

Review

Low productivity of rice (the staple food of the Iraqi family) in Iraq for the period 1950-2013 causes and treatment

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Accepted 16 November, 2015

Rice is important food crop in the lunch Iraqi family and the rest of Asia, Africa and Latin America, in addition to the rice growing source of livelihood for half the world's population to economic yield. Cultivation of rice can use for improvement saline soil when there were agrarian rounds. There are possibilities to increase the cultivated areas, as well as productivity and production when there were available production inputs as there were a great awareness of the importance product by farmers .There are many reasons led to the reduction of cultivated and low areas, productivity and thus production, namely: little or no mechanization where not use enough technology of mechanization, fertilizers, pesticides and high seed production fit with the conditions in Iraq ,little or no water, fear the farmers of non-arrival of water to their farms, lack of improved seeds provide a certified and the adoption of the farmers on the inventory of the previous years, the land left due to migration and provides the functions of the rural non-farm sector for the family, lack of incentives and support by only Agricultural organs in the cultivation of the crop, lack and the provision of electricity and material backup for machinery and equipment ,the adoption of the peasants on what they inherited from the customs and traditions of their parents led to a lack of follow-up data of science and technology, non-use of agricultural courses to stimulate the fertility of the soil and the lack of a plan for land reclamation and thus increase salinity , there were Notes field for rice adopted by the little peasants and farmers and agricultural companies where production increased to more than 1,000 kg \ dunem must be other farmers benefit from them ,the lack of an economic assessment of the fields with a high output in order to honor the owners and motivate them to higher productivity. Adding to the problem is the lack of full coordination between the needs of agriculture mechanization and machinery commensurate with the soil of Iraq, as well as electrical generators and agricultural pumps and between the industry and its needs of raw agriculture materials required for the manufacturing ,the lack of fair internationally for the waters of the Tigris and Euphrates rivers and low water resources distribution to double by 2015, which requires a solution political to this big problem which affected negatively on the production , increase the loss and waste in the use of water in the cultivation of rice in addition to the lack of rationalization , the receipt of loans by some farmers for the cultivation of rice and used for non-agricultural purposes because of favoritism and lack of follow-up and nepotism (the existence of administrative and financial corruption). From the results of that increase the size of the gap between food production and consumption to three times after the 2003 war, which calls for it to rationalize the consumption of rice and maintain strategic inventories, which 17% of the volume of annual consumption ,Economic openness to the world and neighboring countries.

Keywords: Productivity, Rice, Crop, Cultivation, Agriculture, Iraq

INTRODUCTION

Provided with the growing global population increases the need for food, particularly in Asia, Africa and Latin America. And the fact that rice , food main meal to the

families of these areas, there was widespread crop since 3000 BC from India, Japan and China (the original agrarian location) to include Cambodia, Korea, Thailand, Malaysia, Indonesia Islands, the Philippines and the Middle East amounted to cultivated areas in recent years in the world's more than 950 million dunum (dunum =

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2500 m²) with an average productivity of more than 975 kg / acres thus achieving production estimated at more than 575 million tons in 2002. This is about 90.6% of world production in Asia and productivity at a rate of 995 kg / dunum, of which 31% in China and productivity at a rate of 1547 kg / dunum and 19.7% in India and productivity at a rate of 711 kg / dunum in 2002 (1). This production decreased by about 4% in 2000 and by more than 44% of world production, compared with 1980. In Iraq, planting rice was since ancient times extended to 400 years BC and then separated to Syria, Turkey and Iran. Cultivated crop rice area declined in Iraq of 869 thousand dunum, an average of productivity 277 kg / dunum and production of 241 thousand tons in 1950 to 441.3 thousand dunum, but productivity increased to 890 kg / dunum and produced 392.6 thousand tons in 2008 then decreased to 350 thousand dunum, productivity was of 847 kg / dunum and produced 381 thousand tons in 2013. i.e. an increase of only 15% compared with 1950 and this is not a little with the large increase in the population (which have increased almost five-times from 6.3 million in 1957 to more than 30 million people in 2013). Because of no rain and the lack of incoming water to Iraq from the headwaters of the Tigris and Euphrates rivers where dams and reservoirs by Turkey, Syria and Iran (upstream countries) and its transformation into an international problem, had been preventing many provinces that were grown rice in the past few years and since 2005 had become the cultivation of rice, increased the need to study and analyze in terms of area and productivity, production and ambition required, especially since the large economic yield a source of livelihood for many farmers families presentation detective according to the following; First theme: \ crop rice: definition, varieties, planting date and harvest, insects and diseases that makes him suitable for the cultivation. Second theme: \ the reality of the production yield of rice in Iraq (cultivated and harvested, productivity and production areas fertilized and control from insects areas, credit, marketing and agricultural policy). The third theme: \ the analysis of the causes of low productivity and cultivated areas and production according to the questionnaire prepared for this purpose forms. The fourth theme: \ the gap between food production and consumption pre-2003 and Beyond and the prospects for the development of the production of rice crop according to the evolution of consumption of rice in Iraq. At the end of search, there are a set of conclusions and recommendations.

The research aims to study the reality of the cultivated area, productivity and production of rice crop in Iraq and the reasons to fall through a questionnaire prepared within the provinces that grow the crop and conducting statistical tests to check more in all the variables related to the strategic crop is important.

Hypothesis of research is to accept or reject the hypothesis that; the cultivation of rice is in the

deterioration in Iraq and must treat the causes, if any. While the importance of research is in terms of the rice, that there were a main food of the Iraqi family and source of livelihood, elements of production are presented (heat, water, light), providing material and technological base rice is a source of energy, protein, and the possibility of using remnants of the crop in various industries as fertilizer and as a medium for the growth of fungi through extraction cellulose in addition to the improving of the salt soil when there were an agricultural cycles.

The first theme \ Rice crop: definition, varieties, planting date and harvest, insects and diseases that hit by the appropriate conditions for the cultivation.

First: The definition of the crop

(Haron and Ali, 2003). It is a herbaceous annual plant, semi-aquatic, the family is grassy Panaceas or Graineae. Name Scientific for rice is *Oryza Sativa* L. Plant rice either be short stem to the medium multi-branches. It responds to the nitrogen fertilization and has a high production, such as Japanese rice that is with a medium grain called (Sonica Rice) or plant High-altitude with limited branches and low response to fertilization nitrogen such as the Indian long-grain or plants rice, the Indonesian common associated with the Japanese and Indian rice. Rice seed is ranging from short (less than 5.5 mm) and medium grain (5.51 -6.60 mm). long-grain is with (6.60-7.5 mm) or very long grain (more than 7.5 mm). The grain can be thin or thick grain. According to the quality of that rice is contained, it can be divided to a rice with a ratio of 95-98% of amylopectin of starch (where paste in cooking rice) which does not paste in cooking), where it has a few percentage of, that reaches to zero - 2% of amylopectin in addition to its content of amylose. Type *Oryza Sativa* L. is a suitable for all of environmental and water conditions, both in the deep areas or flood plains and dry slopes. In the Asian regions this type is characterized by its facing a large degree of toxicity of aluminum to withstand flooding and water flooding and growth in the conditions of salinity and low temperatures.

There are other types of rice grown in the world, including the type called *Oryza glaberrima* which is ground in the cultivation of the African continent which has ability to face an iron toxicity and the ability of extreme temperatures. The type called *Zizania* aquatic is grown in wide areas of the lakes in the United States

Second: Rice varieties cultivated in Iraq

(Haron and Ali, 2003; Nuehi et al; Directorates of agriculture in the provinces, 2008 - 2013 and Saudi and Ahmed):

1. Class Amber; it is from a medium grain type

including the following properties:

a- grows in the provinces of the country: Diyala, Babil, Wasit, Najaf, Diwaniyah, Dhi Qar, Muthanna, Maysan.

b- the cover of the grain is bean a dark golden brown and be white after pill and has a soft-touch with special flavor ,cleaning percentage is 60-65% of the total weight

c - the ratio of protein in the grain is of 7.75 and 3.2% of oil and this product is the most prevalent in the central and southern region of Iraq.

d –It has with a late maturity and the growth ranging between 140-155 day period .It does not bear delay in the harvest, where the length of the stem, which is more than (1 - 1.5) m when it is available nitrogen fertilizer plant and the wind .The possibility of the breakup of seeds is large.

2. Class Naemeh , Al-Ihuizawi and Molani; they are varieties ,that spread limited areas in the seventies to a lesser extent in central and southern Iraq and that is characterized by short vegetation and respond to nitrogen fertilizer .Seed is medium-rounded (Japanese group) prone to disintegration with low productivity.

3Class Nakazh , Akrawi and Bazian ; they spread in the northern region and the limited areas of Iraq .they recognize with pill as rounded , thick , waxy , low productivity and prone to break up.

4. Class IR8; it is one of a short-medium high varieties ,with high productivity of up to 1800 kg / dunem, but it is characterized by the growth period length. It was recruiting class to Iraq from the World Institute for Rice Research in 1968, then followed by the varieties IR22, IR24, IR26 and IR30 with least productivity

5. Class Mashkhab – 1; It was produced in rice research center in Mashkhab.It is a high-productivity, multi- branches and stem length variety.

6. Class Ibaa -1; Its origin is Bangladeshi brought to Iraq in 1996, long stem (150-160 cm) with a grain of high and long golden brown and has a high productivity of up to 1900 kg per dunem, but it is not homogeneous flowering and non-resistant lain. It composes many branches of the plant because of the length flowering period that carry seeds atrophic breaks when crunches so the farmers reluctant for cultivation.

7. Class Alsomuud,Yasmin , Altafadi , Firat -1 , Amber-33 and Mchkab 2.; The four varieties are with high productivity and quality .First class bears the lack of water conditions with a short growth. The seeds of class Yasmin outperformed the rest of the varieties of rice in the speed of germination, the length of radical In recipes taste and flavor, acceptance and dry weight gesture compared to the seeds of class Mchkab -2 which gave lower averages for these qualities, either class- Amber-33 is a lowest crumb when manufacturing by 10.58% compared with the Class 2 Mchkab.

8. Class Amber -Baghdad, Amber Manadira and Amber- Firat resulting from irradiation class 33.

According to the provinces that grow rice, the rice varieties are:

Diyala province: (Amber, Mchkab), Wasit Province: (Amber), the province of Babylon: (Amber,Yasmine, Firat) the province of Najaf: (Amber, Mchkab, Yasmine, Firat), the province of Diwaniyah: (Amber, Yasmine, Firat), the province of DhiQar: (Amber and Yasmin) and the province of Maysan: (Amber).

Third: Ways of rice cultivation

There are three ways for the cultivation of rice.They are; dry, wet and al-shetal. (Directorates of agriculture in the provinces, 2008 – 2013; Nuehi and Fadous, 2006 and Nuehi and Fadous Shaher, 2007):

1. Dry method: It characterizes by;

- Disperse seeds in the predisposing for farming areas in the plates 50 × 10 meters either by hand in small spaces or Seedling (seed machine) at a distance of 15 cm between the spaces and at a depth of 2-3 cm.

- Make their after each shoulder and that are surrounded by the field sides to drain excess water

- Field irrigates when rains were light and frequent irrigations until seedling were emergence.

2. Wet method: It characterizes by;

- predisposing the land for agriculture then it divides into panels 20 × 25 meters and the distance between his legs and the other 25 meters after plowing twice by disc if there was presence of salts.

- Irrigation the field when it begins the germination of seeds intended for planting process.

3. Al- shital method: is the preferred way in the cultivation of rice cultivated area where up to 10 dunem intended for planting, free of salinity and jungles and fertile modified and extruded. So the field, supplied by wet method, at rate of seed 90-120cgm / dunem, while maintaining the water layer thickness of 3-5 cm increases with the increasing of length of the seedling with constantly an irrigation and drainage operations after 25-30 days from sowing. There must Irrigated land confidential for easy uprooting plants and transported to the ground predisposing sustainable, where planted seedlings either manually 2-3 seedlings in each spot or mechanically using a mechanical machine in regular lines to help increase the winning quantity and quality. In the province of Maysan, this method is used because after that water level drops in the marshes appear Lands (Tale), which are surrounded by shoulders and water which then manually.

At the provincial level we can discriminate the methods used in the cultivation of rice; the way of agriculture , the date of planting, the date of harvesting as follows: Diyala Province: (wet way, 0.15 May and 15-30 Nov \., Wasit Province: (wet and Agriculture after wheat 0.15 May, and 11 \ Nov.), Babil province (wet, 15-27 May and 11 \ Nov), the province of Najaf: (dry and wet and Agriculture after wheat, June 15 and 4 \ Nov), the province of Diwaniyah: (dry and wet, 11 to 18 June and

11 \ 1 Nov), the province of DhiQar: (wet 0.15 May and 11 \ Nov), Maysan province: (wet and by shital, June 15 and 15. \ Nov), respectively.

In rice research station in Mishkhab (southern Iraq), where it is the cultivation of rice by dry method at a rate of sowing 40 kg / dunem and by the wet way is 30 kg / dunem and by the shital manual cultivation of 200 g seeds on the basis of 100 g / m² and Albrashwt(umbrella) planting seeds in dishes prepared for this purpose prepared for 400 seeds per dish and a depth of 2 cm each cradle and then create the appropriate conditions for the germination of soil, water, temperature was reached the following results (Nuehi and Fadous Shaheer, 2007):

- Number of branches manually the shital was the highest (359 efficient branch / m²), in the dry method was (248.7 efficient branch / m²).

- The number of seeds per plant was the highest in the way of manual Alshital (transplanting) ; (154.3 seed) and in the way of dry farming was (151 seed).

- 1000-grain weight was the highest in the wet way (23 g) and in the way Albrashwt was (20 g).

- Infertility rate was the highest in the dry method (19.7%) and in the way the manual Alshital was (15.3%)

- Yield amount was the highest in a way manual Alshital (1143.3 kg\ dunem), while in the dry method was (942.3 kg / dunem)

Fourth: planting date, the date of harvest and appropriate conditions for the cultivation of rice

1. Planting Date: (Magazine Iraqi agriculture, 2004) rice needs to 100-160 days and by category and cultivated as the crop needs to 30-34 degrees of temperature in terms of:

- Varieties of a short growing season and be planted no later than 15/5 until 1/7 and be less sensitive to the optical length of the period, amounting to 100-120 days from sowing to harvest without the effect of the high productivity

- Varieties of a long growing season: and shall be on the cultivation of 15 of may and even 1/June and be more vulnerable and sensitive to the length of the light period, amounting to 140-160 days and that any delay in the date farming reduces plant height and delayed flowering and the small number of florets fertilized and the number of filled grain, so decreases output to half or more in addition to the exposure to rainfall so harvest costs, transport, drying yield and storage are increased which makes a grain of rice with poor quality by the producer and the consumer).

According to the provincial grown rice in Iraq varies date crop between 15 to 27 May in each of Diyala, Babil and Wasit, between 5 -18 June in each of Najaf and

Qadisiyah, Muthanna, DhiQar, Maysan, according to the high temperatures as we move from north to south.

2. As for the date of the harvest which preceded stop the irrigation fields to facilitate harvest automated process and then drying grain rice to the degree of moisture 5-14% in preparation for storage, or in a manual harvest when harvesting combines are not available .After the creation of clean and free land from the jungles to put the harvested plants packages and on the threshing floor of form) in order to dry out .It is between October 15 until November 11, depending on the fall of the early rains in the central regions a little and late in the southern regions. Proceed rice harvest when the plant enters full maturity stage when any harden where grain harvested product (Amber) in the second half of October. The Philippine, for example, varieties are harvested at the beginning of October.

Fifth: pests and diseases that affect the crop (General Authority for plant protection, 1988)

1. (pests (insects and other arthropods) Insects including; mite rice, corn stem borer, of whom, crustaceans,

2 / diseases that infect rice Diseases, including: blight (urticaria), rotten stem disease, spotting leaves disease.

It can combat pests and diseases mentioned using resistant varieties, not to over-fertilization chemical, attention to irrigation and drainage by following a private time forking water with drainage water drainage fully accurate system for irrigation and immersion field, the use of seeds free of injury, to get rid of the remains of plants burning, spray plants material Ethane m -45 or Alsenb by 12 grams per gallon or textured Hinosan by 8 cm² per gallon for the disease blight, treatment the Agriculture textured Aldaethin or Alsenb by 2 g per kg seeds to eliminate the spores suspended on the surface of seeds, early agriculture for disease blight and selection of varieties for the disease stem and the use of appropriate agricultural courses to strengthen the tissues soil (Texture) and fertility.

3: Jungles; they include two types; thin-leaves Group and wide-leaves Group.

1 \Thin- leaves group include: Aldinan, Saad, Aldhnan. It can combat Alidnan by using the anti-pesticide Ordram 72% and sprinkles this pesticide on soil well before planting directly after spraying and tillage disc by pulling and by 1.5 liters dunem mixed with 50-100 liters of water sprinklers ground. Can also be controlled through the use Stam -34 by 2.5 liter confused with the amount of 100 liters of water and spray the plants when they reach the stage of 3-4 leaves.

2. Wide-leaves Group. They are rarely found in the jungles of broad-leaved rice fields.

The second theme \ cultivated area, productivity and production of rice crop (rice) in Iraq and provinces

First: the total area and arable cultivated area in Iraq. (Reports of the Ministry of Agriculture, 2008 to 2013; Ministry of Agriculture and Irrigation, 2008 to 2013; Ministry of Agriculture and Irrigation and Reports of Agriculture and Agrarian Reform, 1980)

The total area of Iraq is 174.020 million dunem, including water that make up the 0.2 % (4.4 million dunem only). This total area distributed on the basis of 6% Island area, 9.6% foothills Area Mountains, 18.3% mountainous region, 23.6% plains area and 42.5% a desert area. The cultivable area up to Class IV is about 44.46 million dunem and constitutes 26% of the total soil, distributed on the basis of the total 0.6% lands excellent for agriculture, 38.7% good and 43% medium quality and a 17.7% with limited ability. In terms of the way of irrigation it can be distributed on the basis of 49.8% depends on the rains and 50.2% in 1988, distributed to 10.153 million dunem are irrigated by rivers, 15.484 million dunem by rain fell to 22.23 million dunem, including 6 .7 million dunem by rivers, 4.5 million dunem through an equipment and pumps in 1992. The reason is due to soil salinization and entrapment of rain, then rose to 33.15 million dunem in 2001. There are wide areas as pastures, including a total of 11.7 million dunem. There is also the equivalent of 750,000 dunem with palm trees and fruit.

Second. Cultivated areas and harvested plants and the proportion of endemic vulnerability of the rice crop in Iraq. (Reports of the Ministry of Agriculture, 2008 to 2013; Ministry of Agriculture and Irrigation, 2008 to 2013; Ministry of Agriculture and Irrigation and Reports of Agriculture and Agrarian Reform, 1980)

1. /Rice crop cultivated areas in Iraq and at the provincial level: Cultivated crop rice area has been in a unstable, reaching 869 000 dunem in 1950 fell to 355 200 dunem in 1958 and then increased to 563 000 dunem in 1967 and to 239 400 dunem in 1980 to 223 000 in 1988 to 113 000 dunem in 2001 to 122 000 dunem in 2003 by more than seven times. This is because of salty soil and wars that got for the period 1980-1988, the economic embargo of 1990, the crisis of September 11 2001, and the 2003 war. These areas planted in 14 provinces: Mosul, Salahuddin, Kirkuk, Diyala, Baghdad, Anbar, Babil, Karbala, Najaf, Diwaniya, Muthanna, DhiQar, Wasit, Maysan, Basra, Dohuk, Arbil and Sulaymaniyah then areas cultivated began to increase to reach 352 000 , 419278, 495034, 461717 , 424 500 and 350000 dunem for the years 2004.2005, 2006.2007 , 2008 and 2013, respectively areas planted, but in eight provinces: Diyala, Babil, Wasit, Najaf, Diwaniya, Muthanna, DhiQar and

Missan only. Here we note that the planted area constitutes only 50% for the period 2004-2013 compared with 1950 despite the increase in the application of science and technology of certified seeds and fertilizers, chemicals, machinery, increasing areas fight against insects and diseases and increasing expertise through education, training and extension, state support for projects and farms through loans and subsidies , increasing the strict supervision and follow-up of agricultural equipment and the issuance of the agrarian reform law No. 30 of 1958 and 117 of 1970 and Act 95 of 1975 in the Kurdistan region and the law of agricultural production protection and campaigns farming successive held agricultural conferences in the province and district and provincial centers for the implementation of agricultural plans. Najaf province has achieved the biggest areas at a minimum and a high in the cultivation of rice (173900 - 195900 dunem), Qadisiyah (111000-145100 dunem), Diyala (28100- 61200 dunem), Maysan (15700-33100 dunem), and Wasit (18100-28400 dunem), DhiQar (from 4500 to 26,500 dunem), Muthanna (7000-17000 dunem) and Babylon (3700-13000dunem) and accounted for 47.7%, 17.3%, 5.3%, 4.3%, 2.2 %, 3.3%, 3.37.3% and 2.4% of the total area planted with grain during the period 2004-2013 respectively

2. Resettle coefficient: It is one of quantitative analysis methods, which aims to determine the degree to which determines the share of each of the province agricultural activity in addition to other criteria such as the proportion of persons engaged in the cultivation of rice to the total number of employees and the use of value-added (production value - equipments of production) (16). The resettle coefficient of grown rice crop can be measured according to the following equation:

$$\text{Resettle coefficient} = \frac{\% \text{ area planted in rice \cultivated grain area in the province}}{\% \text{ area planted in rice \cultivated grain area in the country}}$$

The resettle of rice cultivation is in the provinces when it is increased the rate of about one and properly resettle and is decreased whenever fell for it. Accordingly, the coefficient of resettlement is to be a great harvest rice in the provinces of Najaf and Qadisiyah, Muthanna, Maysan and Diyala (11.92, 4.32, 1.82, 1.32 and 1.07), respectively, while the rice plants in the provinces of focus Babil, Wasit and DhiQar less than one (0.6, 0.55, 0.82), respectively, and the agricultural bodies must be had an attention to it.

3. Waste or loss ratio of harvest rice areas in Iraq at the provincial level; When we compare the cultivated areas to the harvested area to indicate the amount of loss, we find that the waste or loss increased from 17.9% in 1979 to 24% in 1983 ,then dropped to 15% in 1985 and to 11% in 1991. This is due to wars and economic blockade and then it dropped to 0.5% in 2007, when the importance of getting the farmer economic yield was higher in this period and beyond . (Directorates of agriculture in the provinces, 2008 - 2013) At the provincial level, we find

that the highest percentage of waste in cultivated areas was 16.7% in Wasit province in 2007 because of the scarcity of water and the lowest percentage of damage was 0.9% in the province of Najaf in 2006. Also we note that there are damaged areas of rice in Muthanna province over the three years 2006-2007, while their insistence to farmers for the interest in this crop to yield economic, leading to a lack of areas in each Babil and Maysan provinces for the years 2005-2008, and the provinces of Babil, Najaf, DhiQar, Maysan, for the years 2007-2008. (Directorates of agriculture in the provinces, 2008 - 2013)

4. Reasons behind the decline of cultivated areas in Iraq and provinces; The reasons behind the decline of cultivated areas of rice are:

- The size of the area planted is small because of the fragmentation of the land,
- _ little or no machines, no machinery modification and smoothing and leveling.
- -little or lack of water for the farm, leading to rice farmers, who live in the beginning of river to take advantage released in the river at the account of those who live at the end of river,
- Do not growing the crop because of the fear of lack of access to adequate water despite Report the peasant for agriculture,
- Failure to provide improved seeds or certified high-output seeds,
- -There was no soil suitable for cultivation of the crop due to salinity,
- Problems in the marketing of crop because of the high transport cost and routines and procedures,
- -Leaving the land for providing a rural family jobs in other economic sectors,
- There is no treatment against areas with pesticides and bushes,
- -Weakness in following-up of agricultural bodies to what has been approved within the plan,
- There is no law required the farmer planting the crop,
- Lack of incentives and support of agricultural bodies in the cultivation of the crop such as credit, electricity and back-up generators and tools,
- Farms exposed to the risk of security to prevent the cultivation of the crop.

I've been devising the above reasons during the meeting of the directors of agricultural departments in the provinces of the research sample, technicians and part-time agricultural and frequent meetings with peasants and farmers and agricultural companies.

5. The number of agricultural ownerships , land leased and per capita farmland rate: The number of Iraq's population was of 5.6 million people in 1950 , 6.3 million in 1957 , 8.2 million in 1977 ,22 million in 2003 and 28 million people 2013 .The rural population ratio was of 68%, 61%, 56%, 32.1% 31.6%, respectively, and at the account of the average per capita (agricultural area / rural population), we find it has dropped from 1.5 to 1.2, 0.85,

0.8 and then increased to 1.9 dunem, respectively, due to the lack of programmed planning for the migration from the countryside to the city and the presence of unemployment in the countryside and provide employment in other sectors such as health and non-agricultural municipalities, electricity, construction and other works. At the provincial grown rice, currently level we find that the population of the countryside constitutes the highest percentage of Diyala which is 57.8% of the total rural population in Iraq, while the population of the countryside constitutes the lowest rate of Najaf, which is only 30% .add agricultural ownerships occupies the highest percentage in Diyala province (10.1%) of the total number of agricultural holdings in Iraq, while the lowest rate is the share of Muthanna province (3.4%) . leased areas according to the law 35 for the year 1983 was the highest in the province of Diyala and Wasit, followed by (14.5% 10 0.2%), respectively, while the province of Najaf occupies the lowest rate (2.1%) and therefore, the per capita ranged between 0,4 - 2,7 dunem. Less areas was one of the farmer share in Wasit (0.4) dunem and more areas was one of the farmer's share in Missan (2.7 dunem) .The farmer share in the area of the biggest provinces in the cultivation of rice, is in a Najaf and Qadisiyah province and was only 0.9 and 2, 2 dunem, respectively.

Third / productivity per dunum for the rice crop in Iraq and at the provincial level

Introduction

Because of the use of technology and data science of improved seeds, fertilizers, chemicals , the need for additional revenue for the farmer ,instead of manual primitive cultivation through condensation, the crop yield per dunem increased dramatically in Iraq from 277 kg\dunem in 1950 to (404) kg\dunem in 1957 and to 437 kg\ dunem to 668 kg\ dunem in 1990 because of the importance of the product and increase farmer awareness and farms and agricultural enterprises need to expand this crop (areas and productivity horizontally and vertically), but because of the economic embargo in 1990 and the lack of supplies required for the production dunum dropped to 515 kg\ dunem for the period 1990 - 1994.Then the productivity increased again to become 664 kg\ dunem in2003 and kg\ dunem in 2013. This productivity is considered low compared with much of the countries of world

In Iraq, productivity for the years(1960-1964) , (1969_1971) and (1989-1991 ,were 349 and 693 and 634 kg \ dunem respectively, compared with the world (517, 582 and 878) ,Europe (1162, 1259,1470), America (1147, 1271,1365) , Japan (1787) , East countries(457 690, 1107) and Turkey (750 , 1026.1244) for the same period, respectively. (nizh Food and Agriculture, 1996 and

Food and Agriculture Organization, 1995).

From the information above, it is clear that the productivity rates of rice in the world is increasing year after year and with different proportions, but they are far superior to those in Iraq for the period 1960-2013, despite their increase in Iraq with 98.6% for the period 1969 to 1971 and 81.6% for the period 1989-1991, respectively. In Europe, America and Japan were productivity has increased three-times compared with Iraq during the period 1960-1964 , twice for the period 1969-1971 and more than a little for the period 1989-1991, the East countries 73.9%, Turkey 114% and 48% and 96 0.2% for the same period, In Iraq requires extraordinary efforts to reach the global level or more.

At the provincial level, the productivity of rice crop is in constant fluctuation. Productivity dunum have increased by between 2.3% and 42.5% for the period 2004/2013 in all provinces that grow rice, where attention was evident in Maysan province, by an increase of 42.5%, Muthanna 42.2%, Wasit 32.4%, Diyala 25.3%, DhiQar 22.8%, 18.7% Najaf, 8.3% Babil, and 2.3%Qadisiyah.

Reasons for declining productivity\ dunum of rice crop in Iraq and the provinces

The low productivity per dunum in Iraq dues to the following reasons:

- Do not use modern technology to increase productivity of automation and high productivity varieties and chemical fertilizer.
- The absence of a settlement and modify predisposing soil for planting seeds lead to erosion the seeds and collects in areas where competition for water, air, light, adequate food increases.
- Weakness of soil texture, because of overlap with rice, wheat cultivation in some areas and thus the lack of response to increase yield.
- Do not farmers receive, completely, data of Science and Technology and the follow-up to rely on inhereditary of their fathers and forefathers of customs and traditions.
- No devices scientific research cooperation in supplying the farmer what is new.
- Weak agricultural extension services in the delivery of publications and periodicals for farmers and the lack of established training courses.
- Use poor productivity varieties, stored for multiple years.
- salinization of the soil and the lack of a plan to reclaim the land.
- Do not use the agrarian rounds to stimulate agricultural soil fertility.
- Do not encourage farmers to visit the high-yield fields and to identify weaknesses as a demonstration fields.
- lack of economic evaluation of the fields with a high output in order to honor the owners and thus encourages high productivity.

- The lack of inspection fields on the bushes and jungles and thus competes with rice on the requirements of growth and weakens it.

- lack of specialization for the production of rice and rely on diverse agriculture.

Note; we've been devising the above reasons during the meeting of the departments of agricultural departments in the provinces of the research sample, technicians and part-time agricultural and frequent meetings with peasants and farmers and agricultural companies.

Fourth, it achieved production of rice in Iraq at the provincial level

1. The fluctuation in the cultivated area and productivity had been achieved effect production for the period 1950 to 2013 to be fluctuated too .Production was 241 000tons in 1950 fell to 147 000 tons in 1957 to 151 000 tons for the period 1975-1989 and then increased to 262 000 tons for the period 1990 - 1994 , then dropped again to 81 000 tons in 2003 and increased to 350000 tons in 2013.This an increase of only 2.9%, despite the increase in population of 6.34 million people in 1950 to 30million people in 2007, and the rate of increase of nearly six times.

At the provincial level, there was an increase in production during the period 2004-2013 in the provinces of Muthanna, Najaf and Maysan (77.1%, 33.1% and 14%) in 2013compared with 2004 . and there was a decline in production in the provinces of DhiQar, Qadisiyah, Babylon ,Wasit and Diyala, (70%, 49.8%, 48.6%, 37.6% and 9.3% respectively) Knowing that the provinces of Diyala and Wasit did not produce anything because of the prevention of Agriculture in 2008 to water scarcity and migration of a lot to the city, where the lack of irrigation water and provide drinking water in the end of rivers.

2. The reasons for the low rice production in Iraq and the provinces: Among those reasons are;

- Lack of response of modern technology.
- Increased unemployment in rural areas compared with the city.
- Default methods of irrigation and the spread of salinity and lack of irrigation systems and puncture protected with failure in the control and follow-up of offenders.
- Do not given the importance of the private sector remained stalled for relying on the work of cooperatives or on their way to the solution.
- Lack of farmer awareness of the process of investment and development because of poor education and lack of training courses
- Poor agricultural marketing and credit operations, storage and transfer of lending.
- Lack of agricultural sector allocations and dependence on imports.

- The large number of stopping in agricultural machinery and combine harvesters and irrigation pumps with the lack of spare parts for many of them.

- lack of full coordination between agriculture and industry in the supply of agriculture with machines that are suitable the soil of Iraq, as well as pumps and electricity

- The absence of a just international distribution of water making the water crisis a real crisis impacted negatively on production.

- Wasteful use of water and do not rationalize.

- Reluctance to growing the crop because of the security conditions in some areas of Iraq.

- Lack of economic criteria when running agricultural worker and the lack of programmer planning for the operation.

- The lack of scientific research and the accumulation of knowledge-based strategy in the development of the means of production.

- failure to declare the purchase price by the state before the date of agriculture and thus the lack of a clear pricing policy for crops to encourage farm production and which affect investment and financing.

- taking agricultural loans to non-agricultural purposes due to lack of follow-up, nepotism and thus the lack of agricultural inputs.

- Weakness in marketing and marketing information systems and warehouse management.

Note; we have been devising the above reasons during the meeting of the departments of agricultural departments in the provinces of the research sample, technicians and part-time agricultural and frequent meetings with peasants and farmers and agricultural companies.

3. Areas control with chemical pesticides and the quantity of pesticides used: Areas under the control of crop rice ratio constitutes of 12.5%, 24.2%, 34.3% and 37.9% of the total area planted in Iraq for the years 2005, 2007, 2006, 2013, because of the scarcity of water and the cultivation of the crop on the responsibility of the farmer to plan where there is no anti-farming districts in the provinces of Diyala, Babil, Muthanna, DhiQar and thus. The areas control concentrated in the provinces of Diwaniyah in the first place (45,3 -74,8%), followed by Najaf II (27.5 to 42.8%) and Wasit (2.6 to 10.6% despite the presence of preventing 2008) and Missan (2.0 to 8.3%, and despite the presence of preventing in 2008 as well. It is proposed that the Ministry of Agriculture continued to use the same pesticide for four years, which could generate immunity in insect or pathogen resistance to the pesticide and therefore lack of access to .So agricultural research centers must look for other pesticides more effective.

4. Low areas mechanically harvested crop of rice: When manually harvested areas data analysis and mechanically we find that there is a significant shortfall in the number of harvesters required and the lack of fuel

needed in addition to the lack of spare parts and increase per hour mechanically costs make manual harvesting of the crop rice in Iraq make up more than half (53.7%) in 2005 .The provinces of Babil, Muthanna, Maysan, the highest percentage (100%, 99.2% 97.9%) respectively, while the province of Najaf constitutes a proportion equal to the proportion of manually harvested area rate in Iraq. The area harvested mechanically make up the largest proportion in Wasit and Qadisiyah (64.1% and 62.2%), respectively, because of its dependence on the rest of the combine harvesters coming from its neighboring provinces.

The largest proportion of the number of rice harvesters have reached the first part of the provinces of Najaf, Diwaniyah and Muthanna Second, Third and formed (52.7%, 21.9% and 20.5%), respectively, although the number of unemployed was a great harvesting in the provinces of Najaf by 43.0 %, Diwaniyah by 33.5%

5. Low fertilized areas for rice crop in Iraq and the provinces: Due to prevent the cultivation of rice, for lack of water we did not find a plan for the areas fertilized in the provinces of Diyala, Babil, Wasit for the period 2005-2008, and Qadisiyah for the years 2007-2008 and Maysan in 2008. Rate of growth for fertilized areas of the kinds of fertilizer nitrogen and compound in Najaf was 8.3%, Dhi Qar, an increase of approximately three times. Maysan, up nearly twice. Fertilized area as concentrated primarily in Najaf and at a rate of 144 765 dunem that constitutes only 81% of the cultivated total area of rice, followed Qadisiyah province Second, and at a rate of 65 727 dunem, which make up only 50% of the total area of the cultivated rice, followed by Maysan Third, at a rate of 19 178 dunem, which constitutes 75% of the total area of rice, then province of DhiQar IV at a rate of 17 780 areas, which make up only 99% of the total area cultivated rice. Accordingly, concentrated amounts of fertilizer on average in the province of Najaf (16 721 tons), Qadisiyah (8984 tons), Maysan (2078 tons) and DhiQar (4322 tons). Note that there was no plan to fertilize the presence of preventing the cultivation of the crop for the years(2005, 2007 and 2008)(2005 --- 2007),(2005-2006),(2006 and 2008) in the province of Diwaniyah ,Muthanna , DhiQar, and Maysan respectively. The decline in production comes from food shortages, particularly of nitrogen which is added at the beginning of plowing with compound fertilizer. At the time of the forest or branches the stem (where the yellowing leaves show signs, a reduction in the process of photosynthesis, the shortage of the forest and the lack of size of clusters of flowering) who needs A plant throughout his life. As The increase of nitrogen leads to excessive branching and an increase in the number of flowers sterile and increased susceptibility to disease and thus lower production. The lack of phosphorus (phosphate fertilizers and compound) and that appears through a narrow size we get the paper and the lack of size of the root group and therefore the delay in the formation substitutes and reduced the size of the

clusters floral (Nuehi et al., 2006)

Note; we have been devising the above reasons by meeting departments and agricultural departments in the sample provinces Find and full-time technicians and agricultural and frequent meetings with peasants and farmers and agricultural companies.

6. Lack of marketed quantities of crop rice; According to the provinces for 2005 and 2007 and the analysis of what has been marketed rice product to the Ministry of Commerce and local companies and markets in Iraq, we find that the kyat marketed quantities increased by 37% in 2007 compared with 2005, for an increase of the prices declared, the lack of stores suitable for the storage of the product, the presence of risk due to theft or tampering and the lack of stable security conditions in some areas that the quantities marketed not constitute only 75% and 69% of the total quantities produced for 2005 and 2007 respectively.

At the provincial level, we find that the quantities marketed were the largest in the province of Najaf and an increase of 142% in 2007 compared with 2005, followed by the province of Qadisiyah, but by decreasing the amount of 0.7% due to the decrease in cultivated rice areas. In third place is the province of Diyala and the declining rate of 48.7% for the same period, because of the unstable security conditions. We also noted that the provinces of Wasit, DhiQar, Maysan, a significant increase in the proportion of marketed quantities have achieved the amount of 28.7%, 186.9%, 21.9%, respectively.

The third theme; analyze the causes of decline in areas, productivity and production of rice in Iraq

First - the sample society: It consisted of growers harvest rice in the agricultural departments of agricultural branches and divisions managers, agricultural engineers, technicians and farmers in eight Iraqi provinces are characterized planted to this crop it consists of a (Diyala, Babil, Najaf, Wasit, Qadisiyah, Muthanna, DhiQar and Missan). Then there were distributed questionnaires of 30-50 form for each province of these eight provinces, but that have been adopted in the sample (25) only form for each province, from a sample of the full answers careful study provinces, and therefore, the number of forms that adoption in diameter (200) form the rest of the forms it has either been excluded from the analysis

Secondly - sample tool: The sample, in the collection of data on A questionnaire form, included three main themes in addition to the introduction where the researchers explained the nature of the sample and how to answer them, and ensure that the first axis (26) questions about the reasons for a reduction in area planted for harvest rice in Iraq, and contained a second axis on (18) questions about the reasons for the low

productivity of rice crop, while offering the last axis to (28) questions about the causes of reduced production of this crop, and took objectivity in the distribution of the questionnaire, as the researchers did not intervene to direct answers to individual study sample, has been using the triple scale (agreed, somewhat agreed, I do not agree) to measure the sample trends.

Thirdly - statistical treatment of the data: The data tabulation computer and entered for analysis using known statistical packages (SPSS) program was descriptive statistical methods and analytical data processing adopted, which included frequency distribution and percentages to describe the study sample and extract averages, standard deviations, and coefficients difference of trends in the sample about the main dimensions of the study, has been giving the number (3) to the level agreed to represent the maximum positive trend and the number (2) of the level agreed to some extent and number (1) to the level I do not agree.

It can be concluded from the mean and standard variation data and the coefficient of variation year at the provincial level of reasons behind the decline of cultivated areas of rice crop as following;

- The arithmetic mean indicates of all the answers to a discrepancy (variation) between the agreement and the lack of agreement on the questions and the resolution which did not exceed the values of class (2) in all provinces except in the questioner covered by the province of Najaf.

- The values of the standard variation indicate low and less than one-to homogeneity and harmony of the sample people and to some extent between the agreement and the lack of agreement and to the order of each paragraph of the resolution in all the provinces. If what happened that rose to class (1), it means the presence of dispersion in the answers to the sample.

- General coefficient of variation indicates the importance of the sequence of paragraphs that cause decreased cultivated area where they were between 32.72% in Diyala and 44.08% in Wasit. Note Table (1).

Also it can be concluded from the mean and standard variation data and the coefficient of variation year at the provincial level of reasons behind the decline the productivity of rice crop as following;

- The arithmetic mean values indicate to the year it exceeded the testing laboratories (2) in many of the paragraphs in the resolution and this confirms most of the respondents agree to what those paragraphs aim. These values have varied between 2.188 in Diyala and 2.40 in Najaf.

- The values of the standard variation indicate low and less than one-to homogeneity and harmony of the sample and to some extent between the agreement and the lack of agreement and to the order of each paragraph of the resolution in all the provinces and if what happened, that rose to class (1), it means the presence of dispersion in the answers to the sample.

Table 1 mean, standard variation and coefficient of variation in questionnaires in Iraq and according the provinces for the reasons of deceasing the cultivated areas of rice crop in Iraq

Province	mean	standard variatio	coefficient of variation
(Diyala	1.995	0.603	32.72
Babil	1.879	0.786	43.06
Najaf	1,874	0.752	44.08
Wasit	2.11	0.817	39.74
Qadisiyah	1.924	0.834	40.04
Muthanna	1.983	0.798	41.31
DhiQar	1.88	0.786	43.00
Missan	1,932	0.780	42.24

Worked by researchers, according on computer (SPSS) ,data of questioner, of Agricultures directorates in provinces.

Table 2 mean, standard variation and coefficient of variation in questionnaires in Iraq and according the provinces for the reasons of deceasing the productivity of rice crop in Iraq

province	mean	standard variatio	coefficient of variation
(Diyala	2.188	0.729	34.16
Babil	2.195	0.710	32.89
Najaf	2.282	0.758	34.36
Wasit	2.400	0.700	30.26
Qadisiyah	2.351	0.712	31.73
Muthanna	2.348	0.729	31.90
DhiQar	2.357	0.542	24.36
Missan	2,351	0.691	30.25

Worked by researchers, according on computer (SPSS), data of questioner, of Agricultures directorates in provinces.

Table 3 mean, standard variation and coefficient of variation in questionnaires in Iraq and according the provinces for the reasons of deceasing the production of rice crop in Iraq.

province	mean	standard variatio	coefficient of variation
(Diyala	2.212	0.675	28.98
Babil	2.465	0.678	28.90
Najaf	2.330	0.705	31.26
Wasit	2.450	0.717	29.85
Qadisiyah	2.430	0.701	30.16
Muthanna	2.462	0.681	28.72
DhiQar	2.611	0.485	20.96
Missan	2.532	0.873	29.03

Worked by researchers, according on computer (SPSS), data of questioner, of Agricultures directorates in provinces.

- The values of the coefficient of variation indicate to the public the importance of the sequence of paragraphs that cause decreased yields dunum where she was between 24.36% in DhiQar and 34.36% in Wasit Note Table (2).

Also it can be concluded from the mean and standard variation data and the coefficient of variation year at the provincial level of reasons behind the decline the productivity of rice crop as following;

- The arithmetic mean values indicate to the year it exceeded the testing laboratories (2) in many of the paragraphs in the resolution and this confirms most of the

respondents agree to Mazhpt those paragraphs to it. These values varied between 2.212 and 2.611 in Diyala in DhiQar.

- The values of the standard variation indicates low and less than one-to homogeneity and harmony of the sample and to some extent between the agreement and the lack of agreement and to the order of each paragraph of the resolution in all the provinces and was the lowest in the DhiQar and the highest in Missan and if what happened and that rose to class (1), it means the presence of dispersion in the sample answers.

- The general coefficient of variation values indicate to

the importance of the sequence of paragraphs causing lower production where she was between 20.96% in DhiQar and 31.26% in Wasit. Note Table (3).

The fourth theme \ prospects of the development of the productivity of rice in Iraq and at the provincial level

Firstly; Estimate the size of the food gap for the rice crop for 2015: in the seventies and eighties increased rice consumption by 5 times more than in previous years because of the Iran-Iraq war, then fell to three times in the nineties because of the economic embargo in 1990, then increased again during the twentieth century and the twenty-first because of In 2003for occupation. The gap between production and consumption of rice growing was by 283 000 tons in 2010 and to 329 000 tons in 2015. (19) and (29) and (30). As the effects of the liberalization of international trade on a large agricultural goods, which indicate prices upward, including rice, which will increase about 21% and is the biggest problem to when production often declines with higher prices for quantities consumed .Iraq bears the heavy burdens or loads in the balance of payments and drains a lot of foreign reserves abroad. That great effort is being made to reduce the food gap, as follows:

Second; .The ability of increase productivity per dunem by;

1.The removal of obstacles to lower productivity and labor to increase productivity on average in Iraq to 950 - 1000 kg \ dunem, that has been made in the provinces of Najaf , Qadisiyah and Wasit within different areas. In calculating 2 kg \ per consumer per month, we find that Iraq needs 767 304 tons in 2010 and 889 536 tons in 2015 to 807 688 and 889 536 dunem for the same period, with the possibility of increasing the areas of summer crops (including rice crop) to 3.2 million dunem in the basins of the Euphrates and Tigris if the nature of the agricultural season in the case of drought and depend on the water drainage (Ministry of Irrigation, 1995).

2. The ability of increase the efficiency of water use through:

- using 81%of the providing water resources
- finding solutions to the problem of water among riparian countries which are; Turkey, Syria and Iran with Iraq, with finding the development and management of water resources planning.

- Interest in irrigation projects completed and deployed on the area of more than 7 million dunem across the provinces that are cultivated rice (Ministry of Agriculture, 1999).

- Interest in irrigation projects carried out in all the provinces where rice grown partial export of oil and invested in improving the cultivation of various crops, including rice (ibid)

- The organization of dams and reservoirs for the

storage of available water resources especially ,that affected by the war and the statute of limitations.

- Interest in irrigation and drainage and improvement of existing irrigation systems and maintenance of devices to control the water and the efficient operation of networks.

- Reduce water waste and loss that was happened to irrigate rice as much as possible and complete hydrological monitoring networks and the production of desalination techniques.

- Increase of Agriculture and Water Research data and keep pace with science and technology, providing mechanization requirements of drawers and agricultural harvesters according to the specifications of the soil with the provision of electric generators

- To give an importance for Geological survey and preparation of maps of fertile survey to determine the most suitable areas for the cultivation of rice in Iraq.

Thirdly \ reducing the volume of consumption of rice, through:

- impact on the tastes and traditions and customs of the Iraqis, especially that Iraq over the wars and crises including the Iran-Iraq war in 1980, the economic embargo in 1990 and the US occupation in 2003.

- use price Policy as a way to reduce rice consumption through the liberalization of the price limited by the state.

- find alternatives. that can be used instead of rice consumption so as not to affect the growth of food According to the daily requirements of the actual need Seminars and conferences aimed to rationalize consumption, especially of rice product

Fourthly \ maintain inventories strategic which consists of the official national food reserves, stocks held by production units, farmers and agrarian companies. Maintain inventories food aims to install commodity prices, encouraging farmers to improve their production without fear of crises and fluctuations that negatively affect their income, the continuity of consumption because of seasonal production and stockpiling reserves that limits monopolies sector. International Food and Agriculture Organization have identified the size of the strategic inventories by 17% of the annual volume of consumption. (Food and Agriculture Organization, 1995)

Fifthly \economic openness to the neighboring countries and the world through:

- Policies of Foreign Trade for exports, including the removal of the low price to the price of export earnings allocated to foreign currency exchange so that no exchange of cash transactions in all price and evaluation of export earnings unified exchange applicable to the commercial banks (Ali and Abdel-Qader, 1990)

- Focus on quality, consistency, reduce taxes and food manufacturing processing to facilitate the process of two-way trade came as the World Trade Organization WTO and thus competitiveness by local agricultural production

- Economic Openness requires to address the problem of low economic activity in Iraq, which reached 50% in 2006, which means that there is unemployment reached

28% in 2003 fell to 18% in 2006, a relatively high percentage compared with the world average (6.6% in industrialized countries and 4.7% in Japan in 2004) (International Monetary Fund, 2005). On the other hand, underemployment address (and emerging among the population aged 15 years and over due to lack of working hours), which amounted to 38% in 2006 in Iraq.

CONCLUSIONS AND RECOMMENDATIONS

1. Felling planted rice crop by 50% areas for the period 1950-2013 compared with an increase of the population by more than five times and this is due to a number of reasons to be addressed and in which more than two provinces involved and in terms of importance, namely:

- or lack of mechanization -Little
- Little or no water for irrigation
- Fear of Farmers of non-arrival of water to farms
- Do Provide improved seeds and certified farmers and the adoption of the inventory of the previous years
- Leave the land because of immigration and provide rural jobs outside the agricultural sector for the family
- Lack of incentives and support from the agricultural bodies, but in the cultivation of the crop such as credit and the provision of electricity and backup material for machinery and equipment.

2. In spite of increasing the productivity of rice in recent years, more than three times, but it will not live up to what we have reached the world group in order to share the reasons for which more than two provinces must be taken into consideration and addressed, namely:

- Do not use enough technology of mechanization, fertilizers, pesticides and seeds of high productivity fit with the conditions in Iraq and shared by all the provinces of the study sample

- Adoption farmers on what they inherited from the customs and traditions of their parents led to a lack of follow-up data of Science and Technology

- Do not use crop rotations to stimulate the fertility of the soil and the lack of a plan for Land Reclamation, thus increasing salinity.

- there Notes field for rice adopted by the little peasants and farmers and agricultural companies where production increased to more than 1,000 kg \dunem and must be the other farmers to take advantage of them.

- Do not an economic assessment of the fields with a high output in order to honor the owners and motivate them to higher productivity.

3. For low light areas and low productivity, the production of rice fell by half during the research period, compared with the quantities available for consumption and thus increase the food gap for a range of reasons involving more than two provinces, namely:

- Do not use modern technology
- Weakness of Irrigation methods and the spread of salinity and lack of irrigation networks and puncture

protected with failure of follow-up and supervision of offenders

- Lack of full coordination between the needs of agriculture mechanization and machinery commensurate with the soil of Iraq, as well as electrical generators and agricultural pumps and between industry and agriculture needs of raw materials required for manufacturing

- The adoption of the primitive methods in the cultivation of rice crop

- Do not a fair internationally for the distribution of waters of the Tigris and Euphrates, which requires a political solution to this big problem which affected negatively on production

4. Increased loss and waste in the use of water in the cultivation of rice in addition to the lack of rationalization; The receipt of loans by some farmers for the cultivation of rice and used for non-agricultural purposes, because of favoritism and nepotism and lack of follow-up (the existence of administrative and financial corruption)

5. Increasing the size of the food gap for the rice crop till 2015, which requires the intervention of the state in dealing with the failure by improving infrastructure and determine the price before the start of planting date or launch price according to supply and demand, adequate water supply, disbursement of loans by the banks on schedule to be utilized in saving rice cultivation requirements, the establishment of specialized agricultural companies in the cultivation of the crop.

6. Treatment the problem of water per year and up to 2015 doubled between riparian countries Turkey, Syria, Iran and Iraq.

7. Reduce the volume of consumption of rice

8. Keep on inventories amounting to 17% of the annual volume of consumption

9. Economic opening for the world, even if Iraq had reached self-sufficiency in the production of strategic crops such as rice crop.

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