

## **PRODUCTION AND EMPLOYMENT IN AGRICULTURAL SECTOR IN LIBYA**

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**Abstract.** The article looks into the population, agricultural labour force, agricultural productivity and overall economic activities in Libya between 1990 and 2004. In addition study analyses growth in agricultural productivity. The agricultural labour force in 1990 was 13.7% of total labour force; however, in 2004 it had dropped to 4.6%. This occurred because of people migration from villages to cities, looking for jobs in other economic sectors, since income from other sectors was higher. Other factors included: drop in rain fall, decrease in income reinvestment, and lack of qualified labour force. The growth in agricultural labour productivity in 2004 by 12.7% was observed due to use of new technologies in the agricultural sector.

**Key words:** production, employment, agriculture, Libya

### **INTRODUCTION**

The most important indicator currently used to define character of the economic development is to compare agricultural labour force share with others sectors. The labour force contribution in agriculture is dropping in favour of others economic sectors within this industry and services. The study shows the production, productivity, employment statistics of the total population and the labour force comparisons in different sectors. In addition the study observes the changes in agricultural sector in Libya.

### **OBJECTIVE**

The aim of the study was to analyze the changes of agricultural labour force within this the percentage of rural women employed. In addition it considered developments achieved in the agricultural productivity and reason of decline in agricultural production, and of labour force migration from the rural areas to the cities.

## THE POPULATION AND THE SECTORAL STRUCTURE OF THE EMPLOYMENT

As it can be seen in the table 2, the total labour force in 2004 increased to 2018.0 thousand, during which time village population dropped to 93.2 thousand people. The percentage of agricultural labour force in comparison to the total labour force decreased by 4.6 percentage points. The drop was due to number of factors, namely:

- increase of the marriage number and drop in infant mortality rate due to advancement in health and other services. The fact that more than half of the population in Libya is under 15 years old, and on average a Libyan family possess four children causes that 80% of Libyan population are economical unproductive,
- increase of the percentage of women employed as labour force. In 2006 the increase percentage of women employed in Libya from 15.65% in 1995 to 29.59% in 2006, is a sign that, in spite of percentage of women employed in labour force Libya still experiences a drop in 2006. The table No 1 presents some of the changes in number of women employed in the economic sector, the table covers 1995–2006 period and gives the number of men, women employed in the economic sector and those employed in non-economic sector.

Table 1. The structure of labour force in 1995 and 2006 in Libya  
Tabela 1. Struktura siły roboczej w latach 1995–2006 w Libii

Year Rok	The ratio in economic activity Wskaźnik aktywności ekonomicznej	Population [thousands] Populacja [tysiące]			Population in [%]		
		Male Mężczyźni	Female Kobiety	Total Ogółem	Male Mężczyźni	Female Kobiety	Total Ogółem
1995	Employees in the economic sector	895 187	205 769	1 100 956	65.79	15.65	41.15
	Employees in the non-economic sector	465 550	1 108 970	1 574 520	34.71	84.35	58.85
	Total	1 360 737	1 314 739	2 675 476	100.0	100.0	100.0
2006	Employees in the economic sector	1 117 612	518 171	1 635 783	60.48	29.59	45.45
	Employees in the non-economic sector	730 435	1 233 060	19 634 495	39.52	70.41	54.55
	Total	1 848 047	1 751 231	3 599 278	100.0	100.0	100.0

Source: Arab Organization for Agricultural Development, "Arab Agricultural Statistics, Year Book", Vol. 25.  
Źródło: Arabska Organizacja do spraw Rozwoju Rolnictwa, „Arabska statystyka rolnicza, roczne wydanie”, Vol. 25.

It can be seen that total number of people active working in both sectors increased, especially males. Employed males to females ratio has been changed, more females are occupied.

## AGRICULTURAL LABOUR FORCE IN COMPARISON TO TOTAL LABOUR FORCE

The population ratio employed in the agriculture is an important factor in determining changes in agricultural productivity. Table No 2 shows percentage of agricultural labor force in the total labor force in Libya. In spite of the fact that total agricultural labor force has dropped from 155 thousand, in 1990, to 93.2 thousand in 2004, percentage wise it has dropped from 13.7% in 1990 to 4.6%, in 2004. The drop is due to the migration of agricultural labor force to others economic sectors, since salaries in the agricultural sector are lower. Another factor is that being employed in non-agricultural sector constitutes a guarantee for a person and his family; in agricultural sector is more difficult work – less mechanized and more tiresome than in other sectors.

Table 2. Share of the agricultural labour force as a percentage of total labour force between 1990 and 2004 in Libya

Tabela 2. Procentowy udział siły roboczej w sektorze rolnym w stosunku do całkowitej siły roboczej w latach 1990–2004 w Libii

Year Rok	Labour force [thousands persons] Siła robocza [tysiące osób]	Agricultural labour force [thousands persons] Siła robocza w sektorze rolnym [tysiące osób]	Percentage [%] Udział procentowy [%]
1990	1129.0	155.0	13.7
1991	1168.0	157.0	13.4
1992	1209.0	159.0	13.2
1993	1250.0	163.0	13.1
1994	1292.0	176.0	12.9
1995	1033.0	214.0	20.7
1996	1224.0	219.0	17.8
1997	1275.0	226.5	17.7
1998	1339.8	228.3	17.1
1999	1339.8	228.3	17.1
2000	1800.0	108.0	6.0
2001	1853.0	104.0	5.6
2002	1907.0	101.0	5.3
2003	1962.0	97.0	5.0
2004	2018.0	93.2	4.6

Source: Arab Organization for Agricultural Development, “Arab Agricultural Statistics, Year Book”, Vol. 25.  
Źródło: Arabska Organizacja do spraw Rozwoju Rolnictwa, „Arabska statystyka rolnicza, roczne wydanie”, Vol. 25.

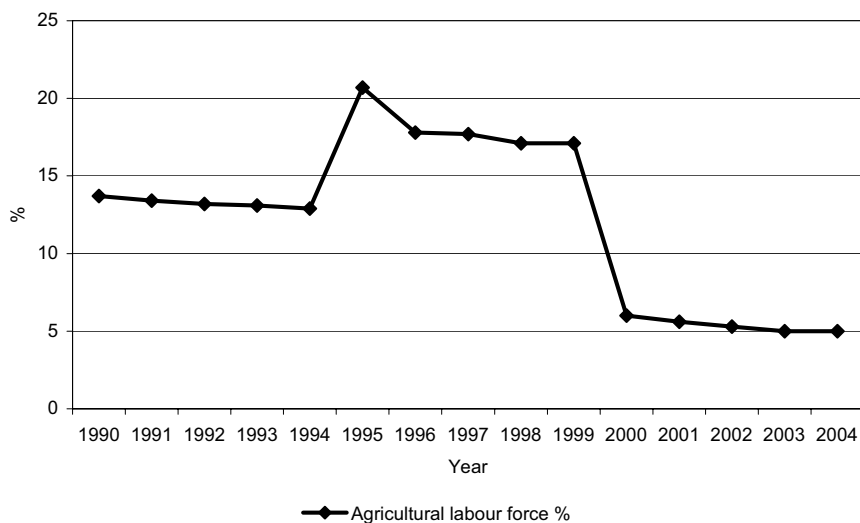


Fig. 1. Share of agricultural labour force as a percentage of total labour force between 1990 and 2004 in Libya

Rys. 1 Procentowy udział siły roboczej w sektorze rolniczym w stosunku do całkowitej siły roboczej w latach 1990–2004 w Libii

Source: Arab Organization for Agricultural Development, “Arab Agricultural Statistics, Year Book”, Vol. 25.

Źródło: Arabska Organizacja do spraw Rozwoju Rolnictwa, „Arabska statystyka rolnicza, roczne wydanie”, Vol. 25.

## SHARE OF AGRICULTURE IN TOTAL GDP

In order to easily see the share of agricultural sector in the national total GDP, the table No 3 presents total production and the agricultural GDP in Libya.

Table 3. Gross Domestic Product and Gross Agricultural Product in Libya between 2000 and 2004 (in million USD)

Tabela 3. Produkt Krajowy Brutto oraz Produkcja Rolnicza Brutto w Libii w latach 2000–2004 (w milionach USD)

Year Rok	Gross Domestic Product – GDP Produkt Krajowy Brutto – PKB	Gross Agricultural Product – GAP Produkcja Rolnicza Brutto – PRB	GAP/GDP [%] PRB/PKB [%]
2000	32 944.0	2 666.0	8.09
2001	28 589.0	2 314.0	8.09
2002	19 360.0	1 062.0	5.49
2003	24 358.0	1 066.0	4.38
2004	27 609.0	1 184.0	4.29

Source: Arab Organization for Agricultural Development, “Arab Agricultural Statistics, Year Book”, Vol. 25.

Źródło: Arabska Organizacja do spraw Rozwoju Rolnictwa, „Arabska statystyka rolnicza, roczne wydanie”, Vol. 25.

Ratio of agricultural sector in the total national GDP does not exceed 10% since 2000. Table No 3 shows drop in the percentage of agricultural sector in total national GDP. The table shows that while there has been insignificant dropped in GDP, there has been a significant drop in gross agricultural product, from 2666 million dollars in 2000 to 1184 million dollars in 2004. This, on the one side, is a result of incapable of the agricultural sector to guarantee fulfilment of people's wishes, and on the other side, due to decrease in food demand and failure to meet that demand, in spite of the increase in the agricultural productivity.

Important elements contributing to decrease in share of agricultural sector in the total local GDP are, among others:

- drop in income greater in the agricultural sector in comparison to others sectors, this encourages migration from the countryside to the cities, and this in turn affects achievement of GDP in the agricultural sector.
- decrease in qualified agricultural labour force.
- lack of the water and rainfalls.
- drop in income reinvestment.

## LABOUR PRODUCTIVITY IN THE AGRICULTURAL SECTOR

The labour productivity in the agricultural sector has increased, this increase of the agricultural labour force productivity is due to more investment and employed of modern technology. The growth of gross agricultural product increase at a faster rate than labour force, therefore the rate of agricultural productivity is increased too.

Table 4. Changes in Gross Agricultural Product, labour force, agricultural productivity between 1991 and 2004

Tabela 4. Zmiany Produktu Rolniczego Brutto, siły roboczej, wydajności produkcji rolniczej pomiędzy latami 1991 a 2004

Year Rok	Gross Agricultural Product [million USD] Produkt Rolniczy Brutto [miliony USD]	Labour [thousands persons] Siła robocza [tysiące osób]	Agricultural productivity [USD] Wydajność produkcji rolniczej [USD]
1991	1 712.4	157.0	10.9
1992	1 845.6	159.0	11.6
1993	2 039.0	153.0	12.5
1994	2 735.0	176.0	12.9
1995	2 759.0	214.0	12.9
1996	2 154.5	219.0	9.8
1997	2 357.0	226.5	10.4
1998	2 669.0	228.3	11.7
1999	3 085.0	228.3	13.5
2000	2 879.0	108.0	26.6
2001	2 662.0	104.0	25.6
2002	1 272.0	101.0	12.6
2003	1 067.0	97.0	11.0
2004	1 184.0	93.2	12.7

Source: Arab Organization for Agricultural Development, "Arab Agricultural Statistics, Year Book", Vol. 25.  
Źródło: Arabska Organizacja do spraw Rozwoju Rolnictwa, „Arabska statystyka rolnicza, roczne wydanie”, Vol. 25.

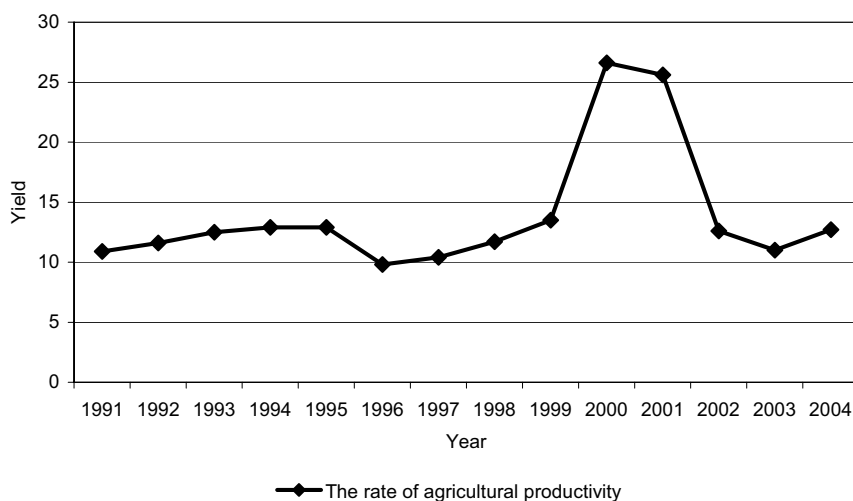


Fig. 2. Changes in Gross Agricultural Product, labour force, agricultural productivity between 1991 and 2004

Rys. 2. Zmiany Produktu Rolniczego Brutto, siły roboczej, wydajności produkcji rolniczej między latami 1991 a 2004

Source: Arab Organization for Agricultural Development, "Arab Agricultural Statistics, Year Book", Vol. 25.

Źródło: Arabska Organizacja do spraw Rozwoju Rolnictwa, „Arabska statystyka rolnicza, roczne wydanie”, Vol. 25.

## AGRICULTURAL PRODUCTION

This covers the total quantity of cereals crops per given area, while productivity means the quantity of crops in tons per hectare. Production and productivity for any given crop determines the economical success. The lower production level is, the lower productivity and economic success are. Table No 5 shows the quantity production per year, per given area, and the yield between 1991 and 2004. From the table it can be seen that cereal production in all the covered years fluctuates, this is because of the fluctuation of and shortage of rainfall.

The total production of cereals in Libya does not mean the demand and in addition the yield per hectare is much lower than the world standards, for this reason the Government has tried to improve this situation in a number of ways, namely:

- introduction of state farms, where irrigation is used to water the plants, and silos are built to gather for the harvested cereals,
- research and introduction of better quality seeds, with higher survival rate, high yields and high resistance to bad conditions, e.g. shortage of water, salty water, etc.,
- improve the efficiency of agricultural services,
- introduction of modern technology in agriculture and use of fertilizers and manure, proper use of manure taking into consideration the soils and crops, and type of water or irrigation,

- training of farmers in modern ways of farming, as well as application of different sprays, used to fight parasites or treat plants,
- using land in accordance with their best suited crops, arrived at from laboratory tests.

Table 5. Agricultural area and production in tones of cereals between 1991 and 2004 in Libya  
Tabela 5. Produkcja rolnicza oraz obszar zasiewów zbóż i plon zbóż w Libii w latach 1991–2004

Year Rok	Agricultural production [1000 MT] Produkcja rolna [megatony]	Area of cereals [1000 ha] Powierzchnia zbóż [1000 ha]	Yield [kg/ha] Plony [kg/ha]
1991	298.0	421.0	707.8
1992	298.0	454.0	656.4
1993	300.7	451.8	665.5
1994	226.6	200.7	1129.4
1995	145.8	269.8	540.1
1996	161.8	197.7	818.5
1997	181.1	146.2	1238.8
1998	255.8	180.2	1419.5
1999	377.8	349.8	1080.0
2000	340.3	279.3	1219.0
2001	286.0	238.5	1200.0
2002	296.4	282.8	774.0
2003	296.4	282.8	774.0
2004	296.4	282.8	774.0

Source: Arab Organization for Agricultural Development, "Arab Agricultural Statistics, Year Book", Vol. 25.  
Źródło: Arabska Organizacja do spraw Rozwoju Rolnictwa, „Arabska statystyka rolnicza, roczne wydanie”, Vol. 25.

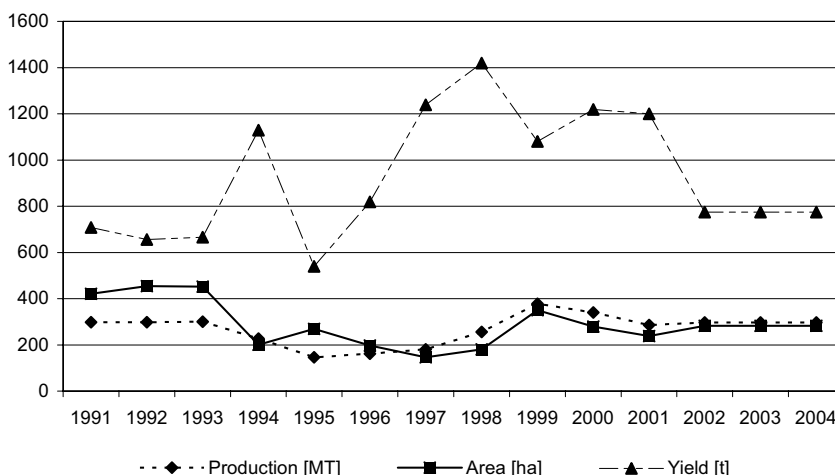


Fig. 3. Agricultural production, area and yield of cereals in Libya between 1991 and 2004

Rys. 3. Produkcja rolnicza oraz obszar zasiewów zbóż i plon zbóż w Libii w latach 1991–2004

Source: Arab Organization for Agricultural Development, "Arab Agricultural Statistics, Year Book", Vol. 25.

Źródło: Arabska Organizacja do spraw Rozwoju Rolnictwa, „Arabska statystyka rolnicza, roczne wydanie”, Vol. 25.

## **MIGRATION FROM AGRICULTURAL SECTOR**

The most important factor affecting agricultural productivity is the migration of agricultural workers to the cities searching jobs which offer better wages. Movement of population to the urban areas and villages which are still developing to become the towns is other factor. Very important is the migration of the young and educated people from villages to cities.

The issue of the movement of the population to the cities is due, in most parts, is the fact that the services offered in the cities are better as well as other opportunities that the countryside cannot offer. This trend could be reversed by investing in rural areas. The investment can include agro-tourism, which should help move people and money to the villages, creating employment and attractiveness of the countryside. Other incentives include increasing the prices of farm products, or government subsidies to the prices, hence income to the farms and farm labour. Mechanization also, in most of the agricultural field this trend could have changed. Therefore, in the future, there is a chance that the migration of people from rural areas to towns will decrease.

## **THE AGRICULTURAL WAGES**

The agricultural wages and salaries are important elements affecting agricultural productivity. In Libya salaries in agricultural sector, compared to the other sectors, are lower. This gives rise to movement of employees from agricultural sector in search of higher wages outside.

Average wages in the agricultural sector are small in comparison to other sectors and that affected the farmers and moved them to the other sectors from villages to the cities.

## **CONCLUSIONS**

Study compares agricultural labour force to the total labour force in Libya in the period between 1990 and 2004, results show that there has been decrease in agricultural productivity in recent years, in particular 2004, this was brought about by drop in agricultural manpower, coming as a result of movement of workers to other sectors offering higher wages and benefits. In addition, work in the agricultural sector is harder than in other sectors. The study has also shown percentage of the agricultural gross product in total GDP, data shows that there has been decrease in average salaries in the agricultural sector compared with others sectors. The decrease also come about as a result of lack of qualified manpower in the agricultural sector, lack of the water and unpredictable rains fall, and low returns on investment. Agricultural productivity is, however, in a good situation in Libya, for example, the rate of growth of wheat production volume stands at 12% per year, this has come about due to use of modern agricultural productivity technologies. Cereals in general have also been covered showing fluctuation in production and yield in years between 1991 and 2004.



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## PRODUKCJA I ZATRUDNIENIE W SEKTORZE ROLNYM W LIBII

**Streszczenie.** Badanie dotyczyło liczby ludności, siły roboczej w sektorze rolniczym, produktywności rolnictwa oraz działalności gospodarczej w Libii w latach 1990–2004. Dodatkowo przeanalizowano również rozwój wydajności rolniczej w okresie objętym badaniem. W 1990 r. udział siły roboczej zatrudnionej w rolnictwie w stosunku do całkowitej siły roboczej w Libii wynosił 13,7%, jednak w 2004 r. udział ten spadł już do 4,6%. Było to spowodowane migracją ludzi ze wsi do miast w poszukiwaniu lepszych płac w innych sektorach, zmniejszoną ilością opadów, spadkiem ponownego inwestowania dochodów oraz brakiem wykwalifikowanej siły roboczej w sektorze rolniczym. W 2004 r. odnotowano także wzrost wydajności siły roboczej w sektorze rolnym o 12,7 punktów procentowych, co związane było z wykorzystywaniem nowoczesnej technologii rolnej.

**Słowa kluczowe:** produkcja, zatrudnienie, rolnictwo, Libia

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