

# Labor Migration Out of Agriculture in Today's World

Jingbei Hu

**Abstract:** The world is witnessing a mass migration of labor forces from agriculture into non-agricultural activities. Agricultural labor forces dropped from 970 million to 870 million, and the agricultural employment share (AES) from 43% to 27% over 29 years between 1991 and 2020. Around the year 2000, the quantity of agricultural labor forces peaked and started to decrease, and AES fell to 40%. Assuming that AES was 80% around the year 1700 when modern labor migration out of agriculture began and 0% when it ends in the future, the reduction of AES to 40% indicates that humans finally achieved half of their mission of the migration as they entered the third millennium after 300 years of arduous effort. Our analysis demonstrates that the speed and spatial extent of the current migration are unprecedented. Over the past 29 years, the world's AES fell by more than 15 percentage points, while the average speed was 4% per 30 years between 1700 and 2000. Thus, the current labor migration is almost four times faster than the average of the past 300 years. Furthermore, the recent migration is more extensive in spatial terms than in any other period in human history, as evidenced by data from country groups and individual countries worldwide.

**Keywords:** Worldwide labor migration out of agriculture, Transfer of agricultural labor into nonagriculture, Agricultural labor outmigration, Labor migration out of agriculture between 1991 and 2020, Agricultural Employment Share, Decrease in agricultural employment share

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# Labor Migration Out of Agriculture in Today's World <sup>1</sup>

## 1.1 Current Labor Migration Out of Agriculture in the World

One of the most striking features of the present era in which we live is that most humans get sufficient food while only a minority work producing it. It is a new feature in more than two million years of human history. In the case of China, the world's most populous country, only forty years ago, most Chinese were still engaging in agriculture but went to bed hungrily. There were urbanites fortunate enough not to have to toil in the fields daily. However, they had to go to the countryside to "support agriculture" during the busy farming seasons: helping them harvest mature crops and plant the next ones. All these were so usual forty years ago that almost no one in China questioned them. Nevertheless, for the young Chinese today, they are an unimaginable nightmare. Indeed, the most profound change that has taken place around us is that humankind is getting rid of hunger at the same time when most people do not have to produce food. Before this change, most of humanity was farmers, and most human labor was used in food-producing agriculture. The abundance of food meant that many labor forces could shift to producing valuable non-food items, i.e., from agriculture to non-agricultural activities. The subject of this book is agricultural labor migration, i.e., the occupational shift of labor forces from agriculture to non-agriculture. Migration of this kind is a prominent phenomenon of economic and social changes in the world today. Whether one travels to rich or poor countries, to cities or villages, one can find workers who have freshly moved out of agriculture into manufacture and service industries and joined the market economy. One of the most important signs of the rapid growth of the world economy and economic globalization in the last thirty years or so is the immediate combination of the two factors of production, labor migrated out of agriculture and capital, on the world stage. The labor migration from agriculture occurs within each country, extending to the worldwide labor force migration. Thus, an essential prerequisite for understanding the present era in general and the world economy in particular is to understand the migration of agricultural labor.

Economists often refer to the world economic growth that began during the eighteenth century as "modern economic growth" and consider agricultural labor migration one of its essential characteristics. However, for most of the last three centuries, the migration was not a worldwide phenomenon: it took place only in parts of the world. For example, it occurred in a few Western European countries, such as England and the Netherlands, in the eighteenth century and expanded to other Western European countries and North America in the nineteenth century. In the first decade of the twentieth century, trains from the US South to the North were often filled with Southern farmers moving to the non-farm sector in New England. However, most of the world was not even informed of this. Although the two world wars in the first half of the twentieth century significantly boosted the outmigration of agricultural labor, it was primarily confined to Europe and the United States. After the Second World War, many East Asian and Middle Eastern countries

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<sup>1</sup> Parts of the contents of the first three sections of this chapter were published in Jingbei Hu, 2018, World Labor Migration Out of Agriculture at the Present and Deagriculturalization Transition in the Big History, *Academic Monthly* (Shanghai, China), vol. 50, No. 1, pp. 85-95.

witnessed large-scale agricultural labor migration. But it has yet to become a worldwide phenomenon. In the same period, a few countries still tried to reverse the trend of the outmigration of agricultural labor. Even in the 1960s and 1970s of the second half of the twentieth century, the governments of China and Cambodia forced their urban populations, mostly workforces, to relocate to the countryside on an enormous scale.<sup>2</sup> Nevertheless, from the 1990s onward, agricultural labor migration suddenly went from an unnoticed local phenomenon to a global tidal wave that swept the world. Humankind suddenly emerged amid a great wave of population migration, with agricultural labor migration at the core. Whether in populous countries like China and India or sparsely populated ones in West Africa and Central Asia, developed Western Europe and North America or underdeveloped sub-Saharan regions, agricultural labor migration occurs everywhere in the world.

Let's demonstrate this phenomenal migration with data. The International Labor Organization (ILO) compiles and publishes statistics on the world labor forces including the agricultural ones. We utilize them from 1991 to produce Fig. 1.1 with two measures of agricultural employment (AE) and agricultural employment share (AES).<sup>3</sup> The latter refers to as the share of agricultural labor in the total amount of employment.<sup>4</sup> The height of the bars in Fig. 1.1 indicates the absolute quantity of AE, while the curve represents AES. The curve shows the strongly diminishing trend of AES for the whole period since 1991. The world AES was 43% in 1991, decreased to 41% in 2000 and further to 33% in 2010, and dropped to as low as slightly above 27% in 2020. Since the world has not experienced any large-scale natural and social catastrophes leading to reductions in the agricultural labor forces in the last three decades, the decrease in ASE should only suggest a mass migration of the agricultural labor forces to the non-farm sector in the context of continued growth in global population and employment.<sup>5</sup>

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<sup>2</sup> The author of this book was among the tens of millions of Chinese urbanites who were relocated to rural areas by the government in the 1960s and 1970s. The places where I moved out and in were the City of Nanjing and Baohua People's Commune, Jurong County (now known as Baohua Township, City of Jurong), both in Jiangsu Province, respectively. I lived as an agricultural laborer in the last location for nearly nine years.

<sup>3</sup> We begin with 1991 in Fig. 1.1 because there are extreme irregularities in China's labor statistics for the year 1990. Usually, China's total labor force (L), employment (E), and AE grew at around 3%, 3%, and 1% yearly before and after 1990, but all of them increased by approximately 17% in 1990. We'll demonstrate the absurdity of China's 1990 data in Sec. 3.5 of Chap. 3 of this book. China's 1990 census, with substantial helps from the World Bank, was the first one with standards mainly similar to that of both the World Bank and the ILO. Since then, China's labor statistics seem plausible. Around 1990, China's share in the world's total labor, employment, and AE may be around 27%, 29%, and 40%. Hence, China's extensive irregularities in 1990 data should make the world statistics of that year implausible. See Dada Appendix 1 and 2. ---- added to English translation..

<sup>4</sup> For the strict definitions of AE and AES, see Sec. 2.3 of Chap. 2.

<sup>5</sup> Fig. 1.1 and other charts and tables of the world and regional data in this chapter serve only to suggest long-term trends in agricultural labor migration, not the actual state of annual changes. The ILO released nine versions of world labor statistics through 2016, each with substantial revisions to the data released in the previous version. After 2016 it publishes its labor statistics primarily on its website. Also, they are often revised and updated. Of particular note is that estimates and projections dominate most recent years' data. Therefore, the ILO data utilized in this book will likely be revised in the coming years. The reader of the world and regional data in this chapter and this book is encouraged to focus on the trends they may show and to pay close attention to the latest revision of such data. See the ILO's statistical information website: ILO, <https://ilostat.ilo.org>; ILO, 1999-2016, Key Indicators of the Labor Market, 1st to 9th ed.

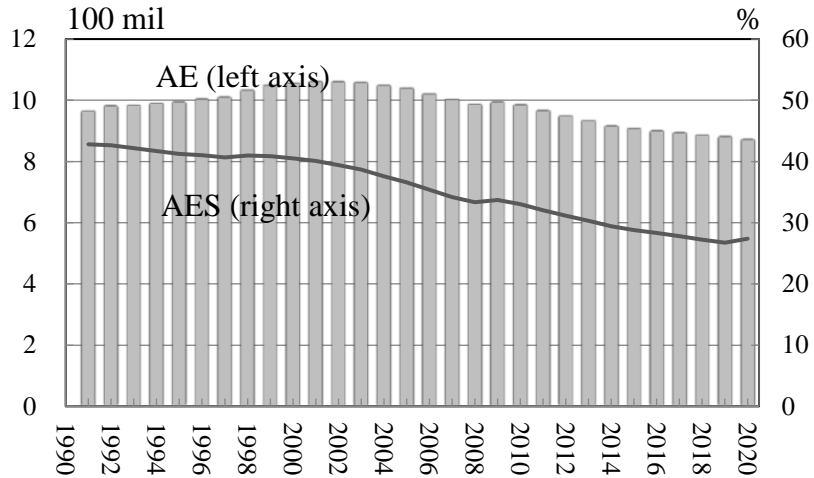


Fig. 1.1 World Agricultural Employment and Agricultural Employment Share 1991-2020

Source: Data Appendix 1.

If the decrease in AES indicates a relative reduction in total AE, then the ultimate sign of agricultural labor migration is the absolute reduction in AE. It is during the recent period since the 1990s that the world's AE began to diminish in absolute terms. As the bars in Fig. 1.1 show, the world AE reached an all-time high of 1,064 million in 2001.<sup>6</sup> From 2002 on, it decreased absolutely. By 2020, the year with the latest data, it has dropped to 870 million, 190 million less than the peak in 2001, and more than 90 million less than in 1991, the beginning year of Fig.1.1.<sup>7</sup> The absolute decrease in AE unambiguously confirms the outmigration of agricultural labor.

Regarding the absolute quantity of AE, humankind finally reached a new stage of its reduction, a landmark achievement humans made on the path of deagriculturalization. Look at the relative measure, we assume both that the world AES was 80% around 1700 when modern economic growth and agricultural labor migration might begin and that AES would tend to zero when the migration ends at some point of time in the future, then its decrease to 40% around 2000 could imply that humankind has finally completed the half of the agricultural labor migration after three

<sup>6</sup> Before 2001, AE slowly increased from 970 million in 1991 to 1,064 million in 2001, with an average annual growth rate of less than 1%. Compared to the average yearly growth rate of total world employment of over 1.6% over the same period, most of the natural additions to the agricultural labor force each year must have shifted out of agriculture, and AE must have been in relative decrease. In fact, despite the slow and steady increase in total AE from 1991 to 2001, the AES still decreased from 42.8% in 1991 to 40.1% in 2001. See Data Appendix 1.

<sup>7</sup> In the 8th edition of the ILO's Key Indicators of the Labor Market, published in 2014, the maximum number of the world AE was one billion and seventy million, and appeared in 2003. However, in the 9th edition, published in 2016, the maximum number was revised to one billion and sixty million in 2001. See ILO, 2014; 2016, and see Data Appendix 1.

hundred years of hard work.<sup>8 9</sup> Although the accuracy of the available data is questionable and we may never be able to obtain accurate data on the migration in the last thirty years, we could still conclude that, as humanity entered the third millennium AD, the absolute amount of human labor devoted to agriculture peaked and began to decrease while the relative share of human work devoted to agriculture dropped to about half of the original when humans started labor migration out of agriculture.<sup>10</sup>

The world agricultural labor migration not only crossed a historic milestone in the last three decades, but also should reach the fastest level ever. Here, we use changes in AES to measure the speed of the migration. It is doubtless that the trend of absolute decrease in AE starting in 2002 has accelerated the decline in AES so that over the nearly two decades from 2001 to 2020, the world AES dropped by almost 13 percentage points. But even for the entire period from 1991 to 2020, the migration speed should be the highest ever achieved since its beginning. The world AES decreased to 27% in 2020, a reduction of more than 15 percentage points compared to 1991. An imaging history could highlight the incredible rapidity during this period. In Table 1.1 below, we imagine two starting points for the migration, i.e., 1700 and 1800.<sup>11</sup> Suppose that the task of humans for agricultural labor migration is to reduce AES from 80% to near zero. We know the reduction of 15.4 percentage points during the twenty-nine years between 1991-2020. Let us conservatively assume that AES reduced by 15 percentage points for the thirty years from 1990 to 2020. At this rate, it would take only five to six “thirty years,” or about 160 years, for humanity to transfer the entire agricultural labor into nonagriculture. However, historical facts show a wholly different picture: If human beings started to move labor out of agriculture in 1700, the world AES only fell to 40% in 2000 after three hundred years. The total reduction in the three centuries was only 40 percentage points or an average of 4 percentage points every “thirty years.” But the recent

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<sup>8</sup> The world AES around the year 2000 were 1999: 40.9%; 2000: 40.5%; 2001: 40.1%, and 2002: 39.4%, respectively. As shown in Fig. 1.1, the share shows a significantly decreasing trend after 2000 and continues until 2020, the year of the latest data. Therefore, although the accuracy of the statistics around 2000 is questionable, our statement that “the world AES reached 40% around 2000” should be valid to a considerable extent. See Data Appendix 1.

<sup>9</sup> If we take the total labor force as the denominator and AE as the numerator, we get the agricultural labor share (ALS). It was 40.2% and 39.6% in 1992 and 1993, respectively, and 37.9% in 2000 according to data in the 9th edition of the Key Indicators of the Labor Market published by the ILO in 2016. The difference between ALS and AES is whether the denominator includes unemployment. Assuming that there was no unemployment in the modern sense in the agricultural society before the agricultural labor migration, the ALS and AES were equal at the historical starting point of the migration. Therefore, we can also say, generally and imprecisely, that if we take the year 1700 as the starting point, ALS also decreased by half by the turn of the twentieth and twenty-first centuries. For the data, see Data Appendix 1. For an economic history study of the origins of modern unemployment, see Keyssar, 1986.

<sup>10</sup> Fig. 1.1 also shows that the world financial and economic crisis in 2008 failed to stem the tide of agricultural labor migration in the last three decades. In Fig. 1.1, the absolute number and relative share of agricultural labor forces rebounded only in 2009 and then resumed their long-term solid downward trend.

<sup>11</sup> There is a consensus in the circles of historians, especially economic historians, that the Industrial Revolution or modern economic growth began between 1700 and 1800 AD, i.e., within the eighteenth century AD. Speaking more precisely, the Industrial Revolution should not begin earlier than the middle of the eighteenth century. For example, after studying a large amount of historical data, Mitchel points out that the Industrial Revolution in England began no earlier than the mid-eighteenth century and takes 1750 as the starting year for his edited historical data, see Mitchel, 2003, p. VII. However, agricultural labor migration studied in this book may begin earlier than the Industrial Revolution. And for chronological convenience, we assume the year 1700 as the historical starting point for the migration.

thirty years, starting in 1990, witnessed a reduction of 15 percentage points! In other words, the world has transferred agricultural labor nearly four times faster since 1990 than the average rate of 1700-2000! To be humbler, we assume human beings started to transfer agricultural labor in 1800. Human beings reduced AES by 40 percentage points in 200 years, or by 6 percentage points every “thirty years.” The rate of AES reduction since 1990 is also two and a half times the average rate in 1800-2000 according to Table 1.1. Thus, the data comparison in Table 1.1 reveals the high rate of decrease in AES over the last three decades. In this regard, despite the lack of a series of historical data on the rate of agricultural labor migration over the previous two to three centuries and the inaccurate information on agricultural labor migration in the last thirty years, we could still estimate, on a reasonably high level of probability, that the last thirty years since 1991 should be the fastest period of agricultural labor migration in human history so far.<sup>12</sup>

Tab. 1.1 Comparisons of Supposed Speeds of Agricultural Labor Migration  
1700, 1800 and 2020

	Percentage point		
	1700-2000	1800-2000	1991-2020
Number of years	300	200	29
Total reduction in AES	40	40	15.4
Average reduction per 30 years	4.0	6.0	>15
Average reduction p.a.	0.13	0.20	0.53

## 1.2 Labor Migration Out of Agriculture by Countries or Groups of Countries

The world agricultural labor migration in the last three decades is probably not only the fastest in the temporal dimension but also the widest in the spatial dimension in the history of humankind. The ILO once divided the world's countries into nine groups according to both the level of economic development and geographical location. It then provided labor statistics for all of them separately. We compare AE with the total labor force and refer to their ratio as the agricultural labor share or ALS. Using it, we compile the ILO statistics in Fig. 1.2. It shows that, regardless of the level of economic development, geographical location, quantity of AE at the beginning of the period reviewed, or even differences in social systems, ALS decreased significantly in all nine

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<sup>12</sup> It is worth noting that the dissolution of the former Soviet Union also occurred in 1991. Of course, there may not be any direct links between the starting year 1991 in the ILO world data and the breakup of the former Soviet Union. However, there should be some historical eventual and economic theoretical connections between the collapse of the former Soviet Union and the massive wave of agricultural labor migration of recent thirty years. Hobsbawm defended the former Soviet system, after its failure, with the new argument that it facilitated agricultural labor migration which is considered a historical trend. However, he did not present any materials to prove his point. Although we lack data before 1991, the data cited here for agricultural labor migration after 1991 at least suggest that the most rapid migrations of labor out of agriculture in the last three hundred years followed the collapse of the former Soviet system. The author of this book once argued that it was the collapse of the former Soviet system that opened the floodgates for a worldwide tide wave of agricultural labor migration since the collapse allowed capital and agricultural labor to combine on a global scale, thus making the massive worldwide migration of agricultural labor forces possible. See Hobsbawm, 1994, p. 9; Hu, 2008b.

country groups from 1991 to 2013. Hence, agricultural labor migration occurred within all these groups and became a universal phenomenon worldwide. Because we lack reliable and comprehensive data on agricultural labor migration for the whole world and different regions before 1991, and because the reliability of the ILO's world statistics does not reach a relatively high level, we cannot arbitrarily claim that humans did not experience agricultural labor migration that occurred worldwide simultaneously before 1991. However, based on our general knowledge of the history of world economic growth in the last three hundred years, it should be reasonable to estimate that the world agricultural labor migration since 1991 also be the first such widespread phenomenon experienced by humankind in the last three hundred years.

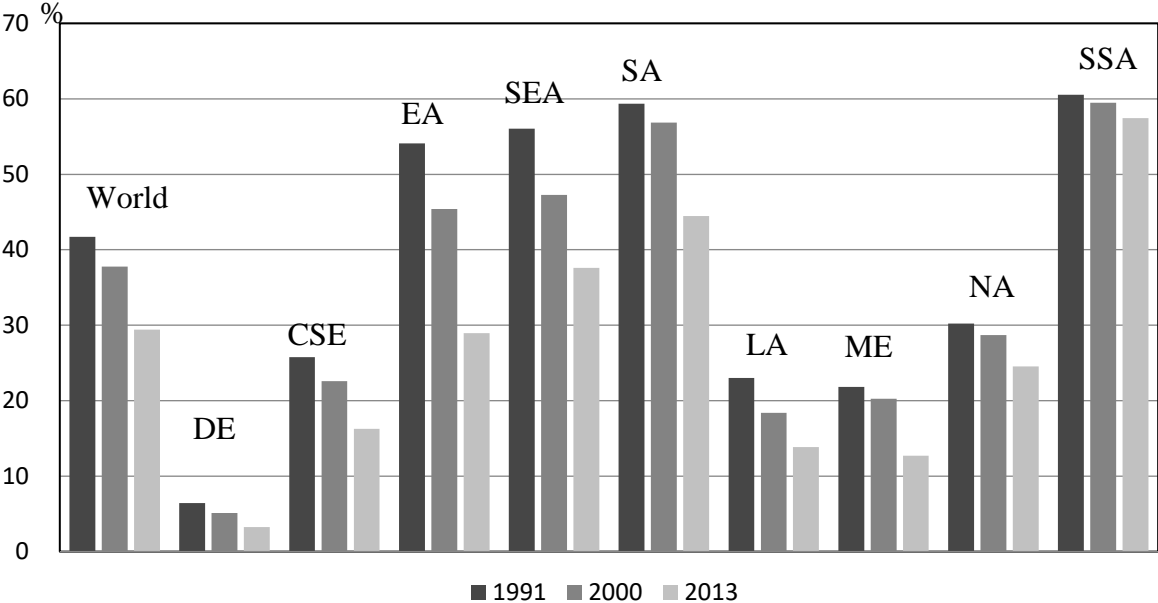


Fig. 1.2 Agricultural Labor Migration, the World and Nine Groups of Countries 1991, 2000 and 2013

Note: Vertical axis indicator is ALS. The full names of the nine country groups are "developed economies and EU countries (DE in this figure)", "non-EU Central and Southern European and CIS countries (CSE)", "East Asia (EA)", "Southeast Asian and Pacific countries (SEA)", "South Asia (SA)", "Latin American and Caribbean countries (LA)", "Middle East (ME)", "North Africa (NA)" and "Sub-Saharan countries (SSA)". See sources for the composition of each group of countries.<sup>13</sup>

Source: Data: ILO, 2014, Key Indicators of the Labor Markets, 8th ed., ILO, Geneva, Switzerland, Table R4 and R5. Country groupings: ILO, 2015, World Employment and Social Outlook: Trend 2015, ILO, Geneva, Switzerland, p. 95.

<sup>13</sup> The ILO regrouped the countries in the ninth edition of its Key Indicators of the Labor Market published in 2016 and subsequent labor statistics. However, such regrouping does not affect studies of the widespread occurrence of the world agricultural labor migration we show in Fig. 1.2. For the reclassified country groups, see, e.g., ILO, 2016. For the latest ILO country groupings, see ILO, 2021a, Appendix A: Country Groupings by Region and Income Level, p. 117.



The rapid agricultural labor migration on a world scale results from the rapidity of such migrations in most countries. We look at Fig. 1.2 again. Among the nine country groups, the East Asian group, which includes China, stands out astonishingly. In 1991 and 2000, the ALS of this group was 54% and 45%, respectively, significantly higher than the world average. However, by 2013, its ALS has dropped to 29%, even slightly lower than the world level. In the twenty-two years from 1991 to 2013, East Asian countries reduced their ALS by 25 percentage points, doubling the amount of the world's reduction. If we regard agricultural labor migration as a race of competition, the East Asian group came out on top in this twenty-two-year competition. The achievements of Southeast and South Asia groups are also outstanding, with a reduction of 18 and 15 percentage points, respectively, in 22 years. The three groups of East Asia, Southeast Asia, and South Asia include the countries with the largest stock of agricultural labor force in the world. Therefore, the reduction rate in their ALS has the most significant impact on that of the globe ALS. In this sense, the rapid agricultural labor migration in these large agricultural countries has driven the rapid decrease in the world's ALS.

With these three regions as the center, the reduction rate in ALS gradually slows down in spreading outward. The rate decreases to 3 percentage points in twenty-two years in both groups of developed and sub-Saharan countries, respectively, which are geographically farthest away from the center. However, considering that ALS in the developed countries was already as low as 6% in 1991, using the amount of ALS reduction compared to the original ALS level (i.e., dividing the reduction between 1991 and 2013 by the 1991 level), the rate of agricultural labor migration in this group in these twenty-two years is even the second highest, only after the East Asian group. The world's most underdeveloped country group of sub-Saharan countries has also achieved a reduction of 3 percentage points in the period. We confidently expect that if the current trend of rapid global deagriculturalization continues, the sub-Saharan countries will significantly increase their reduction rate in ALS soon.

We further demonstrate the agricultural labor migration in individual countries worldwide. The National Bureau of Statistics of China has attached statistics of AES for a few dozen countries in the "China Statistical Yearbook" published annually.<sup>14</sup> We select each country's AES data for four years 1991, 2000, 2010, and 2019 and compile them into Table 1.2. The table includes 38 countries.<sup>15</sup> In addition, we calculate differences in AES between the first three years and 2019 for the selected countries, as shown in the three columns to the right of Table 1.2.

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<sup>14</sup> Both the number of countries and specific countries selected in the China Statistical Yearbooks, Tables of Employment Structure of Countries, change frequently. Table 1.2 uses the most recent yearbooks as the criterion for determining the total number of countries and specific countries. It then adds two more measures, namely that a country has data appearing in the yearbooks for at least two of the four years 1991 (or 1990), 2000, 2010, and 2019, and that city countries are excluded. The only exception is Romania. Its data appearing in the China Statistical Yearbooks are for only two years of 1991 and 2000. We cannot compare them with the 2019 data in Table 1.2. In addition, the data for those two years are 29.8% and 42.8%, respectively, which are hardly credible, so we exclude Romania from Table 1.2. For data on Romania, see China Statistical Yearbook-1994, Appendix Tables 4-6; China Statistical Yearbook-2009, Appendix Tables 2-2.

<sup>15</sup> Data published in the China Statistical Yearbooks of different years for the same year and same country often differ. We selected data for four years 1991 (or 1990), 2000, 2010, and 2019 from the more recently published China Statistical Yearbooks.



Table 1.2 Agricultural Labor Migration, Selected Countries, 1991-2019

Country	AES				Reduction in AES		
	1991	2000	2010	2019	1991-2019	2000-2019	2010-2019
	%				Percentage Point		
China	60.0	50.0	36.7	25.4	34.6	24.6	11.3
Bangladesh		62.1		38.6		23.5	
Cambodia			54.2	32.3			21.9
India			51.1	42.4			8.7
Indonesia	55.9①	45.1	38.3	28.6	27.3	16.5	9.7
Iran			21.2⑤	17.9			3.3
Israel		2.2	1.7⑥	0.9		1.3	0.8
Japan	6.7	5.1	3.7	3.4	3.3	1.7	0.3
Kazakhstan		35.5④	28.3	15.8		19.7	12.5
South Korea	16.7	10.6	6.6	4.9	11.8	5.7	1.7
Malaysia	26.0①	18.4	13.3	10.4	15.6	8.0	2.9
Mongolia		48.6	40.0⑥	27.4		21.2	12.6
Pakistan	47.4	48.4	44.7	36.7	10.7	11.7	8.0
Philippines	45.2①	37.4	33.2	23.4	21.8	14.0	9.8
Sri Lanka		24.2④	32.7⑤	24.5		-0.3	8.2
Thailand	64.0①	48.8	38.2	31.6	32.4	17.2	6.6
Vietnam		65.3		37.4		27.9	
Egypt		29.6	28.2	23.8		5.8	4.4
South Africa		14.5	4.9	5.1		9.4	-0.2
Canada	4.5	3.3	2.4⑤	1.5	3.0	1.8	0.9
Mexico		17.6	13.1	12.6		5.0	0.5
USA	2.9	2.6	1.6	1.3	1.6	1.3	0.3
Argentina		0.7	1.3	0.1		0.6	1.2
Brazil	22.8①	20.6④	17.0⑥	9.2	13.6	11.4	7.8
Venezuela		10.2	8.7	8.3		1.9	0.4
Czechia ②	9.9	5.1	3.1	2.7	7.2	2.4	0.4
Germany	3.5	2.7	1.6	1.2	2.3	1.5	0.4
France	5.7		2.9	2.4	3.3		0.5
Italy	8.4	5.3	3.8	3.7	4.7	1.6	0.1
Holland		3.1	2.8	2.0		1.1	0.8
Poland	26.7	18.8	12.8⑥	9.2	17.5	9.6	3.6
Russia ③	18.2①	14.5	9.7	5.8	12.4	8.7	3.9
Spain		6.6	4.3	4.1		2.5	0.2
Türkiye		36.0	23.7	18.4		17.6	5.3
Ukraine		23.4	15.8⑤	14.5		8.9	1.3
UK	2.1	1.5	1.2	1.0	1.1	0.5	0.2
Australia	5.5	5.0	3.3⑥	2.6	2.9	2.4	0.7
New Zealand		8.7	6.6⑥	5.7		3.0	0.9

Note 1: ① 1990 data. ② 1991 data for former Czechoslovakia. ③ 1990 data for the former Soviet Union. ④ 2001 data. ⑤ 2008 data. ⑥ 2009 data.

Note 2: Decreases in AES are the differences between AES in the first and last year of the period.

Note 3: The order of countries is based on China Statistical Yearbook-2021, Appendix Table 1-2.

Source: 1991 data: China Statistical Yearbook-1993, Appendix Table 4-6; China Statistical Yearbook-1994, Appendix Table 4-6. 2000 data: China Statistical Yearbook-2009, Appendix Table 2-2. 2010 data: China Statistical Yearbook-2013, Appendix Table 2-2; China Statistical Yearbook-2014, Appendix Table 2-2. 2019 data: China Statistical Yearbook-2021, Appendix Table 1-2. If data from the yearbooks of different years differ, the data of the latest yearbook prevail. In addition, all these tables in the China Statistical Yearbooks indicate that the data source is the World Bank database.

First, we look at the midpoint of the historical process of agricultural labor migration. Assume it is at 40% of AES. Although the world as a whole has already passed this chronological midpoint around 2000, many countries, especially many Asian countries with a large stock of agricultural labor force, have not yet reached or are even far from it. As seen from the data in the first four columns of Table 1.2, among 19 countries in 1991, 14 crossed the midpoint, and the rest 5 countries that have yet to reach it were all in Asia, especially in East, South, and Southeast Asia. Of the 34 countries in 2000, 27 had crossed the midpoint while the remaining 7 countries that lagged were still all in Asia. In 2010, 33 of the 36 countries, including Mongolia, crossed or reached the midpoint, with only three Southeast and South Asian countries - Cambodia, India, and Pakistan - failing behind it. In 2019, the year of the latest data available, only one of the 38 countries, India, was a little behind the midpoint, while all other countries crossed it. These data suggest that over the last three decades, many Asian countries that previously had high AES and concentrated the world's most agricultural population have been scrambling to shift their agricultural labor force, rapidly reducing their AES, and moving past, or at least approaching the historical midpoint of agricultural labor migration in their respective countries. This phenomenon is not only entirely consistent with the rapid agricultural labor migration profile of the East, Southeast, and South Asian country groups during 1991-2013, as demonstrated earlier in Fig. 1.2 but extends this profile to 2019.

Second, Table 1.2 points out that many non-Asian countries selected for Table 1.2 reduced their AES to below 20 percent as early as around 1991. Western European and North American countries, Japan, and Australia had already reduced the ratio to below 10 or even 5 percent by then. It shows that before the current massive wave of agricultural labor migration swept the world, the world's migration mainly occurred in Europe and America. After 1991, although these countries continued to transfer labor out of agriculture, they could no longer offer the main body of the world's agricultural labor migration because their AES was already very low, and their total stock of agricultural labor forces was small. The main body of migrated agriculture labor forces must be ones from Asian countries.

Indeed, Asian countries played a decisive role in the world's agricultural labor migration during the period concerned as seen from the data in the right three columns of Table 1.2. All four countries, namely China, Thailand, Indonesia, and the Philippines, which have reduced their AES by more than 20 percentage points during 1991-2019, are Asian. China and Thailand even achieved an average reduction of 1 percentage point per year. It was a miracle. Look at the decadal phasing. Since Table 1.2 only presents data for the decadal phasing in the column 2010-2019, we

discuss the data in that column briefly. Over this effectively nine-year period, Mongolia, Kazakhstan, and China are the top three players in the agricultural labor migration race, all experiencing decreases in AES of more than 10 percentage points. The Philippines, Indonesia, India, Sri Lanka, and Pakistan performed reductions of more than or just 8 percentage points. Beyond this phase, Bangladesh reduced its AES by nearly 24 percentage points over the years 2000-2019, the average annual reduction being significantly more than 1 percentage point, the benchmark which can be taken as an exceptionally high reduction rate. It is known that China, India, Indonesia, Pakistan, and Bangladesh were the five countries with the highest concentration of agricultural employment and the most significant number of agricultural workers in the world thirty years ago. The amount of agricultural labor force they need to transfer to reduce their AES by 1 percentage point is far more enormous than the corresponding amount for 1 percentage point reduction in AES in other countries. To this background, we can imagine how spectacular the wave of agricultural labor migration in the last three decades has been!

Third, almost all countries included in Table 1.2 reduced AES and achieved a shift of agricultural labor to the nonfarm sector in all three sub-phases of 1991-2019, 2000-2019, and 2010-2019. Only Sri Lanka and South Africa, in the periods 2000-2010 and 2010-2019, respectively, saw a reverse increase in AES and a rebound in the number of agricultural laborers. At a micro level, labor migration between the agricultural and nonagricultural sectors is inherently bidirectional: some people go from agricultural to nonagricultural employment, while others move conversely. The labor migration from agriculture discussed in this chapter refers to the general trend of labor migration from agriculture to non-agriculture at the macro level. It does not exclude that a country, a group of countries, or even the whole world briefly experiences more labor transferred from nonagriculture into agriculture or "backflows." If the backflows are not very large in scope and magnitude, they should be considered normal fluctuations in the general trend. These fluctuations show that although the outmigration of the world's agricultural labor force in the last three decades seems unstoppable, it is not easy for any country to achieve it.

Of course, the number of countries with employment statistics published in the China Statistical Yearbooks is limited. Based on it, the number of countries selected for Table 1.2 must be more limited. Including only four special years for Table 1.2 further reduces the number of countries selected. For example, Table 1.2 contains too few African countries. Only two of more than fifty African countries are present in it. They are Egypt and South Africa, neither of which is typical of African countries in terms of agricultural labor migration. No countries of the "sub-Saharan group" of the previous nine country groups appear in Table 1.2. But African countries have also experienced an unprecedentedly large agricultural labor migration in the last three, especially the previous decade. Take Nigeria, the most populous country in Africa, as an example. According to the China Statistical Yearbooks, its AES fell from 58.3% in 2005 to 35.1% in 2019,<sup>16</sup> a reduction of 14.2 percentage points in fourteen years, exceeding the benchmark of 1 percentage point per year. In addition, Table 1.2 considers only four exceptional years and excludes other years, making it difficult to describe a complete picture of agricultural labor migration in the countries in Table 1.2 over the last three decades. For example, Cambodia's AES was 72.2% in 2008,<sup>17</sup> "plummeted" to 54.2% two years later in 2010 and dropped incredibly quickly to 32.3% in 2019, as Table 1.2 shows. The Cambodian data may contain considerable bias. The Cambodian political and economic environment may be unique as it forced most of the

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<sup>16</sup> See China Statistical Yearbook-2017, Appendix Table 2-2; China Statistical Yearbook-2021, Appendix Table 1-2.

<sup>17</sup> See China Statistical Yearbook-2012, Appendix Table 2-2.

country's urban population to return to the countryside in the 1970s. But in any case, the Cambodian example shows that if we consider other years not covered in Table 1.2, we will be able to learn more about the process and pace of agricultural labor migration in individual countries and around the globe.

Appendix 1 Data of World Migration of Labor out of Agriculture, 1991-2020

Indicator	Labpr	Employment	Agri. Employment	AES	ALS	Agri. Labor Migration		
						Rate	Acceleration	Quantity
Simbol	L	E	E <sup>A</sup>	<i>l</i> <sup>E</sup>	<i>l</i>	<i>h</i>	<i>a</i>	H
Source	Original			Computed				
Formula				E <sup>A</sup> /E	E <sup>A</sup> /L	<i>l</i> <sub>t</sub> - <i>l</i> <sub>t+1</sub>	<i>h</i> <sub>t</sub> - <i>h</i> <sub>t-1</sub>	<i>h</i> L
Unit	10 T			%				10 T
1991	240,814	225,834	96,680	42.8	40.1			
1992	244,984	230,694	98,401	42.7	40.2	0.0		-47
1993	248,930	233,666	98,579	42.2	39.6	0.6	0.6	1,407
1994	253,342	237,774	99,213	41.7	39.2	0.4	-0.1	1,113
1995	257,592	241,556	99,625	41.2	38.7	0.5	0.0	1,252
1996	261,806	245,268	100,591	41.0	38.4	0.3	-0.2	664
1997	265,946	249,032	101,250	40.7	38.1	0.4	0.1	932
1998	269,844	252,400	103,490	41.0	38.4	-0.3	-0.6	-756
1999	274,990	257,029	105,046	40.9	38.2	0.2	0.4	418
2000	279,302	261,279	105,789	40.5	37.9	0.3	0.2	904
2001	283,577	265,456	106,370	40.1	37.5	0.4	0.0	1,038
2002	288,103	269,484	106,254	39.4	36.9	0.6	0.3	1,814
2003	292,889	274,170	106,019	38.7	36.2	0.7	0.1	2,000
2004	297,972	279,387	105,054	37.6	35.3	0.9	0.3	2,806
2005	303,195	284,688	104,149	36.6	34.4	0.9	0.0	2,746
2006	306,796	289,141	102,257	35.4	33.3	1.0	0.1	3,129
2007	310,475	293,925	100,515	34.2	32.4	1.0	-0.1	2,967
2008	310,941	296,827	98,931	33.3	31.8	0.6	-0.4	1,736
2009	312,938	295,429	99,624	33.7	31.8	0.0	-0.6	-58
2010	315,729	298,562	98,668	33.0	31.3	0.6	0.6	1,844
2011	319,234	302,111	96,824	32.0	30.3	0.9	0.3	2,940
2012	322,380	305,465	95,138	31.1	29.5	0.8	-0.1	2,640
2013	325,529	308,604	93,602	30.3	28.8	0.8	-0.1	2,465
2014	328,958	312,139	91,826	29.4	27.9	0.8	0.1	2,761
2015	332,709	315,563	90,960	28.8	27.3	0.6	-0.3	1,913
2016	336,180	318,661	90,220	28.3	26.8	0.5	-0.1	1,689
2017	339,604	322,524	89,645	27.8	26.4	0.4	-0.1	1,494
2018	343,060	326,562	88,863	27.2	25.9	0.5	0.1	1,694
2019	347,324	330,310	88,351	26.7	25.4	0.5	0.0	1,617
2020	340,699	318,895	87,376	27.4	25.6	-0.2	-0.7	-710

Note: The recent data released by the ILO are estimates, and all ILO data, including the recent ones, undergo constant revisions. Hence the accuracy of the original ILO data in this table is questionable. There should be more severe accuracy problems with the labor ratios and data of agricultural labor migration (migration rate, acceleration, and quantity) calculated using the original data in this table. In this regard, readers are urged to pay attention when working with these data.

Sources: Labor: 1991-2007: ILO, 2016, Key Indicators of the Labour Market, 9th ed., Table R1 Labour force participation rate (ILO estimates and projections; by sex and age group), Geneva, Switzerland: ILO; 2008: ILO, 2021, Table of labour force by sex, age and rural/urban areas -- ILO modelled estimates, Nov. 2020, update on OCT. 10, 2021, ILOSTAT: [https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.ilo.org%2Filoostatfiles%2FDocuments%2FExcel%2FIndicator%2FEAP\\_2EAP\\_SEX\\_AGE\\_GEO\\_NB\\_A\\_EN.xlsx&wdOrigin=BROWSELINK](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.ilo.org%2Filoostatfiles%2FDocuments%2FExcel%2FIndicator%2FEAP_2EAP_SEX_AGE_GEO_NB_A_EN.xlsx&wdOrigin=BROWSELINK), retrieved Oct. 18, 2021; 2009-2020: ILO, 2022, ibid, update on Mar. 6, 2022, retrieved Mar. 13, 2022.

Employment, agricultural employment: 1991-2008: ILO, 2016, Key Indicators of the Labour Market, 9th ed., Table R4 Employment by sector (ILO estimates and projections; by sex), Geneva, Switzerland: ILO; 2009-2020: ILO, 2022, Table of employment by sex and economic activity -- ILO modelled estimates, Nov. 2020, update on Mar. 6, 2022, ILOSTAT: [https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.ilo.org%2Filoostatfiles%2FDocuments%2FExcel%2FIndicator%2FEMP\\_2EMP\\_SEX\\_ECO\\_NB\\_A\\_EN.xlsx&wdOrigin=BROWSELINK](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.ilo.org%2Filoostatfiles%2FDocuments%2FExcel%2FIndicator%2FEMP_2EMP_SEX_ECO_NB_A_EN.xlsx&wdOrigin=BROWSELINK), retrieved Mar. 13, 2022.

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\*: If two years of publication, e.g., 1847/1977, are given to a work, the former represents the year in which the work was originally published, while the latter denotes the year of publication of the edition of the work cited in this book.



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