

The future of Agricultural Development in Arab nations up to the year 2000

Thirdly, the necessity of joint Arab co-operative work strategy to enforce food security

Arab countries face acute problem in food security together with reduction to the half in their self - sufficiency of wheat. When they complete their needs of it from monopoly countries they prone to the most economic and political dangers unless Arab countries strive strongly to control their food security problem, the independence of food will collapse from its roots with continuity of wheat increasing needs with averages that cannot be reached with the averages of growing wheat in Arab countries. considering the current productive and consumer tendencies, it is estimated that the current production will multiply in the middle of the coming century and the needs will increase four times of the current needs and the average of self-sufficiency will fall down to the fourth part and Arab countries alone will embrace approximately half of the quantity of wheat included in the international trade if this evolution gives space to take that track, that will mean Arab countries will

be subdued by the exporting contrive even if they are able to countries its value and guarantee getting the demanding quantities. Also, this evolution means to prone to famine specter under the failure of getting the money for the imports .and their quantities guarantee

Facing these factual materials, Arab countries can only work to enforce their food security through pushing food development to the extremest go-limit level that the available .resources allow

Although Arab countries concern with agricultural and food development and follow the way of planning this development the Arab food gab continues to widen despite of these plans which are primarily set on country account. Individual country development failed to make use of the huge resources that are available among the countries. The possibilities of using these resources in production need joint and coordinating Arab work to assemble these resources with the kinds and quantities needed to propel production process and increase food development rates. The

enormous potentials of joint Arab work and opportunities of controlling food gap are supported according to the following true statements

1. The huge landscape resources that are suitable for planting and that all Arab countries have. The current planted space reaches about 50 million of hectares while the area that is suitable for planting reaches 198 million of hectares. There is a possibility of enlarging the area of the agricultural space with 15 million of hectares with the end of the current century

2. The huge water resources that could be available by the end of the current century. It is estimated that these resources reach 82 billion cubic meters that are enough to irrigate 10 million hectares and thus doubling the current irrigated area

3. The extension of Arab countries into multi environmental belts that enable producing different agricultural products and enlarge

integrations chances and reduce probabilities of
.importing them from other countries

The big potentials to intensify agricultural .4
production by largely using updating production
prerequisite such as fertilizers, agricultural
mechanical machines, improved seed growers, in
addition to forbid the common system of
.fallowing land in Arab countries

There is the availability of the agricultural work- .5
force that reach about 21,8 million workers and
their ability to comprehend updating production
.methods through training and guidance

The possibility of finding expert cadres among .6
Arab countries and with much more training and
stimulations. We could raise technological level
of production and also do advanced scientific
agricultural research and train and enlighten
.farmers on how to use that technology

There are large financial surpluses in Arab .7
countries and there is the possibility of executing

all the necessary requirement of investment to
.support food development

The strategy of Arab countries for food
development

If Arab joint work is unavoidable necessity to make control on food gap, so the carrying out of this work on joint economic strategy basis is also fatal necessity for the assurance of its effectiveness. This strategy organize Arab joint - work both in making objectives and choosing suitable methods for realizing these objectives, concerning this strategy that supposed the food security programme based on, which we will later speak about, we can state down its most important
:elements

The joint purpose of commodity for food /1
security programme have been specified according to some objective estimation for a group of plans for agricultural development schemes in Arab countries that have been selected on the basis of their roles in enforcing country and nation food

security, and also from objectives estimation of limited numbers of country and national schemes which are set out by the organization experts. In this early stage of the Arab joint - work, the method, in which the purpose have been specified, is considered rational method especially on the area that is related with the possibility of making agreement on suggested programme and also on the possibility of fulfilling their objectives. It is possible in the future to carry out co-ordination for country plan to realize national and country objectives that are more coordinating and more economically efficient. Some of consequences of carrying out suggested food - security programme and realizing its objectives are the beginning control on food-gap and diminishing it to noticeable degree to some basic food resources by the end of the current century and fully realizing self-sufficiency to defined number of it and the degree to which that control is applied will be shown when the results of carrying out food security programme are displayed

When fixing joint objectives for food /2 development programme and selecting methods and the way of carrying out the schemes of these programme, the economic strategy is based on the principal of helping direct economic benefits for all the countries that joined the programme of enforcing development, through having real shares in carrying out these projects. Most of the agricultural – food projects should be carried out in countries that enjoy natural agricultural recourse to enforce the economies of these countries while the industries of agricultural production prerequisites, that the joint Arab work provides markets and stable uses for them in food development projects, should be carried out in .Arab Oil- producing countries

The consequences when petroleum countries contribute with production prerequisites for these projects will be the foundation of developing, updating and big industries to produce production. Prerequisites in these countries that leads to enforce their economics and strengthens Arab countries integration and use increasing amount of

Arab capital in Arab countries in addition to realizing more food security. The big chance of the available manufacturing for petroleum countries are shown from food security programme estimation for the kinds and number of agricultural machines and their values and also the kinds, amounts and the value of the needed chemical fertilizers to carry out the projects of these programme up to the year 2000.

Concerning the dividing of the food security /3 programme investments among Arab countries, the strategy of this division is based on allocating the biggest numbers on investment to the countries that have potentials and agricultural resources that enable them to participate fast and effectively in developing the production of food commodities and consequently realizing higher level of self-sufficiency in national account besides national goals. The total investment of food security programmes out of the Oil producing countries is allocated to Sudan about 33,7%, Morocco 16,9%, Somalia 10,3%. This investment division generally suits with the principal that

concerning the resources that found and exploited in the Arab countries, to allocate the biggest number of investment to Sudan is relevant with the huge agricultural resources that Sudan enjoy and with its need to basic infrastructure. This tendency is opposite to the strategic investment that prevailed the five years 1976 - 1980 that allocated to Sudan about 6,7% of the total investment. In spite of its huge resources, Morocco 6,2% and Somalia less than 1%. Concerning the distribution of the investments of the food security programme on developing food commodity, the strategy of this distribution is based on allocating the most possible investment for developing the production of the most important food commodities according to food, economical and political concept, and also for developing the least commodity that is produced according to the consumption need which is the most minimum according to the self-sufficiency rate and then for its significance according to its value in improving food - standard. And thus, it has been allocating for improving seeds about 42% of the total invest value considering then, especially wheat as the most important element for food-gab elements, besides

allocating about 16,4% for sugar production and
.animals production about 5% of these investment

Regarding surpluses of producing food /4
commodities of the local consumption in some Arab countries, the strategy of food security programme is based on using the surpluses in the Arab countries that suffer from deficiency, this use requires the free movement of surplus food commodities between Arab markets on the one hand and to ensure the joint consumption within Arab countries on the other hand with exporting what surplus consumption needs of Arab countries to international markets, and in the process of implementing this strategy, the disparity of costs of food commodities and their prices between Arab countries for producers or consumers, requires joint agricultural policy that takes into account this disparity of costs and prices between Arab countries and also takes into account the disparity of Arab prices and international prices, the implementation of food security programme requires this policy which has not been developed at the current stage yet and it is not too late to put

it where no surpluses of food commodities are expected before two or three years from the starting of implementing joint food development. Following the same marketing method is the use of agricultural production which the Oil- producing countries produce for the food security programme projects, as it obliges the free movement of these supplies with them to ensure markets in agricultural countries which in turns means that joint agricultural policy into account both the .products and production requirement

The strategy of implanting food security /5 programme and achieving its goals is based on raising the technological level of production by using modern production inputs such as improved seeds, chemical fertilizers, pesticides and agricultural machinery so as to intensify production g of cultivated area and raise the level of yields. The launch of this strategy is the fact that the possibility of relying on the expansion plan alone for the development of production on an going basis, and that the continuation of productivity raising is subject to the continued progress for

scientific and technological production in addition to that this progress is in time for the short gain increased production and that the result of the horizontal expansion is not achieved except in .short terms

The strategy takes into its account that agricultural areas of scientific research are multiple, and scientific research is based on many over lapped sciences and advanced technological applications, and thus depends on the research potential of joint Arab action for the recourse required to set up research centers and the provision of appropriate numbers of Arab and foreign experts to work research aims to address the problems of converting the output of traditional production into technological production with .permanent evolution

The strategy of funding proposed /6 programmes for food security is based on providing new financial resources on the part of the countries that are capable of funding and using these funds in establishing and operating the projects which

have been decided to be carried out. The launch of this strategy is the fact that the funding that can be offered by Arab funds from its existing recourse are too limited and not enough though devoted the whole of the agricultural development which the current plans include without food security. So in the provision of adequate additional funds sufficient to implement food security programs, it needs to restrict the decision of funding these programs in the hands of responsible organization because of the universality of the problem of food security and interdependence between project and the extension of a number of Arab countries and the need to test them on the basis of the implementation of the priorities to be agreed upon between the participating countries for promoting
food development

This focus calls for the creation of specialized agricultural funding institution to fund projects with loans and direct contribution and be mainly
responsible for the financing of Arab food security

The strategy of carrying out suggested food /7 security programme us based on the principle of implementation flexibility in the light of the amount of money which are available for the investment of these programmes. The privilege of this strategy is that it gives decisions makers choice flexibility to the extent of food security promotion out of exact commodity programme and the range of the investment cost for this programme in addition to that it allows choice flexibility between projects of exact programme on the basis of economic principles and give priority to projects of the most efficient and economic point of view as well as the flexibility to choose between two or more projects on the basis of marginal variation factor for capital between the programs and the possibility of selection on the basis of the size of their financial return, or consumer preferences between their .outputs

Arab - savings and their employments

It has accumulated in Arab Oil - producing countries, as a result of exchanging part of their

national wealth components which is not prevalent into cash assets and increasing these assets over its instant investment need, foreign cash savings estimation as 190 billion dollars in 1979, most of it was invested in industrial countries and about 60% of it was invested in dollars. This savings suffer a lot due to decline in the value of dollar and drop down their real value as consequence dropping down its real value during the period from 1974 to 1978 by about 40%. The corrosion in liquid wealth is clear from the fact that the Arab Oil revenues for 1979 estimated 114 billion dollars at current price not to exceed the real value 45 billion dollars, measured in 1970 prices through the use of a record number of wholesale prices of manufactured goods in the 12 industrialized countries. So bringing maintenance to this wealth and maximizing the return from them become the major challenges facing the Oil countries in maximizing the return from saving, challenges lies in the ability to convert financial assets into assets in kind within the Arab World so that the interest of capital exporting countries and host countries are realized as well as productive investment opportunities and to enhance Arab economic

integration. As the investigation of the equation in maintaining and optimal ratio between Oil reserves and production, and at the same time the international responsibility towards meeting the needs of the world from Oil will remain the most .important issues in the Oil – producing countries

:Pricing Policies

Pricing policies undertaken in the Arab world play a major role in accomplishing production goals and creating change in income distribution between areas and sectors. The effectiveness of pricing policy in agricultural sector depends on development strategy and on the extent of its grantee of the balance between farmers' benefits on one hand and the benefits of the manufactures of the primary, agricultural product and the inhabitants of the urban areas on the other hand. There is an indication to price policies and support in the majority of Arab countries developed for the interest, of urban inhabitants by supplying them cheap food and raw materials with cheap prices and so farmers did not receive remunerative prices which impact negatively on their, income and on

the production incentive they have and on the use of modern 'technology and inputs in the .production

The low agricultural policies limited the market in front of the local agricultural input industry and limited the demand for it and the international prices for the basic Arab crops remains higher than the prices that the Arab farmers get, for example while the international prices for cotton, raised in the 1960s and 1970s of about 11% yearly, the prices didn't raise for the interest of the farmers in Sudan and Egypt but with the only average of 3,2% and 2,5% in the two countries respectively which . .impact on the planted areas with this crop

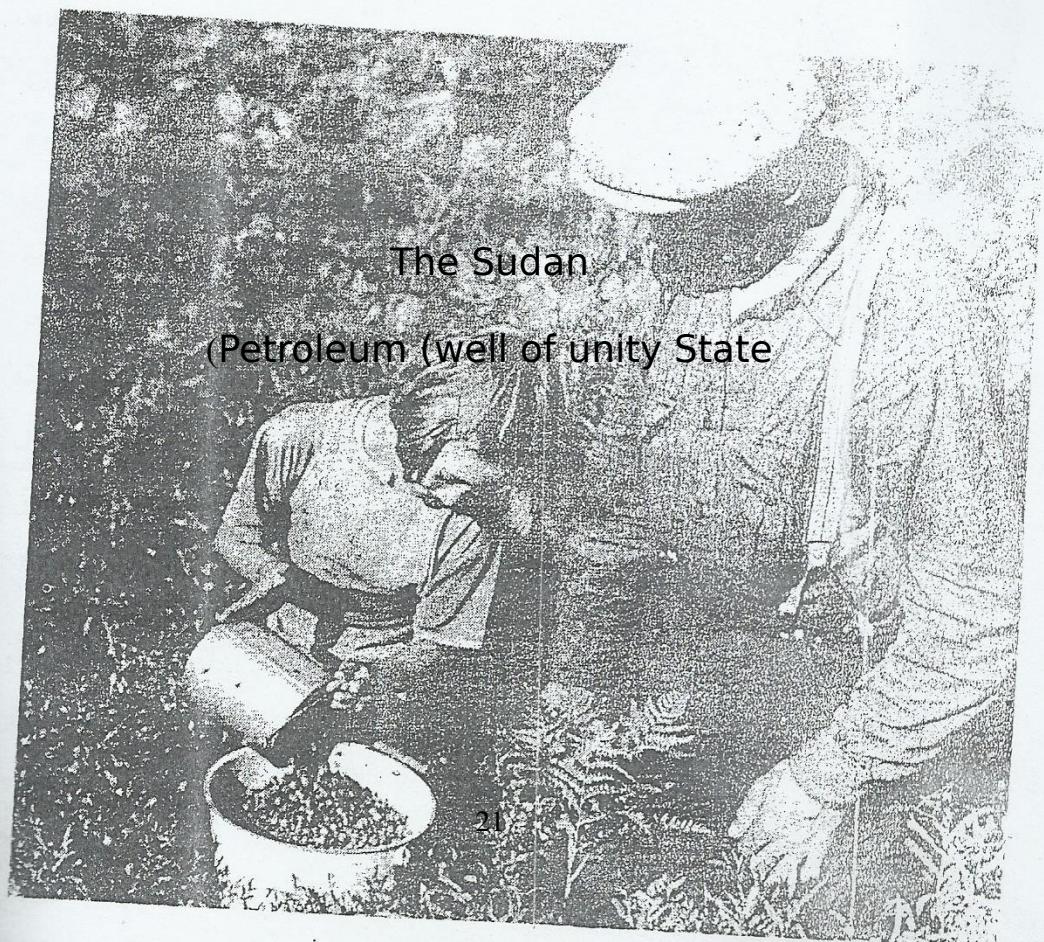
There is also an indication to price stabilization policies of some commodities in isolation from production plans and the agricultural cycle and the total income for the farmers. Also the support policy that aims to the provision of goods and production inputs with low prices and to install farmers' income decrease production cost for farmers and encourage production expansion as it .happened in Somalia and South Yemen

Price change in some countries led to a deterioration of the terms of exchange of agricultural production for the interest of industrial products which raise the differences between income levels. In some cases, the exchange conditions of agricultural production for small farmers who produce traditional crops and are subject to mandatory prices from the country deteriorated, while they improved for rich farmers that their financial conditions and technical abilities allowed them to shift to the Cultivation of fruits and vegetables and dairy production, meat and other, goods which are marketed through private trade channels. It was the movement of prices and implicit taxes and excellence in the relative price and tax policies in favor of the non-agricultural sector as significant impact on agricultural production and the crops grown. The experience of 1970s that the desire-to support industrial development led a number of countries to ensure a surplus of agricultural sector to invest in the industry, through pressure on agricultural prices and limited the growth in the agricultural sector also increased the income disparity between urban .and rural areas

In the industrial sector, most Arab countries took a policy of import substitution, especially in industries where the applied consumer protection system including administrative restrictions and high tariffs on imports of consumer goods to the excellence toward consumer industries and the protection system has encouraged to the establishment of consumer industries depend in a large extent on imported intermediate materials by rising profit margins and reduce the value-added. It also led to the import substitution policy of directing capital to consumer industries rather than directed to investment in natural resources. The high tariff isolated producers to invest in the natural resources of these commodities in an atmosphere of competition and reduced in many cases tire efficiency of their production. The trade policies have been developed in the countries of the two. groups I and III in order to support the manufacturing process was the expansion of the public sector including banks and foreign trade by imposing marketing an important aspect of industrial exports.

In the area of energy deliberately pricing policies in the Arab countries of the petroleum exporting or that production is balanced with the needs to reduce the prices of petroleum products for which actual prices in some countries does not exceed 10% of the export price, as it is in countries with deficits in energy close to the actual prices. This price policy has led to rapid growth in the consumption of energy in Arab countries at rate of 12.5 per year during the period 1974-1978, compared to a growth rate of global consumption of 12.5 per year for the same period. In the face of this drain for depleted resource, we must .rationalize the internal pricing policy

The cheap energy policy in oil-exporting countries and the countries of balanced production and needs, has encouraged establishing industries with non-competitive cost which was unable to continue without the support which is represented by low price for energy. And it may be necessary to reconsider the energy pricing policies in the Arab .countries



Educate your children agriculture and make them love it

Education policies, manpower and technology

Despite the efforts of the Arab countries during the 1970s, the policies in this regard are still suffer from some shortcomings, for example, an imbalance in the balance of supply and demand of the labor force as a result of the lack of proportionality quantitative and qualitative between the outputs of the education system and .input output system

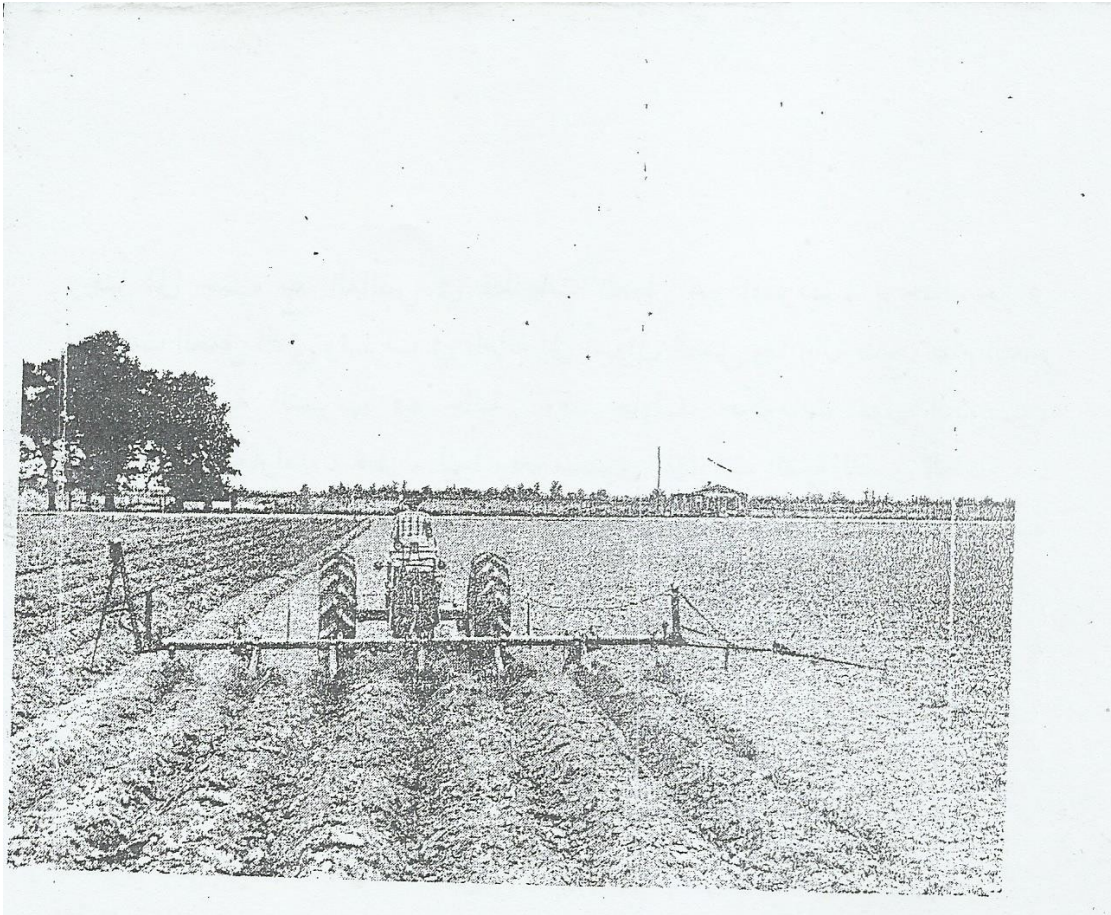
Side-by-side with the surplus in the untrained employment sectors, there is a deficit in the sectors of artwork and a leak in the labor markets work and is still an academic nature of the .education system with high dropout rate

The government of Kuwait, Saudi Arabia United Arab Emirates, Libya tried to raise levels of technical skills of the work force and the development of programs of Intensive training and the provision of incentives, but it is in the absence of a complete study of the structure of the labor force, and without identification programs to the need of the manufacturing of skilled labor, and thus training programmers are characterize as partial omitted to prepare new cadres trained to face the prospects of expansion in various sectors and the continued, reliance on foreign labor import and unskilled according to the rules of the: skilled .market

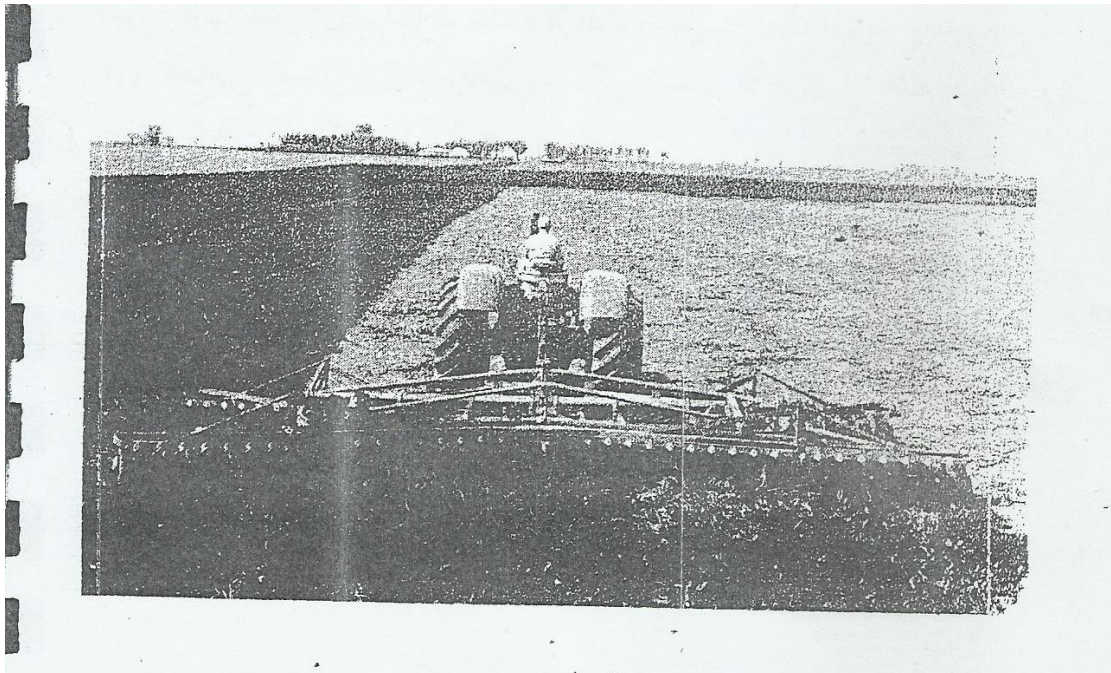
And the employment policies do not look better in the countries of Sudan, Somalia, Mauritania, North Yemen and South Yemen despite the serve shortage of skilled labor in the least

they lack specific policies to :developed countries prepare and train skilled workers, and this is due to low income and to the constrains and other problems of development in these countries and to the need to of the educational system to support .and development

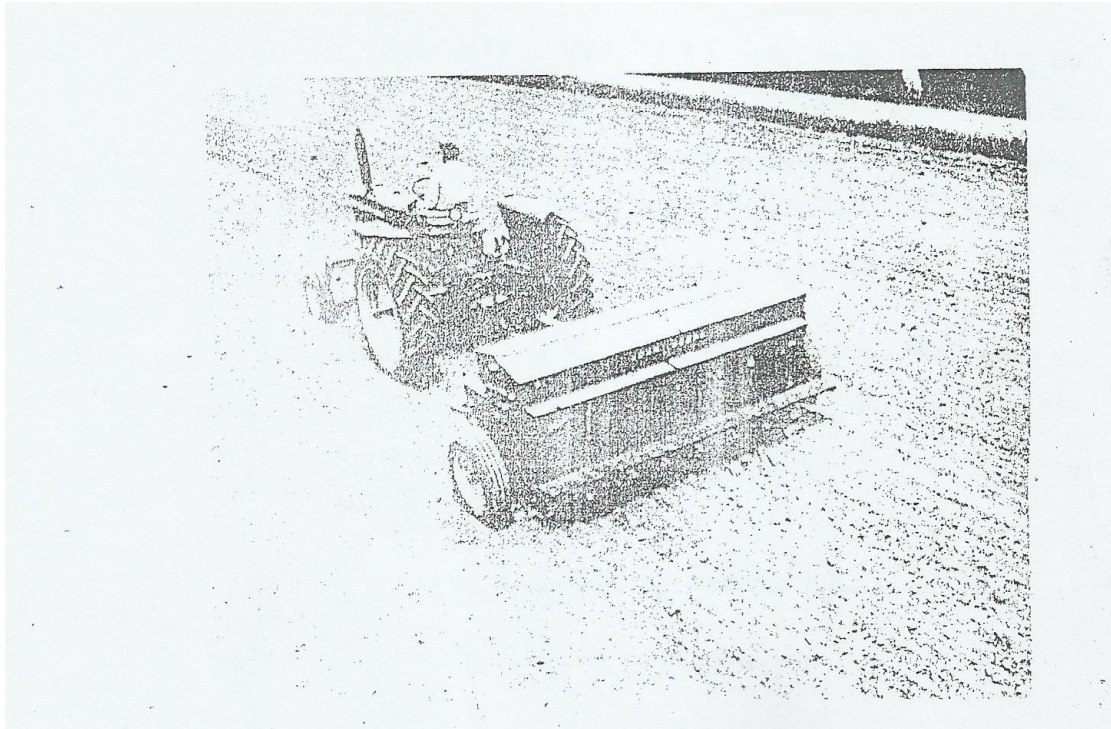
In spite of the obvious integration among Arab nations in the work force, the Arab world did not in the 1970s set out specific policies that organize and coordinate the movement of this supplier, and made moves to large numbers of workers spontaneously in the absence of the perceptions of inclusiveness and clear programs and this necessitates development of a plan and national .policy in this area



A farmer is shoving lines in the land for agriculture



A farmer is turning land after the process of planting



And another farmer is yielding land

The development and relative distribution of
labourers between sectors

The growth trends in the economic structure of the Arab nations have reflected in the size and distribution of labor between sectors. The number of workers in this Arab world in 1977 was about 40 million compared to 34.5 million 1970, but the proportion of the (labor force population, which represents 27% did not change during the two years, which is low compared to the global average in 1977 which was about 43%, and there is a discrepancy between a country and other as ranging from 22% in Algeria and 53% in the United

Arab Emirates, the rise in oil producing countries is attributed to the high proportion of migrant workers to these countries without accompanying their families. The average annual growth rate of the labor force during the period 1970-1977 was 2.4% of the Arab nation as a whole and ranged during 1.5% in the two Yemen's and 3% in Libya and Kuwait, this is because the difference in the growth rate between the oil and non-oil producing countries is that the first attracted employment from the second and, despite the scarcity of manpower in some Arab countries, there is still high percentage of unemployment in the Arab world, the estimation is about 12% of the total .workforce

The following table shows the relative distribution of workers in different sectors and its change during 1970-1977 and also shows that the relative size of the labor raised during this period in the .industrial sector but fell in the agricultural sector

The relative distribution of workers in main sectors
(in the Arab world (in percentage

national economic	manufacturing sector	industry sector	services sector	agricultural sector	year/ sector
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sector					
100	8	16	24	60	1970
100	10	19	25	56	1977

But the proportion of workers In the manufacturing sector to the total numbers of workers in the national economy is still low and this is reflected in the small manufacturing and low relative importance in the generation of GDP as it reflect the adoption of industries that depend on capital-intensive industry pattern, it does not appear in the late 1970s that the contribution of the industrial sector in national output and employment are at the level of importance that the Arab world .directed to this sector

N.B, the industrial sector includes mining, construction, electricity, water and gas in addition .to the manufacturing industry

The agricultural sector provided in 1977s opportunities - to work for 56% of the total, number of workers in all economic activates although its contribution to the gross domestic product of the Arab nation was only 8.5% which

indicates a low level of Productivity and the low
.level of wages of workers in agriculture

And that it is possible to use a large proportion
of workers in agriculture to meet the needs of
other sectors if we provide them with preparation
.and training

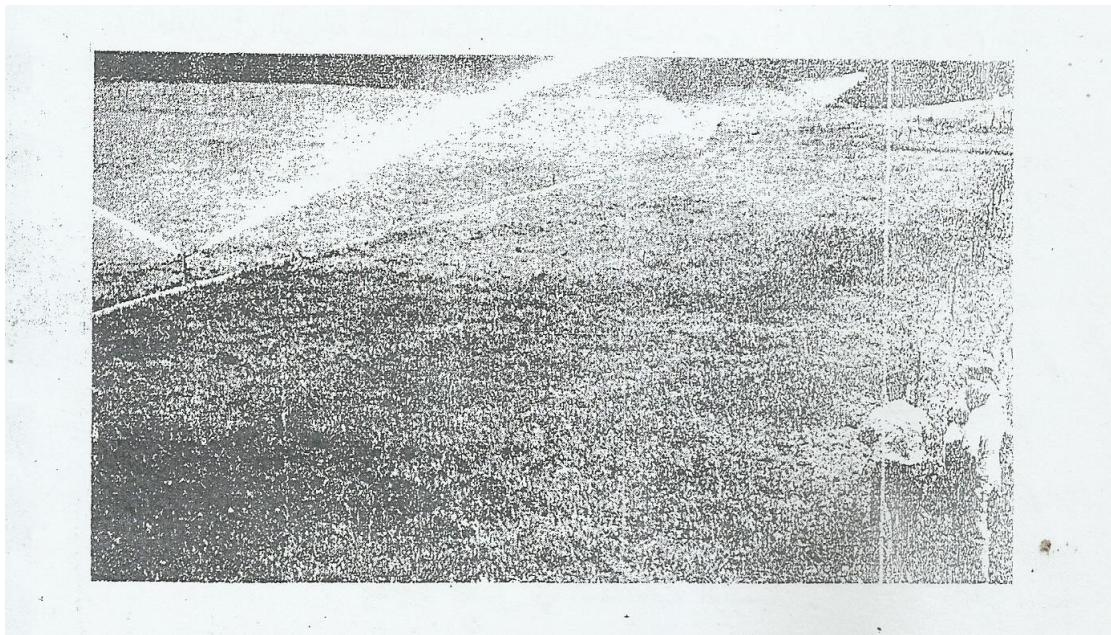
The labor productivity has increased in the
different sectors but the average of its increase in
the agricultural sector was not parallel to what was
.achieved in the other sectors

The rise in the labor activity In the Industrial
sector was attributed to its big rise in the
extractive industrial sector while for the
manufacturing industry, the level of productivity is
almost equal to the average productivity in
.different sectors

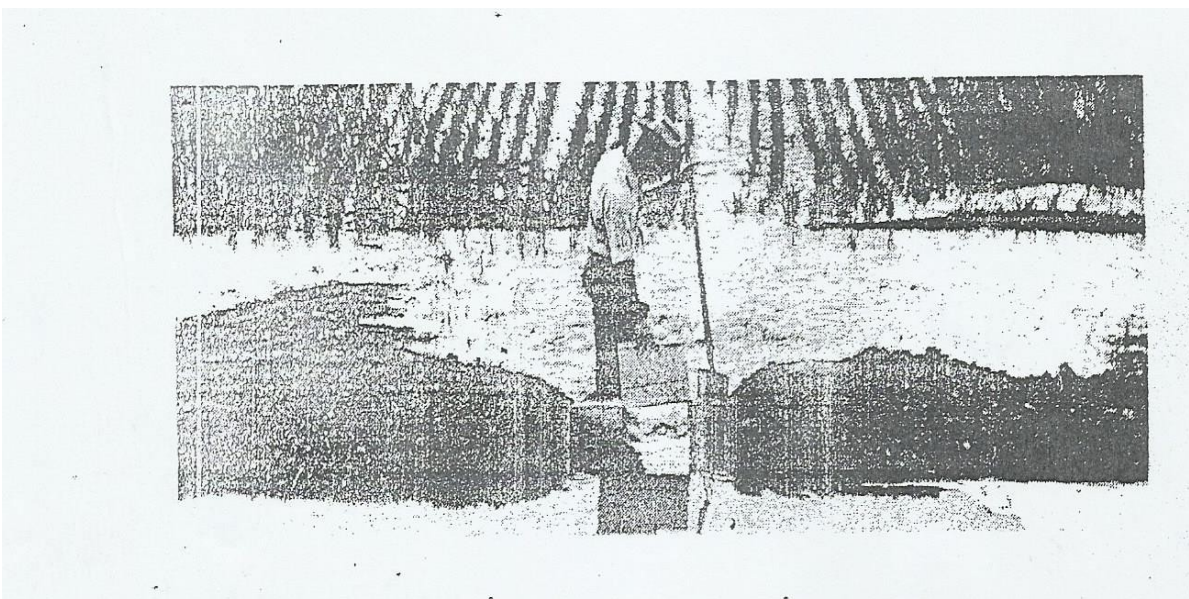
The Productivity of Labour in the Main Sectors in
(the Arab World (in dollars

national	manufacturing	industry	services	agriculture	year/ sector
1129	1683	3044	1900	312	1970
4344	3924	3889	5040	614	1977

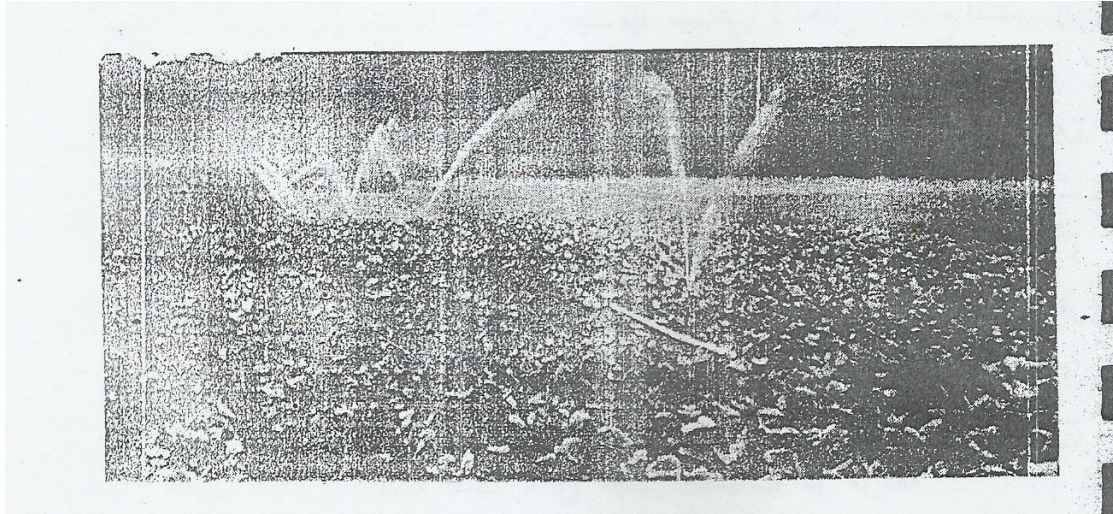
And need to be noted that productivity in this table was calculated on the basis of sector output for value-added and was also calculated with the for the lack of:current prices rather than fixed price .implicit, reduction factor



Modern irrigation method by using spraying system



He waters land fully especially the rice crop



Cabbage field irrigated by the spraying water system

Chapter five

The importance of technology in developing Arab
world

The widening gap between countries

The developing countries as they seek to catch
up, to its full potential, with the developed
countries and arrived at the rates of their

development and with their efforts, the efforts were unsuccessful desired as the 1960s ended- the first period of development, and the gap wonderingly increased between rich and poor countries; the rich countries become richer and the per capital income becomes between 3500\$ to 5000\$ per year, while developing countries have achieved only too weak development where we find the average per capital income has reached between 200\$ to 500\$ per year, and this is because the rich countries have entered the development race with their all huge potential where the availability of growth factors of skilled labor and the availability of capital as well of inventions and speed applied to production sectors alongside advance scientific management allow .them to achieve high growth rates

In addition to that it looks clear that developed countries, in their seek to progress, refused to help, but within the limits of corporation between rich and poor countries except what leads to the .interest of developed countries

We all know that production depends on the elements of labor, capital and technology, which

play a basic role in advancing production very quickly, and in this regard, the technology is the most important element of development and although there are small differences between developed countries, in their respective specialization of investment ratios, it has been observed that there are significant changes to meet the annual economic growth rates between these countries, which is mainly due to the different production art that is used production process between these countries.

Edwin Mansfield also confirms this in the calculation of the effect of the rate of technological development on the rate of economic growth where he estimates that 90% of the rate of increase in the production of ownership in the United State on a long time but was due to the uses of technology and to the increase in the level of education and houses of knowledge and factors other than capital and labor.

In a recent study carried out by G. Divieon about the source of economic growth in the United States for the year 1969, about the effect of

education on the rate of increase of annual growth, he explained that more than 40% of the increase in personal income, in the United States during the period 1929 - 1947 is due to the increase in education, while he attributed the large increase in national wealth and in incomes increase in developed countries over the past hundred and fifty years, to the flow of inventions and to the application of these inventions to economic sectors and to the various means of production; and that the rate of increase in the rates of development is going steady with speed in the application of inventions on the means of production. Since it was recognized that the productivity increase per capital is strongly related to technology development and is also associated with an increased density of capitalism, or factors affecting the increase in production, such as machinery exploitation and the invested recourses at full .power

Technological process is the main pillar for increasing productivity, this progress can be achieved through many methods and means such as the use of modern machineries mechanization

expansion and the existence of competent administrative and regulatory system that is by having administrative and regulatory cadres, expertise, scientific integrated system and by preparing and providing skilled laborers who can adapt to the arts and methods of the current era. This progress depends on technicians and specialists who specialize in planning and implementation and realize their duties and master them to the fullest extent of efficiency, and this means that progress can be achieved without intensive capitals this is confirmed by the research presented by "Benfon Masal" in his book which is about capital formation and technical changes of the effect of increasing production rate in industry in the United State during the period 1919 - 1955 where technological development impact the increase in industrial production growth by 3% per year which it is, no doubt, a high percentage, the sources of this development is the advances in science and management and the raise the scientific level of workers, that is technical .development involving no more capital - intensive

The severe rush in developed countries after the second world war towards their economic growth rates, was a reason to direct economists to focus on productivity increasing so countries competed on using the best methods of production so that their exports to invade the world, taking into account, the change in the economic and social life is an ongoing process; it must be the acquisition of new knowledge for the application of best use of the new technological development, as the non- use of the latest production methods or even slowdown in use that will expose their goods .to recession and cannot find them a viable market

It should be noted that the effect of change on agriculture in the productive art is no less than in the industry, because the agriculture sector has witnessed a revolution in production and deep changes in the relationship between the user and the product called the Green Revolution and agriculture sector is common traditional sector witnessed just slow progress through ages where no great changes are observed like what happens in industry sector and this due to intrinsic properties of this sector because a grower hate to

change the pattern if production for example, which the growers accustomed to and the difficulty of convincing them to change their traditions or their plantings that they are familiar with. In this regard Rayan and Gross mention that farmers are distinguished from others by their strong attachment of old methods, therefore cites the example of hybrid corn which its harvest increased much more than the normal corn and that for 14 years and then has been grown in Iowa county in America and also, this hybrid corn, has been growing largely in other countries in more than 10 years. in addition to that, agriculture sector is subject to external influences such as climate and changes of weather, and is also influenced by the soil and manpower and their efficiency as well as difference in agricultural property from one country .to another

As consequence, art productive for agriculture varies from one place to another according to these changes, and the technological development that happens after the Second World War realized huge result as it was possible to produce new seeds that are characterized with their abundant

harvest. However this also needs proficiency in the use of fertilizer, irrigation and resistance to diseases, pests and weeds

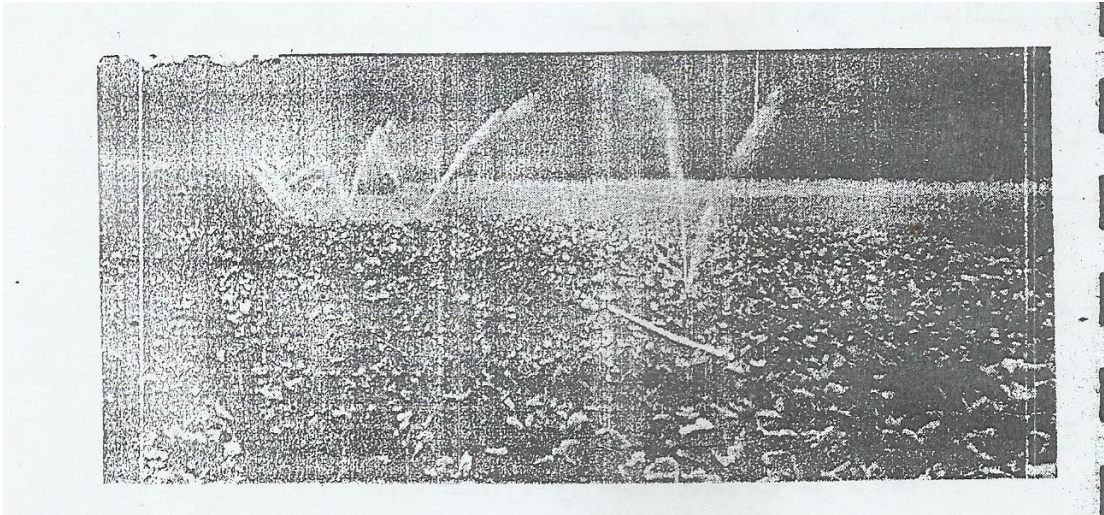
Statistics show that many of developing countries managed to increase their agricultural production by raising the level of their territories productivity through the use of modern productive art in agriculture, perhaps the most, clean example for that is what México has realized of increasing the productivity of land cultivated with wheat from 11 sacks to 27 sacks a result of planting species known as México wheat or short wheat. Philippines is also able to increase its production of rice after planting the type of rice that is known as the Miracle Rice and thus reached a stage of self - sufficiency in this crop. Frmvza is also able to suffice itself from rice and sugar and raise its production by 50% as result of the introduction of new species of this crop. India is also able to multiply wheat production very rapidly where it rise from 12.2 million tons to 23.3 million tons which is about double of the output in the period from 1968

to 1971 an increased its income accordingly by 3
.billion dollars

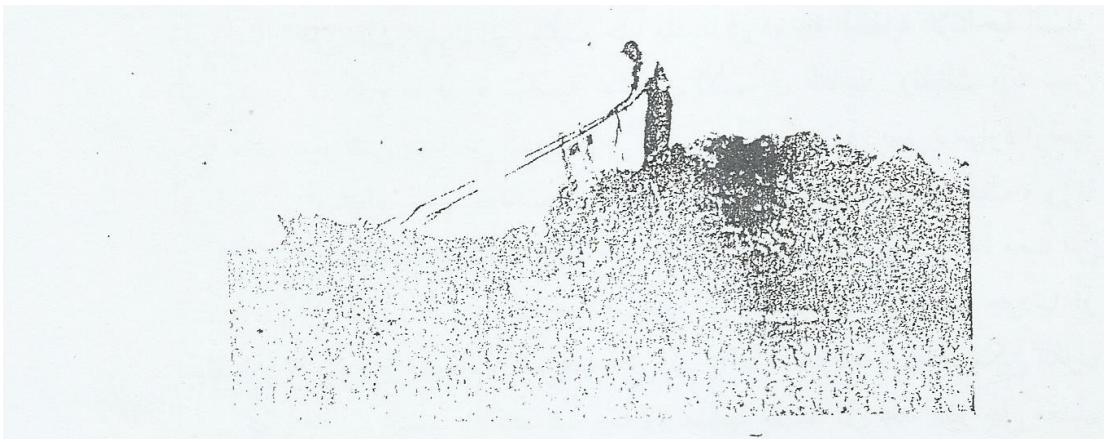
All this is a proof that technology is considered
in this day and age as a key element of production,
and that any failure in the use of technology in the
field of investment would affect the other factors of
production, whether it is ground, capital or human
recourses and also hinder these resources from
.achieving productive targets

The technological advances that countries
endeavor to achieve in the development of
methods and means of production, along its
stages, with the achievement of the following
:results

Reducing the cost commodity production /1
through the use of an absolute minimum of
physical capital or cash or less possible size of the
.business units that are required for this production



A farmer is plowing land



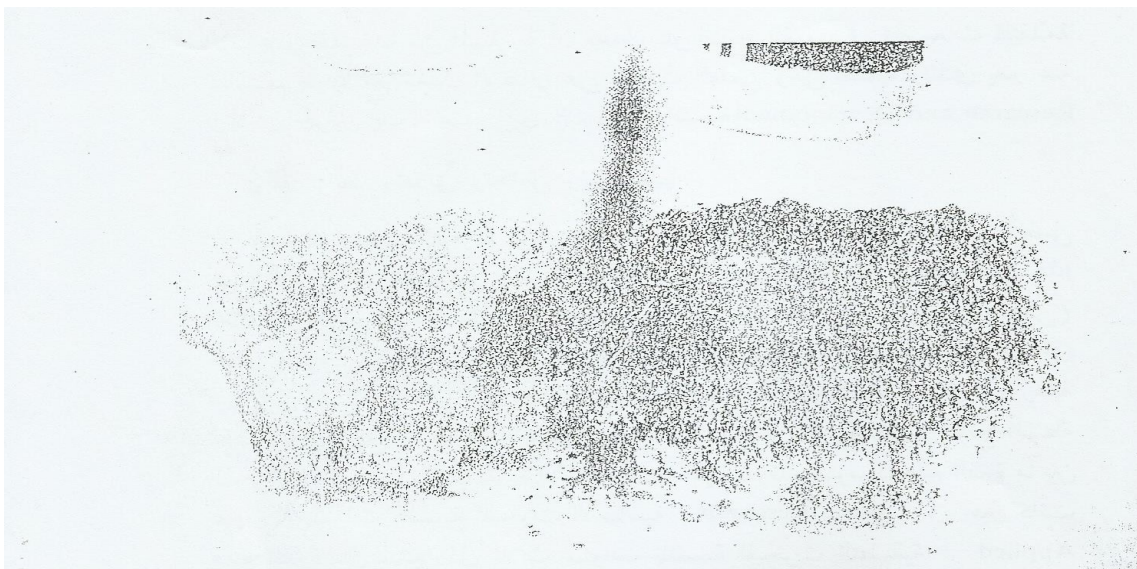
Another is gathering and storing harvest

Produce the largest volume of goods and /2
 services to the maximum degree of efficiency so
 that they have a highly competitive and the large
 .and growing demand

Improve work methods and means in a way /3
 that achieves speed and ease in output
 .performance and comfort for workers

And thus the achievement of these goals has run its impact in improving the production of all its aspects, and to achieve excellence in global and local markets, and also has a direct effect on the rise in the level of economic, social and human welfare by allowing people to satisfy the needs of the increasing quantities of good goals in a timely manner and thus expanding the volume of consumption and the degree of satisfaction for people and what they need on the best level

In fact, technological advances, in this era which countries race in a large extent in order to outdo each other, needs hard work and an intense effort, especially that this progress is no longer something spontaneously come to detect the phenomenon of eye -view comes coincidence or is a flash of thought imagined by one of the scientists or specialists



A fertilized land on the right, and the other without fertilization

but be the result to match the scientific research with the material production, and the science, in turn, has become a major production employs large numbers of workers work in scientific production, at different levels of skills, experience and education in the form of integrate groups and teams, where science is practiced within the units of the research being organized and managed in the same way of organizing .economic management units

This image reflects the reason for the attention of both country agencies and private enterprises in developed countries through providing colleges, universities, houses of science and research agencies with their needs of the conviction that the return on investment in education and research has high value and importance because of its vibrated and a direct reflection of the technological advances in the fields of production, it is now recognized that the growth rate of GDP in developed societies is directly proportional to the rate of spending on scientific research and development, which is briefly expressed with the

letters R and D which they stand for research and development, and there is a correlation match and :close integration between the two

Experience and expertise show that the investment in scientific research is one of the best types of investment since it achieves a positive return directly in development as well as the high rate of this return from other public and private investment. Professor Gebrlech has estimated in a paper by him that the average return on investment in research range from 3% to 5%, the studies conducted in this regard explained that there is a period of time decreases between the date of the use of investment in research and between the date you receive the results of scientific research activities in the rate of development physical investment, the average period is estimated between 5 to 8 years for basic research where it is 2 to 3 years for applied research and development research. It should be noted that investments in research lose value quickly and become irrelevant and useless when it is not accompanied by all the factors of progress and development where styles and arts

productivity are permanently in development and progress, what could be considered as a recent style for production at the present time, soon become a backward style in production in near time. Thus many aspects of knowledge will lose its value unless efforts are being made to renew and develop them, and this is fully applied to highly scientific qualified people, since it has become known that half of what an engineer learn from engineering sciences become obsolete after ten years since his her graduation, where he or she should avail themselves with new and what is created of this science and to follow up this development on an ongoing basis. As a result, the minimum level of investment in scientific research must be decided just to keep the existent standard and to prevent back to back, since any country flinch or slow down in the use of the latest production methods, its products must be exposed to underdevelopment and stagnation in global markets. Here we should consider into account the issue of scientific competencies migration, which is a very serious problem for the Arab countries in general, where hundreds of competences are lost annually and a lot of development and progress

factors are lost with them. In general, we can say there is a relationship between the level of growth and progress of a country and the migration of these competencies, and when there is a true renaissance and economic and social development at a high level, the scientific competencies do not tend to migrate and prefer to work in the fields of these renaissance and development, perhaps the most prominent example of this is Japan where it was observed that with Japan's openness to the world, the United States has not been able to after attract an experienced scientific Japanese despite the fact that Japan has enticed none to work in Japan. Because the benefit from which the new technology in developed countries has reached to achieve the desired progress cannot be achieved once you buy factories, machinery or equipment and to transport them to be installed inside factories and installation and then to be operated for limited periods of time, even when they have been consumed or lost their validity, it has been resorting to buy others to replace them, since the import of modern technology and transport and use of it in our country, is not enough to maintain the scientific and technological level which the

country follows or to keep pace with the rapid development in this field. So there is a must to activate scientific research and expand its horizons and fields in order to develop an all - new and trendy that can add something important and vital together with what a country import applies or takes from developed countries, and as such, scientific researches should be supported and directed to the appropriate and applicable destination for the advancement of economic and remedy the problems of development and .difficulties

All these things must be given great attention and appreciation from all Arab countries and that is on the basis of cooperation and integration among themselves by pooling their scientific and technical potentials and organizing them which are undoubtedly very great and has a value and weight with a view to scientific and technological formation that has importance and weight that can be well used within the scope of favorable climate to the max in order to great direct and efficient in .development for all Arab countries

And as previously, the technological advances extended great breadth within the agricultural sector and in all its respects, though progress in agricultural production methods is much slower than the industrial production due to the properties that characterize the agricultural sector as the lack of acceptance of agriculture producers to change what they accustomed to a certain pattern in production or due to the link of agriculture production with natural factors such as climate, soil and water, all of which is not easily to control, direct or affect on them by material or human methods, but in spite of that, the technological progress achieve through the development of new seeds that produced much harvest and abundance and the best in kind. Also the use of pesticides against insects and diseases becomes more efficient and effective besides the great advance in the field of fertilizer using and in the use of agricultural mechanization with its different types and forms which had a considerable impact in what the developed countries achieved of high rates in agricultural productivity higher than what it was in the past, and also excels in large proportion of what is found in developing countries by every measure whether quantitative or qualitative or in .cash or time

If we move from the scope of progress in vegetable production to livestock field, we find that there are significant differences in the level of

efficiency in livestock production in both developed and developing countries and this is due to the methods that are followed in livestock and poultry breeding which are attributed to the large scientific development that covered all aspects of this production, whether in breeding or in resisting and treating diseases or in developing new strains of them, while this type of production still relies on primitive methods in many developing countries

The main ingredient for achieving technological progress in the Arab world

First of all, we must point out that technological progress is not a magic wand alone can do everything or do the expected change, but that any technological advance, whatever the means and whether it is based on national scientific research and modern innovations or simulation of developed countries, its impact and consequences are under provision of certain elements and with the availability of appropriate atmosphere for its application and the use and

benefit from it, and that all that is available on the scope of the Arab countries as whole in the coherence, integration and full cooperation between them, perhaps the most important ingredients that can achieve technological progress and to benefit from it is the possible maximum

: extent are

The existence of a balance of knowledge and (1) scientific manpower and that is linked with a strong base of researcher scientists, technicians and

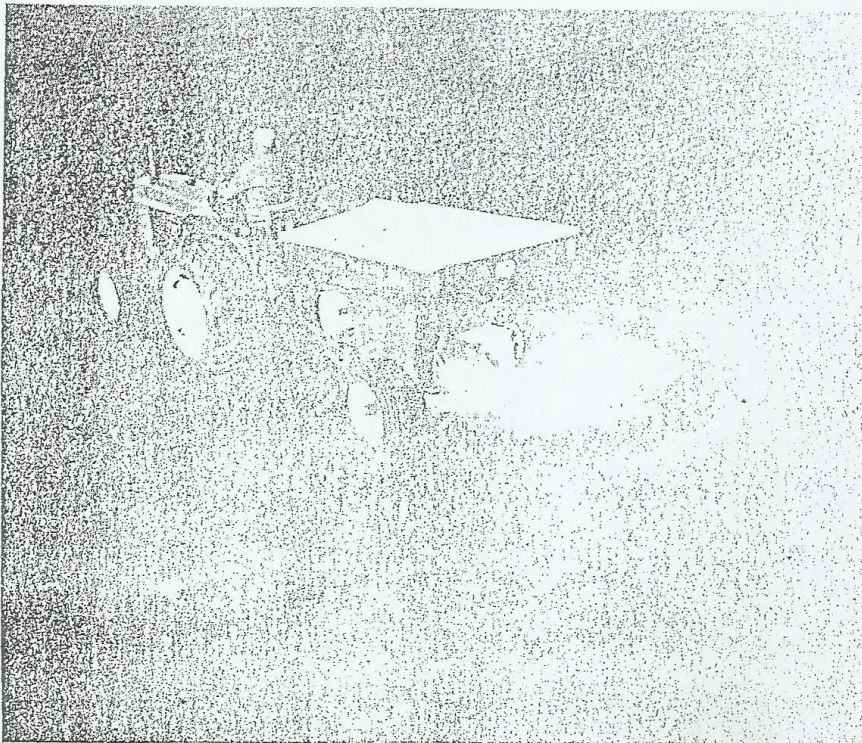
:skilled laborers

This requires the necessity of paying attention to education in all levels and directing scientific supplier to the destination that serves development in all sectors with emphasis on technical education as one of the elements of economic development. And it also requires the

.renewal of scientific knowledge

By means of trendy styles it is not enough to have a limited number of specialists and technicians who are high educated but also there

should be a horizontal stretch with wide - dimensional and to include skilled and highly trained laborers alongside competent scientists, as it is without these, we cannot expect real technological progress, and here, the Arab countries have to focus on programs that fight against illiteracy in order to create this class of .skilled workers



The latest methods to fertilize a crop using a machine,
advance in technology

The existence of strong scientific management (2)

As the underdevelopment in the quality of administration is a hindrance of technological progress and an obstacle to benefit from the advantage of the technology imported or developed by a country, also without a sound regulatory basis that governs all aspects of development projects, in particular, management practices and the level of administrative efficiency, these projects become unable to absorb the results .of research and technology learned from them

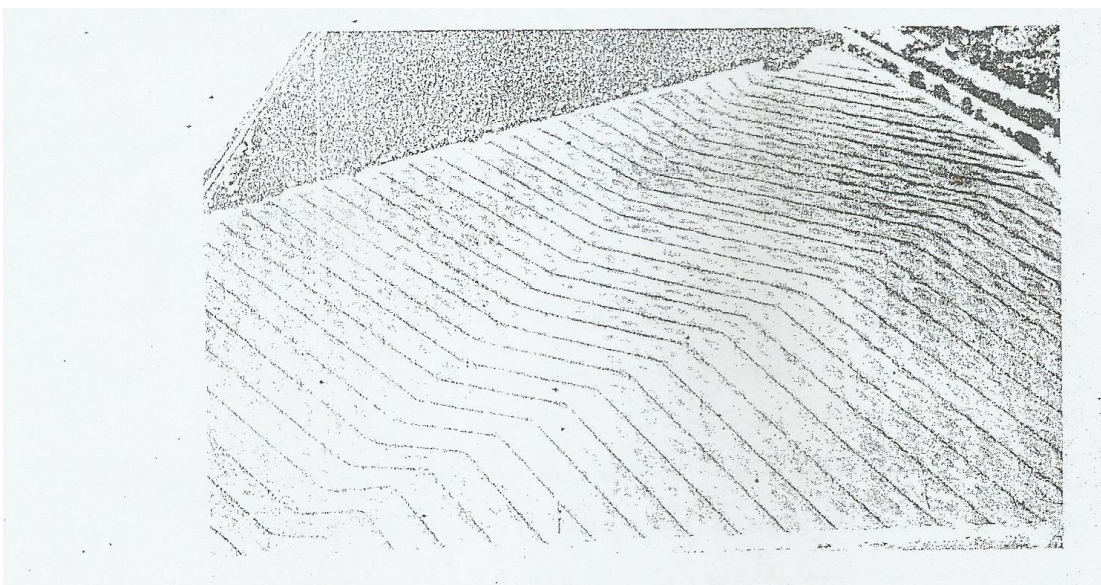
:The widening scope of the market (3)

As the technological advances that make increase in production and speed of capital turnover, needs to expand the market for the distribution of products and goods, so as to ensure the continuation of production units in work and production. This shows the importance of the role of economic integration between the countries in coordinating and linking them that leads to the

contribution and assistance in the success and
.progress of technological development

The need to develop a strategy to achieve (4)
:technological progress

Provided it is done in the Arab world, as the
expansion more than it should be in setting up
many industries leads to fragmented efforts and
difficulty concentrating in the range of financial,
technical and organizational possibilities that are
available, and also the difficulty in raising the
standard and in terms of quality and improving the
.used means and methods



A well - planned farm typical in irrigation, agriculture and
crops

Making the required social changes for (5)
development and progress

And here we must create all the decisions for
development on the basis of research and study,
not to improvise generated inspired thoughts or
passion, but this must be sensitive to honesty and
accuracy of statistics and data, so that the plans,
that are put on that basis, come sound and all the
actions are to be characterized with objectivity
which is considered as scientific actions, not
influenced by personal considerations, or the
person's work, and to constantly observe the need
to direct employees and to guide them and to stick
diligently and faithfully to work and to recommend
feeling of responsibility and duty appreciation as
well as the importance of the time element, in an
era that a part of a second affects on the direction
of rockets and in space ships path

Arab capital (6)

After we dealt with the importance of technology in developing the areas of progress growth and prosperity, we deal with the capital component and its role in development in the Arab world. We say in this area that the large Arab capital, specialty the money of oil producing countries are still searching for investment in foreign financial institution, primarily the Swiss barks, then the British, then the French, then the U.S.A and there are no figures on Arab funds invested in foreign institutions or deposited in banks, because of the secrecy imposed by the .owners

The imported and oil consuming countries calculate their accounts at the present time and in planning for the future based on this situation, it seemed clear as a consequence of that the increase in prices of many industrial and agricultural goods, where the agriculture production depends largely on modernization along the stages, as well as the high cost of transportation that rely on petroleum energy use. Also price rises will not only alone on these goods, but that the studies conducted in Europe indicate

an increase in the most important materials for building and construction as cement, glass and others, perhaps the recorded rise will also face chemical materials where their price are estimated .more than double

In this climate the Arab countries can exert economic and commercial activity surrounded by all means of appreciation and attention from European and American countries with conscious aware of these countries and their capabilities and capacities which enables the Arab countries to direct their potential and wealth towards development, and at the same time, we find pressing desire from foreign countries to share Arab countries and to offer them scientific and .technical facilities

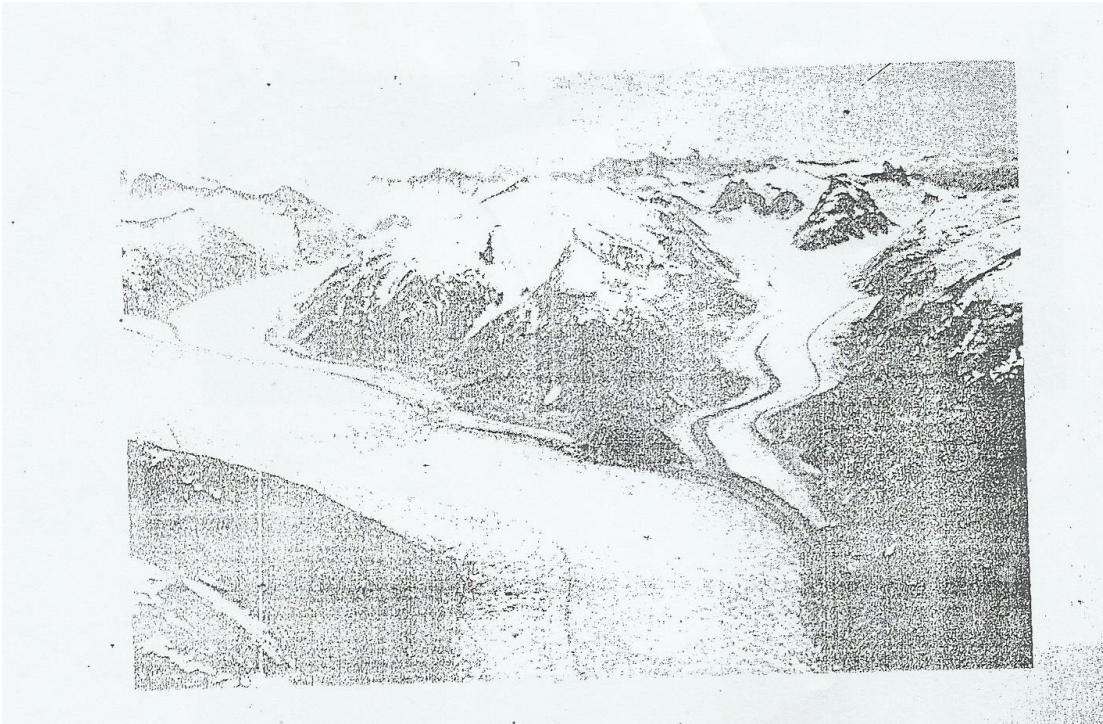
Perhaps the most important of all is that, it began in the Arab horizon, close and strong ties dominated by interdependence, integration and positive, which were not at this level than ever before, and this phenomenon will have definitely impact in establishing the foundations of

integration and development in the Arab world, there for, the oil - producing countries must pay great attention towards investing and developing their capitals to their advantage from one hand and to serve the other Arab countries that seek capitals to finance development projects, on the other hand. And perhaps it is more satisfactory to all these countries instead of leaving the Arab countries get what they need of many from foreign countries that impose, on them and on the region, condition and situations that may not be acceptable to the Arab or make them feel relax, at a time when there are assets belong to Arab countries that are deposited or invested in European and American banks and institutions work for the benefits of European and American countries and to increase their financial capabilities and predispose then wider opportunities of progress and prosperity. As the Arab countries in their agricultural development depend largely on importing much of the requirement of this development from other countries, whether these requirement are chemical fertilizers pesticides machines or seeds, also and at the same bird to provide their needs of nutritional needs (crops,

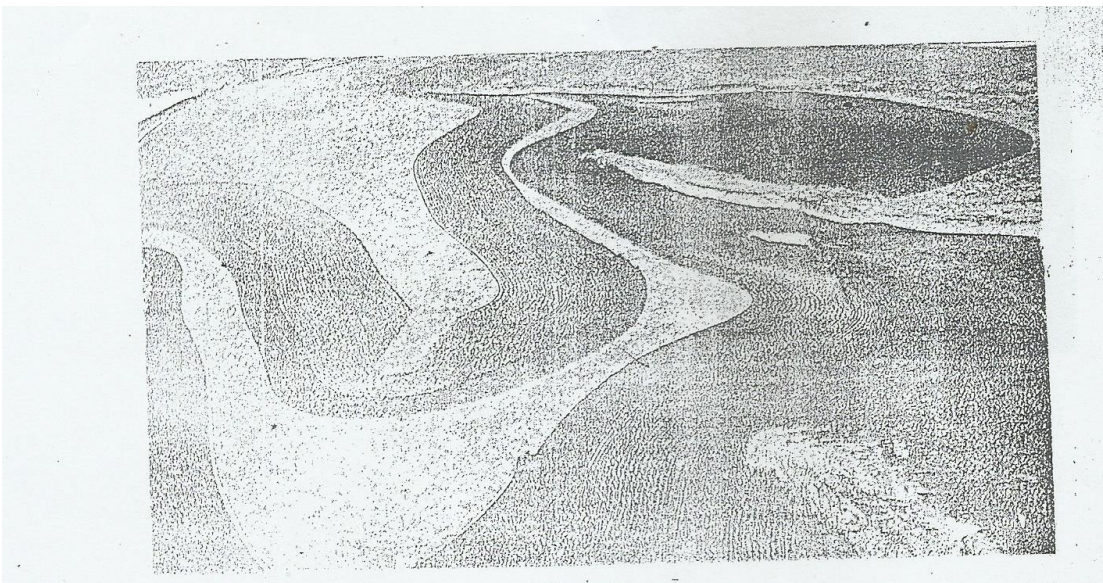
meat and vegetable oils) depend on that from other countries, while price of agricultural requirements and the needs of foods being to rise and also become an element of pressure and threatening in the face of agricultural development in Arab countries and in the face of people's need .for food

An when there were common interests between countries that provide these supplies or food needs and between these producing and Oil-exporting Arab countries, which requires to be taken into account when planning agricultural development and directing investment in the Arab countries towards programme and projects of these plans, it is best to put these plans in such circumstance on the basis of regional planning for the Arab region, and we believe that the best method for agricultural development in the Arab world is what we see through a system that depends on the basis of the universal principles of (economic integration) although the Arab countries need it for the time being, this need will look much confirmed and pressing in the future, this is what the policy and programs of these countries should

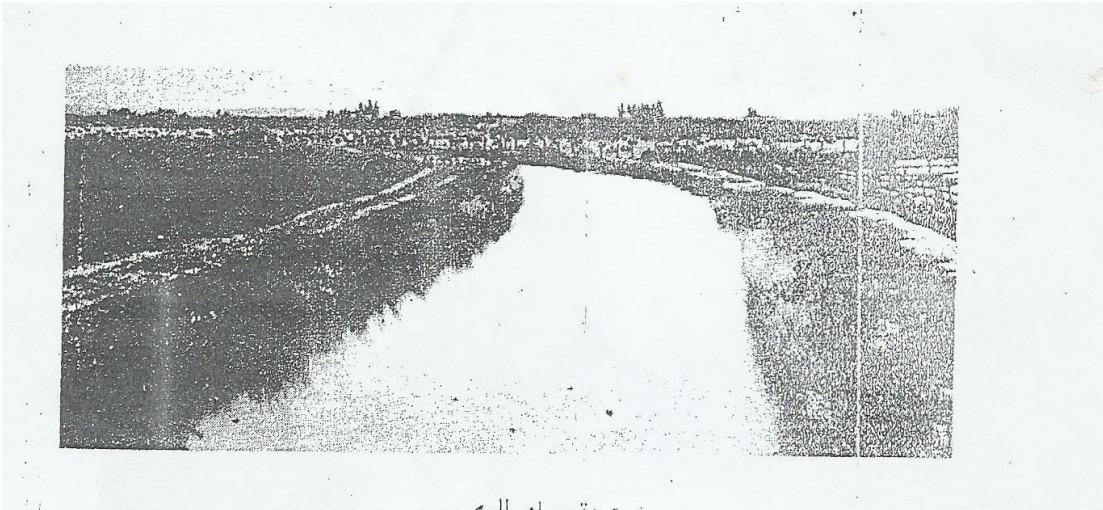
take and governments and leaders should give attention and care to, since the elements of this economic integration and its causes are affordable and available, since the Arab countries as a whole coherent and has a accumulations of capital cash and millions of acres that are currently exploited or can be exploited in agriculture, as well as millions of people and technical geographic location where the Arab countries are located in the heart of the world which is characterized by a unique location with possibilities and energies which are not .available by any country or Union in the world



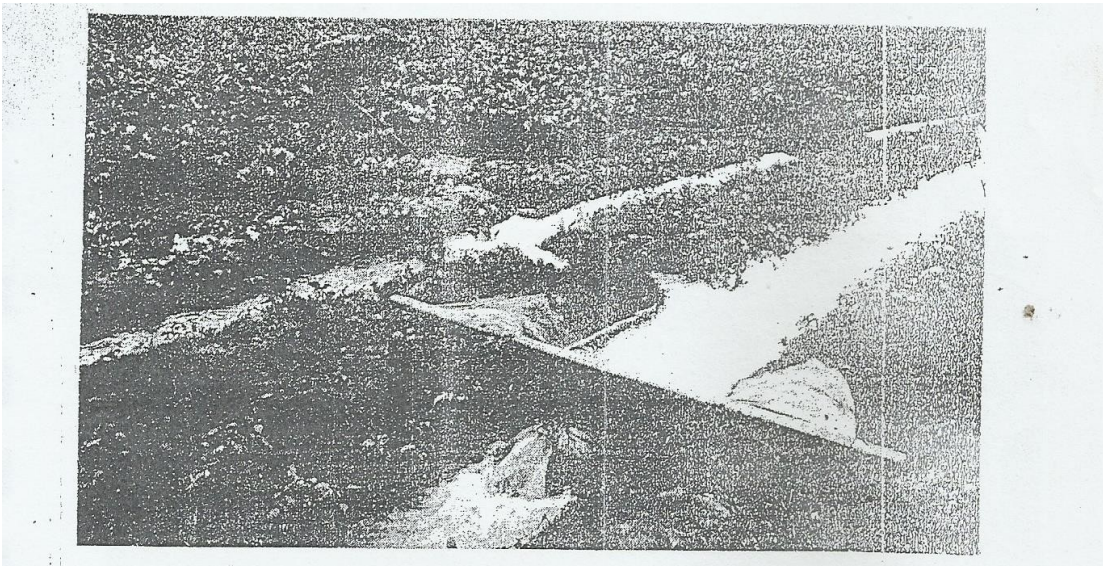
A source of rivers of snow - capped mountains



A typical farm



Canal water for irrigation



A farmer oversees the irrigation of his farm

Part II

The main parameters of the Arab agricultural economy

Chapter One

An overview of the possibilities and resources
of the Arab region

It can be said that the Arab world in the lines of this progress heralds a bright future. In recent years, many productive projects that based on huge investment appeared, such as those held in many Arab countries through development plans, and this phenomenon encourages Arab capital and Arab resources to clump among themselves to finance and construct bigger projects in the other countries of the Arab world in order to achieve the common interests for the people of the region.

And the Arab nation, as a generator of civilization, science and progress as it is a source of light and humanity in the worlds and a cradle and a beacon of culture and science, is no longer in this day need is prove the truth of unity and solidarity among peoples, as the battles against injustice and aggression proved the fact of the Arab presence which has all its components and its potential both in terms of the unity of language that makes unity of thought and knowledge, or in terms of the unity

conscience, as well as the unity of hope which
.makes the unity of the future and destiny

That all of the countries of this region, as they move towards the establishment of comprehensive development of all aspects of life in order to raise people's living standards economically, socially and humanly, rely mainly on radical changes that is not intended to compensate for underdevelopment, which experienced during the colonial period, but we mean the pursuit of scientific development that prevails in many region of the world to reach a civilized and advanced level according to means methods of age to use and enjoy. Though many Arab countries have gone a long way in the way of progress, they still have a longer way to go in order to achieve a high degree of sophistication to restore historical glory on the world map, especially as their physical possibilities and human energies and the nobility of origin qualify to achieve what needs to be achieved and aspired and there is no doubt that the success in achieving these goals is to attain advanced extent of sophistication of the plans to develop their resources especially human ones which is the

dearest thing to have and the most expensive
wealth entirely

Lands of Arab region

That the lands of the Arab region is locality in the countries of Asia and Africa, between the temperate zone and the tropical zone, and extents over 5,000 Kilometer from East to West between the Arabian Gulf and the Atlantic Ocean, and it is not easy to identify from the South in the posterior part of Africa because the extension of deserts in it, the review Nile us considered its greatest length from South to North between its entry to Sudan and its downstream in the Mediterranean, as this length is about 3,000 Kilometers in straight the lands of Arab countries exceed more than European continent area and ranks second in terms of extension after the Soviet Union, as the area of Arab countries is about 11.3 million square kilometers, the equivalent of 28% of the area id

.Asia and 72% of the area of Africa

