

# Economic Loss from School Dropout due to the Syria Crisis

A Cost-Benefit Analysis of the Impact of the Syria Crisis on the Education Sector





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## Abbreviations and acronyms

CBS	Central Bureau of Statistics
EMIS	Education Management and Information System
GDP	gross domestic product
LFS	Labour Force Survey
PV	present value
SCPR	Syrian Centre for Policy and Research
SYP	Syrian pound (currency)
UNDP	United Nations Development Programme
UNICEF	United Nations Children’s Fund
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East



## Abstract

This study estimates the cost of the crisis in Syria derived from the loss of human capital formation. It does so by assigning monetary value to the reduction of lifetime earnings derived from children dropping out of school. Differences in lifetime earnings are calculated based on the observed differences in wages for people with different levels of academic attainment in pre-conflict Syria, adjusted using a discount rate. This difference is then applied to the number of children of primary and secondary age estimated to be out of school in Syria as of the 2012/13 school year. From this, the estimated cost of the loss of human capital formation due to the ongoing crisis in Syria is estimated to be US\$10.7 billion, or about 17.7 per cent of the Syrian gross domestic product (GDP) in 2010. This estimation emphasizes the importance of providing access to education to children affected by conflicts, both during conflicts and after such conflicts end.



# Introduction

The Syrian Centre for Policy Research (SCPR), with support and cooperation of the United Nations Development Programme (UNDP) and the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), published the report “Alienation and Violence” in 2015. The report estimates that a total economic loss of US\$202.6 billion, including damage to capital stock, loss of investment and idle capital stock, has been incurred since the start of the conflict in 2011 until the end of 2014. However, the report does not take into account the economic costs of human capital, which could be substantial. Since the onset of the conflict, about 2.1 million Syrian children across Syria and in host countries for refugees are not attending school (UNICEF 2014). In 2010 and 2011, about 5.5 million children were enrolled in basic and secondary education, however, 2 million students dropped out from the education system in 2012. Although about 200,000 students returned to school in 2013, the enrolment level remains 1.8 million students below the 2011 level. It is not expected that students who dropped out will return to schools in the near future, as the conflict is expected to continue. It will also take a long time for infrastructure damaged by the conflict to be repaired or reconstructed. The children who dropped out have not only lost the immediate opportunity to learn academic and social skills, but also their productivity and potential lifetime income have been lowered correspondingly. The Syrian crisis has a long-term impact at both the individual and country levels.

This study attempts to estimate the economic loss from school dropout by using labour market data provided by the Central Bureau of Statistics (CBS) of Syria and data from the Education Management Information System (EMIS) of the Ministry of Education in order to build evidence to better understand the impact of the crisis and to provide further support for the education cluster in Syria. This study complements existing studies on the economic loss due to the crisis in Syria and on out-of-school children in general.<sup>1</sup> The main objectives are to capture the whole picture of the economic loss and to gauge the magnitude of rebuilding the education sector. Education is a key area of intervention during and after emergencies. The funding gap in the education sector during emergencies, however, is always large, as education is often not seen as a life-saving necessity, even within humanitarian discourse. This study attempts to provide new evidence to support the education sector during emergencies and transitional periods of war and conflict.

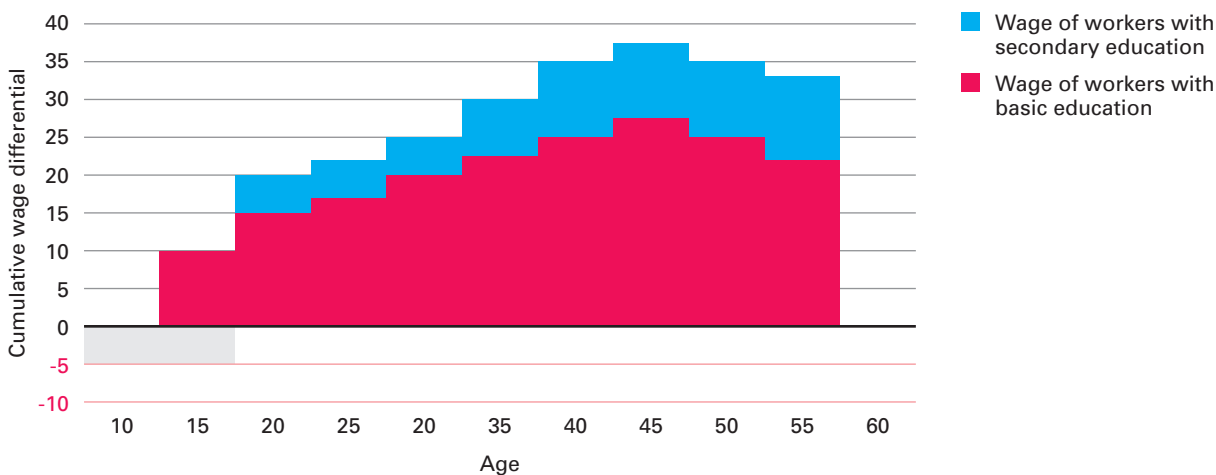
<sup>1</sup> See Thomas and Burnett (2015) for an example of both a micro-level and macro-level estimation of the economic cost of out-of-school children in Southeast Asia.

# Methods

This study estimates wage differentials between workers with different educational backgrounds to gauge the economic loss in the education sector due to the crisis. First, using data from 2010 Syrian Labour Force Survey (LFS), the average annual wage for both sexes will be calculated from the starting age of work to the age of retirement. The streams of annual wages are then adjusted for the time value of money to obtain their present value (PV) equivalents in 2011. The PV differences in lifetime earnings will be calculated between (1) graduates from secondary education and graduates from basic education<sup>2</sup> and (2) graduates from basic education and those who have not completed basic education. The former represents forgone wages from dropping out of secondary school, and the latter forgone wages from dropping out of basic education.

The concept of the wage differential is illustrated in Figure 1. The wage of workers with a secondary education will be higher than the wage of workers with only a basic education. The difference between the two income streams (the blue area in Figure 1) represents the lifetime wage differential. When students in secondary school drop out before completion, their future wages will be reduced to the wage level of basic education graduates. Essentially, the calculation uses the pre-conflict gap in earnings of workers with different educational backgrounds and multiplies it by the number of students who dropped out after the first year of the crisis (i.e., the difference in enrolment between 2012 and 2011), in order to estimate the sum of the forgone future wages of children who were enrolled and are now out of school.

**Figure 1** Concept of wage differential



Annual wage differentials are converted to the present value, as their future monetary value will differ from today's value due to inflation and uncertainty. The present value of lifetime earnings is calculated as follows:

$$\text{Present value of lifetime earnings} = \sum_{i = \text{age of starting work}}^{i = \text{retirement age}} (\text{PV of annual earnings})_i$$

where  $PV = \frac{(Ci)}{(1+r)^n}$ , in which  $Ci$  is cash flow in period  $i$ ,  $r$  is discount rate and  $n$  is the years from the age of starting work.<sup>3</sup>

<sup>2</sup> For this study, basic education is considered Grade 1 through Grade 9.

<sup>3</sup> Discount rate is needed to evaluate a future monetary value in terms of today's value. For example, today's US\$100 will be worth US\$105 next year with an inflation rate of 5 per cent. Thus, a discount rate of 5 per cent can be used to discount US\$105 of next year in order to express it in terms of its value today.



As labour force participation and unemployment also vary among workers with different educational backgrounds, the paper estimates the PV of lifetime earnings multiplied by the “employment rate” as a sensitivity analysis, which is defined as follows:

$$\text{Employment rate} = \frac{\text{Number of employed people}}{\text{Number of people in the labour force}}$$

Thus, the adjusted PV of lifetime earnings is expressed as:

$$\sum_{i = \text{age of starting work}}^{i = \text{retirement age}} [(\text{PV of annual earnings})_i \times (\text{employment rate})_i]$$

Once the PVs of lifetime earnings are calculated, they will be multiplied by the number of students who drop out in order to estimate the total economic loss of human capital in Syria due to school dropout. The wage differentials between workers with secondary and basic education will be multiplied by the number of students who drop out from secondary school from 2011 to 2012. Likewise, the wage differentials between workers with and without basic education will be multiplied by the number of students who drop out from basic education from 2011 to 2012.

## Data

This paper uses labour market data provided by the CBS based on the 2010 Syrian LFS. The 2010 LFS was implemented in two rounds in 2010, covering 14 Syrian governorates. As the micro-data of LFS was not available, the study uses tables computed by the CBS, including average monthly wage by sex, level of education and five-year age cohort, employment and unemployment rates, and education data from the Syrian Ministry of Education covering enrolment by sex and level of education from 2010 to 2012. The 2011 LFS sample size was one fourth of the 2010 LFS sample size; making the 2011 LFS sample size too small to produce reliable cross-tables and, therefore, is not suitable for this study.

## Assumptions

The calculation of wage differentiation requires a number of assumptions, which are summarized below.

- **Average monthly wage for single-age wage.**
  - a** The CBS provided average monthly wage by level of education for five-year-age cohorts. A simple linear interpolation method was used to estimate the average monthly wage for single-age cohorts.
  - b** Two types of wages are calculated. One is “monthly wage” and the other is “monthly wage times employment rate”, which is calculated by dividing the total number of employed and unemployed workers by the number of employed workers, in order to account for the increased employability of higher levels of education.

- Working age
  - a Age of starting work:
    - i Workers with basic or less than basic education: 15 years old.
    - ii Workers with general secondary education: 18 years old.
  - b Age of retirement<sup>4</sup>:
    - i Men: 60 years old.
    - ii Women: 55 years old.
- Discount rate<sup>5</sup>
  - a Seven per cent
- Number of students who dropped out in 2011<sup>6</sup>
  - a Dropped out from basic education: 937,000 boys and 871,000 girls.
  - b Dropped out from secondary education: 44,000 boys and 48,000 girls.
  - c Total of 101,244 refugee children in 2012 of which 73,555 were out of school.
- PVs are evaluated at 2011 value.
- The exchange rate is the 2011 exchange rate: SYP1 = US\$0.021
- The number of students who dropped out is assumed to be the difference between the total number of students enrolled in 2011 and the total number enrolled in 2012.

## Limitations

- 1 Initially, it was planned to estimate the economic loss by estimating the return on income of additional years of schooling using micro-data of the LFS. However, due to data limitation, this approach was not adopted.
- 2 The study estimates only the forgone earnings of students who drop out. Other costs of war, such as costs to train and hire lost personnel, and costs for infrastructure and equipment, are not included.
- 3 When the situation in Syria stabilizes, it is expected that children would return to school. This would reduce the economic loss. In 2013-2014, about 8 per cent of students who dropped out from basic education and 32 per cent of students who dropped out from secondary education returned to the education system. However, the effect of this return is not taken into account due to the difficulties in making this assumption.
- 4 Wage differentials of refugee children need to be estimated using labour market data of host countries, because the value of the return to education in host countries would be different from that in Syria. However, due to data limitations, i.e., there is no disaggregation of data by the level of education and sex, and the fact that the size of child refugee population in 2012 was relatively small; this study does not estimate the wage differentials of refugee children in 2012. As the out-of-school children who are refugees was about 4 per cent of the out-of-school children in Syria in 2012, the economic loss estimated by this paper would be an underestimation by an order of 4 per cent.

<sup>4</sup> Official retirement ages for males and females.

<sup>5</sup> Average consumer price index (CPI) from 2007 to 2011 is 6.8 per cent per year.

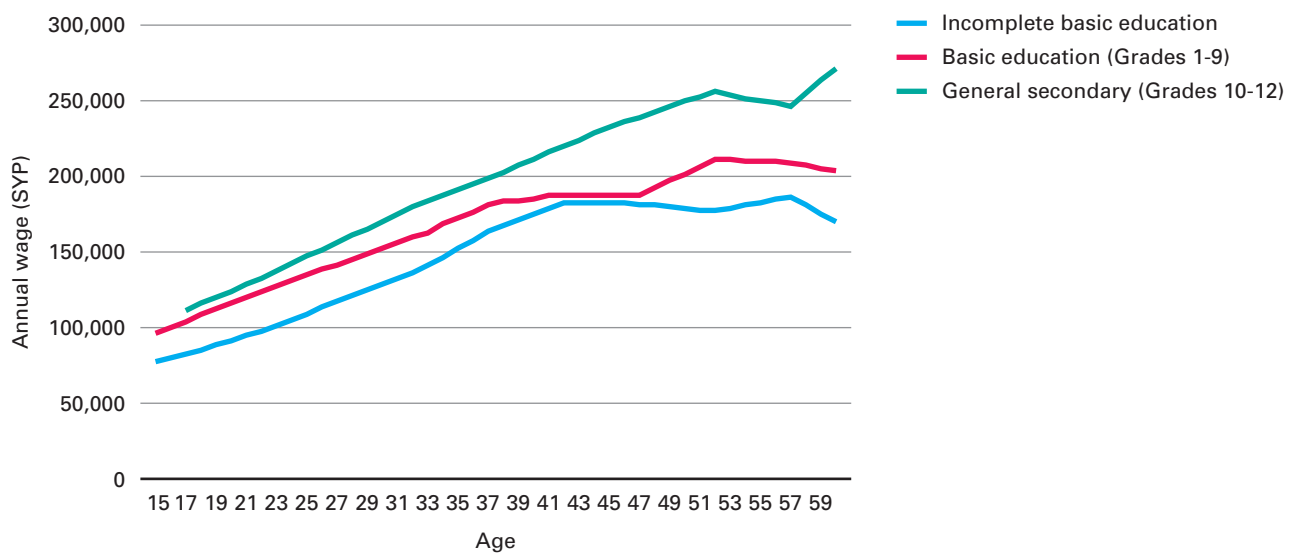
<sup>6</sup> Based on UNICEF (2014) "Quantitative Analysis of Education in Syria, 2010-2013".

# Results

## Wages

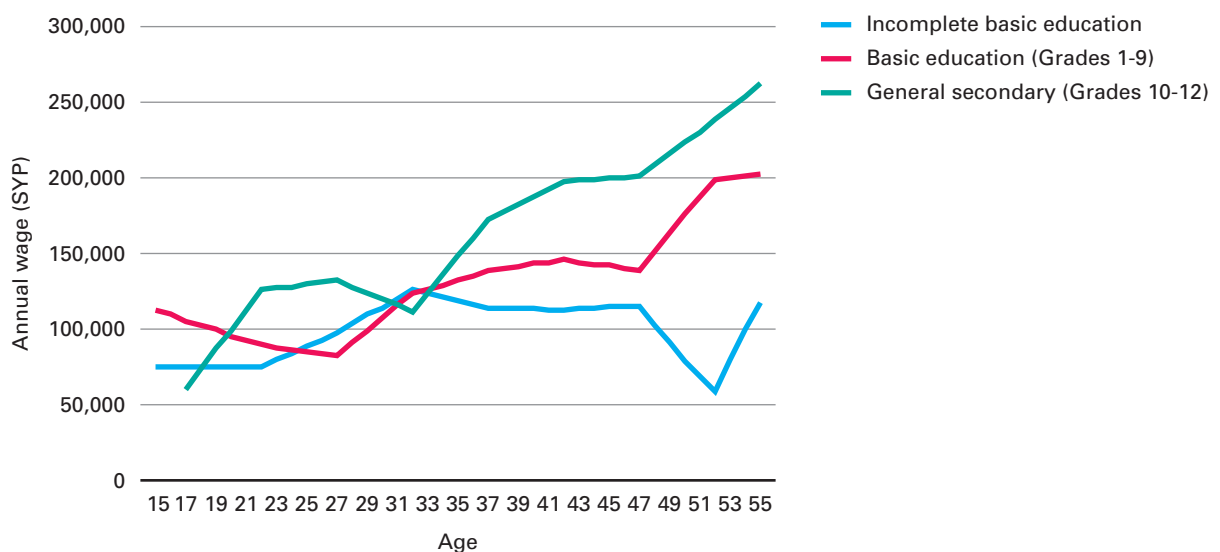
Figures 2 and 3 represent the wages of male and female workers with different levels of education. The average monthly income for young workers, aged between 15 and 19 years old, with less education tends to be around SYP7,000 to 8,500 a month. Workers with more education earn higher salaries. For example, the average monthly income of young male workers with general secondary education is SYP9,340 a month, which is about 36 per cent higher than young male workers who have not completed basic education. This differential continues throughout the productive life. The wage differentials tend to be constant at early stages of the working lifecycle, but they expand after age 40 or so until retirement. Interestingly, the wage differentials among female workers have a significantly different distribution. Generally, the wage level of females is lower than that of males. The female wage differentials are quite small before age 30, after which female workers with higher education tend to earn higher wages.

**Figure 2 Annual wages of male workers with different levels of education, 2010**



Source: 2010 LFS, CBS, Syria

**Figure 3 Annual wages of female workers with different levels of education, 2010**



Source: 2010 LFS, CBS, Syria

## Wage differentials and economic loss from dropout

The earning differentials are estimated based on the lifetime earnings for male and female workers with different educational backgrounds. The PV of lifetime wage differential between male workers who have basic education and less than basic education is SYP295,600 (US\$6,251) with a discount rate of 7 per cent. Likewise, the wage differential between male workers who have secondary education and those with only basic education is SYP36,795 (US\$778). The wage differential for female workers between basic education and less than basic education was SYP259,308 (US\$5,481), and the wage differential between that of secondary education and those with only basic education is SYP25,281 (US\$535).

Once PVs are estimated, they are multiplied by the number of students who dropped out in 2011 in order to estimate the forgone earnings of dropping out and examine the economic impact of Syria crisis in the education sector and labour market. The total economic loss is estimated to be SYP505,667 million, which is US\$10,670 million at the 2011 exchange rate. As the GDP of Syria in 2010 was US\$60,465 million,<sup>7</sup> the PV of economic loss for Syria is about 17.6 per cent of the 2010 GDP.<sup>8</sup>

The above calculation does not include Syrian children who are refugees in Egypt, Iraq, Jordan, Lebanon and Turkey, who did not attend school in 2012. Unfortunately, the refugee information for 2012 does not specify the variables of age and sex, but the total number of children aged from kindergarten through secondary education is estimated to be 101,244, of which 73,555 were out of school (UNICEF 2014). As the number of out-of-school children who are refugees is about 4 per cent, the above-mentioned economic loss could be slightly underestimated.

**Table 1 Present value of wage differential and economic impact of students dropping out**

Gender	Level at which students drop out	Number of students who drop out	PV of wage differential	Economic impact (in millions)	
				SYP (2011)	US\$ (2011 exchange rate)
Male	From basic education	937,000	295,600	276,977	5,844
	From secondary education	44,000	36,795	1,619	34
Female	From basic education	871,000	259,308	225,857	4,766
	From secondary education	48,000	25,281	1,213	26
<b>Total</b>	<b>From basic education</b>	<b>1,808,000</b>	<b>–</b>	<b>502,834</b>	<b>10,610</b>
	<b>From secondary education</b>	<b>92,000</b>	<b>–</b>	<b>2,832</b>	<b>60</b>
	<b>Total</b>	<b>1,900,000</b>	<b>–</b>	<b>505,667</b>	<b>10,670</b>

Source: Author's calculation

## Sensitivity analysis

As different discount rates yield different PVs, the PVs of the economic impact of students dropping out based on wage differentials are recalculated using additional discount rates of 5 per cent and 10 per cent. The total PV of wage differentials using 5 per cent and 10 per cent discount rates are SYP523 billion (US\$11.0 billion) and SYP165 billion (US\$3.5 billion), respectively.

<sup>7</sup> <https://data.un.org/CountryProfile.aspx?crName=Syrian%20Arab%20Republic>

<sup>8</sup> As the 2011 GDP of Syria reflects damages of the crisis, the 2010 GDP figure was used to show the impact of the dropping out against the pre-conflict period.

**Table 2** Present value of wage differential and economic impact of students dropping out with different discount rates

Gender	Level at which students drop out	Discount rate 7%	Discount rate 5%	Discount rate 10%
Male	From basic education in SYP (millions)	276,977	356,306	204,812
	From secondary education in SYP (millions)	1,619	143,577	(44,616)
Female	From basic education in SYP (millions)	225,857	15,973	8,065
	From secondary education in SYP (millions)	1,213	7,091	(3,478)
<b>Total</b>	<b>From basic education in SYP (millions)</b>	<b>502,834</b>	<b>372,279</b>	<b>212,877</b>
	<b>From secondary education in SYP (millions)</b>	<b>2,832</b>	<b>150,668</b>	<b>(48,094)</b>
	<b>Total in SYP (millions)</b>	<b>505,667</b>	<b>522,947</b>	<b>164,783</b>
	<b>Total in US\$ (millions)</b>	<b>10,670</b>	<b>11,034</b>	<b>3,477</b>
	<b>Percentage of GDP 2010</b>	<b>17.6%</b>	<b>18.2%</b>	<b>5.8%</b>

Source: Author's calculation

As the employment rate is a function of education, the average wage is adjusted in order to reflect the different employment rates among workers with different educational backgrounds (see Annex 4). The PV of the lifetime wage differential between male workers with basic education and those with less than basic education is SYP265,705 per person, and between male workers with secondary education and those with basic education is SYP85,786. As the employment rate for workers who have attained a higher level of education tends to be lower than the employment rate of workers with lower educational backgrounds, the wage differentials for the latter become negative. The PV of wage differentials between female workers with basic education and those with less than basic education is SYP46,839 per person, and between female workers with secondary education and those with basic education is SYP238,760. The employment rate for female workers with higher education tends to be lower than the employment rate of workers with lower educational background, which turns the differentials similarly negative. However, as the number of students dropping out in basic education and the PV of the wage differentials between workers with basic education and less than basic education is much larger, the total PV of the economic impact due to dropping out is still positive, i.e., SYP274.5 billion (US\$5.8 billion) in total, which is 9.6 per cent of GDP in 2010.

**Table 3** Present value of wage differential and economic impact of students dropping out, adjusted by employment rate

Gender	Level at which students drop out	Number of students who drop out	PV of wage differential	Economic impact (in millions)	
				SYP (2011)	US\$ (2011 exchange rate)
Male	From basic education	937,000	265,705	248,966	5,253
	From secondary education	44,000	-85,786	-3,775	-80
Female	From basic education	871,000	46,839	40,797	861
	From secondary education	48,000	-238,760	-11,460	-242
<b>Total</b>	<b>From basic education</b>	<b>1,808,000</b>	<b>-</b>	<b>289,762</b>	<b>6,114</b>
	<b>From secondary education</b>	<b>92,000</b>	<b>-</b>	<b>-15,235</b>	<b>-321</b>
	<b>Total</b>	<b>1,900,000</b>	<b>-</b>	<b>274,527</b>	<b>5,793</b>

Source: Author's calculation



# Conclusion and discussion points

The results show that the impact of dropout from basic and secondary education is significantly large. In Syria, the economic cost of dropout from basic education is estimated at US\$5,844 per person for a boy and US\$4,766 per person for a girl. As the Syrian GDP per capita in 2010 was US\$2,808, the economic loss due to dropout from basic education is about twice as large as the GDP per capita for both males and females.

The male and female wage differentials between having a basic education and less than a basic education are 8.0 times and 10.2 times larger than the wage differential between having a secondary education and a basic education, respectively. This indicates that dropping out from basic education creates a far more severe economic loss, and bringing children of the basic-education age back to school is one of the most crucial and urgent tasks for the reconstruction of the economy.

Previously, Save the Children estimated the opportunity cost due to dropout at around US\$2.18 billion, using the methodology and data from the report by Burnett et al. (2013). The Save the Children calculation assumed that the range of the GDP loss would be between 2 to 6 per cent, based on the past estimations from Côte d'Ivoire, Democratic Republic of the Congo, Mali, Pakistan and Yemen. Then, the total opportunity costs of out-of-school children was estimated because necessary data to conduct a calculation, such as the primary out-of-school rate, per cent of children out of school at each level, and wage premium, were not available.

This study, on the contrary, did not cap the economic loss in terms of GDP and calculated the wage differential, which is a straightforward way to estimate the forgone income, using the most recent wage and EMIS data from the Syrian Government. This study estimated the wage premium among workers with various educational backgrounds by single age, discounted the streams of wages, and calculated the PV of wages for men and women with different levels of education. Following this, the forgone income is multiplied with the number of out-of-school children. It is striking that the estimate of this robust approach is about 4.9 times higher than the previously estimated figure. It indicates that the magnitude of the impact of the Syrian crisis on education has been greatly underestimated. Other education-related estimations of the cost of the crisis in Syria include Ndaruhutse and West (2015), which estimated the cost of repairing the damaged or destroyed school infrastructure, replacing the lost school equipment, replacing the lost teaching force, and paying for lost teaching time. The authors estimated these costs at between US\$1.2 and 3.2 billion, related mainly to the cost of infrastructure.

The total economic loss due to dropout from basic and secondary education, as of 2012, adjusted for the time value of money, is estimated to be SYP505.7 billion (US\$10,670 million, using the 2011 exchange rate). This is equivalent to about 17.6 per cent of the 2010 Syrian GDP. The Syrian Centre for Policy Research (SCPR) estimated the total economic loss of the nation since the start of the conflict until the end of 2014 to be approximately US\$202.6 billion, which includes damage to capital stock, loss of investment and idle capital stock due to the conflict. The magnitude of the economic loss due to dropout is smaller than the economic loss calculated by SCPR, but the absolute monetary value of economic loss due to dropout is not negligible. Estimates of both the cost of replacing infrastructure and the cost of human capital lost due to conflict for the Democratic Republic of Congo, Nigeria and Pakistan can be found in Jones and Naylor (2014). The paper finds that the cost derived from lost income due to lower levels of human capital exceed the cost of the lost infrastructure in the Democratic Republic of Congo and Pakistan. It is important to note two main differences. The first is that the SCPR estimation covers the loss and opportunity cost of all capital in Syria, not only the infrastructure allocated to education. The second is that for the human capital loss estimations, the Jones and Naylor study relies on an assumed rate of return of education of 15 per cent for Pakistan and 25 per cent for the Democratic Republic of Congo. Lower returns for education in Syria are part of the reason for the differences between the estimated value of the loss of physical and human capital.

As of May 2015, the total number of Syrian refugee children, aged from 5 to 17 years old, living in Egypt, Iraq, Jordan, Lebanon and Turkey reached 1.34 million<sup>9</sup>. This is 13 times larger than the number of refugee children in 2012 and represents approximately 20 per cent of current Syrian school-age children.<sup>10</sup> The number of new refugees from Syria has not been decreasing and the current trend could continue in the foreseeable future. This study discusses the economic costs of dropout and the importance of bringing children back to school in Syria, but the importance of repatriation should be also highlighted. As refugee children have left Syria, their future economic activities will not be contributing to the Syrian economy. Therefore, the economic loss due to refugee children is a much larger issue than that of dropping out. This leads to two related discussion points. The first is the low enrolment of refugee children in host countries. According to the UNICEF Middle East and North Africa regional office, only 45 per cent of refugee children, aged 5–17 years, attend formal school in the five host countries: Egypt, Iraq, Jordan, Lebanon and Turkey. The attendance rate is lower than that in Syria in 2012, indicating that the economic loss estimated using the 2011-12 data, as used in this study, would be an underestimation. The second discussion point addresses creating a framework for the recognition by the Syrian Government of education certificates that refugee children receive from various host countries. This would allow the labour market in Syria to reflect the value of education that refugee children receive in their host countries.

This study highlights the great magnitude of the economic cost of dropout, but there is a serious gap between the values that the education sector and cluster could bring to the Syrian economy and society and the actual funding that the education sector and cluster receive from the international community. Even though the funding requirement for the education cluster in Syria is based on immediate needs in the short term, the funding gaps for the education cluster continue to be particularly wide. For example, in 2015, only 5 per cent of the financial requirement for the education cluster has been fulfilled, compared to an average of 25 per cent for all clusters. From 2012 to 2015, the education cluster has consistently received less financial support than required, and the overall percentage covered in all the clusters is higher than that for the education cluster, except in 2013. In other years, the percentage of financial need that has been met in the education cluster tends to be significantly lower than that averaged over all clusters. It should be noted that the financial requirement for the education cluster represents the amount of resources that development partners could realistically deliver, and other necessary costs for the education sector, such as costs for lost personnel, and lost infrastructure and equipment, are not necessarily included. This implies that the benefit of bringing children back to school in the long run might be heavily underestimated among donors and stakeholders.

As of June 2015, against the US\$4.5 billion required for programmes implemented by United Nations agencies and non-governmental organizations for the Syria Crisis, only 23 per cent or US\$1.1 billion has been received.<sup>11</sup> The Syria crisis requires massive support and continuously raising funds – in spite of “donor fatigue”, which is often observed in long-term crisis responses and is one of the most critical issues. This study identifies the economic impact of dropout from basic and secondary education in Syria for the first time. It is hoped that the findings will contribute to raising funds for the Syrian education cluster, and the methodology of this analysis could be applied to other emergencies so that the importance of education would be recognized among stakeholders and donors.

**Table 4 Funding requirement and gap of the education cluster in Syria from 2012 to 2015**

Year	Financial requirement (in US\$ millions)	Percentage of the requirement covered in the education cluster	Percentage of the requirement covered in all clusters
2012	13.5	9	62
2013	45.7	82	68
2014	103.2	39	48
2015	224.0	5	25

Source: Financial Tracking Service, OCHA

<sup>9</sup> Figures estimated by the Education Section of the UNICEF Middle East and North Africa Regional Office based on the UNHCR’s website (<http://data.unhcr.org/syrianrefugees/regional.php>).

<sup>10</sup> The estimated school age Syrian children aged from five to 17 is 6.5 million.

<sup>11</sup> <http://www.3rpsyriacrisis.org/news/un-agencies-and-partners-say-funding-shortage-leaves-syrian-refugees-and-host-nations-without-vital-support/>

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# Annexes

## Annex 1 Monthly wage (in Syrian pounds) by level of education, age and gender, 2010

Age	Gender	Level of education								Weighted average
		Illiterate	Less than basic education	Basic education (Grades 1-6)	Basic education (Grades 7-9)	General secondary	Intermediate institute	University or above	Unknown	
15-19	Male	6,944	6,865	8,855	8,512	9,340	–	–	–	7,367
	Female	3,424	6,201	6,010	10,150	5,000	–	–	–	6,271
20-24	Male	7,472	8,107	10,277	10,457	11,147	11,340	22,871	–	10,074
	Female	5,882	6,198	6,358	9,931	10,475	10,061	13,163	–	9,420
25-29	Male	8,490	9,788	11,535	12,648	13,032	14,085	15,152	–	12,133
	Female	6,269	8,023	6,438	7,990	10,923	12,610	14,530	–	12,337
30-34	Male	10,854	11,346	13,041	13,998	14,999	14,547	18,960	–	13,701
	Female	10,336	10,476	7,767	13,396	9,295	15,132	16,483	–	14,295
35-39	Male	11,069	13,667	14,691	15,995	16,630	17,722	21,438	–	15,683
	Female	6,916	9,500	10,177	12,672	14,327	15,780	17,719	–	15,240
40-44	Male	11,569	15,142	14,356	17,132	18,374	19,264	21,943	–	16,769
	Female	6,353	9,397	10,584	14,496	16,451	18,675	20,119	–	17,356
45-49	Male	12,823	15,103	14,706	18,228	19,977	21,245	23,806	–	17,400
	Female	7,392	9,582	8,612	15,741	16,671	22,334	22,541	–	19,506
50-54	Male	11,980	14,749	17,236	18,426	21,329	22,996	27,439	20,000	19,004
	Female	10,171	4,822	16,598	16,450	19,887	23,916	21,927	–	20,504
55-59	Male	13,500	15,555	17,228	18,041	20,560	23,658	25,400	–	18,909
	Female	10,422	13,040	10,000	20,236	23,108	24,428	26,569	–	21,105
60-64	Male	12,336	13,180	16,370	17,360	24,110	24,454	26,268	–	16,578
	Female	–	7,814	8,000	–	8,000	–	6,000	–	7,614

Source: CBS, Syria

## Annex 2 Number of employed workers (in thousands), by level of education, age and gender, 2010

Age	Gender	Level of education										Total
		Illiterate	Less than basic education	Basic education (Grades 1-6)	Basic education (Grades 7-9)	General secondary	Intermediate institute	University or above	Diploma	Master degree	Doctorate degree	
15-19	Male	18	222	50	53	6	0	-	-	-	-	349
	Female	4	18	2	4	2	0	-	-	-	-	30
20-24	Male	19	106	233	83	52	19	7	0	0	-	519
	Female	6	12	12	4	11	12	11	0	-	-	69
25-29	Male	30	65	307	82	66	37	32	0	1	0	621
	Female	6	5	15	5	13	26	26	1	1	-	98
30-34	Male	27	61	311	96	58	35	36	1	1	0	626
	Female	5	5	15	12	15	29	22	0	1	0	104
35-39	Male	26	53	248	107	58	37	34	0	1	0	566
	Female	7	4	12	12	11	30	18	-	0	0	95
40-44	Male	34	52	207	82	67	44	51	1	1	1	540
	Female	8	3	13	8	8	31	22	2	0	0	98
45-49	Male	30	44	162	59	39	40	42	1	1	1	418
	Female	11	3	8	5	7	29	15	1	0	0	79
50-54	Male	36	45	108	43	32	34	35	1	1	2	336
	Female	9	1	4	5	6	12	7	0	0	-	44
55-59	Male	28	34	65	21	22	14	23	1	-	2	210
	Female	8	3	1	2	2	4	3	0	-	-	23
60-64	Male	26	26	32	9	7	3	6	0	0	1	109
	Female	3	1	0	0	-	0	-	-	-	-	4
65+	Male	36	33	22	6	5	1	6	0	0	0	110
	Female	4	0	-	0	-	-	0	0	-	0	5
Total	Male	309	742	1,745	639	411	264	272	6	7	8	4,404
	Female	72	56	82	58	76	175	124	4	2	1	651
	Total	381	798	1,827	697	488	439	396	11	9	9	5,054



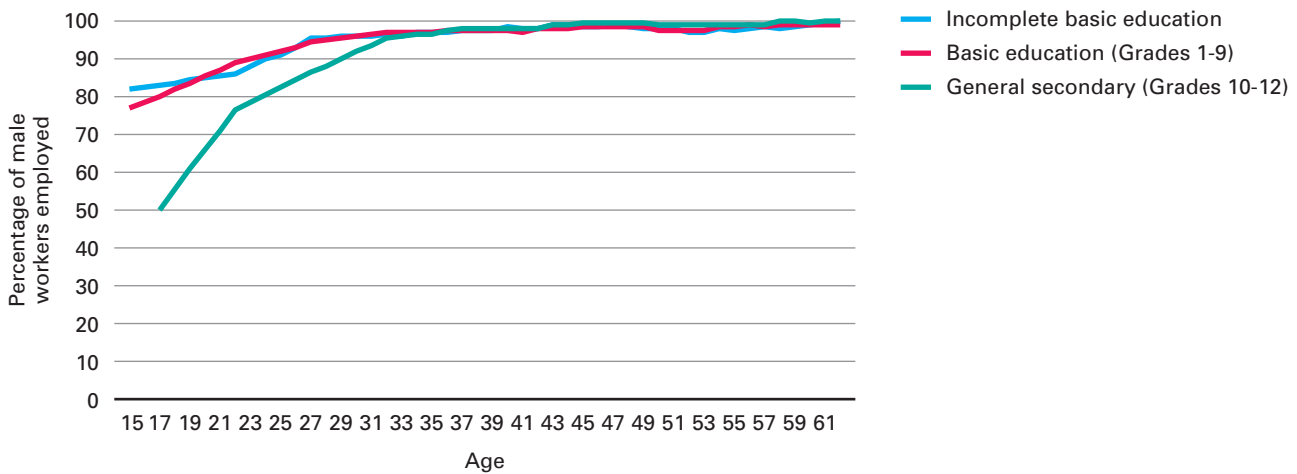
### Annex 3 Number of unemployed workers (in thousands), by level of education, age and gender, 2010

Age	Gender	Level of education										Total
		Illiterate	Less than basic education	Basic education (Grades 1-6)	Basic education (Grades 7-9)	General secondary	Intermediate institute	University or above	Diploma	Master degree	Doctorate degree	
15-19	Male	5.4	45.6	11.8	13.1	5.6	0.4	-	-	-	-	81.9
	Female	-	4.0	0.4	2.1	4.2	0.6	-	-	-	-	11.3
20-24	Male	2.3	17.4	22.1	15.4	16.0	10.9	4.7	0.2	-	-	89.0
	Female	0.4	2.3	4.0	7.2	22.3	20.6	8.4	-	0.2	-	65.4
25-29	Male	2.2	3.4	17.6	5.6	10.7	7.5	10.3	-	0.2	-	57.4
	Female	0.8	1.1	5.4	5.0	15.7	15.5	9.6	0.4	0.2	-	53.8
30-34	Male	1.8	2.6	9.7	2.7	2.9	1.5	2.4	0.2	-	-	23.7
	Female	1.0	0.4	4.2	3.5	10.0	6.4	3.7	0.4	-	-	29.6
35-39	Male	0.4	1.4	6.6	3.2	1.3	0.8	0.4	0.2	-	-	14.1
	Female	0.3	0.1	1.9	3.5	4.1	2.7	2.4	-	-	-	14.9
40-44	Male	0.9	0.9	4.5	2.2	1.2	0.4	0.3	-	-	0.2	10.5
	Female	-	0.3	1.2	1.0	1.5	0.4	1.1	-	-	-	5.5
45-49	Male	0.5	0.7	2.5	0.5	0.3	0.2	0.5	-	-	0.2	5.4
	Female	0.3	-	0.4	0.6	0.5	-	0.3	-	-	-	2.1
50-54	Male	1.0	1.4	2.3	1.2	0.3	-	0.2	-	-	-	6.3
	Female	0.3	-	0.1	0.2	-	-	-	-	-	-	0.6
55-59	Male	0.3	0.7	0.9	-	0.2	-	-	-	-	-	2.2
	Female	-	0.2	-	-	-	-	-	-	-	-	0.2
60-64	Male	0.6	-	0.5	-	-	0.2	-	0.2	-	-	1.09
	Female	0.2	-	-	-	-	-	-	-	-	-	0.2
65+	Male	0.1	0.2	0.3	-	-	-	0.1	-	-	-	0.7
	Female	-	-	-	-	-	-	-	-	-	-	-
Total	Male	15.6	74.3	78.9	43.8	38.6	21.7	18.9	0.7	0.1	0.3	292.8
	Female	3.3	8.3	17.6	23.1	58.4	46.3	25.4	0.8	0.4	-	183.6
	Total	18.9	82.5	96.5	67.0	96.9	68.0	44.2	1.5	0.5	0.3	476.3

## Annex 4 Employment rate

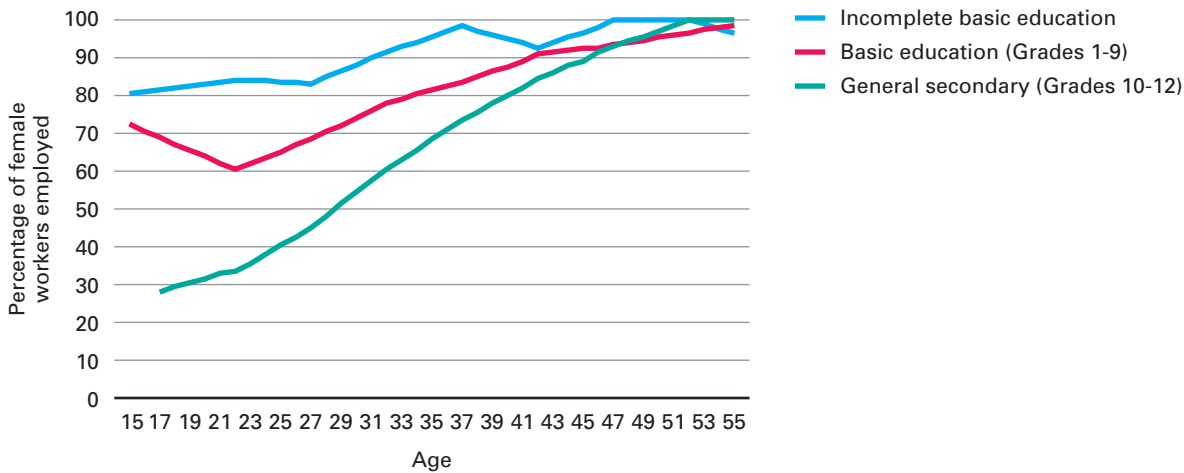
Employment rate was calculated based on the numbers of employed and unemployed workers by age and level of education (information provided by the CBS). In general, employment rates are nearly 100 per cent for male workers who are more than 30-years-old. Youth unemployment, however, is quite high regardless of educational background. The unemployment rates for workers aged between 15 and 19 with basic or less than basic education is around 20 per cent. Female employment rates are, on the contrary, much lower than male employment rates. Also interestingly, females with general secondary education tend to experience lower employment rates than those with basic education or no education certificate. Having a higher education certificate normally results in higher employment rates, but this is not the case for female workers in Syria. National unemployment rates for male and female workers are 6.2 and 22.0 per cent, respectively, while the overall national unemployment rate is 8.6 per cent.

**Figure A4.1** Employment rates of male workers with different levels of education, 2010



Source: 2010 LFS, CBS, Syria

**Figure A4.2** Employment rates of female workers with different levels of education, 2010



Source: 2010 LFS, CBS, Syria









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