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دراسة اقتصادية للتمايز الإقليمي لبعض الحاصلات الزراعية في الوطن العربي

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الكلمات المفتاحية

- أسلوب LSD
- التمايز الإقليمي
- الحاصلات الزراعية - الوطن العربي.

اعتمدت الدراسة استخدام أسلوب أقل فرق معنوي (LSD) Least significant Difference وذلك لدراسة وتحليل التمايز الإقليمي بين الدول العربية لبعض الزراعات الحقلية في الوطن العربي خلال الفترة 2015-2019 حيث أوضحت النتائج أن هناك تمايز إقليمي واضح لمصر في إنتاج بعض المحاصيل الحقلية مثل القمح ، والذي يعتبر من أهم محاصيل الحبوب لاعتماد سكان الوطن العربي بصفة خاصة وسكان العالم بصفة عامة عليه في الغذاء. وفيما يتعلق بالتمايز الإقليمي لزراعة بعض محاصيل الفاكهة في الوطن العربي أوضحت نتائج التحليل الإحصائي باستخدام أسلوب LSD أن مصر تتمتع بتميز إقليمي في زراعة محصول البرتقال. وتتمتع مصر بميزة نسبية سعرية مرتفعة للبطاطس في معظم الأسواق العربية مما يشير لزيادة فرص تحقيق التكامل الإقتصادي العربي في البطاطس على الرغم من انخفاض القدرات التنافسية لها. وبالنسبة لزراعة محاصيل الخضر أوضحت نتائج التحليل الإحصائي باستخدام أسلوب LSD إلى وجود تمايز إقليمي لكل من مصر والجزائر والمغرب في زراعة البطاطس خلال الفترة 2015-2019.

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An Economic Study of The Regional Differentiation of Some Agricultural Crops in The Arab World

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ABSTRACT

The study adopted the use of least significant Difference (LSD) to study and analysis the regional differentiation between Arab countries for some field crops in the Arab world during the period 2015–2019 where the results showed that there is a significant regional differentiation for Egypt in the production of some field crops such as wheat, which is considered one of the most important grain crop for the dependence of the Arab world in particular and the world population in general.

With regard to the regional differentiation of some fruit crops in the Arab world. The results of the statistical analysis using the LSD method show that Egypt has regional differentiation also of Orange Crops.

The results of a statistical analysis using the LSD method showed regional differentiation of Egypt. Algeria and Morocco in potato cultivation during the period 2015 – 2019 .

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Introduction:

Regional differentiation in the Arab countries of the in the cultivation of some agricultural crops is a method of redistribution in between countries in the cultivation of each agricultural crop to achieve the greatest Arab agricultural yield Geographical location is also one of the most important natural factors influencing the determination of the location of the region in terms of strength, internal and external policies. Geographical location is usually

called the astronomical location. Due to this location the diversity of the climate and hence the diversity of the various agricultural crops. The importance of regional differentiation is reflected in the ability of the Arab agricultural planning to achieve the greatest agricultural returns.

As for the economic importance of regional differentiation in the countries of Arab world, it is represented in the diversity of climatic regions. Which is reflected in the diversity of agricultural crops, and formation of a force in the integration of agricultural production between all Arab countries. This led to the study of Arab countries to find out how distinct each country is from others in the cultivation of. Some agricultural crops in the Arab countries.

Research problem:

The research problem of is that the agricultural crops are distributed randomly among the Arab countries without taking in consideration the regional specialization of agricultural crops at Arab level of the countries which is reflected in the failure to achieve. An increase in agricultural output and the greatest optimal agricultural yield, which is fully reflected in the failure to consider of the regional differentiation of some Arab countries during the (2015-2019) study period which reflected in impeding the integration of agricultural production between the Arab countries.

Research Objectives:

The search aims mainly to study regional differentiation in Arab countries in the production of some of agricultural crops studied during the period (2015-2019) with a view to achieving most of the Arab agricultural output to achieve in high rates of trade and achieve the desired economic integration.

Research method:

In general, the study was used to obtain data from different sources:

The study used descriptive and quantitative statistical methods to characterize various economic variables, based on published and on unpublished secondary data obtained from international sources during the period 2015-2019, as well as publications of central Agency for public Mobilization and statistics, Ministry of Agriculture and Land Recruitment.

Results and discussion:

The study used the least significant difference (LSD) method to analyses regional differentiation in the Arab countries in some field crops studied during the period 2015-2019:

- 1- Analyse regional differentiation of wheat crop production in the Arab world.

Wheat is considered one of the most important cereal crops in the Arab world because of the world's population's dependence on it for food, as shown in tale (1) the wheat crop productivity in the most important countries of the Arab world during the period (2015-2019), where Egypt ranked first in terms of its average production which amounted to about 2.75 ton/Feddan during the period 2015 – 2019 when Saudi Arabia, Iraq and sudan came in second, third and fourth with about 2.75, 1.19 and 1.09 ton/feddan, respectively, during the study period as shown in the map figure (1).

Table (1): The production of wheat crop in the most important Arab countries during the period (2015-2019).

Years	2015	2016	2017	2018	2019	Average
Egypt	2.59	2.77	2.69	2.86	2.81	2.75
Saudi Arabia	2.47	2.58	2.49	2.70	2.74	2.59
Iraq	1.01	1.20	1.39	1.19	1.14	1.19
Sudan	0.89	1.45	1.00	1.10	1.10	1.09
Morocco	0.72	1.04	0.48	0.88	1.08	0.84
Syria	0.66	0.84	0.84	0.84	0.84	0.80
Tunisia	0.88	0.59	0.77	0.69	0.74	0.73
Algeria	0.62	0.62	0.50	0.48	0.80	0.60
Libya	0.33	0.32	0.33	0.33	0.32	0.32

Source: FAO data base

A study analyzing the variation in wheat crop productivity in Arab countries during the period 2015-2019 showed that there were significant differences between the average wheat crop productivity in Arab countries. It was also found that there is statistical significance for the model estimated at the 0.05 level, where the value of (F) was calculated at 183.90.

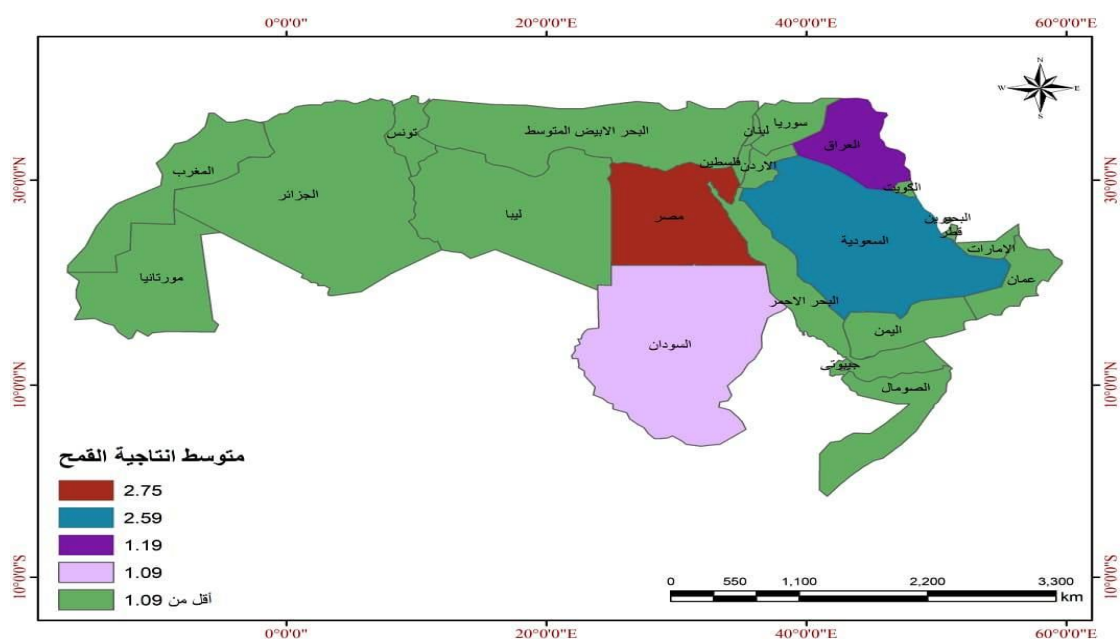


Figure (1): The map of wheat crops for the most important countries of the Arab world during the period (2015-2019).

The difference between the average feddan productivity and the Arab countries during the study period was estimated to be 9.164, 1.582, 9.442, 1.928, 1.65, 196 feddan for Algeria, Iraq, Libya, Morocco, Sudan, Syria and Tunisia respectively.

Table (2): Analysis of Variance for Productivity of Wheat Crop in The Arab Countries The Period of (2015-2019).

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	30.202 ^a	8	3.775	183.898	.000
Intercept	66.880	1	66.880	3257.869	.000
Countries	30.202	8	3.775	183.898	.000
Error	.739	36	.021		
Total	97.821	45			
Corrected Total	30.941	44			

a. R Squared = .976 (Adjusted R Squared = .971)

Source: Results of analysis through SPSS ver 20

from the above, it is clear that there is regional differentiation in the wheat production of Egypt in comparison with the other countries with regional differentiation after Egypt, there are Iraq and Sudan as shown on the map in Figure (1).

2- regional analyses of differentiation in Arab world for the production of orange crops:

Which Orange has excellent source of vitamin C which absorbs calcium in the body and also vitamin A as a source of sodium, potassium, Magnesium, copper, sulfur and no chlorine

table 2 also show the orange crop productivity in the major producing countries during the period 2015/2019 where Lebanon ranked first in terms of average production of 11.49 ton/feddan where Syria, Egypt, Kuwait, Algeria, Jordan, Morocco, Yemen, Tunisia, Libya, Sudan, Somalia, and Iraq all come in second, third, Fourth, fifth, Sixth, Seventh, eighth, ninth, with about 10.13, 8.94 , 7.44, 7.31, 5.88, 4.20, 3.72 and 13, 3.07 and 0.66 ton/feddan, respectively (figure2)

The results of orange crop indicated that there were significant differences between the average production of orange crops in the Arab countries as the statistical significance was fixed at the significance level of 0.05 where (F) calculated was 112.57.

The results of using LSD method the productivity of Egypt and the Arab countries were 1.21, 9.82, 3.05, 6.28, 3.17, 7.41, 6.76, 5.18 and 4.61 ton/feddan respectively for Algeria, Iraq,

Jordan, Libya, Morocco, Somalia, Sudan, Tunisia and Yemen. Approximately 1.01 ton/feddan acre for the benefit of the state of Lebanon, except Kuwait, Palestine, and Syria, were not proven to be significant with Egypt.

Table (2): the production of orange crop in the most important countries of the Arab world during the period (2015-2019).

Years	2015	2016	2017	2018	2019	Average
Lebanon	10.55	11.13	14.10	10.95	10.73	11.49
Syria	11.27	11.20	11.20	11.37	11.67	11.34
Egypt	10.42	10.72	10.61	10.26	10.41	10.48
Kuwait	9.12	9.48	10.45	10.80	10.80	10.13
Algeria	9.34	9.75	7.81	8.53	9.37	8.96
Jordan	6.17	8.17	8.06	7.06	7.72	7.44
Morocco	7.19	6.71	6.85	7.069	7.41	7.31
Yemen	6.07	5.94	5.84	5.83	5.71	5.88
Tunisia	4.71	4.70	4.70	4.70	4.70	4.70
Libya	4.19	4.20	4.21	4.21	4.21	4.20
Sudan	4.98	3.50	3.41	3.43	3.28	3.72
Somalia	3.04	3.03	3.07	3.10	3.13	3.07
Iraq	0.85	0.70	0.64	0.59	0.54	0.66

Source: Food and Agriculture Organization of the United Nations.

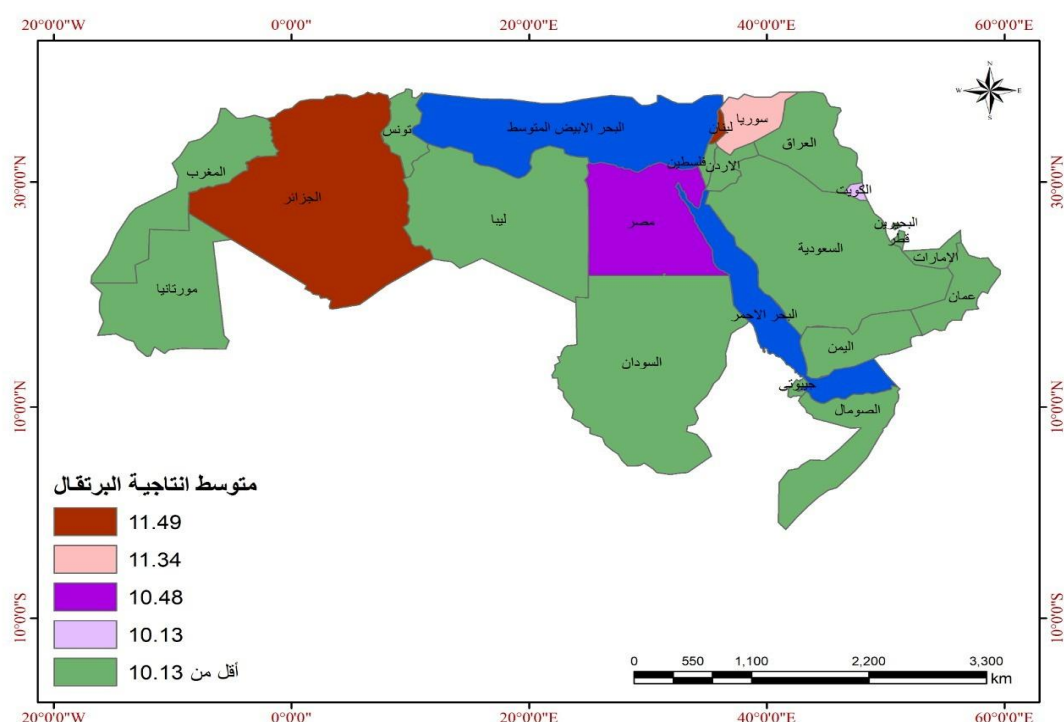


Figure (2): Orange crops Map most important Arab countries during the period (2015 -2019) .

it is clear that there is regional differentiation of Egypt compared to the countries studied in the orange crop production. Statistical analysis of the other countries with regional differentiation

after Egypt indicated Lebanon, Syria, Palestine, Algeria, and Kuwait as shown in the chart in figure (2).

Table (3): Analysis of the variance of the productivity of the orange crop in the Arab countries during the period (2015-2019).

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	796.869 ^a	13	61.298	112.575	.000
Intercept	3580.863	1	3580.863	6576.356	.000
Countries	796.869	13	61.298	112.575	.000
Error	30.492	56	.545		
Total	4408.224	70			
Corrected Total	827.361	69			

a. R Squared = .963 (Adjusted R Squared = .955)

Source: Results of analysis through SPSS ver " 20 "

3- The same results of differentiation in the Arab world for of potato crops.

Appear that Potatoes that are part of the root vegetable family, and they are one of the most popular vegetables around the world, and they have a delicious and rich taste, Promoting heart health, reducing the risk of cancer and other health benefits.

Table (4) the production of potato crops in the major producing countries during the period 2015-2019 , where Algeria ranked first in with about 12.77 ton/feddan lacre during the period 2015-2019 when Morocco, Egypt, Saudi Arabia, Iraq, Syria , Tunisia , Yemen and Sudan came in second , third , fourth, fifth , sixth , seventh , eighth , 8.23. 7.27 , 7.12, 6.31 and 5.96 ton/feddan respectively during the same period.

Table (4): potato crop production in the most important Arab countries during the period (2015-2019).

years	2015	2016	2017	2018	2019	Average
Algeria	12.57	12.44	12.79	13.01	13.06	12.774
Morocco	12.91	12.53	12.33	12.58	12.66	12.602
Egypt	11.26	11.33	10.92	11.67	11.65	11.366
Saudi Arabia	10.56	10.95	10.78	10.67	10.58	10.708
Iraq	6.57	11.18	10.3	11.66	6.6	9.262
Libya	8.41	8.24	8.17	8.17	8.17	8.232
Syria	7.59	7.56	7.56	7.56	7.56	7.566
Tunisia	6.75	7.23	7.45	7.09	7.1	7.124
Yemen	5.41	6.56	6.54	6.57	6.47	6.31
Sudan	7.15	6.44	5.56	5.41	5.23	5.958

Source: Food and Agriculture Organization of the United Nations

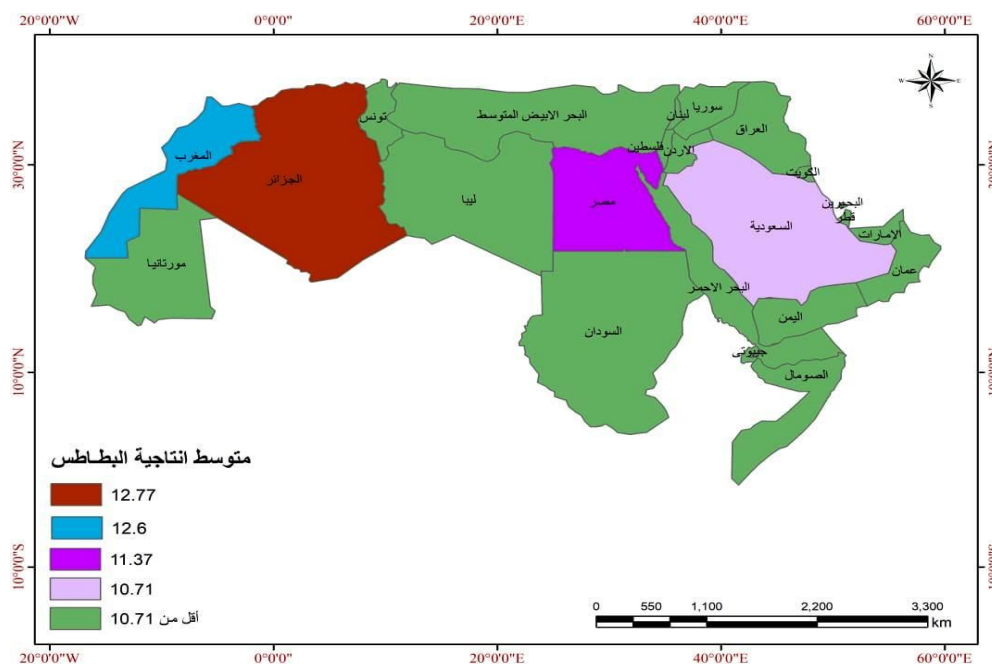


Figure (3): Map of the potato crop for the most important countries of the Arab world during the period (2015-2019).

The same results of potatoes showed that there were significant differences between the average potato crop production in the Arab countries, with statistical morale significant came level of 0.05, where the calculated valve of (F) was about 43.38.

Table (5): Analysis of variance of potato crop productivity in same Arab countries during the period (2015-2019).

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	290.475 ^a	9	32.275	43.380	.000
Intercept	4222.989	1	4222.989	5676.045	.000
Countries	290.475	9	32.275	43.380	.000
Error	29.760	40	.744		
Total	4543.224	50			
Corrected Total	320.235	49			

a. R Squared = .907 (Adjusted R Squared = .886)

Source: Results of analysis through SPSS ver 20

The same Previous results were calculated for productivity of Egypt and other the Arab countries using LSD method, which appear the differences estimated to be 2.10 , 3.13 , 5.41 , 3.80 , 4.24 and 5.06 feddan respectively for Iraq , Libya , Sudan , Syria, Tonisia and Yemen .

These differences proved to be significant at a level of 0.05 for Egypt and about 1.41 – and 1.24 ton/feddan for Algeria and Morocco, except for Saudi Arabia which wasn't proven to be significant for Egypt.

Arab integration in same agricultural crops

The results show that Egypt has regional differentiation in the production of potato crops in comparison with the other countries studied. Statistical analysis of other countries with regional differentiation after Egypt shows Morocco, Algeria and Saudi Arabia as shown in figure (3).

Opportunities and possibilities for achieving Arab agricultural economic integration in light of regional differentiation in the light of local. Regional and global developments, Arab economic integration has become an urgent necessity for the Arab states in order to reduce the risks of global volatility and its negative effects on the growth of the Arab states economies, thus increasing the opportunities for economic integration increasing the strength The Arab economies and correcting their short comings, reducing the economic dependence of the Arab states with the developed countries and benefiting from the increased strength of the Arab economies.

Arab integration in same agricultural crops ,The Arab countries enjoy regional differentiation with regard to the agricultural good under consideration between countries that produce these crops and countries that consume them in a large way and in which the desires of the consumers are varied. It can be emphasized that agrarian economic integration is one of the most important and most easily implemented forms of economies integration on the ground given the regional differentiation among Arab countries in the productivity of agricultural crops. There is the possibility of achieving Arab agricultural economic integration but only through which appropriate polices and mechanisms can be put in place to achieve this integration.

Arab agricultural economic integration can be achieved through efforts to increase the balance of trade between agricultural crops, since increasing the balance of trade between countries is one of the fastest and easiest tools for increasing opportunities for economies integration.

Table (6): shows a number same main results of which reviewed the general features of the inter – Arab agricultural trade of wheat, oranges and potatoes as a practical model to improve opportunities for economic integration.

Crop	Country	Productivity(*)	The most important indicators of foreign trade						Contribution to world trade			
			Exports		Imports		Trade balance		Contribution to world		Contribution to world	
			Quantity	Value/amount	Quantity	Value/amount	Quantity	Value/amount	Arrangement between world exporting	Ratio of contribution to world exports	Arrangement between world importing	Ratio of contribution to world imports
wheat	Egypt	2.75	0.001	0.0013	9579	2770	-9579	-2770	83	0.02	1	5.7
	Saudi Arabia	2.59	0.001	0.001	773	194	-773	-194	135	0.01	51	0.5
	Iraq	1.19	0.78	0.505	21	9	-20	-8	55	0.01	137	0.02
	Sudan	1.1	0.001	0.001	2429	528	-2429	-528	27	0.1	25	1.1
Orange	Lebanon	11.5	56.2	17.5	0.6	0.3	56	17	183	0.1	156	0.01
	Syria	11.3	19.4	7.5	35.2	13.4	-16	-6	178	0.1	169	0.001
	Egypt	10.4	948.7	802.4	287	294	662	508	1	32.4	167	0.01
Potatoes	Algeria	12.7	1.9	0.7	62.1	0.53	-60	0	71	0.1	176	0.01
	Morocco	12.6	36.6	10.5	61.9	30.2	-25	-20	32	0.2	33	0.7
	Egypt	11.4	561.4	2219	115.9	269	446	1950	7	5.2	44	0.3
	Saudi Arabia	10.7	33.8	0.016	45.5	35.5	-12	-35	115	0.006	40	0.4

Source: Food and Agriculture Organization of the United Nations.

For wheat crops :-

It has been found that the most highly productive countries in wheat are Egypt, Saudi Arabia, Iraq , Sudan , and these countries suffer from a deficit in the trade balance as Egypt occupies the first position among the most important wheat importers in the world with a contribution to global imports of about 2.1% Hence . the importance of Arab economic integration in wheat comes from the import integration side and not from exports side. Arab countries can act in solidarity with each other by importing wheat as one bloc at the time of import, which increases the impact of the demand side on the world import price by bidding for imported wheat at the same time.

The Arab countries can also be integrated economically in wheat through cooperation in increasing the levels and rates of self-sufficiency through more coordination regarding the allocation and division of labor and facilitating the exchange of production requirements from countries that have a comparative advantage for these supplies such as (Egypt) to countries that don't have comparative advantages such as (Saudi Arabia , Iraq and Sudan) especially with regard to improved high – productivity and some other production requirements such as organic fertilizers .

2-For orange Crops :

It is clear that the most productive countries are (Lebanon, Syria , and Egypt) but its noticeable that the quantities exported from Lebanon to the international markets are decreasing and so is the presence of a deficit in the trade balance of oranges in Syria and then Egypt is considered one of the most eligible Arab countries to play and important role in increasing the rates of trade in oranges among Arab countries and then achieving Arab economic integration where Egypt ranks first among the most important countries in the world for exporting oranges with a contribution rate to global exports amounting to about 32.4% and in light of changes taking place in the markets . It is possible to work to increasing Arab integration in oranges by increasing Egyptian exports to Saudi Arabia, the united Arab Emirates and Jordan from the data in table 7 , a number of observations on the competitiveness faced by Egyptian orange exports in the most important Arab markets are the following :

- The competitive capabilities of Egyptian oranges in the Golf markets , The most important of which was Saudi Arabia and the UAE, were relatively high , while in other Arab countries , the most important of which was Jordan it was relatively low and the most important competitors in those countries were south Africa where high rates of

markets penetration of Egyptian oranges in the UAE and Saudi were shown while a decrease in Jordan.

- Egypt has a high price comparative advantage for oranges in most Arab Markets, indicating an increased opportunity for Arab economic integration in orange.
 - A- The rate of market penetration of Egyptian goods , within the market – the amount of Egyptian exports of a commodity to the market/ (the amount of country production of a commodity to the market/ (the amount of country production of a commodity + the amount of country imports– the amount of country's exports) 100
 - B- Market share of Egypt within markets (quantity) of Egyptian exports of a good/quantity of market imports of a good) x 100.
 - C- The relative price between Egypt and competitors the price of the competing country for the commodity in the market/the price of Egypt for the commodity in the market.

3- For potatoes crop :-

- The most productive countries are Algeria , Morocco and Egypt, but it's noted that there is a deficit in the trade advantages of both Algeria and Morocco m while Egypt is one of the most important exporters of potatoes in the world with a contribution of 5.2% to the world exports.
- Greater Arab integration of the potato could be achieved by increasing Egyptian exports to the UAE , Lebanon and Iraq.
- From table 7, a number of observations are made regarding the competitiveness faced by Egyptian potato exports in the most important Arab markets including the following :-

Table (7): include Egyptian the exports of oranges and potatoes in the most important Arab Markets as an average for the period 2015-2019 .

Crop	Country	Growth rate of commodity demand %	The position of Egyptian exports				The position of the most important competitors				
			Growth rate of commodity exports	Market share	Egypt among the most important dominant countries	Market penetration rate	Country	Position among the most important exports countries	Growth rate of commodity exports	market share	Price Ratio to Egyptian Price
Orange	Saudi Arabia	3%	12%	38%	The first place	1.3%	South Africa	The Second place	1%	28%	0.07
	Emirates	9%	16%	15%	The Second place	1.5%	South Africa	The first place	8%	46%	1.5
	Jordan	6%	21%	10.2%	The fourth place	0.8%	South Africa	The first place	-12%	22.1%	1.2
Potatoes	Emirates	34%	>1%	12%	The Fifth place	0.6%	Pakistan	The first place	-7%	93%	1.5
	Lebanon	18%	>1%	10%	The Fifth place	0.8%	South Africa	The first place	9%	56%	1.2
	Iraq	11%	%-2	12%	The third place	1.1%	Holland	The first place	22%	33.1%	1.3

Source: <https://www.trademap.org/>

- The low competitiveness of the potatoes in the most important Arab markets and the low rates of market penetration mainly due to the preferential trade advantages granted to the preferential trade advantages granted to the countries by the Arab countries.
- It is notable that Egypt has a high price competitiveness advantage for potatoes in most Arab markets indicating increased opportunities to achieve Arab economic integration in the potatoes despite its low competitive capabilities.

From the above, a review of the general features of the opportunities and possibilities for achieving Arab agricultural economic integration in the light of regional differentiation during the average period 2015-2019 shows that although there are elements for increasing the opportunities for Arab agricultural integration through an increase in the rate of trade in agricultural goods among the Arab countries, increasing the opportunities for Arab agricultural trade exchange is facing many challenges in recent years, the most important of which are the following.

The existence of some non-tariff barriers imposed by Arab countries on their agricultural imports and the existence of preferential trade privileges granted by Arab countries to competing countries reduce the opportunities increased Arab trade in agricultural goods.

The existence of some problems faced by agricultural exports in intra Arab trade, particularly problems relating to the disparity among Arab states in the use of the rules of food and agricultural goods and quality certificates and export produces and documents required by Arab states, which contribute to limiting the increase in the rates of intra – Arab agricultural trade in Arab markets and thus reduce the opportunities for Arab economic integration. Disagreement among Arab states in the application of rules of origin and quality standards to imported agricultural good are among the main reasons for increasing the burden. The financial costs incurred by exporters to meet these standards and requirements may sometimes be exaggerated for non-commercial considerations.

- The lake of sufficient means of promotion in Arab countries that export agricultural goods in order to face the high level of competition face by Arab imported markets and the lack of adequate awareness of developments with regard to the requirements of Arab markets that import agricultural goods.
- The failure of Arab states to adopt electronic customs clearance procedures among themselves the adoption of such procedures with other non-Arab countries, which makes it more difficult to complete the procedures for the entry in to force of Arab agricultural goods exported to Arab markets compared with other non-Arab countries.
- Policies and mechanisms through which trade and agricultural exchange rates can be increased as a key and effective means of achieving Arab agricultural economic integration :
- Negotiation among Arab states to overcome differences in the application of roles of origin and quality standards for agricultural imports.
- Facilitating export financing operations especially in light of the rise in world freight prices, through the Arab monetary fund's support to central banks in the countries of the Arab world to provide soft loans to exporters to finance exporters of agricultural goods. To apply and adopt rules and procedures for the exchange of electronic export documents in order to complete customs clearance processes, thereby facilitating easier access of agricultural goods to Arab markets and increasing the rates of agricultural intra trade.

Recommendations:

The expansion of the crops under study in the home countries where regional differentiation was found in their cultivation , namely Egypt, Saudi Arabia, Iraq and Sudan with regard to wheat crops, while the countries that have regional differentiation in the cultivation of orange crops are Egypt , Lebanon , Syria , Palestine , Kuwait and Algeria Finally , expansion of the cultivation of potato crop in the most important Arab countries , namely Egypt, Morocco, Algeria and Saudi Arabia , because they enjoy regional differentiation compared to the rest of the Arab world.

Investment in the most important countries of the Arab world in which regional distinction is found in the agriculture of some agricultural crops in the Arab world.

Improving the productivity of the main crops in the Arab world in order to benefit from them in the most important countries in which regional differentiation is found as shown by the results.

Work on an integrated Arab national community to benefit the Arab countries with regional differentiation in the agriculture of the most important agricultural crops in the Arab world in order to benefit from market competition among the countries of the world .

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