory and monitoring of forest and nature areas;

2.2.3 Agricultural Production:

Constraints facing Agricultural Production include:

- Small farm sizes result in high production costs, marketing problems, and complicate the process of knowledge dissemination and technology transfer;
- Small farm sizes also cause difficulties in water distribution from shared wells and springs;
- Lack of effective farmers' associations to improve management of water resources, reduce input costs and improve output marketing.
- Insufficient and ineffective agricultural extension services;
- Inadequate applied research services linked closely to extension programs;
- Insufficient farmer access to production and marketing credit;
- Lack of support information for decision-making on more profitable alternative products and technologies;
- Limited access to alternative markets and high export transaction costs;
- Limited availability of food processing market outlets;
- Yields are low due to inappropriate varieties, poor cultural practices and inefficient input use;
- High cost of inputs;
- Limited genetic improvement of farm animals (especially sheep and goats);
- High neonatal and early-age mortality for sheep;
- Limited use of improved breeding technologies (i.e. artificial insemination) for dairy cows;
- Absence of processing and storage capacity (transportation, storage, processing plants for milk and milk products) results in unstable seasonal production;
- Lack of vertical integration in poultry production limits productivity and profitability;
- The persistent problem of insufficient cereal production makes the Arab world more dependent on cereal importing.
- Shortage of grain storage capacity;
- High cost of feed;
- Limited veterinary diagnostic staff and laboratories;
- Absence of food safety regulations for meat and poultry;



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- Limited food processing capacity

2.2.4 Marketing:

Marketing is one of the administrative components needed for agricultural development and which suffers from structural problems in **the Arab World as will be shown below:**

- Unstable prices in domestic markets;
- Long domestic marketing channels (marketing margins are high);
- Frequent surpluses;
- Lack of reliable decision making information on demand, supply and prices;
- Insufficient access to latest production technology and management concepts;
- Limited availability of refrigerated trucks for internal and export marketing;
- Inadequate pre-cooling, grading, export packaging, cold storage and transportation services;
- Limited knowledge of global markets and marketing requirements;
- Absence of substantial companies (channel captains) capable of dealing effectively with global buyers;
- Inadequate direct Arab export experience;
- Poor understanding of export quality demands, quality and food safety assurance and required post harvest practices;
- Non-competitive and weak food processing industry;

2.2.5 Institutional and Human Resource Development:

- Inappropriate agricultural laws and regulations;
- Lack of an agricultural insurance system;
- Shortage of well trained agricultural researchers, extension workers and entrepreneurs;
- Unclear strategy for agricultural education and insufficient resources;
- Intermediate agricultural education is almost non-existent;
- Lack of reliable production, trade and price data;
- Lack of clarity of the future role and relationship of NGOs to other institutions;
- Incomplete coordination with regional and international institutions related to Israeli imposed restrictions;
- Weakness in cooperatives and other rural community organizations;
- Absence of grading and standardization, market information, and capacity building institutions;



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- Absence of coherent government programs to assure adequate rural and agricultural credit facilities.

Table 3 below shows that the Arab world is ranked very low in terms of its social and institutional capacities as well as the adoption of science and technology in the agricultural sector. The figures demand that civil society participation in rural development should be expanded, especially in the Arab context.

Table3: Countries Worldwide with respect to selected agriculture sustainability Indices:

Country	Social & Institutional Capacity	Science & Technology
Algeria	114	77
Egypt	64	78
Jordan	70	90
Lebanon	84	52
Libya	122	73
Kuwait	106	86
Morocco	80	68
S. Arabia	121	56
Sudan	115	113
Syria	117	100
Tunisia	102	83

Source: 2001 Environmental Sustainability Index, Annual Meeting 2001, Davos, Switzerland.

3. Future Sustainable Agricultural Strategies:

The Arab world has to face the challenges of the new millennium. The responsibility to make changes does not rely on the governments alone. Civil society institutions have a major role to play. Clear definitions of roles, mandates and responsibilities should be made. Fundamentally, agricultural policies in the Arab world should be founded on the principles of a free market economy, which includes transparency, pluralism, the protection of human rights and environmental sustainability. The role of government is to provide the basic infrastructure, the legal and regulatory framework, and the knowledge and information required to facilitate efficient production and distribution of agricultural products in the private sector. It is also important that governments assist farmers and exporters in becoming more competitive through technology transfer assistance, research, positive legal and regulatory environment, and human resource



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development. The private sector, in a free and competitive manner, should lead the agricultural growth process.

3.1 Policy and Institutional Framework:

The Arab world should adopt an agricultural policy that aims “to achieve a modern agriculture that responds to the needs of local and foreign markets and to be competitive in terms of quality and price through:

- In devising a unified or a common agricultural policy, it is important to learn from different Arab experiences in forming agricultural policies and strategies.
- The optimal exploitation of agricultural resources, particularly land and water, based on economic viability and efficiency and social equity, to ensure their sustainability, preserve the environment, and to contribute to achieving food security;
- Development of the rural areas through an integrated rural development approach, where agriculture constitutes its backbone;
- To improve competitiveness of agricultural production in the local and foreign markets;
- To enable the private sector to act freely and to contribute to rural and agricultural development;
- To strengthen the institutional structure and legislative framework of the agricultural sector, and to develop human resources to enable more efficient delivery of services.
- To enhance NGO participation in defining agricultural future strategies as well as to use university facilities to coordinate implementation of strategies. Moreover, farmers’ committees should be formed to tackle farmers’ needs and problems. The role of women and the youth in agriculture should be expanded to achieve integrated rural development.
- To control the fragmentation of farm holdings through land consolidation and other mechanisms.
- To develop channels and systems of rural support, with full participation of the rural communities that aim to enhance agricultural productivity.

3.2 Natural Resource Development:

It is clear that land and water resources are severely restricted in most Arab countries. The urgent challenge then is to efficiently use its scarce land and water resources in labor-intensive agriculture to maximize income and employment. Aggressive governmental intervention is needed to regulate land and water usage, to stimulate more efficient use of scarce resources and to assure sustainability of existing resources for



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future generations. **These issues can be addressed separately by considering the following suggestions:**

- Over exploitation of land should be curtailed by demarcating land use areas and undertaking agricultural awareness programs, transferring appropriate technology and devising legal and institutional framework to meet the previous purposes.
- Promoting effective land use planning. Using agricultural resources according to their relative values and suitability.
- Using agricultural resources according to their relative values and suitability.
- Enhancing productivity and sustainable management for agricultural land Adopting sustainable rangeland management as well as protecting forestry and natural reserves.
- Increasing rangelands grazing capacity and grazing period.
- Rehabilitating Water resources and enhancing water supplies as well as making use of available spring waters by adopting appropriate technologies for doing so.
- Improving the adopted water harvesting techniques.
- Strengthening the legal and institutional framework for water management.

3.3 Production, Marketing and Trade:

Agricultural productivity can be expanded by considering the following points:

- Promoting scientific research and awareness programs in agriculture.
- Developing land suitability map to assist in improving the productivity of agricultural systems in the Arab world.
- Increasing the productivity of local varieties and breeds.
- Protecting the region from disease and epidemics.
- Using environmental friendly and appropriate pesticides.
- Ensuring financial support for technology adoption needed for enhancing efficient production.
- Providing the infrastructure needed for production such as agricultural roads, and spreading agricultural and veterinary services, which involve the participation of farmers.
- Encouraging the establishment of agricultural and food industries and focusing on cooperatives.

As for marketing and agricultural trade, the following points are useful to consider in the Arab context:



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- Providing high quality and appropriately priced agricultural products by adopting efficient use of technologies
- Supplying goods according to the market demand, promoting contract production with farmers and disseminating research on marketing procedures.
- Promoting the establishment of companies to develop exports.
- Providing the infrastructure and services needed to assess the quality of husbandry produced against global agricultural standards.
- Providing services needed for agricultural goods' storage, packaging and canning, and transportation.
- Devising legal frameworks compatible to regional and international agreements.
- Enhancing access to international agricultural trade by studying future export opportunities according to the goods concerned and market.
- Limiting bureaucracy in agricultural trade.
- Promoting and supporting agricultural exports and working towards enhancing international market access.

3.4 Scientific Research:

Division of the world based on geography i.e. north and south or east and west is no longer valid. It is becoming clear that the world is now divided among those who have and harness the technology and those who don't. The technological gap between countries of the world is getting wider. There is a large need for promoting technology and scientific research in the Arab world, especially in agriculture. State controlled institutions have failed to bridge the technological gap. Therefore, civil society institutions and the private sector need to assume a major role in technology transfer.

The following points suggest ways to incorporate research in agricultural production and trade:

- Depending on applied research and the use of technology that help enhance productivity and diversity in agricultural production
- Transferring knowledge and experience in the operation of technical devices used in agricultural production.
- Networking, coordination and cooperating between institutions working on research and projects pertaining to agriculture.
- Enhancing capacity building, especially in human resources, infrastructure and equipment.
- Intensifying the role of national centers for agricultural research to help transfer technology and to work as an intermediary between different institutions.



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- Encouraging universities and research centers for disseminating academic and applied research on topics that pertain to agricultural priorities.
- Encouraging the private sector to innovate and undertake research that will serve the development of the agriculture. This could be promoted by establishing intellectual property rights that will encourage agricultural investment.

4. Regionalism and Arab Agricultural Trade:

There are a number of problems facing the establishment of an Arab common market. Rarely did Arab States pursue policies to encourage inter-trade. Until 1996, only 6 to 7% of Arab trade was inter-trade. Table 4 below shows selected statistics about the magnitude of inter-Arab agricultural exports for the year 1997.

Table 4: Inter-Arab Agricultural Exports as a percentage of Total Trade for a country:

Country	Exports to other Arab Countries
Syria	29%
Saudi Arabia	20%
Morocco	6%
Egypt	4%

Such low levels of inter-Arab trade is attributed to several factors. First, inefficient and highly protected industry found in poorer Arab states, fall short in providing the products needed in the Arab market. Second, many Arab states have yet not capitalized their natural assets to be converted into strategic development centers that can produce world-class products to be sold locally, regionally and internationally. Third, there is lack of joint production possibilities among Arab states to diversify their markets instead of providing subsidies for commodities to prevent other states from opening up their markets. Finally, there is lack of communication and the presence of information imperfection among Arab countries that preclude initiatives of intra-regional integration; this is intensified by political border hostilities between some Arab states.

There are other important points to consider concerning the limitations for establishing an integrated agricultural Arab production and trade system:

- Lack of water resources as discussed earlier stands as an obstacle in increasing the size of cultivated lands and productivity.
- Arab countries adopt unilateral actions to serve their national self-sufficiency without considering the effects of such actions on neighboring Arab countries.



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Gains from regional integration in our globalized world include “economic welfare gains, enhanced political power in extra-regional affairs and non-economic goals (especially in security-related ones).” [15] Many Arab countries have initiated to increase their regional interaction but not enough efforts have been exerted for that purpose. The slow growth of real GDP in the region, compared to other developing countries is sometimes attributed to little attempts to regionalize. This explains why little capital was surged in the Arab world, compared to other developing countries. Moreover, Arab export growth has only reached 1.5 % yearly, which is a relatively low number when compared with annual export growth of 10% in other developing countries. [16] Table 5 below shows the share of intra-regional trade in total trade for different geographic region, where the Middle East demonstrates a relatively low statistic.

Table 5: Intra-regional Trade (Exports and Imports) as % of Total Trade:

CEE + CIS	21.7	22.3	25.8	33.2	34.8	34.4	35.2	29.6
Asia	34.7	36.1	35.7	37.0	37.7	38.0	38.1	36.8
Africa	7.4	7.8	8.2	8.9	10.1	10.5	10.2	9.0
Middle East	7.3	7.1	7.6	7.9	7.2	6.6	5.8	7.1
Western Hemisphere	6.6	17.7	18.4	18.3	18.8	19.3	19.0	18.3

Source: www.al-bab.com/arab/econ/sulaiman.htm.

For Arab countries to avoid further marginalization in the world economy, Arab governments need to undergo structural adjustments to achieve a trade-policy regime that encourages integration, doing away with protectionist tendencies. This might boost the Arab world chance as a whole (not merely as sub-regions) to be part of a regional trade agreement with the EU and countries in the southern and eastern Mediterranean. Currently, the sub-regional groups found in the Arab world are the Co-operative Council for the Arab States of the Gulf (GCC) and the Council of Arab Economic Unity.

A Regional Trade Agreement (RTA) in the whole Arab World will lead to further trade liberalization, since the contents of RTAs are usually compatible with those found in the Uruguay Round. Trade liberalization among Arab countries as shown above can generate both economic and political impetus in the face of larger regional blocs such as the EU. A collective trade policy and objective will increase the bargaining power of Arab countries in multilateral negotiations about world trade policies. However, trade liberalization as discussed in earlier sections can be a sword with two edges, where it might have adverse effects on the agricultural environment and social conditions.

Conclusion: ↑



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The changing global economic and political structure is exerting pressures on many countries, especially developing ones, to devise adaptive measures that will help them cope with changing conditions. However, despite the implicit assumption that globalization will foster growth and development for all countries equally, the divide between Northern and Southern Countries is still evident, taking a new form and thrust.

Agriculture as an essential resource of production and revenue generation is placed at the point of contention when trade policies are crafted. Globalization has changed the pattern of agricultural trade leading to both positive and negative implications on various countries. Essentially, developing countries as shown have endured the negative implications more than developed countries, as they lack the structural preconditions to adapt to the new Agreement on Agriculture posited in the Uruguay Round.

The Arab world faces other challenges pertaining to agriculture, where its productive capacities are hampered by internal policies and protectionist tendencies. Regional integration will be useful to set collective strategies and to transfer financial assistance from richer Arab countries to poorer, in an attempt to diversify their agricultural exports and foster the growth of the region. However, for that to be achieved, agricultural and trade reforms need first to start at home, with the cooperation of NGOs and research centers to achieve agricultural development and independence.



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