Future of agricultural manpower

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Abstract. This chapter is divided into six sections: (1) characteristics of agricultural manpower; (2) wages and productivity; (3) migration and its effects; (4) mechanization and manpower; (5) manpower supply and demand; and (6) the future of agricultural manpower.
It is found out that the highest percentage of the Egyptian manpower (47%) is engaged in the agricultural sector; the ratio of the young workers (under 11 years old) in agriculture is greater than in other sectors;
The highest illiteracy percentage (77%) is found among the agricultural workers in rural areas (90% among females versus 63% among males). About 85% of the workers in the rural areas are engaged in the private sector, 58% of the agricultural manpower (4,3 million) work for the family for free in rural areas, and 16% of the agricultural manpower are hired workers.
The ratio of the female permanent workers in rural areas is relatively high compared to urban areas because of the family free work.
It has also come out that the annual increase in wage standards does not correspond to the increase in the prices of foodstuffs and services. A clear decline in the migration flow from rural to urban areas has been detected due to the similarity of economic levels in the two areas and the improvement of services in the rural areas. In the early 1990s, there has been an increase in the number of the returning immigrants from Iraq following the end of the Iraq-Iran War and the Gulf War. This led to a relative freeze of the nominal wages of agricultural workers. Wages remain relatively unchanged and a decline in real wages can be observed as well as the spread of unemployment in agriculture.
Meanwhile, there has been no obvious effect of mechanization on the demand of manpower for major agricultural crops.
The current agricultural work amounts to about 106,343 thousand working days. However, the agricultural labourer works only about one third of the agricultural year, i.e., 113 days unevenly distributed throughout the year.
Hence, agricultural workers undergo three forms of unemployment: seasonal, masked and traditional; the latter is estimated to be about 1.4 million labourers.
The economic reform policy has a negative impact on low incomes as a result of the increasing prices of commodities and services. It also raises sharply unemployment rates in the agricultural sector. This directly results from population growth and the deceleration of job opportunities abroad.

Keywords. Manpower – Hired labour – Remuneration – Productivity – Rural-Urban migration – External migration – Unemployment – Disguised employment

Résumé. *Ce chapitre est divisé en six sections : (1) les caractéristiques de la force de travail agricole ; (2) les salaires et la productivité ; (3) l'exode rural et ses effets ; (4) la mécanisation et la force de travail ; (5) l'offre et la demande de la force de travail ; (6) l'avenir de la force de travail agricole.*
La main-d'oeuvre agricole représente 47% de la force de travail total en Egypte, avec un taux de femmes et de jeunes (moins de 11 ans) plus élevé que dans les autres secteurs. Le taux d'analphabètes est de 77% parmi les travailleurs agricoles dans les zones rurales.
La force de travail familiale représente 4,3 millions (soit 58%) de la main-d'oeuvre agricole dans le monde rural, tandis que la main-d'oeuvre salariale ne représente que 16%. L'augmentation annuelle de la main-d'oeuvre agricole salariale ne correspond pas à l'augmentation des prix des produits alimentaires et des services. L'augmentation importante des salariés réels est le résultat de la réforme économique.
Par ailleurs, on a observé un ralentissement de la migration de la campagne vers la ville, dû à l'amélioration des niveaux de services dans le monde rural. Au début des années 1990, on note le retour d'un nombre important des travailleurs émigrés en Iraq, suite à la guerre du Golfe. Ceci a causé un gel des salaires nominaux des travailleurs agricoles et un léger déclin des salaires réels.
La mécanisation des travaux agricoles n'a pas eu des effets significatifs sur la demande de la main-d'oeuvre agricole pour les principales cultures. Les besoins actuels en travail agricole sont de 106 343 000 journées de travail. Toutefois, le travailleur agricole est occupé pendant environ 1/3 de l'année agricole, soit 113 jours, distribués tout au long de l'année. Les travailleurs agricoles connaissent les différents types de chômage : le chômage saisonnier, le chômage déguisé et le chômage traditionnel. Ce dernier est estimé à 1,4 millions de travailleurs.
Les politiques de réforme économique ont un effet négatif sur les bas revenus. Elles augmentent fortement le taux de non emploi dans le secteur agricole. Ce qui est aussi dû à la croissance démographique, la régression des offres d'emplois à l'étranger.

I – Introduction

Economic problems arise when means of meeting needs, i.e. resources, become scarce. In other words, problems occur when the equilibrium between human resources on one hand and natural resources on the other is disturbed. Natural resources are not usually an advantage; rather, efforts should be exerted to get them. Consequently, the economic value of these resources depends on the relevance of the human factor or human power to the economic resources. Human society is the container that includes the productive manpower on one hand, and the other groups on the other. Consequently, a high percentage of the productive manpower in the national economy implies an increase in production and a high standard of welfare. However, considering various economies, the size of manpower and its percentage in total population—as well as its social, economic and demographic characteristics—vary according to the stage of growth and development. On the other side, the age structure of the population affects directly its contribution to the economic activities. Also, females' participation in manpower is less than males' due to the nature of their function in a traditional society. The percentage of female population participating in manpower varies according to the environment because of the differences between rural and urban areas with respect to the nature of the work, the division of labour within economic activities and the prevailing traditions.

In addition, the impact of different forms of migration on the structure of manpower and its distribution in the national economy cannot be neglected (Abdul Latif et al. 1988).

The economic reform of Egyptian agriculture has begun during the second half of the 1980s. The first half of the current decade is regarded as an initial stage for an intensive application of structural adjustment and stabilization programs. The economic reform of Egyptian agriculture depends mainly upon three pillars : liberalization, privatization and social liberation through reconsidering the relationship between landlords and tenants of arable lands. Undoubtedly, these changes will greatly affect the future of agricultural manpower quantitatively and qualitatively. Studying the present features of agricultural manpower, its distribution, its relation with mechanization and wages, and the effect of applying modern technology will be of great importance in forecasting the trend for future manpower. Therefore, this chapter will deal with the following topics:

1) the characteristics of agricultural manpower,
2) wages and productivity,
3) migration and its impacts,
4) manpower and mechanization,
5) supply and demand of the agricultural manpower,
6) the future of Egyptian agriculture.

II – The Features of Agricultural Manpower

1. The Development of Agricultural Manpower and its Relative Contribution to the National Manpower

The Egyptian population has steadily increased from about 36.6 million (CAMPAS 1991) in 1970 to 48 million in 1986, reaching 53 million in 1988. Consequently, there has been a steady increase in the size of manpower. *Table 2* shows that the age group of more than six years old reaches 39 million in 1986, constituting 80% of the total population. This number includes 25.5 million unemployed labour, 8 million males and 17.5 million females and constitutes 66% of the manpower. The table also shows that the working population represents 13.4 million (12 million males and 1.4 million females), i.e., 34% of the manpower according to 1986 figures.

The total employment in the Egyptian economy has increased from about 7.6 million workers in 1966 to 13.4 million workers in 1986 with an average increase of 0.3 million workers annually. While the agricultural employment has increased from 3.7 million workers in 1966 to 4.6 million workers in 1986, with an annual average increase of 0.03 million workers annually.

The agricultural manpower has declined as compared to the total manpower implying that the agricultural sector provides limited job opportunities compared to the other economic sectors. In 1966, the agricultural manpower constituted about 51% of the total manpower, but in 1976 it declined to 43%, and in 1986 to 36%. These data available from the *Annual Statistics Book* of the Arab Republic of Egypt (ARE) indicate that the relative size of agricultural manpower is decreasing. They differ from the data of the October 1988 Round.

2. Classification of Agricultural and Non-Agricultural Manpower According to Sex and Age

Table 3 indicates that the total manpower in Egypt is about 17.3 million and that the majority of workers (about 47%) are engaged in the agricultural sector. The other percentages are: 17% (services), 13% (industry), 5% (construction), and about 18% for the other economic activities.

Manpower consists mainly of an age group of 12–64 years old (94%). Those below twelve years constitute 3% and those above sixty-four constitute 3% of the total manpower. If a comparison is to be conducted on an age basis, a lower percentage of the 12–64 age group will be obtained for the agricltural sector compared to other sectors: 90% (agriculture), 97% (industry), 98% (services), 99% (construction), and 96% for other economic activities.

This indicates that the percentage of age groups below 12 and above 64 is higher in agricultural activities than in non-agricultural activities. The relatively high percentage of the young (6%) and the old (4%) in agricultural activities may indicate that the agricultural work does not necessitate sophisticated technical skills and that it provides job suitable for both young and old people.

Table 4 shows that females engaged in agriculture in rural areas represent 7,458 thousand, i.e., about 50.4% of the total agricultural labour force in rural areas. The percentage of females is relatively high because most females practise agricultural work at home for free and this kind of work does not require high technical skills. The table also shows that the percentage of males working in non-agricultural activities is extremely high: 99% (construction) and 81% (services).

3. Classification of Rural Manpower in Terms of Sex and Education

Illiterate workers in rural areas amounts to 65% of the total number of workers (10,690 thousand), while in urban areas it is estimated to be 28% of the total number of workers (66,320 thousands). The highest percentage of illiterates is found in the agricultural sector in rural areas (77%) followed by non-agricultural sectors. Only 11% of workers in agriculture in rural areas can read and write: 8% have recieved primary education, 4% are holders of secondary education certificates.

The lowest percentage of illiterates (20%) is found in the sector of services in rural areas.

Classifying manpower according to sex and education reveals that the percentage of illiterate females in agricultural activities is quite high: 90% against 63% for males. It also reveals the low ratio of females who can read and write (5% against 17% for males). Females with primary education are about 4% against 12% for males, and those who are holders of secondary or university certificates represent an insiginificant percentage against 1% for males.

Obviously, most female holders of secondary or university certificates in rural areas work mainly in non-agricultural activities. The number of jobs offered is 246 thousand (industry, services, construction, mining, electricity, trade, transportation and finance), while it reaches 56 thousand in the agricultural activities.

4. Distribution of Manpower in Agricultural Activities by Occupation

Table 5 shows that the structure of total manpower is as follows: 47% are engaged in agriculture, 21% in industrial production, 11% in educational and technical activities, 8% in sales, 6% in clerical work and 6% in services. The table also shows that within the agricultural sector, cultivation is the main job since it

constitutes 97% of the total agricultural manpower (8,095 thousand), followed by industrial production (1.4%), scientific and technical jobs (0.7%), clerical jobs (0.4%) and services (0.3%). Meanwhile, production in the industrial sector is the most job providing activity (76%), followed by the scientific and technical activities (8%). In the sector of services, scientific and technical jobs prevail (44%) followed by services (21%) while in construction production activities constitute 85%.

5. Distribution of Manpower Among Private and Public Sectors

Table 6 indicates that distribution of manpower in different sectors is as follows: 74% (12.8 million) in the private sector, 17% in the governmental sectors and 8% in the public sector. In rural areas, about 85% of the rural manpower (10,915 thousand) work in the private sector. This is due to the fact that most workers in rural areas as engaged in agriculture and have properties of their own. Females constitute 46% (4.3 million) of the total rural manpower in the private sector. Meanwhile, 5,5% of the total manpower in urban areas work in the private sector out of which 22% are females. It can be noted that the percentage of working females in the private sector is greater in rural areas than in urban areas. This is due to the fact that most women, beside undertaking some agricultural house work, help in farm work. On the contrary, in other sectors (governmental, public, investment and foreign sectors) the percentage of females is greater in urban areas that in rural areas as a result of the relatively high standard of education and women's participation in jobs in urban areas.

6. Working Relations of the Agricultural Manpower

Table 7 indicates that in rural areas about 4.7 million people work to help their families on the farm. This number constitutes 43% of the total manpower against 9% only in urban areas. Also, the percentage of females helping their family for free in the rural areas amounts to about 71%; most of them do some agricultural house work.

Hired labour in rural areas was estimated at 33% of the total manpower among which 15% are females and 85% are males. This figure is smaller than that for urban areas which reaches 71%. *Table 7* also indicates that employers in rural areas are 18% (20% of which are females and 80% males). This figure is greater than that of urban areas which is estimated to be 11% of the total urban manpower out of which 9% are females and 91% males. As for those who work for their own, their percentage is about 6% in rural areas (37% females and 63% males) and 9% in urban areas (17% females and 83% males).

Table 8 shows that in rural areas about 7.5 million males work in farm activities out of which 4.3 million (58%) work to help their family on the farm, while females helping on the farm represent about 72%. The table also shows that hired labour in agricultural activities in rural areas is about 16% of hired manpower, and that females constitute about 21% of the total hired manpower.

Employers in agricultural activities in rural areas represent about 23% of the total manpower out of which females are about 21%. Those who work for their own in rural areas are estimated to be 3% of the total agricultural manpower.

7. Work Stability in Agricultural Manpower

Table 9 shows that permanent employment is the dominant form in both rural and urban areas (82% and 88% respectively). In the rural areas, there are about 3,982 thousand permanent female workers representing about 44% of the total permanent employment against 26% in urban areas. This is due to the fact that in rural areas, most females are engaged in agricultural work to help their families. The table also shows that temporary jobs in rural and urban areas represent 16% and 13% respectively. Temporary jobs for female in rural areas are about 24% of the total temporary workers compared to 9% in urban areas.

Seasonal work for males represents 1% in rural and urban areas. But female seasonal workers in rural areas are about 69% and in urban areas 25% of the total seasonal manpower. Temporary work represents 1% in rural areas out of which 21% are females. In urban areas, temporary work represents 2% out of which 2% are females.

In this sense, it can be said that the Egyptian population have steadily increased. This resulted in a steady increase in manpower which reached a total of about 17.3 million. The majority of this manpower (47.6%) is engaged in the agricultural sector. The 12–64 age group constitutes most of Egyptian manpower (94% of the total manpower). However the share of this age group is smaller in agricultural activities than in non-agricultural activities. This is due to the fact that agriculture does not require high technical skills. This also justifies the high ratio of females in agricultural activities, beside the fact that most females do some agricultural house work for their families for free.

High illiteracy percentage, especially among females, has been noticed in the agricultural sector. And it is quite obvious that in rural areas most of the females with middle or high education work mainly in non-agricultural activities.

In addition to what has been said, a large percentage (85%) of the agricultural manpower in the rural areas works in the private sector which is mostly justified by the fact that people cultivate their own properties in rural areas.

In rural areas, the percentage of females in the private sector surpasses that of urban areas due to the fact that, in addition to house work, they help in farm work. However, in the other sectors (governmental, public, foreign investment), the percentage of females, as a result of the high educational average and women's participation in jobs, is greater in urban areas than in rural areas.

Those working to help their family for free in the rural areas amount to 4.7 million which constitute 43% of the total rural manpower. This percentage is immensely high compared to that of urban areas. The ratio of rural females working to help their family amounts to about 71% consisting mostly in agricultural house work. The hired manpower in rural areas is estimated to be 30% of the Egyptian manpower.

III – Wages and Productivity

The theory of marginal productivity implies that the wage of a worker should be equal to the value of his marginal production according to the principle that the utilization of any production factors should be within the limit ensuring the maximum production with minimum costs. Agrarian wages are mostly seasonal or casual because in most developing countries, and even in some developed countries, agricultural work is seasonal and temporary. Besides, in-kind and in-cash wages in rural areas are usually lower than in cities though working hours are usually more in rural areas.

The interaction between wages, on one hand, and supply and demand on the other, depends on the availability of manpower. It is understood that wages in agriculture increase as a result of the rising living costs due to the continuous increase in the prices of commodities and services in the Egyptian economy in general and the agricultural economy in particular.

The nominal and real wages of agricultural labourers started to rise noticeably since 1974 when the nominal wages moved from L.E. 0.35/day in 1974 to L.E. 5.52/day in 1989. Wages also moved from L.E. 0.35/day in 1974 to L.E. 1.0/day in 1987. Then real wages tangibly declined till it reached L.E. 0.62/day in 1989. The rise of nominal and real wages up to 1988 is due to the rise in the price of commodities and services[5] which was reflected in the cost of living (Abou Mandour 1992).

During the past few years, the annual increase of wage records did not keep up with the annual increase of prices of food commodities and services. Hence, both effective and cash wages in Egyptian agriculture were greatly affected. The considerable decline in real wages from 1986 to 1989 was a result of the Economic Reform in Egypt. During that period, state control on agricultural activities was weakened, and the prices of inputs, industrial goods and energy and subsidized consumer goods were raised.

In addition, some subsidized commodities were supplied into the free market through the private sector. Also, attempts have been made to make the management of the public sector units more flexible. And the government has adopted some policies aiming at increasing state resources and decreasing public expenditure which resulted in the decline of real wages but not of nominal wages.

The study conducted by Abou Al-Wafa et al. (1988) outlines that the average daily per capita wages in agriculture (males, females, children), at a sample level and according to the 1984/1985 data, were 5.5 L.E./person, 3.7 L.E./person and 2.6 L.E./person respectively, while the daily wages of the non- agricultural workers (males, females) were 7.3 L.E./person and, 5.3 L.E./person respectively. Results of this study reveal that the average daily wages in non-agricultural activities are higher than those of agricultural activities.

IV – Migration and Its Impacts

1. The Rural–Urban Emigration

Data from the Central Agency for Public Mobilization and Statistics (CAPMAS) state that population growth in urban areas is relatively higher than in rural areas. The ratio of urban population was 28.2% in 1937, and increased to 43.9% in 1986. However, in the 1976–1986 Census, a clear recession has been observed in the flow of rural–urban emigration. The population ratio of the urban areas has slightly changed during the period 1976–1986 from 43.8% to 43.9%. This recession may be due to narrowing the gap of economic level between rural and urban areas which resulted in similarity in job opportunities and wages. It may also be due to the improvement of the services in rural areas and to the possibility of having modern houses built on the agricultural lands at relatively low prices which encouraged rural people, especially the educated ones, to stay in their areas. We should also take into account that the migration of manpower to the Gulf States has been more important after 1973 because of the great increase in oil revenues. It can also be said that the increasing population pressure over the agricultural land is considered to be a major push factor. It must be noted that although the agricultural sector had a surplus of manpower for a long time, the emigration of manpower to foreign countries resulted in a decline of manpower supply in the local market, and the increasing ratio of the working female force instead. Internal migration plays a great role in the redistribution of population among urban and rural areas and between various governorates. Moreover, external emigration has indirectly led to the increase of agricultural manpower wages due to the seasonal transfer of agricultural manpower to the construction sector that enjoyed a great increase in wages.

The social changes that accompanied the migration are the decline of the agricultural manpower paid in-cash, the social diversity among hired labourers, and the increasing speculation over the land. In addition, the individual mobility has influenced the margins between classes and changed the traditional social roles of the rural women. It also resulted in some disturbance in the rural family instability because of the absence of Egyptian fathers.

2. Temporary and Returning External Migration

Temporary external migration has strikingly increased after the October 1973 War which resulted in a great increase in oil prices and consequently in the national income of oil exporting countries. Accordingly, these countries speeded up public and private expenditure for various projects, especially those of the infrastructure.

So, the demand for Egyptian manpower increased because of the shortage of local manpower abroad.

The response of the migration from Egypt to Arab countries was strong for two reasons: i) the high wages in the oil countries compared to those at home (attractive factor); ii) insufficient wages in Egypt for meeting the basic needs of most of the population.

The main characteristic of the temporary migration phenomenon during the past twenty years is that there has been a great demand from Arab countries for unskilled manpower.

In the light of these circumstances the share of rural areas in migration was very notable since the total number of immigrants in 1987 was estimated to be 1,964 thousand out of which 822 thousand (42%) were from rural areas.

Noticeable changes have occurred in the agricultural manpower market which had great effect in reducing the working hours and increasing the nominal and real wages of the agricultural manpower. There

has also been a considerable scarcity in agricultural manpower as a result of external migration on one hand, and the professional mobility from agriculture to constrution and commercial activities on the other.

A substantial increase has been seen in the number of workers in construction activities in the rural areas during the period 1976–1987 as a result of the attempt to benefit from the Egyptian expatriates remittances in the housing expansion in rural areas. This has resulted in a rise in the prices of agricultural land taken off for building, in the diversity of non-agricultural activities in rural areas, in the alleviation of poverty intensity, and in the improvement of the rural family standards. It has also resulted in involving women to play an active role outside the house, which was confined to men before.

The total number immigrants returning to Egypt from 1974 to 1988 amounted to 1,474,622 people of whom 51% worked in rural areas. In the early 1990s, the number of returning immigrants from Iraq increased after the end of the Iraqi-Iran War and the Gulf War, since Iraq was considered the largest market for Egyptian rural manpower. This has resulted in a relative stagnation of the nominal wages of agricultural manpower and noticeable decline in real wages.

V – Manpower and Mechanization

The seventies and eighties have witnessed a rapid growth in the mechanization of Egyptian agriculture and consequently the disappearance of some traditional agricultural equipment such as the traditional plough, the *shadouf* and the *sakia* which were replaced by modern machines. During that period, the power used increased from 1,201 thousand mechanical horses (MH) in 1970 to 6,867 thousand MH in 1989. This rapid increase in power was directly reflected in the use a great number of modern agricultural equipment, especially tractors, irrigation pumps, etc., which substituted the old animal operated tools as illustrated in *Table 10*.

Official data (Abou Madour 1992) state that there has been no obvious influence of mechanization on the demand for manpower for some major crops such as clover and sugarcane which increased in 1989 compared to 1970. The drop in manpower demand was limited to the crops for which working days were decreased such as fruits, vegetables, wheat, beans, summer rice and maize in 1989 compared to 1970.

The study conducted by Abou Al-Wafaa et al. (1988) on productive belts outlines that, among the factors affecting the agricultural manpower, mechanization was of little importance. It was relatively effective only in the rice belt suffering from shortage of manpower in the harvest season which necessitated the use of the machines. This affirms that mechanization has a very limited effect on hired or family manpower in agriculture.

The explanation may be that mechanization is inadequate to perform all the agricultural practices especially in the old lands which constitute the greatest part of the cultivated areas. It implies that manpower is still the main force in performing agricultural operations. Hence, mechanization is more effective in the newly cultivated lands which undergo shortage of manpower and use relatively modern methods of cultivation. A study on the use of the machine-based work and animal-based work in different production belts reveals that the new agricultural belts can absorb additional agricultural resources, especially mechanic work and animal-based work, because of the productive flexibility of both. Most studies on the economic impact of replacing animal-based work by mechanic work have agreed upon the positive impact of this replacement in increasing animal productivity for milk and meat. Meanwhile, most of the studies have outlined that the intensity of mechanization has no impact in increasing the productivity of most crops.

Providing a great number of tractors without having their supplements (spare parts, maintenance centers and well-trained operators) leads to the deterioration of their economic and operational efficiency and also to the increase of wages per hour for mechanic work in comparison with the high rent of the equipment. Hence providing adequate training and technical education in all agricultural activities is very important since agriculture has a crucial need of technicians (tractor drivers, other operators, experienced technicians in electricity, mechanics and maintenance).

It can be said that the change in economic policies (embodied in removing the subsidies, liberalizing foreign trade, free market orientation, changing fuel prices, changing the rate of exchange of foreign cur-

rencies towards the devaluation of the Egyptian pound) will have a great influence on the future of agricultural mechanization in the 1990s. These changes will result in a sharp increase in the prices of agricultural machinery and in its operating, repairing and maintenance expenses. This may lead to a great change in the feasibility of replacing human work by mechanic work under the unchangeable nominal wages and the deterioration of real wages of agricultural labourers. It may also lead to the increase of unemployment in Egyptian agriculture as it will be shown later.

VI – Demand and Supply of Manpower in Egyptian Agriculture

The surplus of agricultural manpower, estimated as the difference between demand and supply, was derived from the data of the Manpower Sample Research in 1988, after excluding the workers of the government and public sectors, taking into account the working days of every individual worker estimated at 280, 188, 159 days/year for males, females, and children, respectively. The available agricultural work was estimated to be 106,343 thousand working days (after converting the average working days of both females and children into that of males).

To estimate the agricultural needs of manpower in 1990, an evalution was made for the number of working days needed to fulfill plant, animal and fish production, for field crops and summer, winter and *nili* vegetables as well as fruits, by calculating the required manpower for every agricultural operation and the adequate timing.

It was found that the required manpower for plant production distributed over the year were: 96%, 64%, 68%, 81% and 69% for field crops, summer vegetables, *nili* vegetables, winter vegetables and fruits, respectively.

The required manpower for animal production was estimated on the basis of common technical standards for both cattles and poultry. While, for fish production, the estimated manpower requirement was derived from the data of the Central Agency for Public Mobilization and Statistics.

It is evident that employment instability for the population in general reflects seasonal fluctuations since the average employment changes from one season to another according to crop rotation. It is quite clear that the peak seasons affect the harvest of one crop and the cultivation of another (e.g., cotton harvested in September and cereals harvested in May, as well as summer crops planted in June and winter crops in October and November). The demand of temporary work during these seasons cannot be ignored in all categories of land holdings.

However, the highest ratio of temporary work is found in more-than-five feddans holdings with less than four family working members.

Agricultural labourers work for about one third of the cultivation year (113 days). But the working days are unevenly distributed throughout the year (e.g., six days in August, seven days/month in January and July, 8 days/month in February, March, April and December, 9 days in July, 11 days in June, 12 days in October, 13 days in May and 14 days in September.

So, agricultural labourers undergo two forms of unemployment : seasonal unemployment which depends on the type of production process in that the demand fluctuates over time, and disguised unemployment in a sense that a great number of workers could be withdrawn without causing any drop in production which means that the marginal product approaches zero in many cases. Masked unemployment is attributed to: shortage of production assisting elements, lack of job opportunities outside the agricultural sector, the spread of small family farms, as well as to the fact that the family is considered as consumer and productive unit at the same time. Masked unemployment is also attributed to the assumption that the individual's share of consumption does not depend on the level of his contribution to production; to the irregularity of agricultural work all over the year which necessitates that a reserve manpower should be provided to participate in the work when needed; and to the scattering of holdings and the lack of cooperation and coordination between the units (Al Essawy 1997).

A third form of unemployment is traditional unemployment. This form exists among both skilled and unskilled workers. It is defined by the lack of job opportunities even though the person is willing to and

capable of doing it within the constraints of the prevailing wages. This form of unemployment emerges when effective total demand is not balanced with the total supply of manpower.

It is well known that females in rural areas are underemployed since there are great differences in employment levels among adult females and adult males in all classes and regions. So, it can be said that 20% of the daily surplus of manpower is not willing to work. By putting this ratio aside, it can be said that traditional unemployment is estimated to be 1.4 million people in the agricultural sector in both rural and urban areas.

VII – The Future of Agricultural Manpower

Accelerating the process of structural adjustment was one of the government's main priorities in its efforts to liberalize Egyptian economy. It is unavoidable that the economic reform program has some negative effects on low incomes due to the increasing prices of some commodities and services. It may also aggravate the unemployment problem especially among university graduates.

The Five-Year Plan (1981/82–1986/87) estimated an increase of manpower up to 1.5 million, based on an average increase of 300 thousand people annually.

A report of the International Labour Organization (ILO) indicates that during the 1990s the reform program will be constantly accompanied by a population growth raising the annual growth of manpower by about 2.5%.

In the light of these estimates, manpower will increase to about 4,540 thousand persons during the 1990s. If the 600 thousand persons, already unemployed, are added, the manpower supply will reach about 650 thousand/year in the 1990s.

This means that 650 thousand job opportunities should be annually created if full employment is to be considered. The spread of small holdings and their tendency towards depending on family manpower in meeting the family needs will lead to higher levels of self-sufficiency, reducing the available job opportunities for hired labour. In addition, unemployment is expected to rise at the same rates of population growth. The present traditional unemployment is estimated—as previously mentioned at about 1.4 million—without seasonal and disguised unemployment. Meanwhile, unemployment in the agricultural sector is expected to increase because of the decline in temporary external migration.

Unemployment has its clear effects on the social, economic and political levels. Nevertheless, manpower should rely on the creation of real job opportunities. The over-crammed-with-jobs governmental and public sectors result in a lower productivity among the employees who then are not fully employed.

This leads to the rise in prices and makes the situation even more difficult because of the unexploited productivity that is wasted in unreal work. It also speeds up the race between wages and the rising prices which result in a deficit in finance and poor working rates.

Low wages received by employees (in disguised employment situation) have a negative psychological effects on the workers in the governmental sector and lead, in turn, to poor performances and a slow down of the rate of growth.

The Egyptian society suffers from the following economic problems:

1) an unbalanced employment structure, i.e., between demand and supply;
2) the failure of some enterprises and difficulties encountered by others which have a negative influence on investment;
3) the unexploited capabilities existing in all sectors;
4 the decreasing demand of manpower due to technological progress aiming at achieving production surplus;
5) the lack of studies on the exact needs of every particular enterprise in different economic activities.

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Table 1. Egypt's Population in Rural and Urban Areas for 1960/1986

(thousands)

Census	Total Population	Rural Population		Urban Population	
		Number	%	Number	%
1960	26 085	16 120	62	9 965	38
1966	30 076	18 043	60	12 033	40
1976	36 627	205 900	56	16 037	44
1986	48 254	27 038	56	21 216	44
1988*	52 827	29 573	56	23 244	44

* Estimated
Source: CAPMAS, 1991.

Table 2. Population Included and Not Included in Manpower and Gender Structure (1986 Census), (6 years old and over)

Demonstration	Males	%	Females	%	Total	%
Included in manpower	11 933	89	1 467	11	13 400	34
Not Included in manpower	8 028	31	17 526	69	25 554	66
Total population	19 961	80	18 993	80	38 954	80
Total population	**24 709**	**100**	**23 545**	**100**	**48 254**	**100**

Source: CAPMAS,1991.

Table 3. Distribution of Egyptian Manpower Among Economic Activities According to Age Groups in 1988

Economic activities	6-12 Years	%	65 Years and Over	%	12-64 Years	%	Total	%
Agriculture	457	6	308	4	7 331	90	8 096	47
Industry	32	2	30	1	2 172	97	2 234	13
Services	13	1	32	1	2 967	98	3 012	17
Construction	2	2	8	8	895	99	905	5
Other activities	28	1	102	3	2 886	96	3 016	18
Total	**532**	**3**	**481**	**3**	**16 251**	**94**	**17 263**	**100**

Source: CAPMAS, 1988.

Table 4. Gender Distribution of Egyptian Manpower (in Rural and Urban Areas) Among Various Activities, 1988

(in thousands)

Eco. activities	Rural Areas						Urban Areas						Total					
	Males	%	Females	%	Total	%	Males	%	Females	%	Total	%	Males	%	Females	%	Total	%
Agriculture	3 696	50	3 762	50,4	7 458	68	229	49	339	53	568	9	3 925	49	4 101	51	8 026	47
Industry	603	66	307	34	910	8	1150	87	175	13	1 325	21	1 753	78	482	22	2 235	13
Services	942	81	214	19	1156	11	1141	61	715	39	1 856	29	2 083	69	929	31	3 012	17
Construction	380	99	3	1	383	4	498	95	25	5	523	8	878	97	28	3	906	5
Other activities	794	79	211	21	1 005	9	1 727	83	353	17	2 080	23	2 521	82	564	18	3 085	18
Total	**6 415**	**59**	**4 497**	**41**	**10 912**	**63**	**4 745**	**75**	**1 607**	**25**	**6 352**	**37**	**11 160**	**65**	**6 104**	**35**	**17 264**	**100**

Source: CAPMAS, 1988

Table 5. Manpower Distribution According to Profession and Economic Activities, 1998

Profession	Economic Activity										Total	
	Agriculture		Industry		Services		Construction		Other Activities			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Scientific + Technical	57	0.7	186	8.0	1310	43.5	63	7.0	318	11	1 934	11.2
Administrative	2	__	40	1.8	77	25.0	15	1.6	62	2.0	196	1.1
Clerical	30	0.4	121	5.4	564	19.0	33	3.6	290	9.6	1 038	6.0
Selling	9	0.1	41	1.8	9	0.2	4	0.4	1292	42.8	1 355	8.0
Services	24	0.3	83	3.7	618	20.5	17	1.9	306	10	1 048	6.0
Cultivation	7 860	97	68	3.0	46	1.5	8	0.9	34	1.0	8 016	46.5
Production	114	1.4	1 693	76	384	12.8	765	84.6	711	23.6	3 667	21.2
Non Identified	__	__	1	__	1	__	__	__	2	__	4	__
Total	**8 095**	**100%**	**2 234**	**100%**	**3 010**	**100%**	**904**	**100%**	**3 015**	**100%**	**17 258**	**100%**

Source: CAPMAS, 1988.

Table 6. Manpower Distribution Among Different Sectors in Rural and Urban Areas,1988

Sector	Rural Areas						Urban Areas						Total					
	Males	%	Females	%	Total	%	Males	%	Females	%	Total	%	Males	%	Females	%	Total	%
Government	1002	82	218	18	1220	11.2	1066	62	649	38	1715	27.0	2067	70	867	30	2935	17.0
Public	324	94	19	6	343	3.1	819	84	154	16	973	15.0	1143	86	173	14	1316	8.0
Private	5052	54	4256	46	9308	85.3	2743	78	784	22	3527	55.0	7795	60	5040	40	12835	74.0
Investment	13	1	__	__	13	0.1	81	86	13	14	94	2.0	94	87	13	13	107	0.6
Foreign	4	1	__	__	4	0.07	18	0.9	2	0.1	20	0.3	22	91	2	9	24	0.3
Other	23	85	4	15	27	0.03	21	0.67	10	0.33	31	0.7	43	74	15	26	58	0.1
Total	6418	58	4497	42	10915	100.0	4748	75	1612	25	6360	100.0	11165	64	6110	36	17275	100.0

Source: CAPMAS, 1988.

Table 7. Types of Work and Distribution of Egyptian Manpower in 1988

(thousands)

Type	Rural Areas						Urban Areas						Total	%
	Males	%	Females	%	Total	%	Males	%	Females	%	Total	%		
Hired	3 081	85	39	15	3 621	33	3 426	76	1 075	24	4 501	71	8 122	47
Employer	1 583	80	400	20	1 982	18	652	91	62	9	714	11	2 696	16
On his own account	412	63	246	37	658	6	484	83	99	17	584	9	1 242	7
For the family, unpaid	1 341	29	3 313	71	4 653	43	188	33	375	67	563	9	5 216	30
Total	**6 418**	**59**	**4 497**	**41**	**10 914**	**100**	**4 750**	**75**	**1 612**	**25**	**6 360**	**100**	**17 276**	**100**

Source: CAPMAS, 1988.

Table 8. Types of work and Distribution of the Egyptian Agricultural Manpower (Rural and Urban Areas) in 1988

(thousands)

Type	Rural Areas						Urban Areas						Total all over the Country					
	Males	%	Females	%	Total	%	Males	%	Females	%	Total	%	Males	%	Females	%	Total	%
Hired	961	79	253	21	1 214	16	100	84	19	16	119	19	1 061	80	272	20	1 333	17
Employer	1 368	79	360	21	1 728	23	104	80	26	20	130	20	1 472	79	389	21	1 858	23
On his own account	133	75	45	25	178	3	12	57	9	43	21	3	145	73	54	27	199	2
For the family, unpaid	1 235	28	3 104	72	4 339	58	83	23	285	77	368	58	1 318	28	3 389	72	4 707	58
Total	**3 696**	**50**	**3 763**	**50**	**7 459**	**100**	**299**	**47**	**339**	**53**	**638**	**100**	**3 995**	**49**	**4 102**	**51**	**8 097**	**100**

Source: CAPMAS, 1988.

Table 9. Distribution of Manpower in Terms of Stability of the Main Work

(thousands)

Degree of Stability	Rural Areas						Urban Areas						Total	%
	Males	%	Females	%	Total	%	Males	%	Females	%	Total	%		
Permanent	4 977	56	3 982	44	8 959	82	4 114	74	1 497	26	5 593	88	14 553	84
Temporary	74	74	20	21	94	1	124	70	52	30	176	2	270	2
Seasonal	38	31	83	69	121	1	16	64	9	36	25	1	146	1
Intermittent	1 323	76	412	24	1 735	16	491	87	73	13	564	9	2 299	13
Total	**6 412**	**59**	**4 497**	**41**	**10 909**	**100**	**4 746**	**75**	**1 612**	**25**	**6 358**	**100**	**17 267**	**100**

Source: CAPMAS, 1988.

Table 10. Evolution of the Main Agricultural Machinery

Years	Tractors				Irrigation Machines (Pumps)				Threshing Machines	
	Less than 25 HP		More than 25 HP		Fixed		Movable			
	Number	Increase % compared to 1978	Number	Increase % compared to 1978	Number	Increase % compared to 1978	Number	Increase % compared to 1978	Number	Increase % compared to 1978
1978	1 882	100.0	29 645	100.0	17 250	100.0	25 840	100.0	15 561	100.0
1984	1 492	79.3	44 520	150.0	20 556	119.2	72 328	201.8	24 815	109.5
1987	1 766	93.3	59 668	201.3	27 851	161.5	147 943	412.8	30 269	194.5
1989	2 356	125.2	70 200	236.8	32 077	214.9	22 001.7	613.9	32 724	210.3

HP = Horse Power
Source: MOALR, Central Department for Agricultural Economics, Survey of Agricultural Machinery.