Ministry of Labour and Vocational Training

Directorate General of Technical Vocational Education and Training (TVET)

The Future
Labour Market

The Cambodia Labour Market Bulletin

Forecasting labor supply and labor demand in terms of flow

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Department of Labour Market Information

About Labour Market Bulletin

The Bulletin is published twice per year to update regularly the Cambodia labour market. This issue is focus on the main conclusion and policy suggestion of the the labour market forecasting and analysis. It was aimed to produce scenarios of labor supply and labor demand in terms of flows.

The project funded by the Asian Development Bank's (ADB) und the Technical and Vocational Education and Training Sector Development Project (TVETSDP) of the Ministry of Labour, Vocational and Training.

The next issues will be TVET national skill measurement survey.
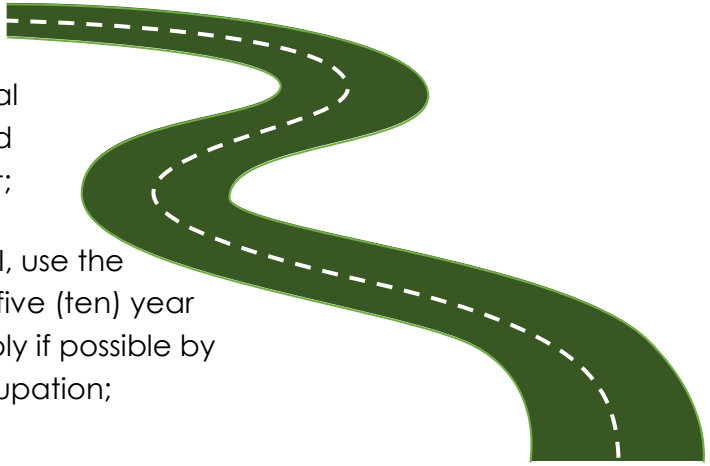
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Background

With supports of RGC's commitment to the development of high-quality, skilled and capable human resources in order to meet the immediate and long-term needs of economic growth and socio-economic development, the ADB have funded to continue of National Employment Agency 's Activities to conduct the labour market forecasting and analysis.

The main aim of the project is to identify forecasting models that allow to verify the coherence between exits from the education and vocational training system and the skill needs of the labor market.

The assignment was carried out from April to November 2019 in collaboration between NEA and the Department of Labour Market Information (DLMI) with key activities bellow:

1. Identify forecasting models that allow to verify the coherence between exits from the educational and vocational training system and the skill needs of the labour market;

2. In collaboration with NEA and DLMI, use the identified approach to estimate a five (ten) year forecast on skills demand and supply if possible by region, economic sector, and occupation;

3. Guide and oversee training of a group of officers of the NEA and DLMI in designing and implementing LM forecasting tools;

The Analytical Framework

Phase of Life and Labour Market

The simplified representation of human life and population used to represent a stock-flow model of the labor market (Bruni, 1988, 1993).

From an economic perspective, human life can be divided into three phases that define three corresponding sub-populations: (a) the training phase and the population in the training phase; (b) the working phase and the Working age population WAP; (c) the post-working phase and the post-working age population
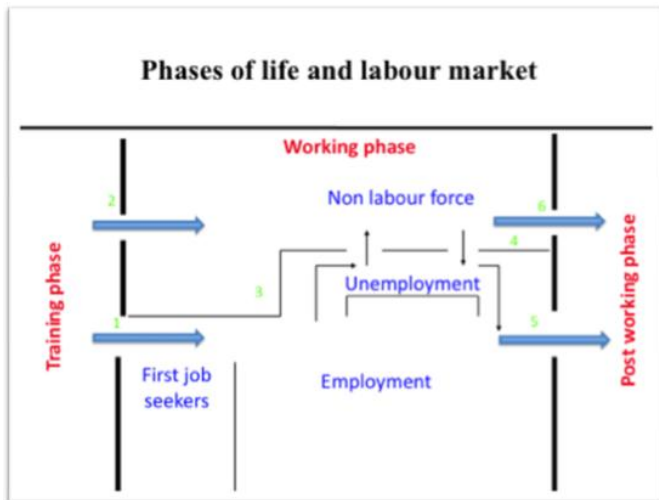
The flows of the education system.

From a labor market perspective, Working Age Population (WAP) includes other subpopulations relevant for labor market analysis: the labor force (that includes the employed, the unemployment and the first-job seekers) and the non-labor force. These populations are the main stock variables of the model.

If we consider an interval of time, the arrows in the figure are given life. They represent the flow variables that measure the number of people moving from one condition to another (from one population to another). In any given time interval, the flow variables determine the quantitative and qualitative changes registered by the related stock variables:

Births and deaths determine the natural dynamic of the population;

The number of people turning 15, the number of people turning 65, and the death of people in working age determine the natural dynamic of the population in working age {WAP}

Entries and exit flows determine the level, structure and trends of employment and the labor force.

Education and TVET Systems

The number of entries into the labor force in any given year are determined by the exits from the Education and TVET system and the propensity of the cohorts exiting in any given year to enter the labor market as the result of the evolution of The number of births, The demographic survival rates of the youngest cohorts and The average duration of education and vocational training of contiguous cohorts
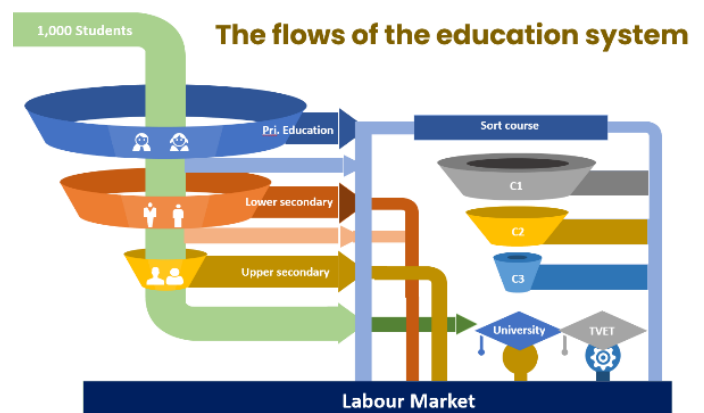
Main Finding

Economic growth Over the past three decades, Cambodia has achieved a remarkable socioeconomic development. Economic growth, driven by textile, tourism, construction, and initially agriculture has been impressive. Despite a slowdown registered after the financial crisis, from 2000 to 2017 real GDP has increased by 250% and GDP per capita (that by now stands at almost 1,500 dollars) has more than doubled in real terms.

Economic sectors and branches - The main economic sectors and their branches have registered quite different rates of growth that have impacted on their weight in total production and role in economic growth. After the 2009 crisis, GDP grew at an average rate of 7%; in the same period the rate of growth of agriculture dropped to 2.1%, that of Services to 5.3%, while the rate of growth of the Industrial sector increased to 11.2% As a result, at present the share of Services in Gross value added is 42.2%, that of Industry 32.9%, while the share of Agriculture is down to 24.9%.

To better appreciate the recent situation we recall that from 2009 to 2017 three braches accounted for half of the increase in Value added: Textile (31%), Construction (11%), and Trade (9%). On the negative side, the contribution of agriculture was only 7.3% (it was 21% in the previous decade) and that of Hotel and restaurants had declined from 6.4% to 5.4%.

Demographic trends - Total population that numbered 4.4 million in 1950 stands now at 15.5 million. However, its rate of growth has notably decreased. The Total fertility rate is still well above the replacement level (2.7 children), but the number of births is projected to decline from a present peak of 366,000 to 318,000 for the middle of the century. The share of working age population has reached 64.3% so that in the next years Cambodia could profit from the demographic dividend.

The education system - After 1980 Cambodia has made big steps in rebuilding the national education system. The large increase in the number of students has been paralleled by an even more relevant increase of physical infrastructure and staff. Data show that in the last years the education system has started to successfully face the relevant problems with which it was confronted and that affected the regularity of the education process: the presence of a large number of overage students, an extremely high number of dropouts the majority of which were concentrated in the Primary level, a high rate of repetition. Despite the improvement registered in the last 10 years, in the school year 2016-17 one student out of seven was still overage, the repetition rate in Primary school was 6.5% and more than ¾ of the exits from the education system were due to dropouts. However, contrary to the past the percentage of dropouts increased with the educational level.

A rough estimates puts the present exits from the training phase at around 315,000 that generate a labor supply just in excess of 280,000, around 60% of which with less than compulsory education, 17% with maximum Lower secondary education, 6% with Upper secondary education and 17% with a university degree.

The labor market - Taken at face value, labor market data, and more specifically the absence of unemployment, suggest an almost perfect coherence between labor supply and labor demand. Such conclusion, however, is not warranted in a situation in which ¾ of the labor force reside in rural areas where statistical surveys find it difficult, if not impossible, to measure unemployment or to distinguish between employment and hidden unemployment and urban areas are

certainly characterized by a large under-employment.

Labour market data do, however, suggest also substantial changes and qualitative improvements of the employment situation. In the last ten years the employment level increased at an average yearly rate of 193,000; agricultural employment started to decline in 2012 so that by now its share is down to 37%. In the same period the increase in industrial and service employment has accelerated respectively to 161,000 and 178.000, and the shares of the two sectors have increased to 26.2% and 36.8%.

The same period has also registered notable qualitative improvements. More specifically:

- The percentage of paid employees has increased from 26% to 51% while the weight of Non-paid family workers has declined from 36% to 4%;
- The percentage of skilled agricultural workers has declined to 31%, while that of Craftsmen has increased form 10% to 24% and that of Sale and services workers from 12% to 18%. Moreover in the last 5 years the growth of Craft and related occupations, Services and sales workers, Clerical support works explain respectively 54%, 18% and 13% of employment growth, while other relevant contributions came from Plant and machine operators, Professionals and Technicians. However the joint weight of managers, professionals and technicians has slightly declined and remains below 6%, while unskilled workers still weight more than 10%;
- The educational level of the labour force has improved, but remains very low: 70% have not completed compulsory education; those with high education are 8% and 7% have a post-secondary diploma. A positive element is, however, represented by the fact that in the last 5 years 34% of the additional jobs have been taken by people with post-secondary education; however, the same period registers also an increase in the number of employed with less than primary or primary education.

The scenarios

The scenarios have been estimated via a stock-flow model of the labour market that allows assessing how many people will be requested by the market and how many will be entering the labour force and to analyse the quantitative and qualitative coherence of the two flows.

A stock-flow analysis of the Cambodian labor market for the period 2007-2017 - The analysis shows that between 2007 and 2017:

- On the average every year 261,000 young Cambodian found their first job;
- The creation of additional jobs contributed for 79%, generational substitutions for 21%;
- 92% of entrants were in the 15-19 age group and the other 8% in the 20-24 age group
- Two-third of exits were concentrated in the 55-64 age group and 26% in the previous age bracket.
- The improvement in the educational level we have already observed was determined by the difference between the educational level of those that entered employment and those that exited.

The 2017-2027 scenarios

The demand side - The higher average age of the employed brings to estimate that from 2017 to 2027 definitive exits will be more numerous than in the previous period and amount to 1.045 million.

The number of jobs that will be created by the Cambodian economy (the Additional demand) will be determined by the rate of growth of production and by the rate of

growth of productivity; the former will largely depend on the quantity and typology of internal and foreign direct investment and on international trade; the latter will result from better technology, more educated and better trained employed, improved labor organization and passages of the production structure to higher technological clusters.

Past trends and recent indications of the Cambodian public institutions did suggest the adoption of three average rates of GDP growth (6%, 7%, and 8%), and three employment-income elasticity (0.2%, 0.25% and 0.3%). The latter, all below past values, reflect the hypothesis that ageing and the attraction generated by construction and manufacturing could accelerate the exodus from rural areas and agricultural occupations, while technological innovation need to be introduced in all sectors to boost the competitiveness of the Cambodian production system.

The resulting 9 rates of employment growth are included between a minimum of 1.2% and a maximum of 2.4%, and of 1.75% in the intermediate scenario that corresponds to average increases of employment equal to 111,000, 235,000 and 166,000 respectively. A comparison with the expected growth of working age population provides the first important result: rates of GPD growth above 7% would require an employment-income elasticity lower than 0.25 and therefore very high rates of technological change.

Concentrating the analysis on the intermediate scenario, the Report finds that agricultural employment is expected to decline at an average yearly rate of 178,000, while industrial employment will increase by 183,000, and services by 178,000. This would notably change the employment structure by sector, with agriculture declining to 14%, industry increasing to 39.6% and Services to 46.4%. The negative Additional demand of Agriculture does not imply that Agriculture will not register generational entries. As a matter of fact the definitive exits of elderly people and the passages of younger workers

to Industry and Services, probably mainly toward Construction, the Garment sector, and the Tourism sector (that will all continue to absorb workers with low educational level) will be partially counterbalanced by the entries of the children of the present day farmers.

The sum of the Additional demand in the Intermediate scenario and of the Replacement demand brings to an estimate of the Labor demand in terms of flows of around 270, 000 young people per year. Based on past trends, the Report estimates that still 34% of entries will have less than compulsory education, 23% compulsory education, and 23% at least Upper secondary. The average educational level of generational exits will be notably lower; therefore the educational level of the employed will increase, but the increase will not be dramatic. In 2027, the share of people with less than compulsory education will still be as high as 59%, but the share of employed with at least Upper secondary education is expected to increase from 8.2% to 12.4%.

The supply side - The supply of labor in terms of flow is given by the number of people that enter the labor force in any given time interval. According to UN DESA Population Projection (UN DESA 2019), between 2017 and 2027, entries into working age population will amount to 3.2 million. Assuming that the propensity to enter the labor market remain constant, the Report estimates entries into the Labor force at 2.634 million.

To break down generational entries by educational level, the Reports presents two projections of the exits from the Education and TVET system based the first on the assumption that the specific rates of survival remain constant at the level of the school year 2016-17, the second, more realistically, that they will progressively improve. As to be expected, the educational level of exits improves more in the second than in the first scenario: while in 2017, 60% of the students exiting the school system had not reached

compulsory education and 40% had at least compulsory education, the shares are projected to be 50% and 50% in Scenario 1, 40% and 60 % in Scenario 2. Even more interestingly, University graduates could reach in 2017 a percentage of 20%.

Finally the Report examines whether the exits from the training phase of life (scenario 2) and the needs of the labor market (Intermediate Scenario) by educational level for the period 2017-2027 are qualitatively coherent. The estimates show that the exits from the school system are perfectly in line with the needs of the labor market, the only value in excess being that of the lowest educational level, which is generally characterized by a lower propensity to enter the labor force.

Skill needs and training requirement 2017-22.

The demand side - The estimated Total employment growth was estimated at 795,000 is the result, on the one hand, of a decline in agriculture of 808,000 and, on the other, of an increase in Industry and Services of respectively 850,000 and 753,000. Once the Replacement demand and the passages from agriculture to the other two main sectors are taken into consideration, entries into Agriculture are estimated equal to 40,000, those into Industry to 196,000 (113,000 first time entries and 83,000 passages from agriculture) and those into Services 188,000 (109,000 first time entries and 79,000 passages from agriculture).

The analysis of the labor demand by major occupational groups allows to bring into the picture the fundamental issue of skill requirements and training needs. The report estimates that of the 490,000 average yearly entries into the three main sectors around ¾ will be in three major occupational group, with Craft and related workers playing the major role (57%), followed by Services and sales workers (14%) and Clerical support workers (13%). A minor but qualitatively important role will be played by Plant and machine operators, Professional and Technicians.

The combined use of different sources including NEA Job Index allows to provide some tentative quantitative estimates of the demand in terms of flows for single occupations and indication of the occupations characterized by a relative lack of supply. The research points out the main role that will be played by single occupations of the construction sector, of the garment sector, of the Accommodation and restaurant sector and by those of the retail trade sector but also of important occupations requiring Upper High school and University. These indications can be easily translated into educational and training needs by the relevant Ministries and especially by the Ministry of labor.

Coming to the supply side, the analysis of the TVET courses at certificate and university level and show that the share of the labor supply covered by vocational training courses is qualitative and quantitatively very limited so that it could (should) be immediately expanded in the direction indicated in the Report.

Policy Suggestion

A central finding of the Report is that the Cambodia labour market suffers from a still very low educational level of the workforce. It is a structural problem that can be solved only in the medium long run by increasing the educational attainment of the student exiting the training phase of life.

A higher educational level of the workforce is extremely important in this historical phase not only because a more educated workforce is requested by numerous branches of the service sector, but also because it represents a prerequisite to acquire the skills and competences requested by the new technology that will be adopted in Agriculture and Industry. It

must be underlined that many of the limits that employers find in TVET graduates such as the lack of basic skills in such areas as reading, writing, and mathematics, cannot be imputed not to vocational training but to lack of education.

An improved efficiency of the labour force is also requested because due to the demographic transition the rate of increase of the labour force will necessarily decline and migration flows to neighbour countries could further deplete the availability of local skilled labour.

Reduce the dropout rate - The majority of exits from the education system take place not at the end but during the educational cycles and those during primary education are especially relevant and have the highest impact. Our analysis has shown that a reduction of the dropout rate would immediately impact on the average duration of the education process.

Many of the causes of early dropouts can be easily understood. A previous ADB Report stated that "Poverty drives many children into the labor force before they acquire much schooling and malnutrition affects what they can learn when they are in school" (ADB, 2015). Given the relevance of the issue, it would seem relevant to organize a survey aimed to investigate in an organic way the root causes of the phenomenon and to design efficient measure to tackle the problem

Improve the efficiency of the education process – The analysis has shown that in the near future the number of students enrolled in the school system will not increase substantially; in this phase it would seem therefor possible and appropriate to invest in the quality of education. According to the same ADB study: Another challenge is the quality and relevance of the education that is currently provided. One reason for quality problems in education is that teachers themselves are often underqualified." Improvement in the quality of the teachers

and of the students-teacher ratio would not only increase the quality of the graduates, but would reduce the repetition rate, which is another of the structural problems that affect the regularity and efficiency of the training process.

Define the role of TVET - This report has devoted little space to TVET, the main reasons being the extremely low number of students and graduates form vocational schools (around 1% of the total) and the lack of statistical information. However, it is to be hoped that the role and relevance of TVET will increase. Three directions seems to be open for a larger role of TVET.

In the first place TVET could act as a safety net for the boys and girls that drop out from school during compulsory education. Acting in this direction TVET could at least partially help these children to comply with the education requirement, while providing them some tools for the labour market.

In the second place, TVET could enlarge its activity by attracting boys and girls that have completed compulsory education or a higher educational level and providing them with the skills and competencies requested by the market. It is common knowledge that vocational training in Cambodia is faced, as in many countries in the world, by a negative perception and is seen as a second level solution. This vision is often due also to the lack of recognition of the status and relevance of jobs for which the TVET prepares its student. In order to enlarge the scope of TVET is therefore crucial not only to show its relevance and advertise its presence, but also to improve the social status and economic return of the wages of the TVET occupations.

In the third place it is widely recognised that the next years will be characterized by an unprecedented technological innovation that will affect all economic sectors. This will require a large amount of retraining that TVET Institutions could provide in cooperation with the private sector.

Finally a series of factors will make employment in agriculture crucial for the development of the country. The huge reduction of workers the sector will witness, the centrality that this sector should recover in the Cambodian economy, the necessity to increase its productivity adopting the most modern technology suggest that TVET institution should give special attention to agriculture.

Education, Vocational training and Industrial policies – Thinking that in order to plan and organize education and vocational training what we need is a forecast of the labour demand is simplistic. In the first place economists are not fortune tellers and what they can do and should do is to provide alternative visions of the future based on different values of the basic variables of the problems. These scenarios will tell politicians what will happen if certain events will take place and or certain policies will be adopted. The scenarios are therefore tools that help politician to take evidence based decisions. In the second place the future is also our own creation. This implies that the training that will be needed will largely depend on the amount and typology of investments that will be made, the agricultural and industrial policies that will be enacted, on how good we will be in expanding the service sector.

In conclusion, while labour market and economic intelligence should provide scenarios, a strong and continuous coordination should be established between the design and implementation of economic policies and the design and implementation of training policies, broadly defined

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List of Labour Market Statistics

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Cambodia Population in thousands
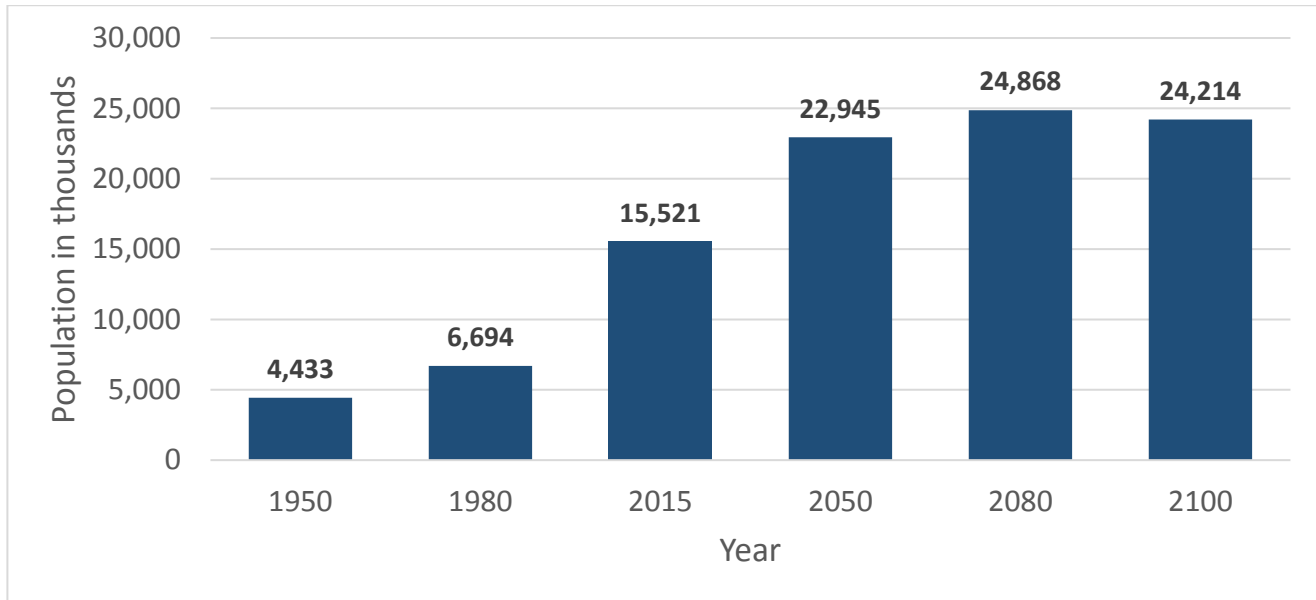
Source: Elaboration on UN DESA data, UN DESA 2019

Births, deaths and natural balance, from 1950–1955 to 2095–2100; average yearly values in thousands
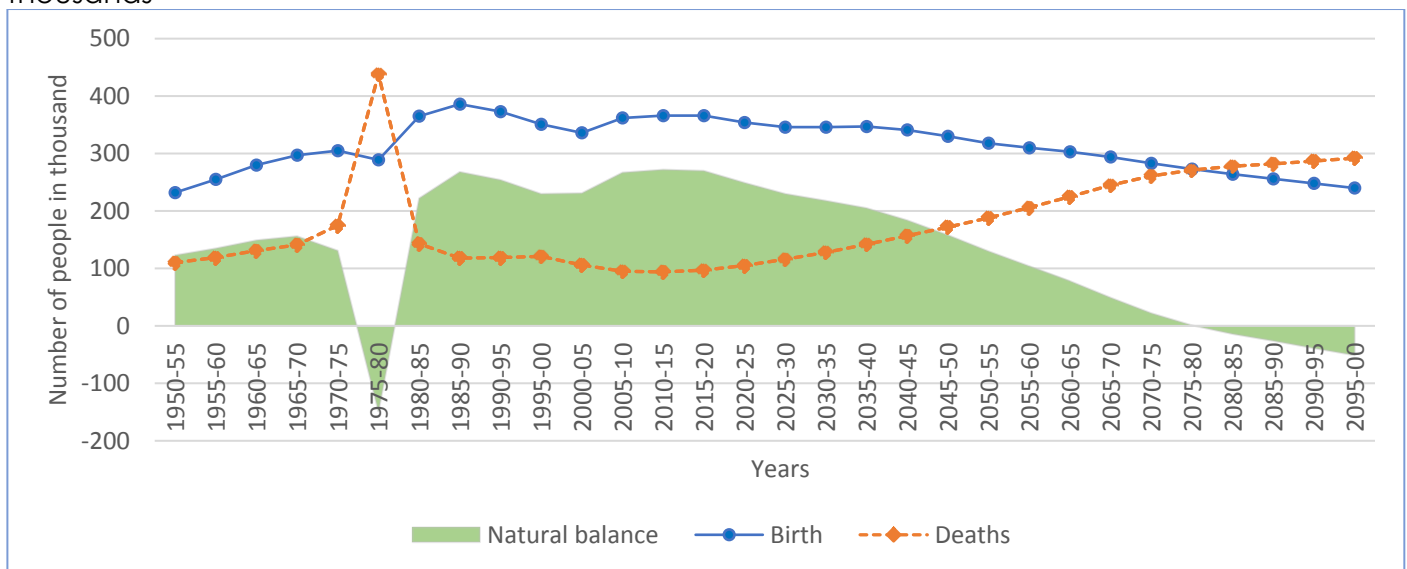
Source: Elaboration on UN DESA data, UN DESA 2019

Total population by main age group, 1950-2015 (==in thousands==)
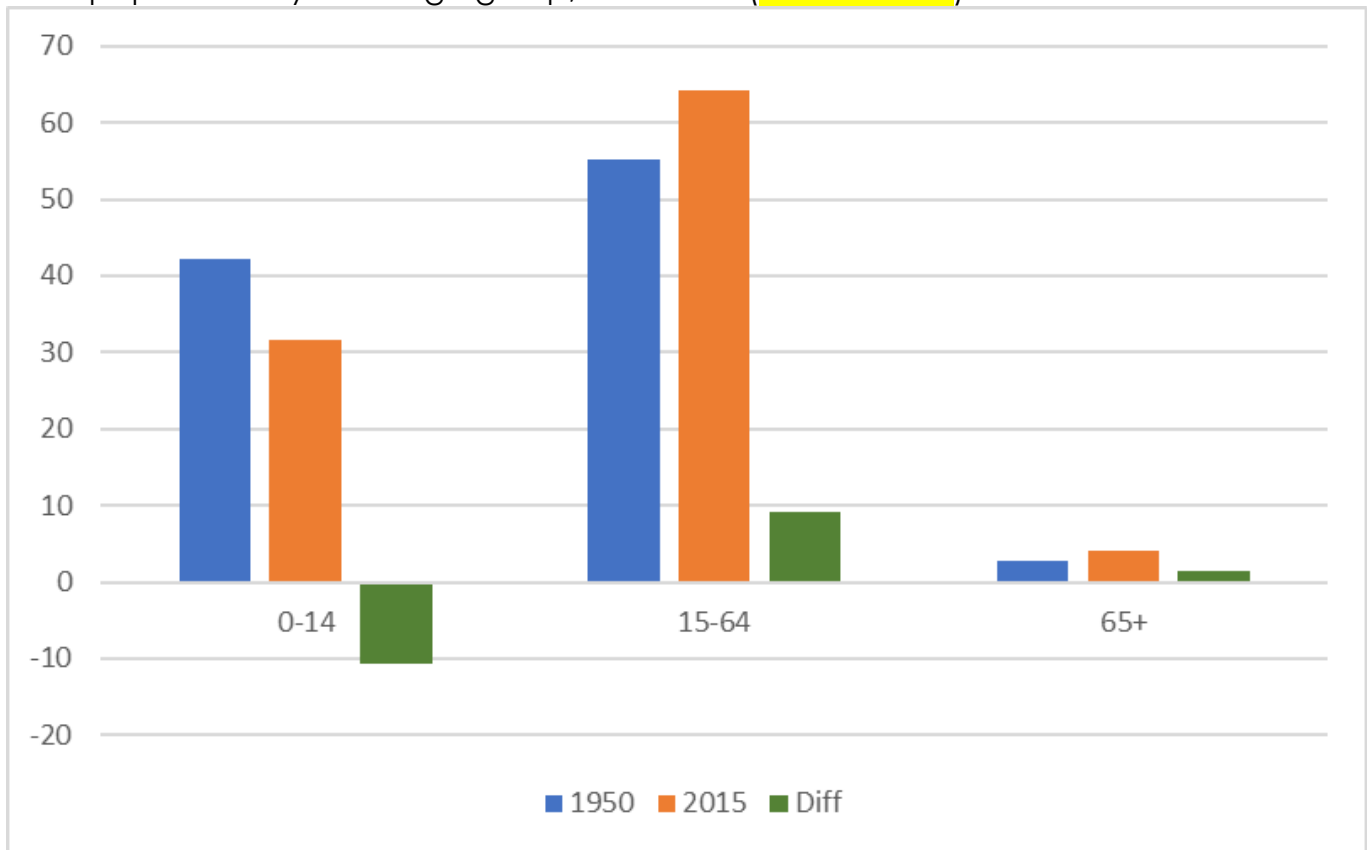
Source: Elaboration on UN DESA data, UN DESA 2019

Training age population by education level from 1980 – 2050 (in thousands)

Source: Elaboration on UN DESA data, UN DESA 2019

Education

Total enrollment by sex and grade; absolute values; 2005-06 to 2017-18

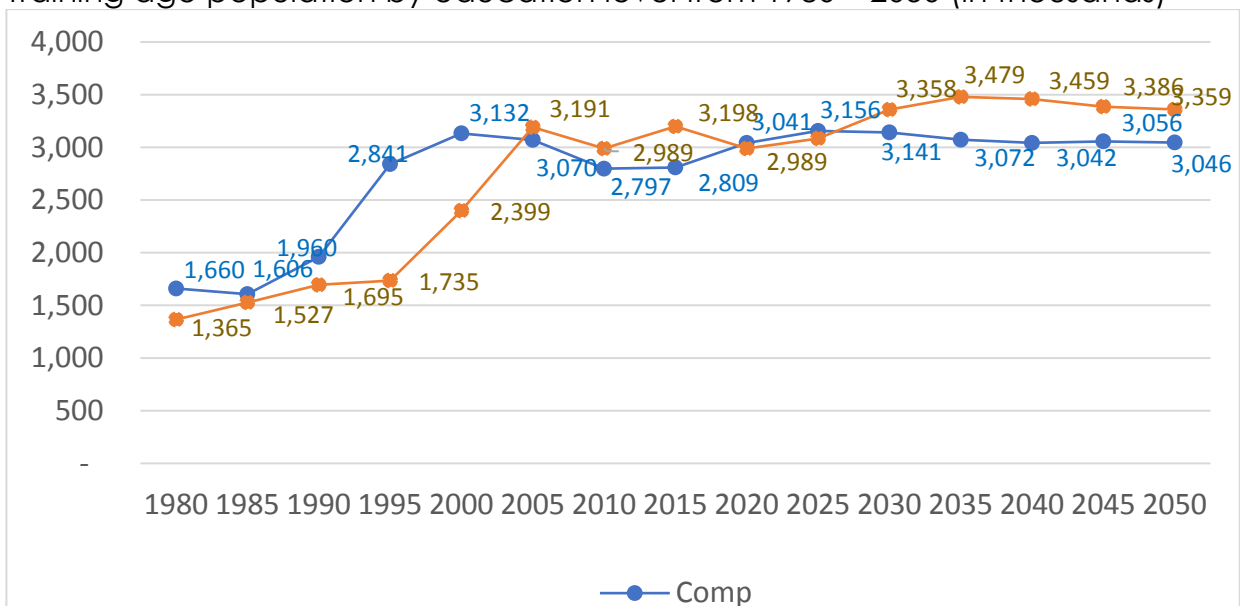|	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Males													
grade 1	297,736	297,032	262,977	266,599	253,277	239,901	226,136	219,638	219,230	219,564	223,186	213,579	207,318
grade 2	250,603	243,037	236,103	222,264	226,911	219,505	208,538	197,561	193,569	194,052	197,579	200,815	195,426
grade 3	228,005	218,585	211,142	210,099	200,384	202,725	197,021	191,878	183,603	174,735	178,576	185,340	188,717
grade 4	208,812	196,230	187,839	184,453	186,673	179,690	183,515	196,174	174,479	162,096	157,799	165,818	172,452
grade 5	194,127	178,951	167,392	163,448	162,390	164,939	160,341	193,982	161,709	152,043	146,224	146,596	153,558
grade 6	169,902	165,596	151,077	142,678	140,923	141,050	145,322	151,168	146,232	138,686	135,497	135,682	135,660
grade 7	142,807	140,732	134,919	121,714	116,109	113,770	112,020	114,200	111,401	113,897	113,535	116,259	117,915
grade 8	103,474	111,801	111,006	104,868	96,719	92,026	88,567	85,608	88,866	84,993	88,173	89,881	93,146
grade 9	77,923	87,773	94,797	92,020	92,760	84,614	76,967	71,533	70,586	72,651	71,357	76,248	79,373
grade 10	53,321	52,835	63,797	68,491	67,359	67,124	59,714	52,976	49,907	49,677	51,696	51,785	57,431
grade 11	34,977	44,654	45,018	53,444	60,010	58,184	55,704	48,607	43,562	40,805	40,881	43,883	44,374
grade 12	37,064	36,081	45,368	47,154	55,331	58,954	57,230	52,598	45,787	43,097	40,293	40,290	42,939
Total	1,798,751	1,773,307	1,711,435	1,677,232	1,658,846	1,622,482	1,571,075	1,575,923	1,488,931	1,446,296	1,444,796	1,466,176	1,488,309
Females													
grade 1	262,435	261,231	233,471	237,406	236,725	214,435	201,301	197,019	195,721	195,999	196,245	183,642	179,546
grade 2	217,934	212,589	208,658	196,266	200,859	195,422	186,679	179,399	174,526	175,915	179,013	180,478	171,236
grade 3	198,726	191,738	186,843	186,911	178,407	182,229	177,816	175,921	167,233	160,811	166,175	170,919	172,793
grade 4	187,369	174,828	169,260	167,060	169,985	163,205	168,272	167,243	162,158	153,042	150,754	158,118	163,096
grade 5	181,919	164,776	153,790	151,174	150,351	153,888	148,925	168,406	153,482	147,116	143,140	144,371	151,635
grade 6	160,899	156,542	142,555	134,475	133,766	134,203	138,598	134,995	141,869	138,116	136,485	136,703	137,257
grade 7	125,280	127,388	124,561	113,086	109,924	109,720	109,146	112,317	110,589	116,131	118,974	122,633	123,069
grade 8	82,749	94,206	98,088	96,108	89,499	87,024	85,308	84,477	89,274	87,234	94,454	99,867	104,171
grade 9	56,100	64,105	74,258	77,911	80,104	73,714	69,139	66,575	67,910	71,772	71,971	81,154	87,423
grade 10	36,062	37,480	45,832	53,146	57,248	57,696	52,367	48,560	47,826	49,799	53,827	56,253	64,802
grade 11	22,559	29,620	31,633	38,824	46,213	49,064	47,490	42,772	40,026	39,958	41,634	46,421	48,678
grade 12	20,942	21,601	29,317	31,364	37,422	43,712	45,660	43,276	39,185	38,922	38,275	40,777	45,745
Total	1,552,974	1,536,104	1,498,266	1,483,731	1,490,503	1,464,312	1,430,701	1,420,960	1,389,799	1,374,815	1,390,947	1,421,336	1,449,451
Total													
grade 1	560,171	558,263	496,448	504,005	490,002	454,336	427,437	416,657	414,951	415,563	419,431	397,221	386,864
grade 2	468,537	455,626	444,761	418,530	427,770	414,927	395,217	376,960	368,095	369,967	376,592	381,293	366,662
grade 3	426,731	410,323	397,985	397,010	378,791	384,954	374,837	367,799	350,836	335,546	344,751	356,259	361,510
grade 4	396,181	371,058	357,099	351,513	356,658	342,895	351,787	363,417	336,637	315,138	308,553	323,936	335,548
grade 5	376,046	343,727	321,182	314,622	312,741	318,827	309,266	362,388	315,191	299,159	289,364	290,967	305,193
grade 6	330,801	322,138	293,632	277,153	274,689	275,253	283,920	286,163	288,101	276,802	271,982	272,385	272,917
grade 7	268,087	268,120	259,480	234,800	226,033	223,490	221,166	226,517	221,990	230,028	232,509	238,892	240,984
grade 8	186,223	206,007	209,094	200,976	186,218	179,050	173,875	170,085	178,140	172,227	182,627	189,748	197,317
grade 9	134,023	151,878	169,055	169,931	172,864	158,328	146,106	138,108	138,496	144,423	143,328	157,402	166,796
grade 10	89,383	90,315	109,629	121,637	124,607	124,820	112,081	101,536	97,733	99,476	105,523	108,038	122,233
grade 11	57,536	74,274	76,651	92,268	106,223	107,248	103,194	91,379	83,588	80,763	82,515	90,304	93,052
grade 12	58,006	57,682	74,685	78,518	92,753	102,666	102,890	95,874	84,972	82,019	78,568	81,067	88,684
Total	3,351,725	3,309,411	3,209,701	3,160,963	3,149,349	3,086,794	3,001,776	2,996,883	2,878,730	2,821,111	2,835,743	2,887,512	2,937,760

Source: The Education Statistics and Indicators, EMIS, Ministry of Education, Youth and Sport

Enrollment, population training age and rate of enrollment in thousand

	Enrolled	**Population**	**% Enrolled**
Primary	2,022	2,049	98.7
Lower- Secondary School	586	1,051	55.8
Upper Secondary School	283	1,010	28.0
Higher Education	155	2,211	7.0
Total	3,046	6,320	48.2

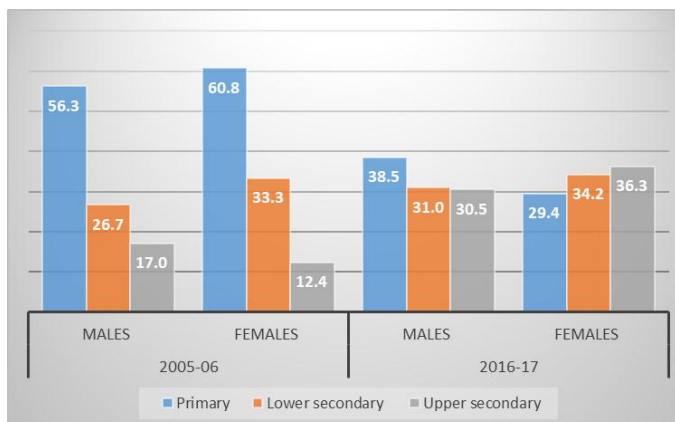Source: elaboration on EMIS, The Education Statistics and Indicators

Percentage distribution of enrollment and training age population
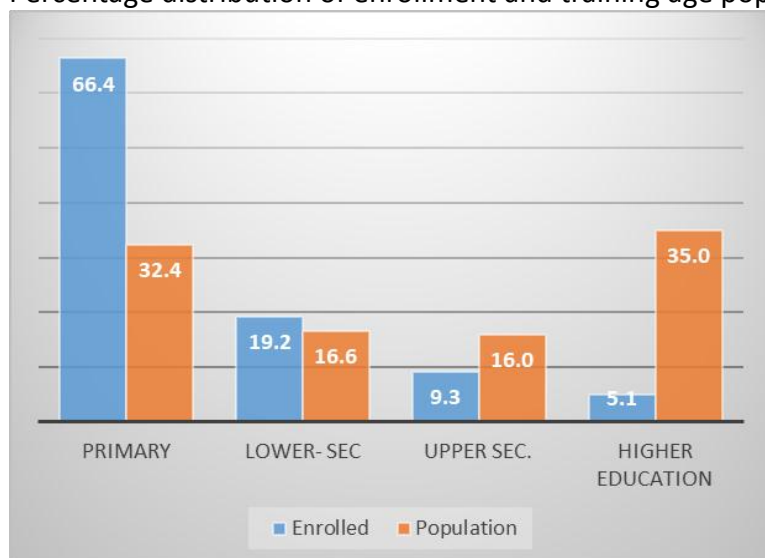
Source: elaboration on EMIS, The Education Statistics and Indicators

Exits by sex educational level and typology in 2005-06 and 2016-17;
the weight of dropouts , Percentage distribution of dropouts by educational level in
2005-6 and 2016-17

	Males			Females			Male and females		
	RE	DO	TE	RE	DO	TE	RE	DO	TE
					Primary				
Absolute.Value									
2005-06	10	135	145	15	117	132	25	252	277
2016-17	11	49	60	6	33	39	17	82	100
% Incidence									
2005-06	26.2	61.3	56.3	43.7	60.8	58.2	34.6	61.1	57.2
2016-17	33.1	40.0	38.5	18.2	33.1	29.4	25.8	36.9	34.3
					Lower secondary				
Absolute.Value									
2005-06	2	67	69	3	64	67	5	131	136
2016-17	2	47	49	3	43	46	4	90	94
% Incidence									
2005-06	5.7	30.2	26.7	7.8	33.3	29.4	6.8	31.6	28.0
2016-17	4.8	38.2	31.0	8.0	42.7	34.2	6.4	40.3	32.5
					Upper secondary				
Absolute.Value									
2005-06	25	19	44	17	11	28	42	30	72
2016-17	21	27	48	24	24	49	45	51	96
% Incidence									
2005-06	68.1	8.5	17.0	48.5	5.9	12.4	58.6	7.3	14.9
2016-17	62.1	21.8	30.5	73.8	24.2	36.3	67.8	22.9	33.2

Source: elaboration on EMIS, The Education Statistics and Indicators

Number of year birth in thousands from 1950 – 2100 as estimate of entry into education
system
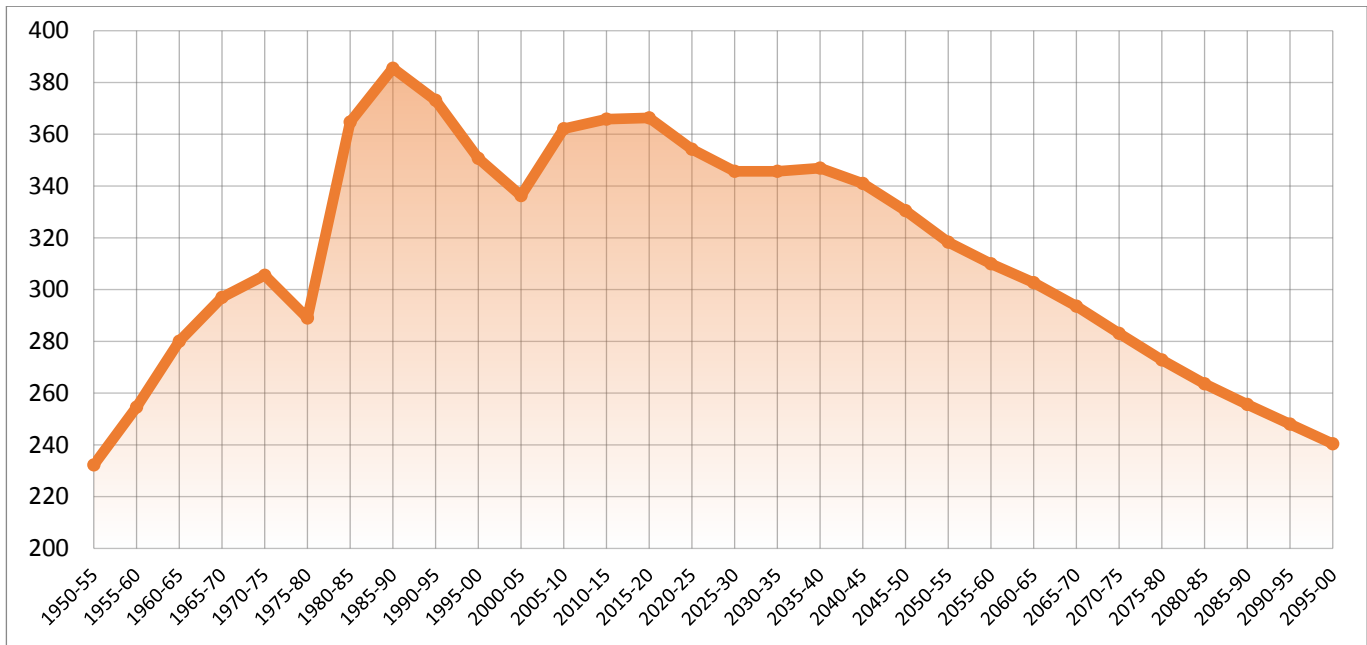
Source: Elaboration on UN DESA data, UN DESA 2019

TVET

Enrollment in certificate courses

	Enrolment											
	C1			C2			C3			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
2018-19	1,727	607	2,334	675	149	824	395	77	472	**2,797**	**833**	**3,630**
2017-18	1,703	623	2,326	484	85	569	262	58	320	**2,449**	**766**	**3,215**
2016-17	1,416	531	1,947	387	66	453	232	42	274	**2,035**	**639**	**2,674**
2015-16	1,120	358	1,478	268	41	309	180	23	203	**1,568**	**422**	**1,990**
2014-15	580	171	751	116	22	138	143	20	163	**839**	**213**	**1,052**
2013-14	270	94	364	100	20	120	82	21	103	**452**	**135**	**587**
2012-13	123	23	146	152	27	179	64	20	84	**339**	**70**	**409**

Source: TVETMIS, MLVT

Enrollment by sex; percentage composition by level

	C1			C2			C3		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
2018-19	61.7	72.9	64.3	24.1	17.9	22.7	14.1	9.2	13.0
2017-18	69.5	81.3	72.3	19.8	11.1	17.7	10.7	7.6	10.0
2016-17	69.6	83.1	72.8	19.0	10.3	16.9	11.4	6.6	10.2
2015-16	71.4	84.8	74.3	17.1	9.7	15.5	11.5	5.5	10.2
2014-15	69.1	80.3	71.4	13.8	10.3	13.1	17.0	9.4	15.5
2013-14	59.7	69.6	62.0	22.1	14.8	20.4	18.1	15.6	17.5
2012-13	36.3	32.9	35.7	44.8	38.6	43.8	18.9	28.6	20.5

Source: TVETMIS, MLVT

TVET courses by field and level; school year 2017-18

		Courses				
		C1	C2	C3	Total	
1	Electricity	29	15	11	**55**	*31.8*
2	Information Technology	22	8	5	**35**	*20.2*
3	Automobile	16	7	3	**26**	*15.0*
4	Civil Engineering	12	4	4	**20**	*11.6*
5	Air Conditioning	12			**12**	*6.9*
6	Welding	5			**5**	*2.9*
7	Mechanical	4	3	2	**9**	*5.2*
8	Graphic Design	3		1	**4**	*2.3*
9	Electronic	3			**3**	*1.7*
10	Tourism And Hospitality	1			**1**	*0.6*
11	Metal Engineering		1		**1**	*0.6*
12	Business Information Technology			1	**1**	*0.6*
13	Veterinary Science			1	**1**	*0.6*
	Total	107	38	28	**173**	*100.0*
		61.8	*22.0*	*16.2*	*100.0*	

Source: TVETMIS, MLVT

Scenarios of labor demand in terms of flow

Employment by main economic sector; actual values for the period 2007-2017 and projected values for the period 2017-2027

$y = 0.962x - 1904.7$

$y = 1.3425x - 2681.1$

$y = -2.3045x + 4685.8$
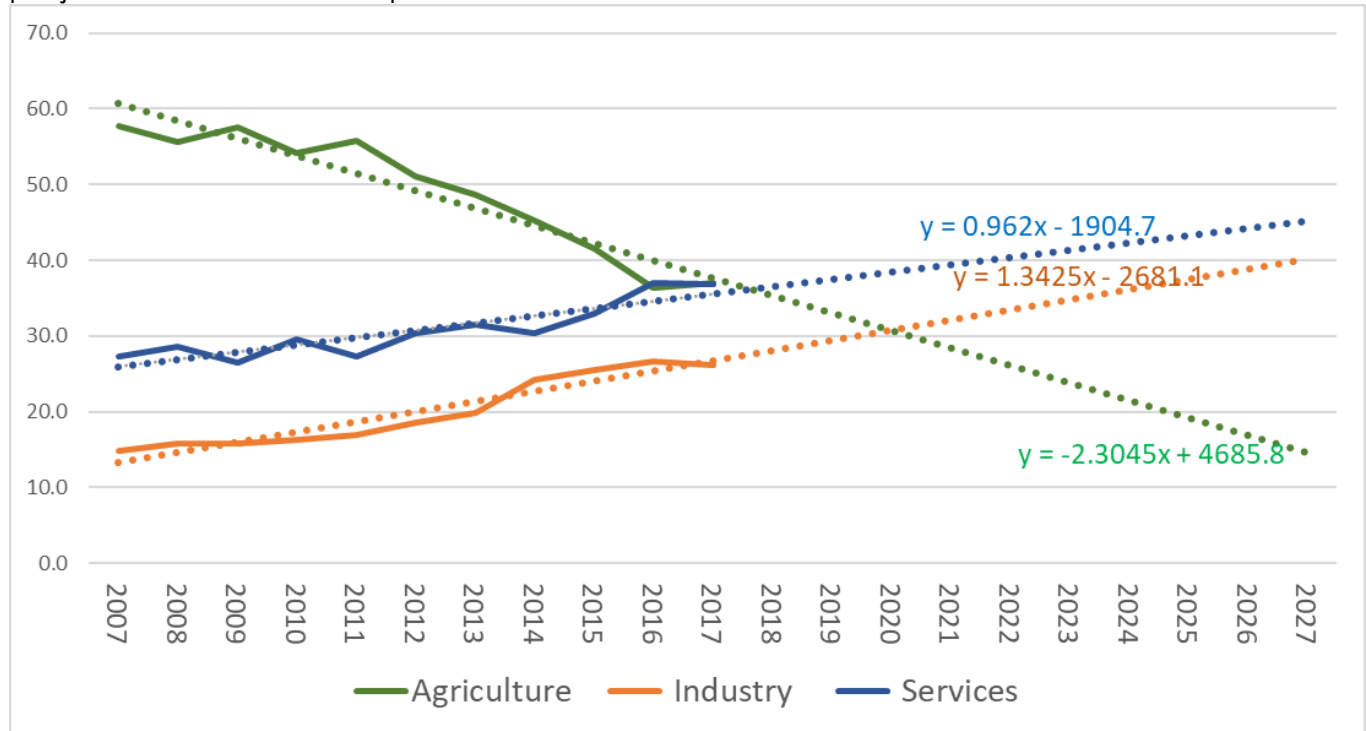
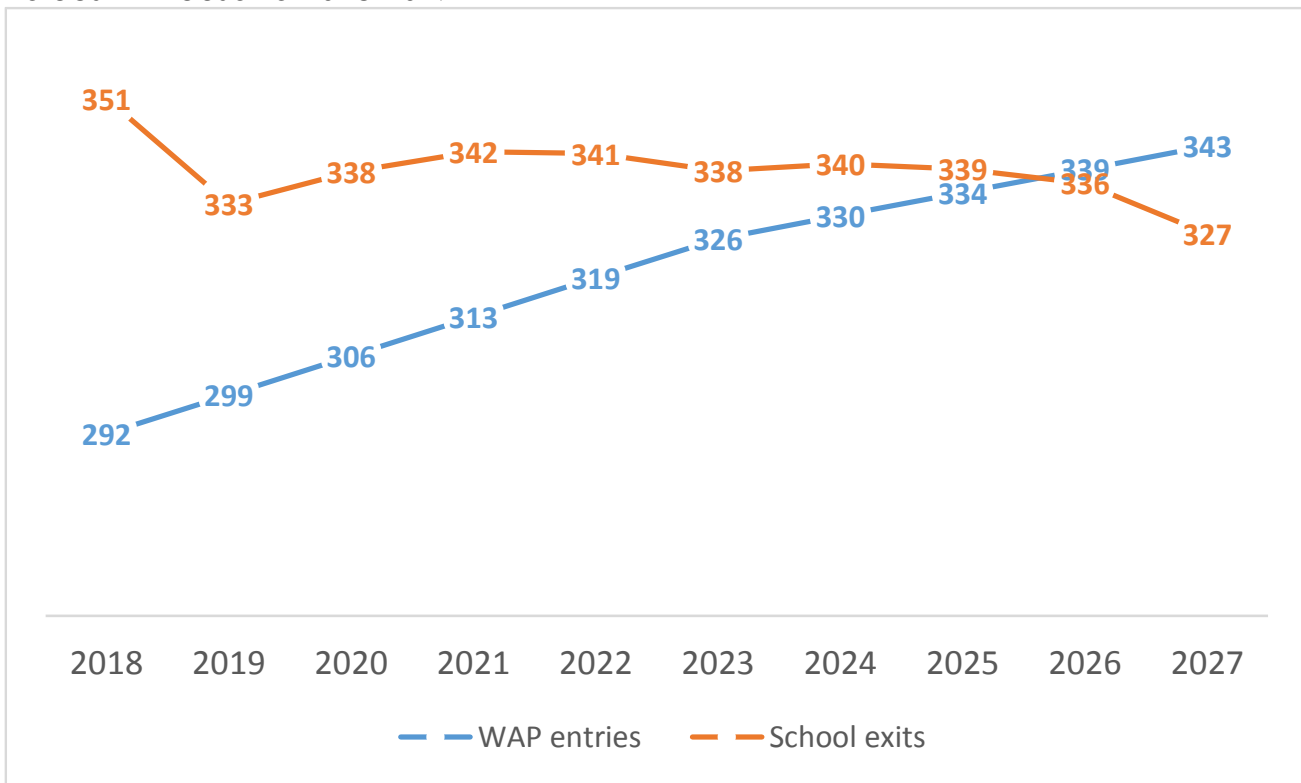Source: Authors' Calculation. National Institute of Statistics (2019), *CSES*

Scenarios of labor supply in terms of flow

Labor supply in terms of flow (in thousand); 2007-2027
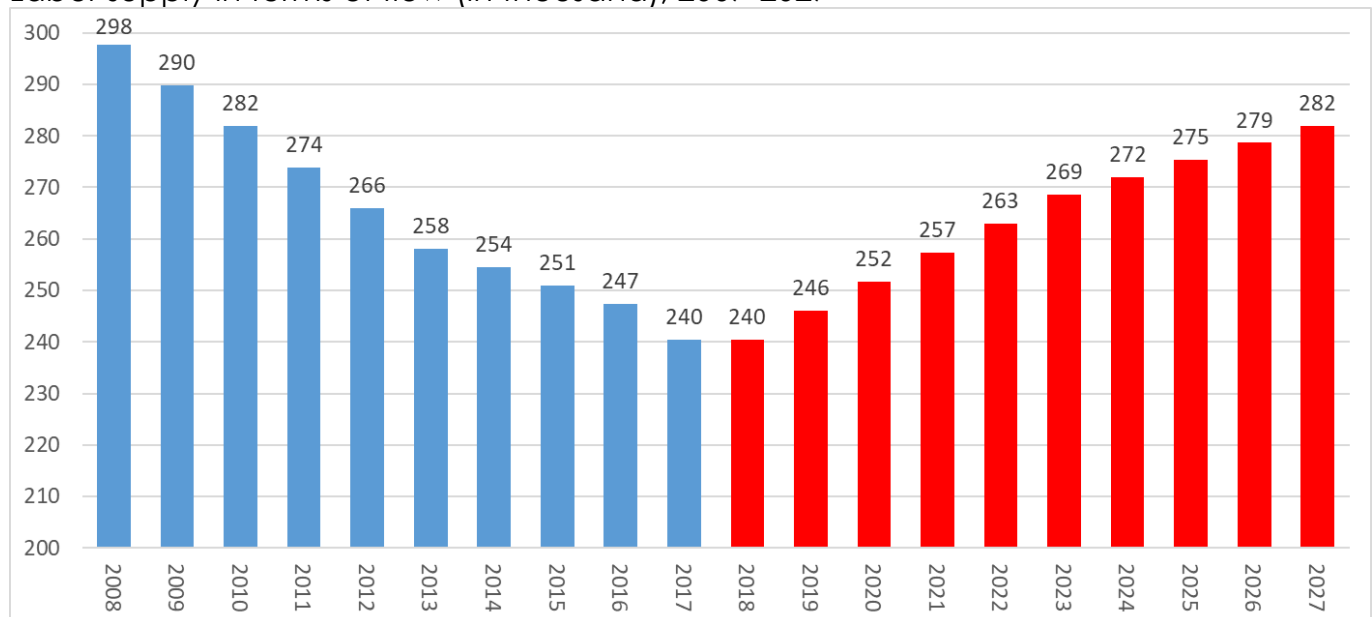
Source: Elaboration on UN DESA data; UN DESA, 2019

Entries in working age population and exits from the education system (Scenario 2); values in thousand 2018-2027

Source: Authors' Calculation. UN DESA data and EMIS

The Five-Year Scenario 2017-2022

Replacement demand, additional demand and labor demand in terms of flow, 2018-2022 (in thousand)

|	Replacement demand	Additional demand	Labour deamnd in terms of flow	% Replacement demand
2018	98	153	252	39.0
2019	102	156	258	39.5
2020	106	159	265	40.0
2021	109	162	271	40.4
2022	113	165	278	40.8
2018-22	529	795	1,323	39.9

Source: Authors' Calculation. National Institute of Statistics (2019), CSES

Gross value added, Employment, Labor productivity, Working age population and Rate of employment; absolute values, absolute change and percentage change; 2017-2022 (in thousand)

	GVA	Employment	Labour productivity	WAP	RoE
2017	45,554	8,770	1,299	10,357	84.7
2022	63,892	9,565	1,670	11,235	85.1
Abs. change	18,338	795	371	878	0.5
% chan ge	40.3	9.1	28.6	8.5	0.5

Source - Authors' Calculation. National Institute of Statistics (2019), CSES

Yearly average labor demand in terms of flow for macro-occupations; 2018-22
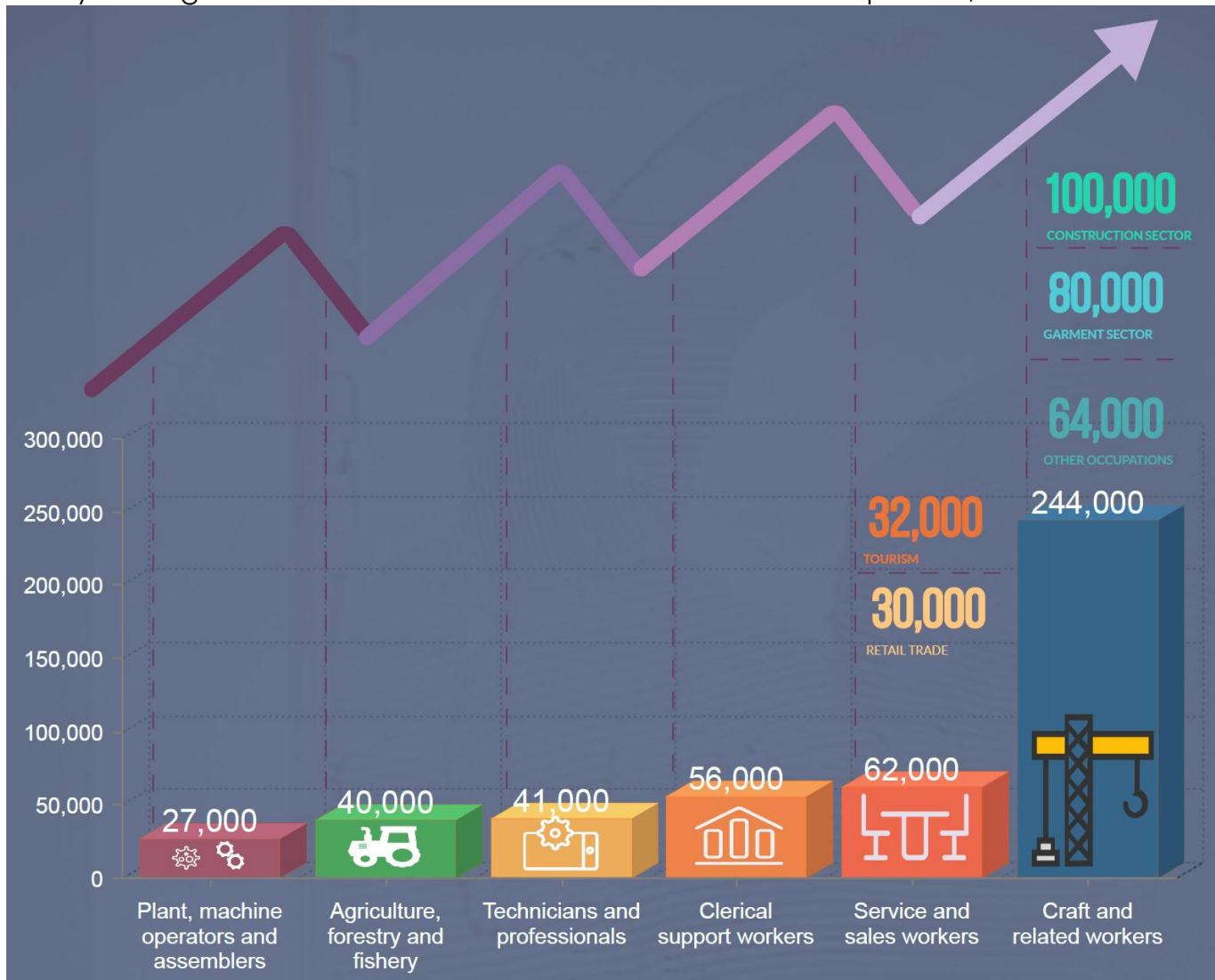
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