



THE REALITY OF FOOD SECURITY IN THE ARAB WORLD

Abdulrahman Al-Fawwaz^{1†} --- Abdullah Ahmed²

¹Associate Professor, Department of Humanities, Al Balqa Applied University, Jordan

²Lecturer, Department of Sociology and Social Work, Yarmouk University, Jordan

ABSTRACT

The study concludes that the reality of food security in the Arab World is unstable and fluctuated; there is no self-sufficiency to cover the needs of the Arab states. In addition, food security is connected with the power of water security, as all water resources come from non-Arab states. Water shortage may lead to the shortage of food for Arab states (famines), poverty and divisions. Therefore, this affects the social security due to the emergence of unemployment, poverty and the inability to develop, and to sustain the infrastructures, the general services considered necessary for the Arab citizens. Rainfalls, desertification, drought and the weaknesses of technical abilities are the main reasons for decreasing food security; they increase food subordination or dependency, which become significant in the Arab states that rest on foreign countries to fill the food needs of their people, as the average of consumption is higher than the production. The study is divided into four parts: the introduction, the dilemmas of food security's concept, the relationship between food, water and social security, and food security threatens in the Arab World.

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Keywords: Food security, Arab world, Water security, Arabian water resources, Arabian agriculture, Arabian food threatens.

Contribution/ Originality

This study is one of very few studies which have investigated in the reality of food security in the Arab World. The paper contributes the first logical analysis about the challenges of food security and water security as well as agricultural threatens in Arabian lands.

1. INTRODUCTION

Food security is the basis of national security; it has an advanced position among the various activities practiced by states. Food security occupies the first priority among the nation's

† Corresponding author

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elementary functions, as the state adopts a strategy that enables it to meet the society's needs and to provide the financial possibilities for supporting food needs.

In the past few years, food crisis in the world lead to the emergence of a political desire in the Arab leaderships and the executive bodies, to review the plans and the general policies in the field of food security. The necessity of having ambitious and effective strategies enhance the ability of the Arab region to rely on itself in providing sufficient food needs for its people, especially the basic goods.

The ceaseless interest in providing food security relates to the great role that food security plays in preparing the Arab citizen to encounter the challenges imposed by the international system. The giant political and economical changes in the world have made the urgent need for integral security in the Arab world in general and in the Gulf countries in particular, to achieve self-efficiency from different basic goods. Food security dilemma is not only an economic problem, but also it has political, strategic and international dimensions. The significance of food security has increased to fulfill the national security; the Great States monopoly the surplus of agricultural and alimental products. Food is being used as a weapon to serve political, economical and military purposes; US ex-president Ford stated that " American armory has a political weapon with a special effect... it is food (Ahmad and Ahmad, 1999a).

Food security is regarded as one of the reasons for international conflicts and political disagreements. A state with food security has power and a big competition in the global markets. The production and exportation of food increase the national income and enhance the state politically and economically. During the Second World War, Food production to support the world needs was one of the international prominent achievement. However, more than 800,000 million people in 46 countries are suffering from malnutrition and 40,000 people die daily because of hunger and malnutrition (Van Wyk and Jo-Ansie, 2001).

The previous years have witnessed the raise of food prices all over the world, this crisis negatively affects the Arab states that suffer from food security threatens. This study aims to provide an accurate evaluation of food security, and its relation to other concepts such as social and water security as well as the reality of Arab food security and the threatens that affect it, and to give the suitable solutions for promoting food security for Arab citizens.

1.1. Significance of the Study

This study aims to focus on the food security as an important and effective axis in providing political and social security, and stability in the Arab states. Arab States suffer from the shortage of food goods, and the nutrition subordination to meet the needs of their people. This

This study also concentrates on the reality of food security, and the various challenges that encounter the sustaining of food security and self-efficiency for the Arab states. It is significant because it investigates the political and social dimensions, which represent the reality of food security and its relation with water security in the Arab World.

1.2. The Questions of the Study

1. What is the reality of food security in the Arab World?

2. What are the challenges facing Arab food security?
3. What is the relationship between food security and water and social securities?
4. What is the size of consumption and production? Is there food subordination?

1.3. Aims of the Study

1. Recognizing the reality of food security in the Arab World.
2. Recognizing the relationship between food security from one side and water and social security from another.
3. Highlighting the most significant challenges and threatens that face food security.
4. Explaining food subordination, and the consumption size that exceeds the productions' size.
5. The necessity for having strategies and regulations that guarantee the Arab states' right in achieving food security for their people.

1.4. Methodology of the Study

In order to have an accurate and a scientific description to the phenomenon, the study draws on the descriptive approach in explaining the real situation of the phenomenon or the problem by defining its circumstances and dimensions, and explaining the relationships between them. The descriptive approach focuses on analytical methods that rest on efficient and accurate information about a phenomenon or a subject during a specific period, to get scientific results, and to explain it in a subjective way lining with the actual data of the phenomenon. The study focuses on available data and information to understand and to explain the research problem by resting on primary sources such as observation and using secondary sources such as books, essays and so on.

2. THE PROBLEMS OF FOOD SECURITY'S CONCEPT

The dictionary meaning of the concept, "security" is tranquility and protection. In addition, to provide protection for the state entity and to impose its prestige on its territories, its borders, its people and its national wealth from any aggression whether it is direct, indirect, from home, or abroad (Abbas Fadil Alsa'di, 1990).

When defining food security, we should differentiate between the relative food security and absolute food security. Relative food security is the ability of a state to provide the regular needs of its people from food commodities fully or partially (Mohammad Waleed, 2003). The provision of food commodities may not be on the national level, it may rest on other countries (Arab Organization for Agricultural Development, 1996) . However, absolute food security refers to food production, that equals or above national demand, at home; it is called "self-efficiency".

There are different definitions for food security in various studies and research; some studies define food security as a term refers to the situation where the members of the community approach their nutritional requirements in the time they need, for their production and life activities (Salem Tawfeeq, 1999).

Some scholars define food security as the ability of a society to provide food commodities to its members that enable them to live healthily and actively; the society should guarantee that for

those whose incomes are low, whether this provision is locally produced, or imported from other countries (Ahmad and Ahmad, 1999b).

World Bank defines food security as the ability of people to access to sufficient food in any time for a healthy life. World Bank differentiates between permanent and temporary food security. Permanent food security refers to the availability of sufficient food forever, while temporary food security is a temporary decline in getting food.

Food security concepts attach to the nutritional gap, which means the difference between the value and the quantity of exported materials, and the value and the quantity of imported materials. If the gap between the exports and imports increase, this will defect the nutritional trade balance; this may be a deficit or a surplus in food commodities. Food insecurity lies in the inability to produce food because of a lack of resources and the inability to import the missing food commodities (Subhi Elqasim, 1993). Therefore, there should be a protection and a provision of the basic needs for the members of the society in a state. Food security is the prior of basis requirements for population. So, food security is the basis for national security and it is a significant for the economical, political and social stability.

3. THE RELATIONSHIP BETWEEN FOOD SECURITY AND WATER AND SOCIAL SECURITY

The need for water goes beyond the personal need of water; it includes all the fields of life, such as transportation, agriculture, industry and breeding. Water forms a connection and a networking between societies, as the connection of food security with water security is an inextricable. Water resources need large amounts of water to fulfill the people's need from sufficient nutrition necessary for its continuity. Many countries fought each other's for water resources centuries ago, as water is so important to achieve food security.

Food security and water security are the prominent priorities for national security for the world, developed and developing countries, as water security is deemed to be the most significant element of life constituents on the earth. There will be no food security without water security. People need 2-5 thousands liter of water to produce daily nutrition. Water security can be problematic for nations nowadays and in the future due to the shortage of water resources and the increase of population density. Actually, water shortage affects more than 40% of world's population because it affects the ability of food production. For example, the production of one kilogram of wheat requires 1500 liter of pure water, whereas the production of one kilogram of meat requires tenfold of water (Wa'il Mo'ala, 2012). Water was an important source in the past and for various successive civilizations, as it has a great importance in life; this can be proven by the Holy Quran: "Have those who disbelieved not considered that the heavens and the earth were a joined entity, and we separated them and made from water every living thing? Then will they not believe?" (21:30, Surat Al-'Anbyā'). Undoubtedly, food security is one of the basic factors that creates stability for societies and their prosperity in different fields. Food insecurity leads to the emergence of social and political phenomena such as poverty and unemployment. Therefore, this will lead to the emergence of chaos that may lead people to steal, to revenge and to beg. The environments of poverty form a suitable atmosphere for social deviation that threaten the society's

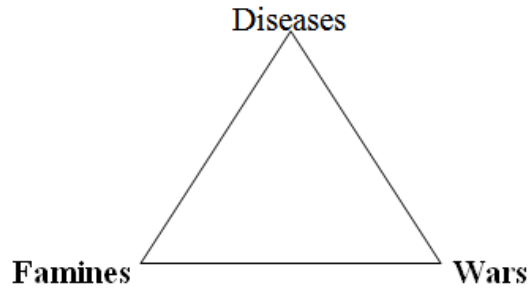
values and spread fear and worry among the members of the society. It will also prevent many people from the basic need of life such as housing, caring and education. It will lead to the emergence of homelessness and aggression, and this forms a defect in the balance of the social structures and a motivation for violence and social dissociation.

Food security and water security are two identical and complementary elements. The missing of one affects directly the other. Food insecurity affects the development of a society, its welfare and its continuity. It may lead to displacement and migration of people, and the spread of multi-social phenomena. In addition, food insecurity leads to the confusion of the agricultural sector, thus it leads to an imbalance in food production because of the lack of the necessary protection for producers and workers and it may be repellent to investors. Some social phenomena fulminated in the past centuries; the most common one was famine that led to the usage of all social violence means to obtain food, as what happened in some African countries. Therefore, food security is regarded as a secure and safe element for people, due to its great value in the prosperity and welfare of the societies. It also protects the societies from any dangers that may annihilate people because of food insecurity. The availability of food for all members of the society is the responsibility of the state. There is a fascinating statement by Abu Dar (one of the Prophet Mohammad's companion): "I am astonished from those who do not have the sustenance at home, why they do not go out to people wielding their swords."

4. THE THREATENS OF FOOD SECURITY IN THE ARAB WORLD

The year 2006 witnessed the commencement of global food crisis, which led to decrease the supply of the agricultural strategic commodities, especially grains in global food markets; this led to the raise the prices of these commodities significantly. The prices of strategic food commodities are unstable since the beginning of the global food crisis all over the world. They are also shaped by the agricultural sector due to climate conditions i.e. what happened to the Russian wheat in fall 2010. The rise of prices, the shortage of food commodities and world grain stock threaten the stability of many countries. A report by the British Observer newspaper states that, about 30 developing countries from Western Africa to the southern Africa may expose instability and famines because of food insecurity (Alkhaleej News, 2008).

We should refer to Malthus pessimistic scientific studies on the population, which based on the essentiality of food for human life. These studies are considered as a revolution in the field of food security and its relation to population. Malthus confirms that the power of population exceeds the earth's ability to produce food for humans. Malthus's pyramid can be applicable to the Arab states whose population's density increases in a geometrical form in contrast with the increase of food commodities need in a numerical form. However, we cannot apply the impediments that the Arab World proposed because of the prevailing culture. The following form shows Malthus's triangular pyramid in decreasing the number of population.



Arab countries do not have sufficient nutrition supplies to meet the needs of their people; they are unable to enhance food security due to several reasons such as water security. This is due to the following:

4.1. Regional Water Crisis

Arab countries suffer from water shortage, as 67% of their water resources come from non-Arab lands. For example, Turkey shares with Syria and Iraq, the Tigris and Euphrates basins, and Turkey controls the runoff of both rivers. Turkey also refuses to subject Tigris and Euphrates rivers to the international law, and to reach an agreement with Syria and Iraq to share the waters.

While the Nile River originates from central Africa, specifically from Victoria Lake; there are ten countries located in its basin, eight of them are in the headwaters area of the basin, while Egypt and Sudan share a part of the river. All the Nile Basin countries suffer from internal and regional problems as well as economic backwardness.

Water resources in Jordan and Palestine suffer from conflicts and wars with Israel, because of that Israel turned the course of the Jordan River to the Negev Desert and to the southern part of the occupied territories. Suffice to say, Israel seizes some water resources in the southern of Lebanon and the border areas adjacent to Syria on the Lebanese side, such as the Hasbani and Wazzani rivers and Tiberias Lake and the Yarmuk River (Mohsen Elkhazindar, 2010a).

Therefore, Arab countries do not control their water resources. The imported waters from non-Arab countries always threaten development plans for the Arab countries. The need for water is urgent for the Arab countries due to the overwhelming increase of the population. Jordan is one of the countries that has shortage in its agricultural and water resources. Therefore, there is a need for great efforts to have short-term and long-term plans to protect food security supported by the financial ability and the political intention.

Food security in Jordan is associated with different crops and the quantities produced, the policies of exportation and importation. Therefore, it is associated with self-efficiency in each crop. Self-efficiency of different crops can be measured based on the availability of the production to meet the demand of food commodities. In case, there is a deficit in production to meet the demand, the imported quantities will work in plugging the deficit of the demand on this food commodity. We can conclude that, when we have a self-efficiency of food commodities, the domestic production of food commodity will be enough to provide food security for this good.

Table (1) below shows the agricultural area in Jordan in 2007, that was 1.872 thousand acres, 811 thousand acres were irrigated and 1.061 acres were rain fed. We observe that the majority of

field corps were produced in the irrigated areas while 97% of essential crops were planted according to irrigation systems.

Table-1. Shows the cultivated area, irrigated and rain-fed, and the proportion of irrigated area according to the agricultural corps in Jordan in 2007.

| Corps | Total Area | Irrigated Area | Rain-fed Area | Percentage of Irrigated Area |
|----------------|------------|----------------|---------------|------------------------------|
| Fruitful Trees | 813.054 | 433.265 | 379.789 | 53.3 |
| Field Crops | 724.064 | 51.563 | 672.501 | 7.1 |
| Vegetables | 334.765 | 326.068 | 8.697 | 97.4 |
| Total | 1871.883 | 810.896 | 1.060.987 | 43.3 |

Source: Department of Statistics, Jordan

4.2. Low Rainfall

In the Arab World, agriculture is heavily dependent on rainfall, 81% of cereal crops rest on rainfall. In 1992, this was about 27.9 million Hectares (AOAD, 1994). However, in the Arab World, rainwater is characterized as infrequent and poorly distributed during the grown season. In addition, rainwater falls in a stormy way which may cause damages to agricultural crops. Therefore, having an effective strategy to produce cereals is problematic because of its correlation to unstable rainfall. The annually amounts of rainfall in the Arab Worlds are 250-400 mm, it may exceed 1000 mm in Lebanese mountains, Syrian coast, Yemen heights and the south of the Sudan. The rainwater falls on the Arab World is about 2100-2300 billion cubic millimeter annually (Mohsen Elkhazindar, 2010b). that means one liter of water for every one meter square (Mahmoud Zabo'ah, 2007). This quantity of water cannot be considered as a real stock that meet the needs of food security, because of evaporation and the rising of temperature in different Arab regions.

4.3. Desertification and Dry

The population increase, urbanization on farmland, the expansion of desertification and dry areas and the multiplicity of the climate in the Arab world lead to increase demand on nutrition to meet the needs of Arab people. Desertification and dry are the major factors that threaten Arab food security due to the decline of food production and food shortage. Based on the United Nations' research, the desertification area in the world is about 46 million square meters, 9.76 million square kilometer are in the Arab World. Therefore, desertification is considered as a major dilemma in the Arab World due to its size and consequences (Emad Eldin, 2012).

The climate is hot in many Arab countries; this is subsequently considered as a major factor to desertification which has been about 80% of the Arab World area yet (Rania Aldroubi, 2008a). Cultivated areas in the Arab World are about 5% which equals 69.5 Million Hectares from the entire Arab World area which is 1406 million Hectares. The average of cereal production in the Arab cultivated lands is about 1927 tons per hectare while cereal production in the developed countries is about 4.118.14 tons per hectare (Rania Aldroubi, 2008b). This indicates that the cultivated lands in the Arab World are not entirely exploited; just 35% of cultivated lands are exploited.

4.4. Weak Technical Possibilities

Technical possibilities constitute a key factor in strengthening and improving agricultural production; the choice of modern scientific methods in agriculture provides a strong strategic stocks under climate variability that prevails in the Arab countries. Arab countries have suffered from the weakness of qualified human resources, low funds, and the lack of modern methods in light of climate diversity. The money spent on agricultural research in the Arab world was about \$ 230 million, while the amount of expenditure in the developed countries was about \$ 85400 million (Khalid Elnajjar, 2006). This is evidence of the weakness of investment in the agricultural sector, and the preparation of qualified personnel, as investors prefer to invest in other sectors such as services and manufacturing sectors, due to poor water resources and technical capabilities (Arab Planning Institute, 2004). This in turn leads to paralysis the agricultural sector and threatens food security directly in the absence of awareness of the Arab governments and their peoples to develop long-term plans for the production of food and essential requirement tributary of the national security. Arab countries also need to develop the methods of the production of the basic foodstuffs, such as improved seeds, modern agricultural machines, chemical fertilizers and pesticides, and veterinary medicines and vaccines ,and others. Securing the agricultural inputs guarantees the provision of abundant nutritional outputs to serve food security. This in turn leads to enhance the national income; it promotes the wheel of economic development, raises the standard of living, and provides food for the population as well as provides the raw materials required for food industry. To encounter the dilemma of nutrition in the Arab World, various economical sectors should pay collaborative efforts, and provide an appropriate economic and political milieu to support the agricultural sector. Since the development of the agricultural sector and increase food production can only be achieved under a well-established and advanced industrial base to meet the requirements and the inputs of agricultural production. The deepening of the economical and technological interdependence between industry and agriculture strengthens these relations, and makes them stable and inclusive from one stage to another from the phases of overall national development.

4.5. Food Dependency Increase

The failure of Arab agriculture and its inability to cope with the increasing demand of food products weakens the wheel of the economical development and leads to the lack of distributive justice among the various sectors in the Arab World. The proportion of agricultural investment from the total Arabian investments shows clearly that the relative importance of agricultural investment is still incapable to develop the agricultural sector, which mainly contributes to the achievement of food security in the Arab countries.

The trends in most Arab countries to import food from abroad is not necessarily due to poor food production, but due to the presence of international economic blocs that call for the need of economic openness and trade liberalization. Therefore, this leads the rise of demand on food from abroad despite the availability of the aforementioned food security threatens. In addition, the Great Powers benefit from the regional conflicts in the Arab World, and this increases food dependency such as "oil-for-food policy of" which exploits of the circumstances experienced by the Arab

world. The rise of the imported food prices leads to the obstruction of the development that .gained by oil revenues. These revenues will be changed i.e. instead of spending these revenues on new industries and development operations; they will be spent to bridge the food gap. The imports have been about 32 billion, 907 million and 60 thousands US Dollars whereas the total of exports have been about 9 billion 523 million and 250 thousands US Dollars. This means that there is a deficit in the Arab trade balance, which is about 23 billion and 384 million US Dollars (AOAD, 2005).

Food Dependency will increase the inflation proportion in the imported countries, and this may leads to violent social upheavals that may occur across the Arab countries, such as "bread revolution" that happened in Algeria few years ago. In the previous periods, there were many demonstrations across the Arab countries against the rise of the prices of food commodities such as in Jordan, Lebanon, Morocco, Saudi Arabia and Yemen. In addition, hunger can be a major reason wars. For example, food insecurity causes 25% of wars in the Sudan and more than 70% of wars in Somalia (Alwasat Newspaper, 2008). The lack of storage for some agricultural products in the Arab countries constitutes a threat to food security, as the percentage of wastage of grain in the Arab countries boosts to 15%. This percentage increases in the Sudan, Somalia and Yemen because of poor storage (General Union for Trade, 1990). In addition, the negligence of marketing limits the scope of the expansion in the productive projects, and weakens the state's ability in developing food production (Arab Company for Investments, 1986). Undoubtedly, the negligence of agricultural sector increases food dependency and increases the importation of food commodities from abroad, especially grains. Also, the rising costs of the production of some food crops exceeds the domestic specified prices; this pushes some farmers to select some crops which are more beneficial such as Qat in Yemen, as a result this affect the agricultural production.

Table (2) shows the production's quantities and the averages of consumption of grains in the Arab countries. We observe that the quantities of consumption exceed the production's averages; this is an indication of food dependency that many Arab countries are suffering from nowadays.

Table-2. Shows the quantity of food production and consumption of grains during 1999-2006 for the Arab countries.

| Country | 2003-1999 | | 2004 | | 2005 | | 2006 | |
|------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|
| | Production | Consumptions | Production | Consumptions | Production | Consumptions | Production | Consumptions |
| Jordan | 82,33 | 1676,88 | 53,38 | 2085,71 | 102,32 | 2026,46 | 55,82 | 2170,88 |
| U.A.E | 0,18 | 1422,40 | 0,02 | 1543,38 | 21,96 | 2573,39 | 21,96 | 2565,77 |
| Tunisia | 1559,40 | 4028,66 | 2366,90 | 4216,63 | 2118,90 | 4430,98 | 2118,90 | 4430,98 |
| Algeria | 2639,66 | 10057,25 | 4032,80 | 11051,55 | 3527,44 | 11804,33 | 4017,75 | 7281,58 |
| KSA | 2551,00 | 9599,98 | 3189,92 | 10223,81 | 3000,42 | 11215,71 | 3037 | 11284,80 |
| Sudan | 4398,82 | 5307,55 | 5432 | 6975,54 | 5553 | 7331,21 | 6557 | 8188,89 |
| Syria | 5218,48 | 6217,77 | 5304,08 | 6246,37 | 5663,38 | 7653,41 | 6636,75 | 11072,05 |
| Somalia | 416,97 | 647,31 | 451,90 | 1288,10 | 415,90 | 1374,00 | 451,90 | 1374,00 |
| Iraq | 2947,67 | 5653,86 | 3329 | 6315,36 | 3706 | 6676,64 | 5785 | 8755,64 |
| Oman | 9,71 | 309,81 | 9,10 | 410,51 | 4,20 | 358,50 | 4,00 | 335,39 |
| Palestine | 71,55 | 603,02 | 62,19 | 380,34 | 78,00 | 396,15 | 81,54 | 399,69 |
| Oatar | 6,61 | 167,93 | 5,50 | 154,17 | 5,75 | 184,30 | 5,75 | 184,30 |
| Kuwait | 14,67 | 682,25 | 26,40 | 688,94 | 26,40 | 680,80 | 26,40 | 680,80 |
| Lebanon | 157,65 | 993,86 | 165,10 | 1063,47 | 176,10 | 975,65 | 176,10 | 975,65 |
| Libya | 319,38 | 2637,86 | 296,40 | 2754,34 | 297,20 | 2753,52 | 296,20 | 1881,80 |
| Egypt | 19914,84 | 28780,93 | 21285,06 | 7932,94 | 22984,64 | 33009,52 | 22977,47 | 31554,03 |
| Morocco | 4729,58 | 8442,18 | 85588,60 | 4179,63 | 4269,63 | 9264,53 | 9226,59 | 14221,49 |
| Mauritania | 173,72 | 435,84 | 181,30 | 709,21 | 130,20 | 679,29 | 121,47 | 696,46 |
| Yemen | 621,02 | 2933,16 | 487,94 | 2732,74 | 495,55 | 2193,58 | 726,93 | 1984,02 |
| Total | 45833,24 | 90598,77 | 55267,89 | 68220002 | 52613,03 | 105581,97 | 62025,53 | 106038,22 |

Source: AOAD (2005)

5. CONCLUSIONS AND RECOMMENDATIONS

The study explains the major challenges that Arab countries face in food security. The study also tackles the food dependency that Arab countries follow, despite the availability of fertilized agricultural lands and water resources in some countries. The regulations and the lack of cooperation in the field of food security lead Arab countries to import huge quantities of the basic commodities to meet social security for their people. The most important recommendations of this study are the following:

1. Having a clear strategy among the Arab countries aims to increase the food storage within mutual agreements.
2. Decreasing food dependency and not relying of developed countries in providing their people's needs.
3. Using developed methods in agriculture and exploiting the lands and establishing dams and gathering rainwater.
4. Having strategies that support Arab farmers by providing them with non-profitable loans and providing funds for anti-desertification and dry.
5. Providing Arabian and international loans and grants for the countries that suffer from the lack of economical, agricultural and water resources to enhance their people living styles.
6. Opening the Arab and the international markets in different sectors to the international markets without the monopoly of any good to any country, this will enhance the purchasing ability of the Arabian citizen.

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