

Trends of Agricultural Labor Employment in the Egyptian Farming Sector and its Determinants

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Abstract: Due to the growing tendency of both education and favoring urban life and economic activities, relatively old age laborers are maintaining the greater share of Egyptian agricultural labor. This may be unfavorable for adopting modern technology, as old people are mostly reluctant to change. However, unemployment may extend to rural areas as labor returning from Arab oil countries are faced with low demand for small farms due to limited budgets, despite the increasing marginal product of labor and the mostly mechanized and modern technologies adopted by relatively large farms. Expansion of off-farm non-traditional activities may help solving such problem. While small cottage industries are most suitable for women, males may be trained on rural handicrafts.

Key words: Agricultural labor · Marginal productivity · Unemployment · Mechanized operations

INTRODUCTION

The Egyptian rural regions share almost one-half the total population. Although the main economic activity in such regions is of agricultural nature there exists a monotonic tendency toward involvement in nonagricultural activities drawing a remarkably portion of the labor force out of the rural regions. Though such tendency began with the oil boom of the mid 1970s tempting Egyptian labor to seek jobs in Arab oil countries, even after recession the other factors seem to negatively affect the agricultural labor supply such as education expansion beside a growing view of farming and agribusiness as inferior to other activities, at least economic wise. Hence, agricultural labor wages which sprang in the mid 1970s to 4-5 [1] times their level on the early decade, hardly experienced a drawback ever since. Perhaps the growing demand on labor for newly reclaimed lands, beside the slow and even stagnant mechanization development has prevented emergence of a drastic drop in demand of labor. However, the picture is not quite clear with respect to the future trends for both demand and supply of agricultural labor in Egypt as being influenced by the uncertainty with respect to trends of their endogenous and exogenous determinants.

Accordingly, this paper tends to shed some light on issues related to forecasting the future conditions of

agricultural labor in Egypt and their interaction with both agricultural development and unemployment general status.

Methodology: Statistical descriptive methods are used to discuss the principal features of the Egyptian agricultural labor and their changes, including classifications of hired and family labor, permanent and temporal, gender and age. Statistical inference methods are used, especially to explore labor productivity levels, such as comparison of estimates for actual marginal products of labor, derived from estimated production functions through partial differentiation [2], with optimal levels equal to ratios of product unit prices to labor unit wages. Secondary data used are acquired from publications and printouts of both Ministry of Agriculture (MOA) and CAPMAS, beside primary data, especially for physical labor work in production operations for variant principal crops, are derived from several field work surveys in hand.

RESULTS

Major Characteristics of the Egyptian Agricultural Labor Force: Gender Classification: in general, almost 40% of the farming force in farming activities are females [2]. It drops to nearly 20% for certain operations which need more physical effort, high technical experience or of

Table 1: Women contribution to variant farming practices for sugar crops in Lower and Upper Egypt (2006) (%)

Farming operations	Lower Egypt	Upper Egypt
Seeding and land preparation	0	25
Manure application	15	25
Sowing	86	30
Irrigation	13	0
Chemical fertilization	75	10
Thinning and replanting	80	0
Pest control	25	10
Harvest	40	20
Output cleaning and loading	50	75
Waste and leftovers dispose	0	10

Source: El-Ashmawy *et al.* [3]

hazardous handling, such as hoeing, dusting or spraying for pest control, land leveling, plowing or ridging, as shown in Table 1. Females' contribution may mount up to almost 80% for other farming operations such as thinning and fruit picking. As for livestock husbandry, poultry raising and milking activities are mostly done by females. Due to traditional differences in regions characterized by more strict and conserved conduct codes (Upper Egypt), women are slightly less participant in marketing activities as well as involvement in marketing activities. Nevertheless, their overall participation in field practices is almost similar to the situation in less conserved regions.

Family Labor and Age Classification: Even for the smallest landholdings, less than one hectare each, involvement of family labor has decreased during the last 2-3 decades. This is mostly due to the rise in schooling enrollment for both males and females. Only in periods of intensive field work, especially fruit picking, even student members participate if coinciding with school vacations. In general, the labor age bracket is 16-65 years old and almost normally distributed. Again, respectively high technical or effort requiring operations are practiced by middle-age men, as logically expected.

Level of Education: About 60% of agricultural male laborers are illiterate ⁽⁴⁾ and almost 35% are capable of reading and writing with almost none finishing primary school stage. As for females, literate laborers are almost absent. This situation principally hinders successful implementation of modern farming techniques. It is logically expected that the educated youth of farmers'

households refrain to work in fields, even if unemployed. The exception holds for newly reclaimed lands which are distributed among young university and high-school graduates who naturally participate in farming activities for their small landholdings.

Labor Employment: agricultural labor employment in farming practices has faced several distinct stages. Up to the mid 1970s, employment experienced a monotonic gradual growth mostly governed by the rural population growth and moderate agricultural land expansion through land reclamation operations, as positive factors. On the other hand, education expansion encouraged by the state, especially after the revolution of 1952, drew a great portion of the farmers' descendents to education and subsequently away from farming. The second stage began at the mid 1970s with boast of the petrol prices and the subsequent expansion of job opportunities in oil Arab countries and to some extent in domestic expanded private business due to the change toward economic privatization. Such conditions drew a considerable proportion of agricultural labor away from rural regions causing a drop of labor supply for farming activities and a drastic increase in labor wages to almost 4-5 times their initial level. After the end of the first Gulf war, the construction activities in Arab countries slackened causing return of most laborers working abroad and domestic enterprises also faced a slowing-down pace. Accordingly, the labor supply in rural areas retrieved its increasing trend. Nevertheless, such increase was kept slow by the emerging inferiority of farming activities, hence many of the returning laborers chose to seek other activities and so did their educated descendents. On the other hand, despite distribution of newly reclaimed lands and establishment of new private agricultural enterprises, mostly replacing the former public sector enterprises, unemployment of agricultural labor emerged, especially with the continuous drop of investment in agribusiness share to nearly 12% of the national investment from a the level reaching about 24% prior 1970s. It is worth mentioned that although the unemployment ongoing rate for the agricultural sector is lower than the corresponding figures for other sectors a semi high estimate prevails for rural educated youth who are may not be considered as agricultural jobs seekers.

The Economic Role of Agricultural Labor: reviewing the human labor share of total production costs reveal several findings. As shown in Table 2, the share of human

Table 2: Shares of human labor and machines of total production costs for some major crops in Egypt (1992, 2007) (%)

Crop	1992		2007	
	Labor	Machinery	Labor	Machinery
Wheat	28.2	21.7	19.5	14.1
Onions	30.9	11.2	24.6	6.9
Broad beans	32.1	22.1	21.8	10.7
Lentil	23.5	18.3	21.3	9.2
Cotton	46.1	13.5	13.3	7.7
Rice	29.2	21.5	17.8	14.7
Maize	28.4	16.0	24.1	9.7
Sugar cane	29.3	17.2	20.4	16.1

Source: Ministry of Agriculture-Agric. Economics Adms [4].

labor dropped from about 46.1% to nearly 13.3% for cotton during period (1992-2007), 29.2% to 17.8% for rice, 32.1% to 21.8% for broad beans and milder decreases for other major crops. Mechanizing farming operations could hardly be a cause for the dropping labor relative importance within cost items, as the corresponding estimates for machines also dropped within the same period by similar or even greater rates, especially for cotton, wheat and broad beans. The cause of such decline of labor share in total costs, in all its forms, is the drastic rise in prices of all production requisites beside land rent since requisites price subsidization was abolished at the early 1990s, while labor wages maintained a slow increasing trend.

The mentioned above conditions have set limitation use of labor keeping it below optimal use. That is where comparing labor marginal products with optimal application inferred inferiority of the first, especially under the limited farming budgets and/or limited mechanized operations of most farms. Most farms, which are small and of limited budgets, are obliged to operate at an early stage of the second phase of production where the labor marginal product is still within its increasing trend [5]. On the other hand, although larger farms may advantage higher levels of mechanization, raising both average and marginal products of labor, the ongoing market conditions of demand and supply of labor qualified for high technological farming operations also keep labor employment below optimal application.

In view of the former respects, it appears that more intensive use of labor may be in favor optimal economic operation. However, putting such matter into effect may be extremely difficult under the prevailing conditions of the decreasing share of agriculture of gross investment and the subsequent slim potentials for expansion.

CONCLUSION

Several factors seem to influence the role of agricultural labor in Egyptian farming activities and its future trends. On the side of supply, a growing percent of both older age brackets and females is expected. That is mostly due to the increasing school enrollment drawing the descendents of farmers away from the profession of their ancestors, i.e. farming. Likewise, males are both capable and motivated to seek off-farm jobs. Nevertheless, since off-farm job opportunities are facing a diminishing trend, whether within the country or abroad, the agricultural labor supply is still expected to grow at least at a slower rate than for other sectors. On the side of demand, although most of the pigmatic farms operate at less than optimal labor use due to limited budgets accompanied by the dramatic increasing costs of inputs other than labor. Likewise, the emerging large farms, especially in newly reclaimed lands, mostly adopt modern technologic methods of less intensive labor. Hence and due to the prevailing limited job opportunities in other economic sectors currently suffering high unemployment rates, the farming sector is also expected to face a similar problem. Wage decrease is an impractical option, at least considering the ongoing inflation rates. Hence, unemployment confrontation in the agricultural sector may principally rely upon the potentials of off-farm activities expansion, mostly small cottage industries. Most of such activities are in favor of women role promotion. That is since dairy products, pickling, fruits preservation and processing, poultry raising and sewing are all female specialized activities, while males should be trained for carpentry, tools maintenance and manufacture of farm simple equipment.

Summary: The study tended to explore the conditions of the Egyptian agricultural labor force, both present and future. As for the side of supply, youth descendents of farm families tend to seek off-village jobs, especially when obtaining educational degrees. Hence, old age farmers seem to constitute the majority of future labor force. On the other hand, women involvement in farming practices are mostly limited to the least hazardous, physical effort technological training requiring operations. As on the demand side, the general relatively high unemployment rate may moderately extend to rural areas since the low budgets of the small farms still constituting the majority and the relatively high mechanized large farms may slacken the demand on labor versus the return of farmers who were working in Arab oil countries.

That is despite operating at lower than optimal levels of labor employment as indicated by the revealed ongoing increasing phase of their marginal products. In view of the presented above conditions, the agricultural labor may have to seek off-farm activities such as rural handicrafts for males and small cottage industries for females.

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