



MINISTRY OF EDUCATION AND SCIENCE
OF THE REPUBLIC OF TAJIKISTAN



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RESEARCH REPORT

Costing the Transition to a 12-year Education System in Tajikistan

Final

Research commissioned by UNICEF Tajikistan



March 2019



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The Research Team

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Executive Summary

In 2017, Tajikistan budgeted to spend TJS 3 581 million on education. This represents 6.1 per cent of GDP or 18 per cent of the state budget. Of the total education budget, 59 per cent (TJS 2 101 million) was allocated to general secondary education and 6 per cent (TJS 201 million) to preschool education.

The costing of the transition to a 12-year education system in Tajikistan indicates that to introduce an additional school year in 2020 (with no phase-in) will require the following additional expenditure (in 2018 prices):

- ➡ between TJS 597 million and TJS 1 326 million in once-off setup costs, and
- ➡ between TJS 321 million and TJS 642 million in on-going operational costs

depending on the scenario adopted to implement the additional year of education. Note that phasing in the transition over a number of years will significantly reduce the setup costs linked to most scenarios and make the overall process more affordable.

Description of scenarios developed for the purposes of costing

The following table sets out the scenarios for transitioning to a 12-year education system that were agreed upon for the purposes of the costing exercise. The right-hand column describes each of scenarios in terms of characteristics that are important cost drivers

- those in **green** make the scenario **easier to implement**
- while those in **red** make the scenario more **difficult to implement**

Table ES1 – Scenarios for costing the transition to a 12-year education system in Tajikistan

Description of Scenario	Key Characteristics	
	Easier to implement	More difficult to implement
Baseline Scenario (B-Baseline) Maintain current 11-year education system		
Envisages keeping the current 4+5+2 system going forward	Same as current system	
Scenario 1 (S1-1yr forward) Move the current curriculum forward by a full year		
Envisages moving the current curriculum forward by a full year (i.e. children will start Grade 1 at 6 years old, instead of 7) to make space for another year of skills training (Grade 12) to be added to the Upper Secondary Phase, to give a 4+5+3 system	<ul style="list-style-type: none"> Additional year is part of the formal education system Adds year at the end of the current education system Additional year is not compulsory – at least not initially Does shift the starting age down from 7 to 6 years old Additional year is introduced in a single year 	
Scenario 2 (S2-6mths forward) Move the current curriculum forward by 6 months		
Envisages requiring children to start Grade 1 at 6 years old. The first 6 months in Grade 1 would be used for ECE, then the current curriculum would be moved forward by six months to make space for six months of skills training to be added to the Upper Secondary Phase to give a ½+4+5+2+½ system	<ul style="list-style-type: none"> Additional year is part of the formal education system Adds year at the beginning and end of the current education system Additional year is not compulsory – at least not initially Does shift the starting age down from 7 to 6 years old Additional year is introduced in a single year 	
Scenario 3 (S3-stretch) Stretch the current primary curriculum		
Envisages adding an additional year to the primary school phase, thus allowing the current primary curriculum to be stretched across five years, as opposed to the current four. To accommodate the additional year, children would be required to start Grade 1 at 6 years old. This will give a 5+5+2 system	<ul style="list-style-type: none"> Additional year is part of the formal education system Adds an additional year in the middle of the current education system Additional year is compulsory from the outset Does shift the starting age down from 7 to 6 years old Additional year is introduced in a single year 	
Scenarios 4A (S4A-ECE schools) Introduce an initial ECE year based at schools		
Envisages introducing an ECE / pre-primary year offered in facilities built on school premises before pupils enter Grade 1. This pre-primary year would initially not be compulsory for 6-year-olds, though it could be made compulsory later. This will give a 1+4+5+2 system	<ul style="list-style-type: none"> Additional year is part of the formal education system Adds year at the beginning of the current education system Additional year is not compulsory – at least not initially Does not shift the starting age for Grade 1 down from 7 to 6 years old Additional year is phased in over a number of years 	
Scenarios 4B (S4B-ECE various) Introduce an initial ECE year based at schools or community facilities		
Envisages introducing an ECE / pre-primary year offered in facilities built on school premises or as part of accredited, community-based ECE centres before pupils enter Grade 1. This pre-primary year would initially not be compulsory for 6-year-olds, though it could be made compulsory later. This will give a 1+4+5+2 system	<ul style="list-style-type: none"> Additional year is not part of the formal education system Adds year at the beginning of the current education system Additional year is not compulsory – at least not initially Does not shift the starting age for Grade 1 down from 7 to 6 years old Additional year is phased in over a number of years 	
Scenario 5 (S5-Gr 12 only) Introduce Grade 12 only		
It is proposed that another year of skills training (Grade 12) be added to the Upper Secondary Phase, with no other changes to the education system, i.e. the starting age for Grade 1 would remain at 7 years old. This will give a 4+5+3 system	<ul style="list-style-type: none"> Additional year is part of the formal education system Adds year at the end of the current education system Additional year is not compulsory – at least not initially Does not shift the starting age for Grade 1 down from 7 to 6 years old Additional year is phased in over a number of years 	

Annexure B provides a more detailed description and costing of each of the above scenarios, together with an evaluation of their advantages and disadvantages.

Cost of the transition according to the selected scenarios

The following table shows the cost in 2018 somonis of adding a 12th year of education according to the different scenarios.

Table ES2 – Cost of adding a 12th year of education as percentage of GDP and state budget

	Total setup and one year operational costs						
	Baseline B-Baseline 2020	Scenario 1 S1-1yr forward 2020	Scenario 2 S2-6mths forward 2020	Scenario 3 S3-stretch 2020	Scenario 4A S4A-ECE school 2020	Scenario 4B S4B-ECE various 2020	Scenario 5 S5-Gr 12 only 2020
		Summary of costs TJS	Baseline cost	Costs additional to baseline			
Overall total	2 567 803 715	1 940 539 431	1 967 531 676	1 677 124 559	1 437 416 974	1 255 612 174	926 609 031
Total operational costs	2 567 803 715	632 414 231	640 855 676	480 527 959	321 200 774	321 200 774	328 767 431
Total setup costs		1 308 125 200	1 326 676 000	1 196 596 600	1 116 216 200	934 411 400	597 841 600
Total operational costs as:	baseline	additional to baseline					
% of projected GDP	3,8%	0,9%	1,0%	0,7%	0,5%	0,5%	0,5%
% of projected state budget	12,5%	3,1%	3,1%	2,3%	1,6%	1,6%	1,6%
Total setup costs as:	baseline	additional to baseline					
% of projected GDP	0,0%	2,0%	2,0%	1,8%	1,7%	1,4%	0,9%
% of projected state budget	0,0%	6,4%	6,5%	5,8%	5,4%	4,6%	2,9%

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

The above table shows that:

- ➡ The baseline operational cost of the education system in 2018 was about TJS 2.57 billion, which is 3.8 per cent of GDP and 12.5 per cent of the state budget.
- ➡ To introduce a 12th year of education would require setup costs to be incurred of between a low of TJS 598 million and a high of TJS 1 327 million in additional spending on education, depending on the scenario.
- ➡ Between 65 and 78 per cent of the total additional cost of the respective scenarios is for setup costs – of which around 80 per cent is the cost of new classrooms. These setup costs would require general secondary education's share of the state budget to increase from the baseline 12.5 per cent to between 15.4 and 19 per cent. Such increases are substantial, and it is very unlikely that the fiscal space exists to finance them in a single year.

“Single-year approach”

For Scenarios 1, 2 and 3, to create space in the education system to add a new Grade 12 (without requiring pupils to stay in general secondary education beyond the age of 18), it is necessary to shift the start age of pupils entering Grade 1 down from 7 years to 6 years. This is illustrated below:

Table ES3 – The “single-year approach” to moving to a 12-year education system

	2018	2019	2020	2021	2022	2023
6 year olds	227 072	231 460	236 176	239 313	238 751	235 705
7 year olds	221 058	227 062	231 450	236 166	239 303	238 741
Phase-in enrollment of 6 year olds	-	-	236 176	239 313	238 751	235 705
Phase-out enrollment of 7 year olds	221 058	227 062	231 450	-	-	-
Total enrollment in Grade 1	221 058	227 062	467 626	239 313	238 751	235 705
<i>Impact of the phasing-in on class size</i>						
Current average class size	24	24	24	24	24	24
% more pupils above normal	0%	0%	102%	0%	0%	0%
New average class size with no new classrooms	24	24	24	24	24	24
Demand for new classrooms to maintain average class size	9 841					

Source: Demographic data for Tajikistan from the World Bank Databank (2018) and own calculations based on this data

Having a double-age cohort of pupils enrolling in a single year (2020) creates enormous challenges:

- ➡ To maintain the average class size at 24 pupils will require around 9 800 extra classrooms to be built before the shift can take place. It is estimated that this will cost around TJS 999 million;
- ➡ The 9 800 classrooms would need to be furnished at an estimated cost of TJS 295 million. This may have to happen twice as the children grow – and require larger furniture;
- ➡ New textbooks would need to be printed for each grade as the double-age cohort moves up through the grades. This would cost an estimated TJS 324 million, and the extra textbooks for each grade would only be used for one year;
- ➡ Additional teachers would need to be employed to teach the extra cohort. More challenging is the fact that the

group of teachers serving the extra cohort would need to change as it moves up through the grades – and subjects change; and

- ➡ When the double-age cohort reaches the upper grades, it could make scheduling the use of specialised facilities like science and computer laboratories complicated.

Consequently, the most costly items for a single-year transition scenario are infrastructure, new furniture and textbooks, which is reflected in the very high setup costs noted in Table ES2 above.

“Multi-year approach”

The “multi-year approach” to moving to a 12-year education system under scenario 1 suggests that the transition can be managed over a period of time instead of all in a single year*. Based on a range of considerations, a phase-in period of six years was identified as providing a good balance between implementation time, practicality and costs.

The six-year “multi-year approach” divides the 6-year-old cohort into six parts consisting of two months each. Starting from 2020, all pupils that are seven (231 450) and those turning seven in January and February (39 363) will enrol in Grade 1. In 2021, the remaining ten months of the previous year’s 6-year-old cohort and those in the new 6-year-old cohort turning seven in January, February, March and April (79 771) will enrol in Grade 1. And so on for six years; so that by 2026 only pupils from the 6-year-old cohort will enrol in Grade 1.

In 2017, the average class size was 24 pupils. Over the phase-in period, about 17 per cent more pupils will be enrolled each year, which will result in the average class size increasing to 28 or 29 pupils. This increase of 4 or 5 pupils per class can probably be managed within the existing classroom infrastructure and with the existing complement of teachers. This will realise substantial savings relative to the “single-year approach”, including:

- ➡ making it unnecessary to build 9 800 new classrooms;
- ➡ a reduction in the number of textbooks that will need to be printed because they can be used by successive groups of pupils over the phase-in period;
- ➡ a reduction in the amount of new furniture required, given that most schools likely have some unused furniture that can be brought into service given the limited number of additional pupils; and
- ➡ a reduction in the number of teachers that need to be employed.

Various multi-year phase-in scenarios are presented in section 6, and all cost substantially less than the scenarios with single-year transition processes.

Sources of funding for the transition

Unfortunately, there is no magic formula that can generate the funds required to implement the proposed changes to the education system. Every government is faced with the same set of macroeconomic and fiscal opportunities and constraints.

The most reliable source of funding for the transition will be increased government revenue resulting from real economic growth. The World Bank projects that Tajikistan’s economy will grow at around 6 per cent in 2018 through to 2020, meaning there will be around TJS 1 232 million in additional revenues in 2019, and this would gradually increase each year.

Increasing revenue from taxes is likely to be challenging, given the small private sector (tax base), and problems with tax policy and tax administration, including very high collection costs. An increase of around 1.5 per cent, or TJS 215 million, in tax revenue is probably realistic.

International development partners already play an important role in funding education, contributing around USD 20 million or TJS 176 million per year. The government would need to persuade the partners to contribute to the funding of the proposed phase-in of a 12th year of education. This may not be too difficult if priority is given to introducing a compulsory pre-primary grade.

Other possible sources of funding are unlikely to deliver the level of financing required, or are simply not available.

Recommendations for moving forward

The following recommendations, listed in order of priority, are made for the consideration of the Ministry of Education and Science, and the Government of Tajikistan:

1. **The Government of Tajikistan should give priority to properly funding and implementing the existing initiatives to improve the effectiveness of the current 11-year education system, namely:**
 - a. review and strengthen the competency-based curriculum;

*It is not possible to structure a multi-year phase-in for scenario 2, and while to accommodate a multi-year phase-in for scenario 3 would require the transition being divided into two parts (i) reducing the enrolment age for Grade 1 down to 6 years and then (ii) introducing the additional grade in the primary school phase.

- b. improve the quality and availability of learning materials;
 - c. attract and retain high-quality teachers, and providing in-service training on the new curriculum;
 - d. use existing hours more efficiently and provide for more hours of learning within the current system;
 - e. strengthen pupil assessment instruments; and
 - f. upgrade infrastructure – eliminate three-shift schools and address maintenance backlogs.
- 2. The Government of Tajikistan should prioritise the introduction of a pre-primary grade, and other quality ECE programmes, because they are likely to offer the greatest returns in terms of improving the quality of education.** A new universal ECE / pre-primary grade should be phased in over a period of 5 years or more*. Pre-primary grade classrooms should be located either in community centres or schools to reduce infrastructure costs. Given current economic growth expectations, there are sufficient fiscal resources to fund both the setup and operational costs of a new pre-primary grade. Also, international development partners can be expected to make a meaningful contribution to funding the setup costs.
- 3. The Government of Tajikistan should explore whether expanding the number of years of compulsory education from 9 to 10 years (or even 11 years) would offer greater benefits than adding a Grade 12.** At present, enrolment levels in grades 10 and 11 are at about 65 per cent. There is thus significant scope for expanding enrolment in these grades, either by way of encouragement or by making them compulsory. International research indicates that expanding the number of years of compulsory education has positive equity results – benefiting girls and rural students most.
- 4. The Government of Tajikistan should postpone the process of transitioning to a 12-year education system by lowering the enrolment age for Grade 1 down to 6 years until after 2029,** which is when the pressure being experienced as a result of the current demographic transition will begin to abate and, consequently, more resources will be available, and the education system will not be under so much pressure. (Note that lowering the enrolment age for Grade 1 to 6 years implies also lowering the enrolment age for pre-primary to 5 years old).
- 5. If the Government of Tajikistan decides to lower the enrolment age for Grade 1 down to 6 years, it should adopt a gradual approach that involves a phase-in over six years.** This approach will be easier to manage and will greatly reduce the setup costs – especially the need for new classrooms and teachers.
- 6. The Government of Tajikistan should review the curriculum for grades 10 and 11, and prepare plans for the introduction of Grade 12.** Depending on the nature of the curriculum for Grade 12, levels of enrolment and the scheduling of classes, it might be possible to phase in Grade 12 within the current high school infrastructure. Also, there is no need to wait twelve years for the 6-year olds-starting in Grade 1 to reach Grade 11 before introducing Grade 12. There is no reason why a substantial number of students completing Grade 11 would not continue on to Grade 12, despite being 18 years old, if the extra year at school significantly improved their employment prospects.

* Ideally, the expansion of access to ECE opportunities should be for all children, and the introduction of a pre-primary grade should not be at the expense of younger children accessing ECE.

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List of Abbreviations

ECE	Early Childhood Education
ECD	Early Childhood Development
EMIS	Education Management Information System
GDP	Gross Domestic Product
NDS 2030	<i>National Development Strategy of the Republic of Tajikistan for the Period Up To 2030</i>
OECD	Organisation for Economic Co-operation and Development
PCF	Per Capita Funding
PIP	Public Investment Program
PISA	Programme for International Student Assessment
TJS	Somoni
UNICEF	United National Children's Fund
WASH	Water, Sanitation and Hygiene

1 Introduction

In 2017, Tajikistan budgeted to spend TJS 3 581 million on education. This represents 6.1 per cent of GDP, or 18 per cent of the state budget. Of the total education budget, 59 per cent (TJS 2 101 million) was allocated to general secondary education and 6 per cent (TJS 201 million) to preschool.

The costing of the transition to a 12-year education system in Tajikistan indicates that to introduce an additional school year in 2020 (with no phase-in) will require the following additional expenditure (in 2018 prices):

- ➡ between TJS 597 million and TJS 1 326 million in once-off setup costs, and
- ➡ between TJS 321 million and TJS 642 million in on-going operational costs

depending on the scenario adopted to implement the additional year of education. Note that phasing in the transition over a number of years will significantly reduce the setup costs linked to most scenarios and make the overall process more affordable.

This paper sets out the key findings of the study into the costing of the transition to a 12-year education system and, based on these findings, makes recommendations.

Другие промежуточные результаты исследования

Other research outputs:

1. An MS Excel-based Costing Model for costing the transition to a 12-year education system in Tajikistan.
2. A Literature Review of country experiences with changing the number of years schooling.
3. An MS PowerPoint presentation on Costing scenarios for moving to a 12-year education system in Tajikistan.

Key assumptions underpinning the reported costing results

The following key assumptions in the setup of the Costing Model underpin the costing results for each of the scenarios presented in this paper:

- a. All the inputs are costed at 2018 prices so as to minimise the distortionary effects that an inflation assumption could have on the relative price of inputs. In other words, inflation is equal to zero. Note that the user of the model can change this assumption.
- b. The operating costs of schools is based on the Per Capita Funding (PCF) normative. This is the approach the Government of Tajikistan uses to fund schools. It consists of two main components, namely the PCF normative and a funding normative per school. This funding covers the cost of teachers and the operating costs of schools.
- c. The projected number of pupils to be enrolled in each scenario is based on projections using enrolment data for Tajikistan from the World Bank Databank.

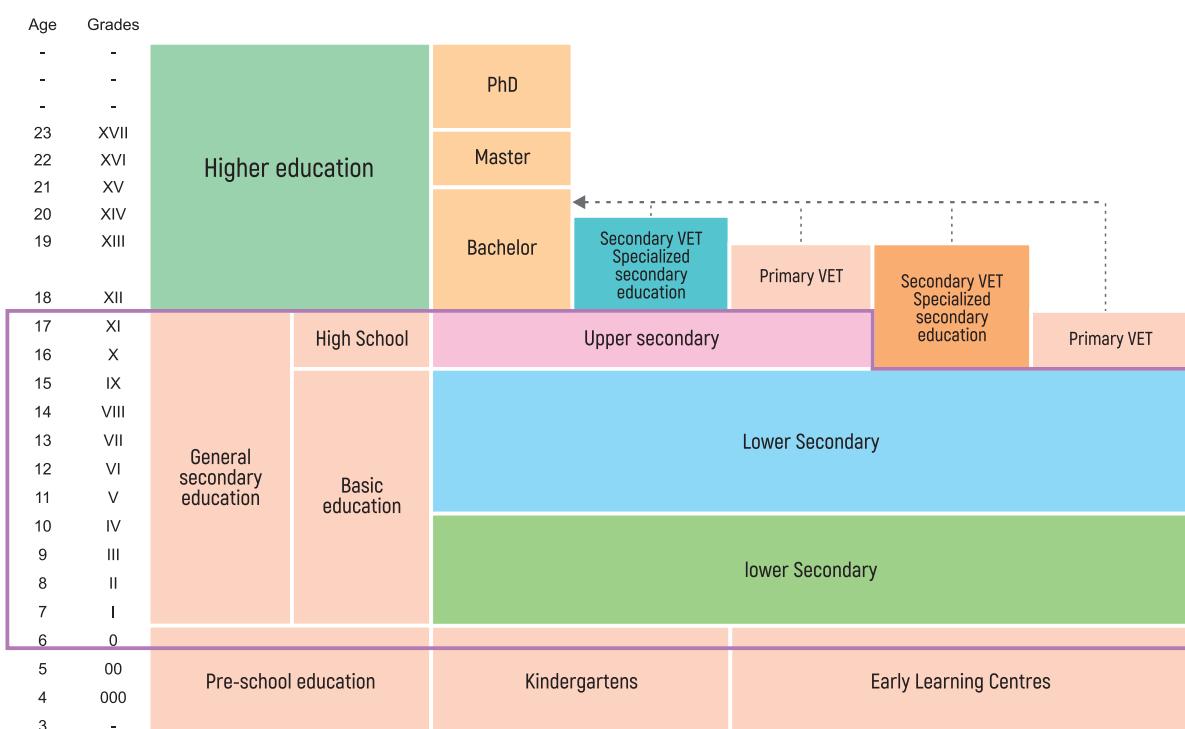
Note

The Costing Model provides a flexible platform for exploring the cost of different scenarios for transitioning to a 12-year education system in Tajikistan. Users of the model can change a wide range of variables to customise specific scenarios, and change the cost of inputs.

2 Structure of the Education System

The following figure shows the current structure of the education system in Tajikistan.

Figure 1. Structure of the education system in Tajikistan



Source: ETF, 2010 Torino Process: Republic of Tajikistan and modified based on government resolution #388 on National Standards on Primary Vocational Education, August 2, 2010, further modified to reflect preschool education

The different proposed scenarios for moving to a 12-year education system will impact on the parts of the education system outlined in blue. For instance, Scenario 1 envisages moving the start age of primary education to 6 years. This would make space for another year – Grade 12 – to be added to the upper secondary phase, resulting in a 4+5+3 general education system. On the other hand, Scenario 4A envisages introducing a compulsory year of preschool, which would give a 1+4+5+2 general education system.

At core, four of the five scenarios provide for the addition of one year to general secondary education, moving the start age down from 7 to 6 years and so increasing the number of years of general education from 11 to 12 years. The scenarios differ in terms of how the resulting 12 years of general education are organised into the different phases. Scenario 5 provides for the addition of Grade 12 without shifting the starting age down from 7 to 6 years.

2.1 The budget structure and the flow of funds for general secondary education

The following table shows how responsibilities for education are divided between central government role-players and local governments.

Table 1. Division of responsibilities for education

Education sector	Central government	Local government
Preschool education	Developing policy Setting guidelines/curriculum Oversight of quality	Managing and funding kindergartens Oversight of early learning centres
General secondary education	Developing policy Setting guidelines/curriculum Oversight of quality State education programmes Capital investment in school infrastructure	Managing and funding: <ul style="list-style-type: none"> • schools • specialised boarding schools • special education institutions
Higher education	Developing policy Managing and funding: <ul style="list-style-type: none"> • primary professional institutions • higher education institutions • Center for the Advanced Training of Pedagogical Workers • centres of excellence for sectoral ministries • research institutions 	

Source: Karimova M.T., Muminova F.M., Sohibov S.K. (2012), supplemented with information from interviews conducted as part of the research

As already noted, the transition to a 12-year education system impacts on preschool and general secondary education. There are likely to be some implications for higher education, such as an increased demand for certain categories of teacher (depending on the scenario) and, possibly, the content of higher education teacher training curriculums might need to change. However, the cost implications of these impacts were not explored as part of this assignment.

In Tajikistan, the state budget system consists of two main components, namely the republican budget for central government and the local budgets for the various sub-national governments.

The following components of preschool and general secondary education are funded from the republican budget:

- ➡ The operations of the Ministry of Education and Science relevant to preschool and general secondary education.
- ➡ State education programmes, including:
 - computerisation of educational institutions;
 - learning English and Russian languages;
 - preparation and publication of textbooks; and
 - strengthening the material and technical base of schools, their autonomous heat supply, and technical support of the educational process.

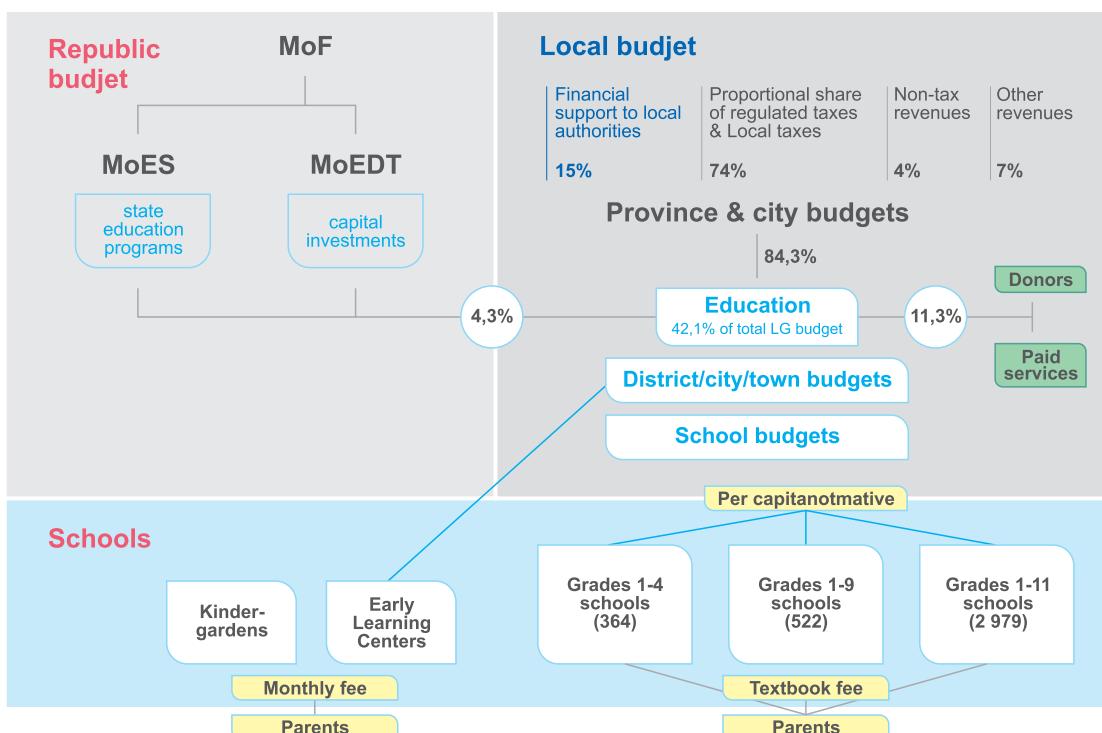
- ➡ Construction, reconstruction and repair of schools.
- ➡ The operations of the Education Academy of Tajikistan, which is responsible for compiling school curriculums.

All of the funding for preschool and the majority of funding for general secondary education is reflected on local budgets. In 2016, only 6.4 per cent of the school budgets were financed from the republican budget. The rest was allocated and disbursed through local budgets*.

However, subventions from the republican budget to local budgets, and tax-revenue-sharing arrangements on the revenue side of local budgets, are important sources of funding for preschool and general secondary education. Similarly, funding from development partners channelled through the Public Investment Program (PIP) and paid services contribute to the funding of preschool and general secondary education. Information on

how these sources of revenue contribute to the funding of education is not readily available – the figure below reflects information from 2010*.

Figure 2. Flow of funds for preschool and general secondary education in Tajikistan



Sources: Karimova M.T., Muminova F.M., Sohibov S.K. (2012), with information from interviews for this assignment.
Note that the % funding is for 2010 from Karimova M.T., Muminova F.M., Sohibov S.K. (2012)

*Mirzoev, S., (2017)

*Karimova M.T., Muminova F.M., Sohibov S.K. (2012)

From discussions with officials within the Ministry of Education, the following was established:

- (a) Schools are allocated funds based on a Per Capita Funding (PCF) normative formula. The formula consists of two main components, namely the PCF normative based on the number of pupils and a funding normative per school. The funding normative for schools only increases as new schools are built, whereas the PCF normative is linked to enrolment numbers and differs according to the grades in the school.
- (b) The PCF normative funds are managed at the District Office of local authorities and do not actually flow to the schools. So, schools enter into contracts with suppliers and send the paperwork through to the District Office, which approves and arranges payments directly to the suppliers.
- (c) The PCF normative allocations to schools cover teacher salaries and operating costs, excluding textbooks. The teacher salaries are paid via the Ministry of Finance, based on information supplied by the District Offices.
- (d) The textbook fee is an annual “rental” for use of the textbooks, which parents pay to the school. The school uses it to “buy” textbooks from the Ministry of Education and Science.
- (e) Parents pay a monthly fee of TJS 25 (2018) per child attending an Early Learning Centre and 110 TJS (2018) for attending a kindergarten. It would appear that kindergartens are partly a fundraising activity for many schools, with the income falling under “paid services”.

3 Trends in Public Spending on Education

In 2017, government planned spending on education was TJS 3 581 million.* This represents 6.1 per cent of GDP and 18 per cent of the state budget. Overall, spending on education grew at an annual average rate of 17 per cent between 2011 and 2017, higher than the 15 per cent average annual growth in

the state budget and the 11.7 per cent annual average growth in GDP for the same period. This indicates that the government has been prioritising spending on education.

Table 2. Expenditure on education in Tajikistan – 2011 to 2017

Education sphere (Thousand somoni)	2011	2012	2013	2014	2015	2016	2017	Annual average growth (2011 - 2017)
	actual							
Preschool	23 977	29 176	42 538	66 743	125 927	129 708	201 822	42,6%
General secondary	919 432	1 041 138	1 311 575	1 740 326	1 783 652	1 951 922	2 101 264	14,8%
Primary vocational	23 239	28 169	41 085	43 389	43 959	58 632	59 596	17,0%
Secondary vocational	32 517	35 336	55 489	73 388	83 054	100 162	140 208	27,6%
Higher education	219 626	281 071	337 808	397 694	477 111	556 167	632 751	19,3%
Other	144 568	192 910	342 341	195 425	404 936	349 638	445 468	20,6%
Total	1 363 359	2 607 800	2 130 836	2 516 965	2 918 639	3 146 229	3 581 109	17,5%
State budget	8 574 585	10 372 903	12 316 971	14 140 253	15 524 676	18 616 740	19 895 050	15,1%
GDP	30 296 867	35 728 889	41 781 098	48 403 173	53 066 164	57 204 164	58 706 705	11,7%

Source: own calculations from data in Ministry of Education and Science (2018) Education Statistical Book

Table 2 shows that, between 2011 and 2017, there was rapid growth in spending on preschool education. This aligns with the growth in coverage from 6.6 per cent in 2009 to 9.2 per cent in 2014 and 12.5 per cent in 2016.**

By contrast, the average annual growth in spending on general secondary education at 14.8 per cent for the period was the lowest of the education sectors, and also lower than the 15.1 per cent average annual growth in the state budget. This indicates that the government is not prioritising increasing spending on general secondary education to the same extent as spending on other education sectors. The following table shows

that the deprioritisation of spending on general secondary education dates from 2015 – prior to that, spending on general secondary education grew very rapidly.

*Ministry of Education and Science (2018): 217
**Mirzoev, S., (2017): 54

Table 3. Annual growth in education expenditure in Tajikistan 2011 to 2017

Annual growth	2011	2012	2013	2014	2015	2016	2017
Preschool	22%	46%	57%	89%	3%	56%	
General secondary	13%	26%	33%	2%	9%	8%	
Primary vocational	21%	46%	6%	1%	33%	2%	
Secondary vocational	9%	57%	32%	13%	21%	40%	
Higher education	28%	20%	18%	20%	17%	14%	
Other	33%	77%	-43%	107%	-14%	27%	
Total	18%	33%	18%	16%	8%	14%	
State budget	21%	19%	15%	10%	20%	7%	
GDP	18%	17%	16%	10%	8%	3%	

Source: own calculations from data in Ministry of Education and Science (2018) Education Statistical Book

Between 2011 and 2017, education expenditure as a percentage of GDP increased from 4.5 to 6.1 per cent. Over the same period, education's share of the state budget increased from 15.9 to 18 per cent.

Table 4. Evolution of education expenditure ratios in Tajikistan – 2011 to 2017

Total education expenditure as:	2011	2012	2013	2014	2015	2016	2017
% of GDP	4,5	4,5	5,1	5,2	5,5	5,5	6,1
% of state budget	15,9	15,5	17,3	17,8	18,8	16,9	18,0
General secondary education as:							
% of GDP	3,0	2,9	3,1	3,6	3,4	3,4	3,6
% of state budget	10,7	10,0	10,6	12,3	11,5	10,5	10,6
% of total education	67%	65%	62%	69%	61%	62%	59%
Preschool education as:							
% of GDP	0,1	0,1	0,1	0,1	0,2	0,2	0,3
% of state budget	0,3	0,3	0,3	0,5	0,8	0,7	1,0
% of total education	1,8%	1,8%	2,0%	2,7%	4,3%	4,1%	5,6%

Source: own calculations from data in Ministry of Education and Science (2018) Education Statistical Book

Expenditure on general secondary education was 3 per cent of GDP in 2011, which increased to 3.6 per cent in 2014 before declining slightly in 2015 and 2016, then moving back up to 3.6 per cent in 2017. It is notable that general secondary education's share of total education expenditure has been on a downward trend, declining from 67 per cent in 2011 to 59 per cent in 2017. This reflects the emphasis given to growing expenditure on the preschool, vocational training and higher education sectors over this period. Nevertheless, the Government of Tajikistan continues to be committed to properly funding schools; it is a top priority in the National Strategy for Education

Development for 2012-2020 and the National Development Strategy for 2016-2030.

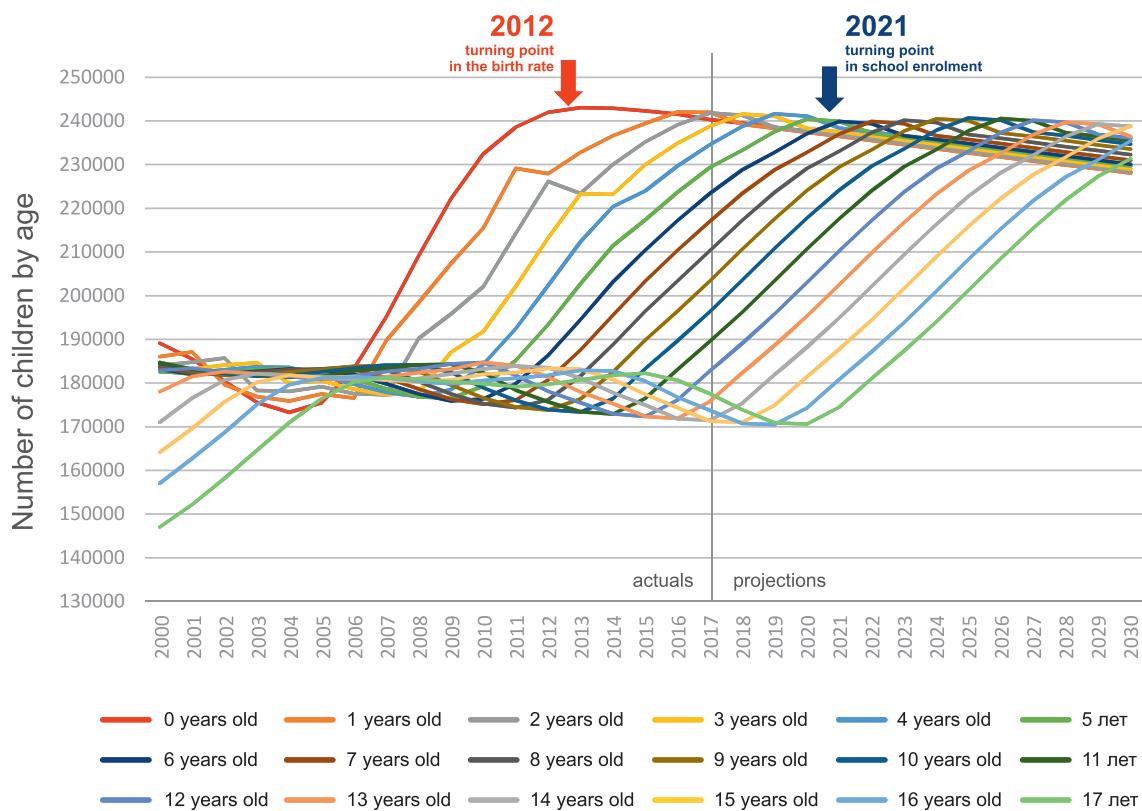
Despite the rapid growth in preschool expenditure, it remains at less than 0.5 per cent of GDP. Preschool's share of total education expenditure has grown from 1.8 to 5.6 per cent between 2011 and 2017.

3.1 Demographic and enrolment trends, and the funding of education

The number of children of school-going age and actual enrolment in each grade are key cost drivers in every education system.

Projecting the future number of pupils requires careful analysis of trends in the birth rate, infant mortality and under five mortality.* Using demographic data for Tajikistan from the World Bank Databank (2018), the following figure shows the actual number of children by age category from 2000 to 2017, and projected numbers from 2018 to 2030.

Figure 3. Actual and projected number of children by age – 2000 to 2030



Source: Demographic data for Tajikistan from the World Bank Databank (2018) and own calculations based on this data

*Note that it is not accurate to use the growth in total population to project future growth in pupil numbers because the growth in total population also accounts for people living longer and the impacts of migration

Figure 3 indicates that Tajikistan is in the midst of a demographic transition that has direct implications for school enrolment numbers.

- ➡ From 2004 till 2011 the birth rate was strongly positive. This has led to strong growth in enrolment in Grade 1 from 2011 onwards.
- ➡ From 2012 onwards, the birth rate turned negative. Our projections suggest that this will begin to reflect in lower Grade 1 enrolments in 2021,

though anecdotal information from the Ministry of Education and Science indicates that Grade 1 enrolments in 2019 were already lower than in 2018* – which would align perfectly with a seven-year gap from 2012.

Using school enrolment data for Tajikistan from the World Bank Databank (2018), and the projected population numbers shown in , the following table sets out projected enrolment numbers for the period 2018 to 2030.

Table 5. Projected enrolment numbers by grade – 2018 to 2030

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Projected enrolment numbers by Grade													
Grade 0	224 801	229 145	233 814	236 920	236 363	233 348	232 413	231 380	230 289	229 278	228 243	227 206	226 187
Grades 1-9	1 601 173	1 654 158	1 717 199	1 780 931	1 847 726	1 905 991	1 949 237	1 974 424	1 988 055	1 997 575	2 000 698	1 998 857	1 991 832
Grades 10-11	262 411	235 253	212 252	211 915	213 750	216 098	227 078	246 813	267 161	276 502	281 687	287 979	293 651
Growth in enrolment relative to 2018													
Grade 0	-	4 344	9 013	12 119	11 562	8 547	7 612	6 579	5 488	4 477	3 442	2 405	1 386
Grades 1-9	-	52 985	116 026	179 758	246 553	304 818	348 064	373 251	386 882	396 402	399 525	397 684	390 659
Grades 10-11	-	-	27 158	-	50 159	-	48 661	-	46 313	-	35 333	-	15 598
Year-on-year growth in enrolment													
Grade 0	-	1,9%	2,0%	1,3%	-0,2%	-1,3%	-0,4%	-0,4%	-0,5%	-0,4%	-0,5%	-0,5%	-0,4%
Grades 1-9	-	3,3%	3,8%	3,7%	3,8%	3,2%	2,3%	1,3%	0,7%	0,5%	0,2%	-0,1%	-0,4%
Grades 10-11	-	-10,3%	-9,8%	-0,2%	0,9%	1,1%	5,1%	8,7%	8,2%	3,5%	1,9%	2,2%	2,0%

Source: Own calculations based on demographic and enrolment data for Tajikistan from the World Bank Databank (2018)

Not unexpectedly, Table 5 shows how the demographic transition highlighted in will flow through into school enrolment. The second part of shows growth in enrolment relative to the 2018 enrolment. This shows that pupil numbers eligible for a possible new pre-primary grade will peak in 2021 and then decline gradually so that by 2030 they will be almost at the same level as they were in 2018. Pupil numbers for grades 1 to 9 are projected to increase through to 2028 after which they will start to decline. The numbers for grades 10 and 11 are difficult to project because these grades are not compulsory and so enrolment is strongly linked to the performance of the economy and the availability of entry-level job opportunities. Nevertheless, enrolment in grades 10 and 11 is expected to increase in the medium term as the benefit of schooling is recognised.

The following table shows how the demographic transition impacts on the funding of education, with reference to the pupil component of the Per Capita Funding (PCF) normative.

*Interview with Mr Usmandzoda. Deputy Minister of the Ministry of Education and Science, 21 January 2019

Table 6. Impact of enrolment trends on the funding of education – 2018 to 2030

TJS millions	2018	2020	2025	2029	2030
Impact on the PCF normative - pupil component					
PCF normative for Grades 1-9	1 353	1 451	1 669	1 689	1 683
PCF normative for Grades 10-11	222	179	209	243	243
Total	1 575	1 631	1 877	1 933	1 932
Increase in the PCF normative funding over 2018	-	56	302	358	357
Growth in the PCF normative funding relative 2018	0%	4%	19%	23%	23%

Source: Own calculations based on enrolment data in Table 2, and PCF normative data from Ministry of Education and Science (2018) Education Statistical Book

Table 6 shows that, as Tajikistan goes through this demographic transition, the funding required for the pupil component of the PCF normative will increase from TJS 1.575 billion in 2018 to TJS 1.933 billion in 2029. This is an increase of TJS 358 million, or 23 per cent. After 2029, the demand for funding is expected to decline as enrolment declines.

Practically, what this means is that the education system in Tajikistan is currently under enormous pressure as it has to absorb the higher number of children born in the period 2004 to 2012. Pupil numbers have grown rapidly from 1 691 000 in 2011 to 1 835 000 in 2017. This is an increase of 144 000 pupils. Overall pupil numbers are expected to increase by another 452 000 to 2 287 000 in 2029, after which they should gradually decline since the number of children enrolling in Grade 1 is expected to decline from 2021 onwards.

How does this impact on proposals to transition to a 12-year education system? It means that, if the transition takes place at any time before 2029, it will happen during a period when enrolment is increasing towards an all-time high, putting strain on the education

system as reflected in larger class sizes. It also means that funding for general secondary education will continue to be under pressure through to 2029, as it has to respond to the growing number of pupils. Within this context, adding another age cohort (around 240 000 pupils) would increase the pressure on both the education system itself and the funding of education still further.

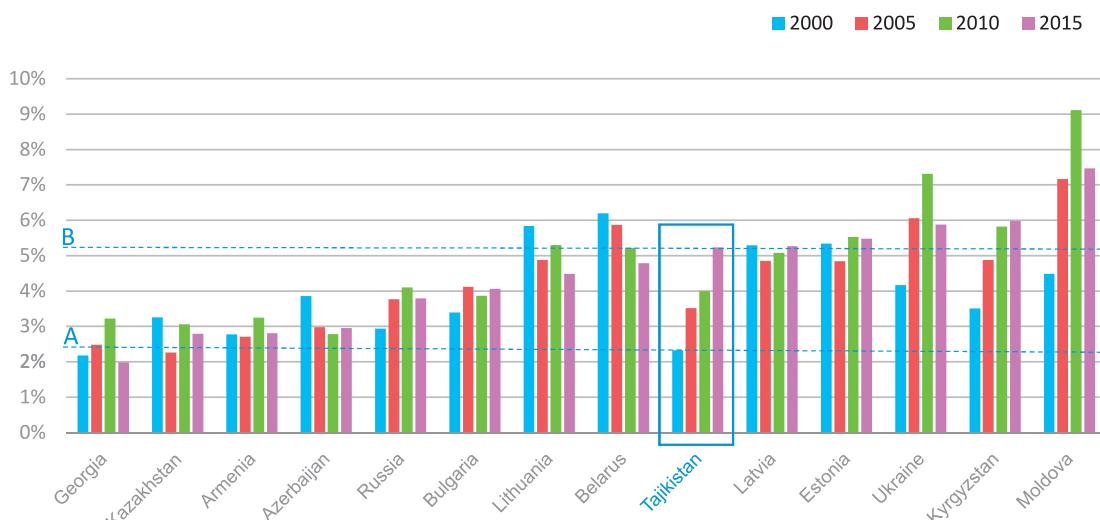
4 International Comparisons

The following set of figures compare the Republic of Tajikistan's expenditure on education to that of other Central Asian Countries, and to other lower-income countries.*

Note that in, figures 4 to 7, the analysis covers total education expenditure, which includes pre-primary, primary, secondary and higher education. Figures 8

and 9 cover pre-primary education only, as separate comparative expenditure data on general secondary education was not available in the data sources reviewed.

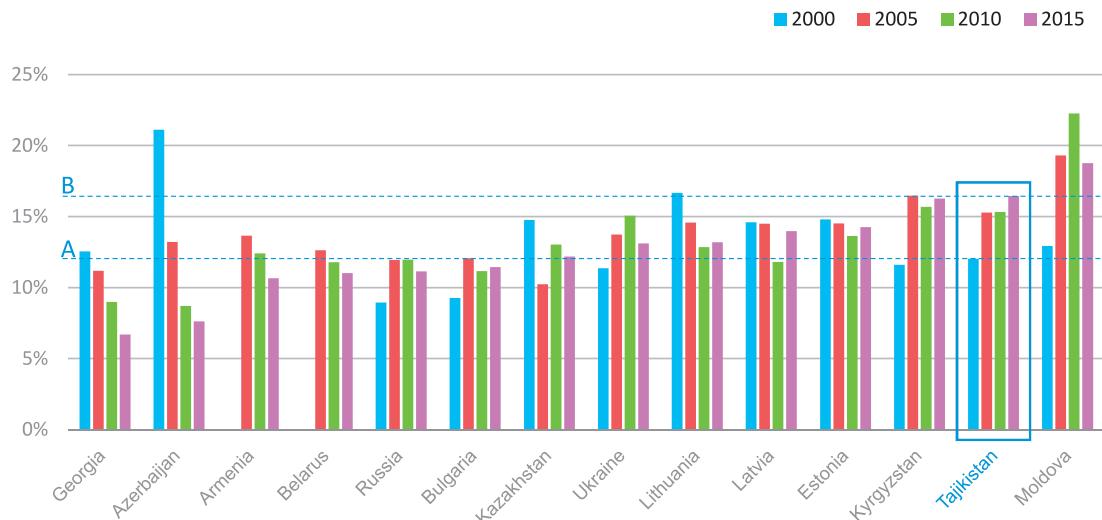
Figure 4. Total education expenditure as a percentage of GDP



Source: World Bank, (2019) Education Statistics database (EdStats)

Figure 4 shows that, in 2000, Tajikistan's expenditure on education was 2.3 per cent of GDP, which was the second lowest among the fourteen Central Asian Countries. By 2015, Tajikistan's expenditure on education had moved up to 5.2 per cent of GDP, which places it sixth. It is notable that between 2010 and 2015, many countries' spending on education as a percentage of GDP declined. Tajikistan was the only country that sustained meaningful positive growth in education spending over this period.

*Note that the World Bank only moved Tajikistan back down into the lower-income country category at the beginning of 2019

Figure 5. Total education expenditure as percentage of total public expenditure

Source: World Bank, (2019) Education Statistics database (EdStats)

Figure 5 shows that, in 2015, Tajikistan was second among Central Asian Countries in terms of allocating public resources to education. This indicates that Tajikistan is prioritising education within the state budget.

The following figures give a more nuanced picture – showing the relationship between total public expenditure as a percentage of GDP and total expenditure on education as a percentage of GDP for Central Asian Countries

and other lower-income countries. In these figures, countries located in the top-left quadrant (shaded blue) have higher levels of public expenditure as a percentage of GDP and higher public expenditure on education as a percentage of GDP.

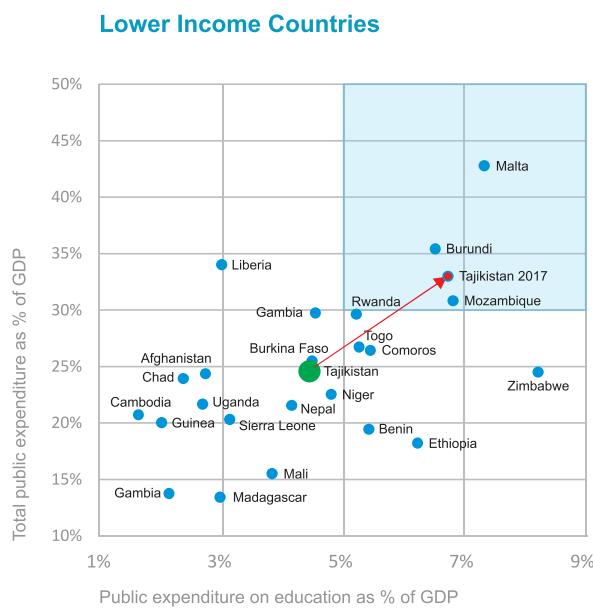
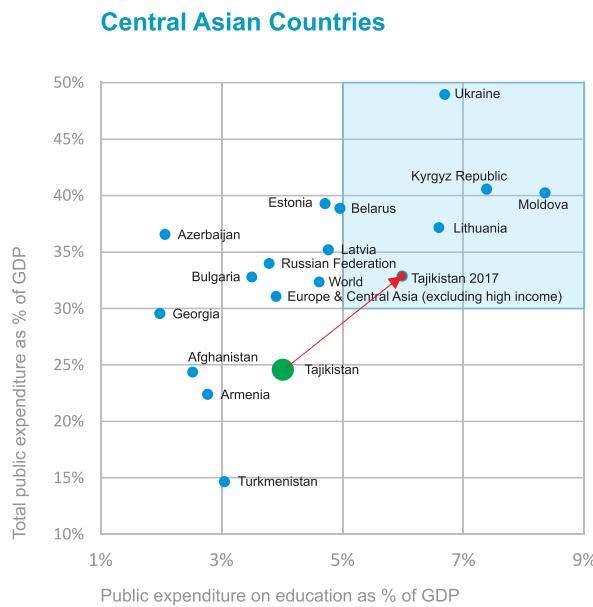
Figure 6. Public expenditure as % of GDP versus education expenditure as % of GDP, 2012

Figure 6 shows that, in 2012, Tajikistan was located in the lower-left quadrant of the graphs, which suggests scope existed for increasing public expenditure on education by both increasing the overall share of public expenditure as a percentage of GDP (by increasing taxation) and increasing education's share of public expenditure. Data for 2017 indicates that Tajikistan has moved into the top-right quadrant, with public expenditure at 33 per cent of GDP, and education's share of public expenditure increasing to 6 per cent of GDP. This is a very positive development, but it does mean that opportunities for further improving expenditure on education are diminishing.

Compared to other countries, in 2017 Tajikistan was still below where Kyrgyzstan, Ukraine, Moldova and Latvia were in 2012.

The following figures show the relationship between the percentage of the population under 15 years and education as a percentage of public spending – indicating the adequacy of public expenditure on education. The red lines in the figures plot the level at which the share of public spending on education equals the percentage of the population under 15 years. Countries that are close to or to the right of the red line are performing better in terms of the adequacy of expenditure on education.

Source: World Bank, (2019) Education Statistics database (EdStats)

Figure 7. Population under 15 versus public expenditure on education, 2012

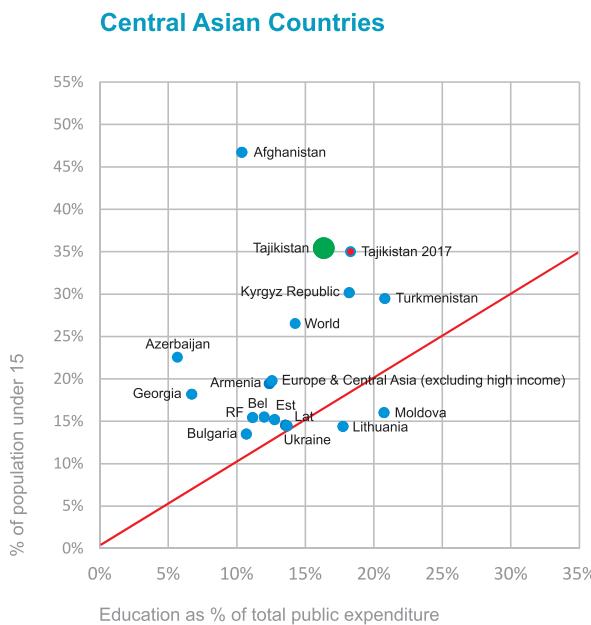
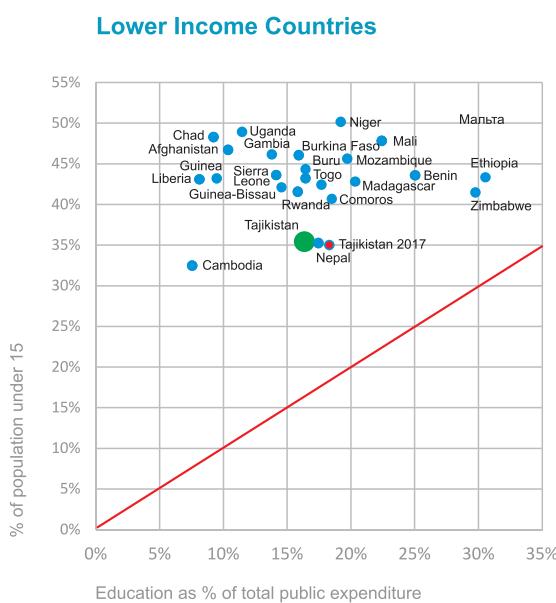
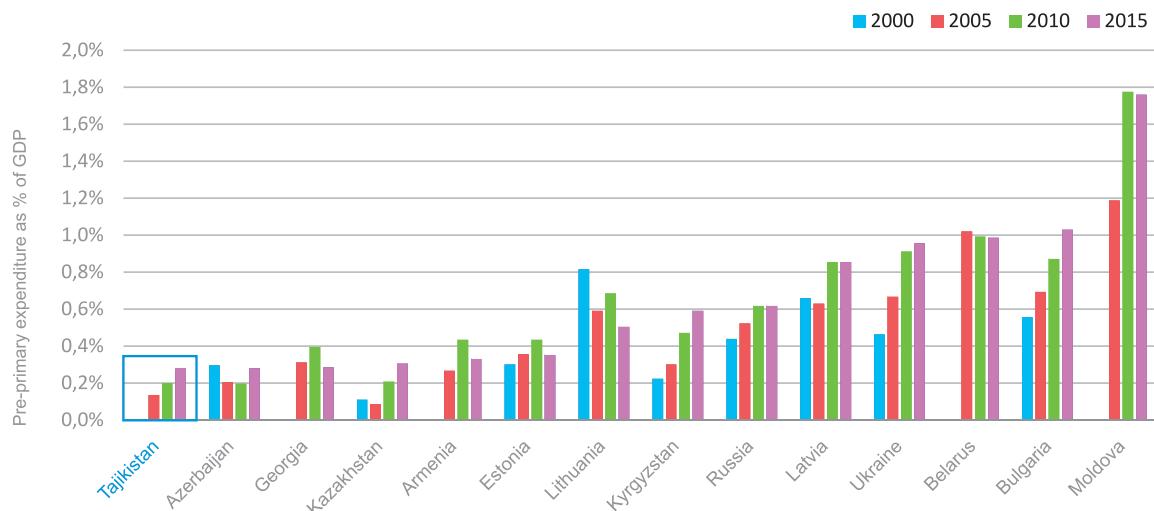


Figure 7 shows that Tajikistan is performing significantly worse than most other Central Asian Countries when it comes to adequately funding education, but better than other lower-income countries. Data for 2017 indicates that Tajikistan's public expenditure on education has moved in the right direction in terms of adequacy, but the improvement has been relatively small.

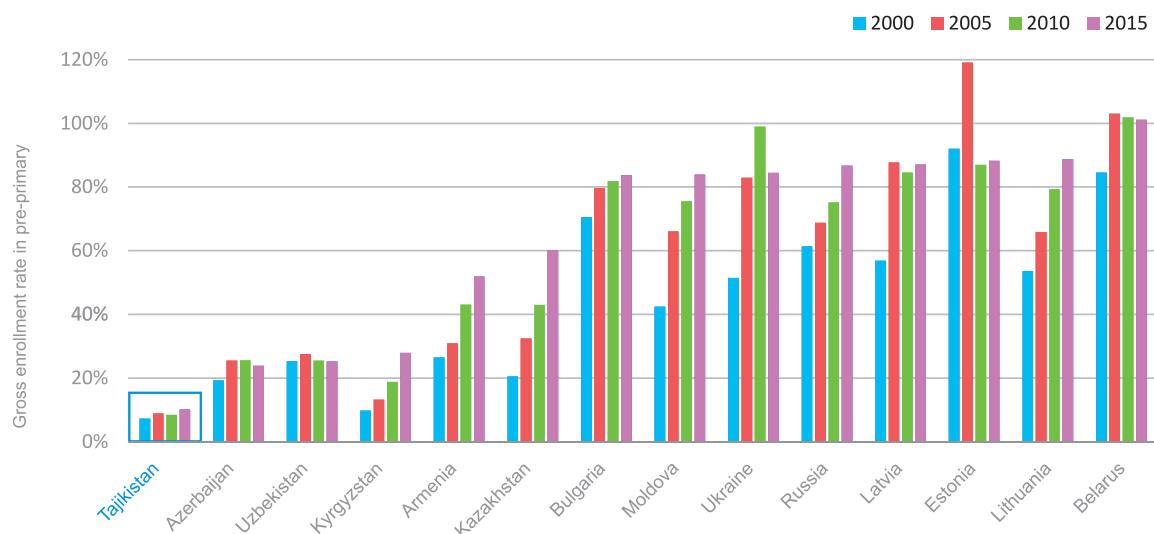
The following two figures compare Tajikistan's provision of pre-primary (preschool) education to that of other Central Asian Countries.



Source: World Bank, (2019) Education Statistics database (EdStats)

Figure 8. Pre-primary expenditure as percentage of GDP

Source: World Bank, (2019) Education Statistics database (EdStats)

Figure 9. Gross enrolment in pre-primary

Source: World Bank, (2019) Education Statistics database (EdStats)

Figure 8 shows that, in 2015, Tajikistan spent the least on pre-primary education as a percentage of GDP compared to the other Central Asian Countries listed. This shows that the consequence of this low level of spending is a similarly low level of gross enrolment in pre-primary. Tajikistan will need to substantially increase its spending on pre-primary education to increase enrolment to levels comparable to Bulgaria, Ukraine or even Kazakhstan.

4.1 Findings of the international review of countries that have changed the number of school years

As part of the research, we did a *Literature Review of country experiences with changing the number of years schooling*, which is available as a separate report. As the Government of the Republic of Tajikistan considers moving from an 11-year education system to a 12-year system, it should consider the following six points that emerge from the experiences of other countries:

1. Increasing the number of years of schooling is not an easy exercise, and a number of countries have embarked on the process and failed due to a combination of inadequate planning, poor management and lack of funding.
2. The more recent changes to the number of years of schooling have focussed on introducing one or more years of compulsory early childhood education (ECE) or preschool.
3. Introducing compulsory pre-primary or ECE can be very beneficial, but this depends on whether the time is used effectively, which in turn depends on the quality of the teachers and the curriculum.
4. Expanding the number of years of compulsory education tends to benefit girls more than boys, and children living in rural areas more than children living in urban areas, thus narrowing the gender and rural/urban inequalities.
5. The impact of increasing the number of years of compulsory education seems to depend on the country context and the number of years before and after the reform. Generally, extending the number of years of compulsory education does reduce dropout rates, improve likely earnings and reduce inequality. It may also have other benefits, such as reducing fertility rates and HIV prevalence. However, where the level of secondary schooling is already high, then adding or reducing a year does not necessarily have a significant impact on human capital acquisition.
6. Above a certain minimum level of instruction time, the marginal return on

adding additional instruction time very often does not justify the cost. Similarly, above a certain minimum level, there does not appear to be a strong correlation between increased instruction time and student performance.

5 Scenarios for Moving to a 12-year Education System

The Ministry of Education and Science is currently implementing the National Strategy of Education Development of the Republic of Tajikistan till 2020 with the strategic goal of “creating conditions to ensure efficient and effective provision of educational services and access to appropriate quality education for everyone.”

An ongoing question is: what interventions in the education system will yield the greatest positive results towards realising the above strategic goal? Broadly speaking, the range of interventions fall into three categories:

- ➔ **Improve children's readiness** to learn by expanding access to ECE and eventually making one or more years of ECE compulsory.
- ➔ **Improve the quality of the existing years of schooling** by reviewing and improving the curriculum, strengthening teacher's capabilities, improving the quality of and access to learning materials, and improving the quality of school facilities.
- ➔ **Add more teaching/study time** by lengthening the school day, lengthening the school term or *adding an additional year to the school system*.

The Education Action Plan 2015 – 2017 outlined the following ambitious focus areas:

- (a) Increasing access to early childhood education using a variety of modalities.
- (b) Increasing access to quality general secondary schools through infrastructure support programmes, focusing on the poorest and most vulnerable section of the population (including WASH).
- (c) Reviewing the curriculum to make it relevant to the national vision and specifying the standards that students are expected to achieve.
- (d) Improving the quality of learning through pre-service and in-service teacher training reform and retaining this essential resource.
- (e) Using assessment and the EMIS for evidence-based policy planning.

In doing so, it covered elements of the first two categories. The question is: has sufficient progress been made in these areas since 2015 to now move on to considering adding more teaching/study time, or should the focus over the next five years or so rather remain on improving the quality of the existing years of schooling and expanding access to ECE? This research assignment was not designed to answer this question, but it is essential that it is appropriately researched and an evidence-based conclusion reached.

5.1 Why increase the number of years of education?

There is a widely-held belief that more school time, including increasing the number of years of education, will lead to better education outcomes. Is this true?

The *Literature Review* conducted as part of this assignment explores this issue under the heading *Return on investment from increasing/decreasing school time*:

- ➔ Acemoglu and Angrist (2000) used meta-analysis of variation in average schooling caused by changes in compulsory schooling laws to interrogate the external human capital returns to education of such reforms. They find little evidence for sizable external returns to education stemming from changes in compulsory schooling laws, which suggests that the broader societal benefit from such laws is insufficient to be considered an incentive.
- ➔ In another meta-analysis, Akguc (2010) provides cross-country panel estimations of the returns to the various stages of education. Interestingly, the study found that returns for the various stages were correlated with countries' levels of development, such that tertiary

education had a more significant impact in more developed countries, while primary and secondary education had a greater impact in less developed countries. This is particularly interesting in terms of prioritisation in the Tajikistan context.

- ➡ A third meta-analysis conducted by Bils and Klenow (1997), and again covering most of the countries included in Table 1, finds that the established relationship between increased schooling, as is enforced by increased schooling years (compulsory or otherwise), and growth in human capital and technology adoption in countries is generally quite weak – with schooling accounting for less than a third of this growth. This, again, calls into question the returns to schooling that accrue from the addition of years to the education system.
- ➡ Anderson and Walker (2015) provide an analysis of the impact of budget constraint-enforced reductions to compulsory instruction time on school operating finances and student outcomes. The study found that the shift to a four-day week with longer instruction hours eases financial pressures on schools, whilst student performance improved under these circumstances. This suggests that the assumed direct relationship between classroom time and student performance might not hold in all instances, and also provides an interesting departure point for discussions on instruction time.
- ➡ These results are mirrored in Hewitt and Denny (2011), who note that there is no significant difference in student

performance resulting from the shift from a five-day to a four-day week.

➡ Similarly, Aronson, Zimmerman and Carlos (1998) found there to be no correlation between increased allocated instruction time (above a minimum level) and student performance, despite the former being commonly used as a lever for reform. Moreover, the study found that the expense of the increased allocation of instruction time was largely prohibitive.

➡ Cattaneo, Oddenfuss and Wolter (2016) support these results with their study into the impact of instructional time on student performance. The study finds that marginal returns from additional hours of instruction decrease rapidly beyond a base level – such that the effectiveness of an extra hour of instruction is only around 30 per cent of the expected average level. They suggest that these marginal gains are likely low compared to alternative uses of time, and to the costs of providing the additional instruction time, and that this should be borne in mind by education authorities when deciding on education reform.

Based on the above, we conclude that available research indicates that, above a certain minimum level of instruction time, there does not appear to be a strong correlation between increased instruction time and student performance. How then does Tajikistan perform when it comes to instruction time?

In a 2016 paper, Mark Agranovich notes that, in 2011, instruction time in primary and lower secondary school in Tajikistan was 17 per cent below Russia and 25 per cent below the average for OECD countries. The introduction of the new curriculum in 2015 closed the gap somewhat. The relevant data is presented below:

Table 7. Instruction time per year in primary and lower secondary school

	Primary school (hours per year)	Lower secondary school (hours per year)	Primary and lower secondary school (total hours over 9 years)
Tajikistan	548	719	5 788
Russia	517	798	6 058
OECD average	799	915	7 656
Tajikistan as a percentage of			
Russia	106%	90%	96%
OECD average	69%	79%	76%

Source: Agranovich, M., (2016) "The Status and Development of Education System of the Republic of Tajikistan, 2016. The Evidence Based Education Sector Review". Paper prepared for the Ministry of Education and Science, Dushanbe

The main reason for Tajikistan having lower instruction time is due to longer holidays and more public holidays through the year, rather than shorter school days.

The above comparisons suggest that Tajikistan should emulate Russia and the OECD countries*. If so, which one? Finland has consistently been one of the top performers of all countries participating in the Programme for International Student Assessment (PISA), and yet it has the shortest school days and the shortest school years (592 hours) among OECD countries. In other words, they do better by going to school less!

It is also important to note how the time is used. In Tajikistan, the curriculum provides for three languages and at the lower secondary level students take a large number of compulsory courses (17-18 courses in each of grades 8 and 9) relative to their counterparts in OECD countries (9 to 13 courses).*

The education system in Tajikistan is also under additional stress. In 2017 as only 15 per cent of children were in single-shift schools, with 82 per cent in double-shift and 3 per cent in three-shift schools.* This means optimal morning teaching time is not available for all grades.

If the number of years of formal learning were to have an impact on education success, then one would expect to see the countries that enrol children later achieve less. While the majority of countries worldwide have age 6 as the enrolment year for formal learning, around 20 per cent of countries have 7 years and 8 per cent have 5 years.* In fact, many of the countries who have a starting age of 7 are achieving amongst the best or well above average in PISA – these countries include China, Estonia, Finland, Korea, Lichtenstein, Poland, Switzerland).*

What is not in serious question is the important impact that the right support to early childhood development and ECE has on children's ability to fulfil their potential.* As the World Bank* has noted:

Evaluations of well-conceived programs designed to foster early development demonstrate that children who participate in these programs tend to be more successful in later school, are more competent socially and emotionally, and show better verbal, intellectual and physical development during early childhood than children who are not enrolled in high quality programs. Benefits of ECD interventions can be found in the following areas:

- Higher intelligence scores;
- Higher and timelier school enrolment;
- Less grade repetition and lower dropout rates;
- Higher school completion rates;
- Improved nutrition and health status;
- Improved social and emotional behaviour;
- Improved parent-child relationship;
- Increased earning potential and economic self-sufficiency as an adult;
- Increased female labour force participation.

In Tajikistan, considerable effort has been made to introduce effective and efficient modalities for ECE based on a sound regulatory framework and built around agreed standards, but allowing for different delivery mechanisms that respond to the needs of the communities. This is a focus of the education strategy, and would therefore appear to be one that should be continued and even strengthened (and not absorbed into the formal system).*

The preceding analysis indicates that the case for adding another year of formal education is by no means clear cut. This makes it especially important for there to be thorough research into whether or not introducing an additional year will indeed contribute to better educational outcomes. This study seeks to contribute to this analysis by working out the cost of different scenarios for making the transition to a 12-year education system in Tajikistan. Knowing the cost of different transition scenarios will facilitate further analysis regarding:

- which scenario is most affordable from a fiscal perspective;
- which scenario is likely to contribute most cost-effectively to improving education outcomes; and
- the extent of the financial opportunity cost of implementing each of the scenarios, and therefore could the funds be used to improve education outcomes in other, more cost-effective ways?

*<http://www.oecd.org/pisa/pisaproducts/strongperformers/>

*Todd, M., 2015.

*Ministry of Education and Science (2018) Education Statistical Book

*Todd, M., 2015.

*Summary data on PISA scores can be found at: <http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf>

*Todd, M., 2015.

*<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTCY/EXTECD>

*Todd, M., 2015

5.2 Key considerations when describing transition scenarios

When describing scenarios for transitioning to a 12-year education system in Tajikistan, the following are important distinguishing options for each scenario:

Table 8. Options that distinguish scenarios for adding an additional year of education

Easier to implement	More difficult to implement	Comment
Additional year is not part of the formal education system	vs Additional year is part of the formal education system	Adding an ECE year that is not part of the formal education system can be offered in community-based facilities, which will reduce infrastructure costs
Adds an additional year at the beginning or end of the current education system	vs Adds an additional year in the middle of the current education system	An additional year added in the middle of the current education system cannot be phased in, whereas an additional year at either the start or end of the education system can be. Also, an additional year at the end of the system will not be compulsory, whereas one in the middle is likely to be compulsory
Additional year is not compulsory – at least not initially	vs Additional year is compulsory from the outset	An additional year that is compulsory from the outset excludes the option of phasing in, and therefore requires greater planning and management, and is often more costly
Does not shift the starting age for Grade 1 down from 7 to 6 years old	vs Does shift the starting age for Grade 1 down from 7 to 6 years old	Shifting the starting age for Grade 1 down from 7 to 6 years represents a separate type of transition that greatly complicates the process of introducing an additional year. If the shift is made in a single year, it requires managing a double-age cohort through the education system, which is a complicated and costly process
Additional year is phased in over a number of years	vs Additional year is introduced in a single year	Phasing in an additional year significantly reduces the costs and the risks associated with the transition

When considering the different scenarios, it is important to evaluate how each one is structured with regards to the above options – because these options are key drivers of costs in the transition process, and even beyond.

5.3 Description of scenarios developed for the purpose of costing

In 2015, Mark Todd was commissioned by the Ministry of Education and Science (working in partnership with UNICEF) to investigate options for moving to a 12-year education system in Tajikistan. The resultant paper, Concept note and options for a possible move from an 11 years system of education to 12 years in Tajikistan, gives a very useful discussion of the context and a range of

issues that need to inform the any decision regarding the transition to a 12-year education system. A summary of the scenarios, analysis and recommendations from this 2015 paper are set out in Annexure C. This assignment builds on the scenario descriptions of this previous research.

Following extensive consultations with stakeholders in Tajikistan in September 2018, the following scenarios for transitioning to a 12-year education system were agreed upon for purposes of exploring the costs of the transition. The right-hand column uses the characteristics described in section 5.2 to describe each of the scenarios (those in green make the scenario easier to implement, while those in red make the scenario more difficult to implement):

Table 9. Scenarios for costing the transition to a 12-year education system in Tajikistan

Description of Scenario	Key Characteristics	
	Easier to implement	More difficult to implement
Baseline Scenario (B-Baseline) Maintain current 11-year education system		
Envisages keeping the current 4+5+2 system going forward	Same as current system	
Scenario 1 (S1-1yr forward) Move the current curriculum forward by a full year		
Envisages moving the current curriculum forward by a full year (i.e. children will start Grade 1 at 6 years old, instead of 7) to make space for another year of skills training (Grade 12) to be added to the Upper Secondary Phase, to give a 4+5+3 system	<ul style="list-style-type: none"> • Additional year is part of the formal education system • Adds year at the end of the current education system • Additional year is not compulsory – at least not initially • Does shift the starting age down from 7 to 6 years old • Additional year is introduced in a single year 	
Scenario 2 (S2-6mths forward) Move the current curriculum forward by 6 months		
Envisages requiring children to start Grade 1 at 6 years old. The first 6 months in Grade 1 would be used for ECE, then the current curriculum would be moved forward by six months to make space for six months of skills training to be added to the Upper Secondary Phase to give a ½+4+5+2+½ system	<ul style="list-style-type: none"> • Additional year is part of the formal education system • Adds year at the beginning and end of the current education system • Additional year is not compulsory – at least not initially • Does shift the starting age down from 7 to 6 years old • Additional year is introduced in a single year 	
Scenario 3 (S3-stretch) Stretch the current primary curriculum		
Envisages adding an additional year to the primary school phase, thus allowing the current primary curriculum to be stretched across five years, as opposed to the current four. To accommodate the additional year, children would be required to start Grade 1 at 6 years old. This will give a 5+5+2 system	<ul style="list-style-type: none"> • Additional year is part of the formal education system • Adds an additional year in the middle of the current education system • Additional year is compulsory from the outset • Does shift the starting age down from 7 to 6 years old • Additional year is introduced in a single year 	
Scenarios 4A (S4A-ECE schools) Introduce an initial ECE year based at schools		
Envisages introducing an ECE / pre-primary year offered in facilities built on school premises before pupils enter Grade 1. This pre-primary year would initially not be compulsory for 6-year-olds, though it could be made compulsory later. This will give a 1+4+5+2 system	<ul style="list-style-type: none"> • Additional year is part of the formal education system • Adds year at the beginning of the current education system • Additional year is not compulsory – at least not initially • Does not shift the starting age for Grade 1 down from 7 to 6 years old • Additional year is phased in over a number of years 	
Scenarios 4B (S4B-ECE various) Introduce an initial ECE year based at schools or community facilities		
Envisages introducing an ECE / pre-primary year offered in facilities built on school premises or as part of accredited, community-based ECE centres before pupils enter Grade 1. This pre-primary year would initially not be compulsory for 6-year-olds, though it could be made compulsory later. This will give a 1+4+5+2 system	<ul style="list-style-type: none"> • Additional year is not part of the formal education system • Adds year at the beginning of the current education system • Additional year is not compulsory – at least not initially • Does not shift the starting age for Grade 1 down from 7 to 6 years old • Additional year is phased in over a number of years 	
Scenario 5 (S5-Gr 12 only) Introduce Grade 12 only		
It is proposed that another year of skills training (Grade 12) be added to the Upper Secondary Phase, with no other changes to the education system, i.e. the starting age for Grade 1 would remain at 7 years old. This will give a 4+5+3 system	<ul style="list-style-type: none"> • Additional year is part of the formal education system • Adds year at the end of the current education system • Additional year is not compulsory – at least not initially • Does not shift the starting age for Grade 1 down from 7 to 6 years old • Additional year is phased in over a number of years 	

Annexure B provides a more detailed description of each of the above scenarios, together with an evaluation of their advantages and disadvantages.

6 The Cost of the Transition to a 12-year Education System

The key output of this research assignment is a Costing Model that explores the cost of the five scenarios described in section 5.4 and Annexure B for moving to a 12-year education system in Tajikistan. Here, the focus is on exploring the relative cost of the different scenarios, while section 7 below explores how the implementation of a 12th year of education might be funded.

As noted in the textbox in section 1, the following key assumptions in the setup of the Costing Model underpin the costing results presented below:

- (a) All the inputs are costed at 2018 prices so as to minimise the distortionary effects that an inflation assumption could have on the relative price of inputs. In other words, inflation is equal to zero.
- (b) The operating costs of schools is based on the Per Capita Funding (PCF) normative. This is the approach the Government of Tajikistan uses to fund schools. It consists of two main components, namely the PCF normative and a funding normative per school. This funding covers the cost of teachers and the operating costs of schools.

(c) The projected number of pupils to be enrolled in each scenario is based on projections using enrolment data for Tajikistan from the World Bank Databank.

6.1 Cost the transition according to the selected scenarios

The following table shows the cost, in 2018 prices, of adding a 12th year of education according to the different scenarios. Note that, in this analysis, 2020 is set as the implementation year so as to minimise any distortionary impact that forward projections of demographic, price and economic variables might have.

Table 11. Total cost of adding a 12th year of education – Total setup and one-year operational costs

Total setup and one year operational costs							
	Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4A	Scenario 4B	Scenario 5
	B-Baseline	S1-1yr forward	S2-6mths forward	S3-stretch	S4A-ECE school	S4B-ECE various	S5-Gr 12 only
	2020	2020	2020	2020	2020	2020	2020
Summary of costs TJS	Baseline cost	Costs additional to baseline					
Overall total	2 567 803 715	1 940 539 431	1 967 531 676	1 677 124 559	1 437 416 974	1 255 612 174	926 609 031
Total operational costs	2 567 803 715	632 414 231	640 855 676	480 527 959	321 200 774	321 200 774	328 767 431
Total setup costs	-	1 308 125 200	1 326 676 000	1 196 596 600	1 116 216 200	934 411 400	597 841 600
As a percentage of total cost							
Total operational cost		33%	33%	29%	22%	26%	35%
Total setup cost		67%	67%	71%	78%	74%	65%

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

Table 11 shows that the baseline operational cost of the education system in 2018 was about TJS 2.57 billion. The costing of scenarios 1 to 5 shows the total once-off setup costs and the annual operational costs that are additional to this baseline figure. Between 65 and 78 per cent of the total additional cost of the respective scenarios is for setup costs – of which around 80 per cent is the cost of new classrooms. This means that, in the

second year of implementation and thereafter, the cost of adding a 12th year of education only comprises the recurrent operational costs. (Though practically, actual implementation will need to be managed differently).

The following table shows the operational costs and setup costs as a percentage of GDP and the state budget.

Table 12. Cost of adding a 12th year of education as percentage of GDP and state budget

Summary of costs TJS	Baseline cost	Total setup and one year operational costs					
		B-Baseline 2020	Scenario 1 S1-1yr forward 2020	Scenario 2 S2-6mths forward 2020	Scenario 3 S3-stretch 2020	Scenario 4A S4A-ECE school 2020	Scenario 4B S4B-ECE various 2020
Overall total	2 567 803 715	1 940 539 431	1 967 531 676	1 677 124 559	1 437 416 974	1 255 612 174	926 609 031
Total operational costs	2 567 803 715	632 414 231	640 855 676	480 527 959	321 200 774	321 200 774	328 767 431
Total setup costs	-	1 308 125 200	1 326 676 000	1 196 596 600	1 116 216 200	934 411 400	597 841 600
Total operational costs as:	baseline	additional to baseline					
% of projected GDP	3,8%	0,9%	1,0%	0,7%	0,5%	0,5%	0,5%
% of projected state budget	12,5%	3,1%	3,1%	2,3%	1,6%	1,6%	1,6%
Total operational costs as:	baseline	additional to baseline					
% of projected GDP	0,0%	2,0%	2,0%	1,8%	1,7%	1,4%	0,9%
% of projected state budget	0,0%	6,4%	6,5%	5,8%	5,4%	4,6%	2,9%

Table 12 shows that the estimated baseline cost of the current 11-year education system in 2018 was TJS 2.57 billion, which is 3.8 per cent of GDP and 12.5 per cent of the state budget.

To introduce a 12th year of education would require setup costs between a low of TJS 598 million and a high of TJS 1 327 million in additional spending on education, depending on the scenario. The above table suggests that the setup costs would add spending amounting to between 0.9 and 2 per cent of GDP to the current 3.8 per cent baseline. Similarly, the setup costs would require general secondary education's share of the state budget to increase from the baseline 12.5 per cent to between 15.4 and 19 per cent. Such increases are substantial and it is very unlikely that the fiscal space exists to finance them in a single year.

By contrast, the operational costs of introducing a 12th year of education are relatively modest, representing between 0.5 and 1 per cent of GDP. To finance the operating costs would require general secondary education's share of the state budget to increase by between 1.6 and 3.1 per cent, depending on the scenario.

As noted, around 80 per cent of the setup cost is for new classrooms. So, from a financing/budgeting perspective, the setup cost of building new classrooms represents the greatest challenge to introducing a 12th year of education based on the specified scenarios.

The specified scenarios all provide for a “single-year” introduction of a 12th year of education that assumes that up to 240 000 pupils will be added to Grade 1 of the education system in a single transition year. This is conceptually neat, but not financially affordable because of the demand it creates for new classrooms.

The following section explores whether the need for new classrooms can be significantly reduced by adopting a gradual approach to moving to a 12-year education system.

6.2 Options for phasing in the 12-year education system

6.2.1 “Single-year approach”

In scenarios 1, 2 and 3, to create space in the education system to add a new Grade 12 (without requiring pupils to stay in general secondary education beyond the age of 18), it is necessary to shift the start age of pupils entering Grade 1 down from 7 to 6 years. As noted, the way the scenarios are currently costed in assumes that this shift will happen in a single year. This is illustrated below:

Table 13. The “single-year approach” to moving to a 12-year education system

	2018	2019	2020	2021	2022	2023
6 year olds	227 072	231 460	236 176	239 313	238 751	235 705
7 year olds	221 058	227 062	231 450	236 166	239 303	238 741
Phase-in enrollment of 6 year olds	-	-	236 176	239 313	238 751	235 705
Phase-out enrollment of 7 year olds	221 058	227 062	231 450	-	-	-
Total enrollment in Grade 1	221 058	227 062	467 626	239 313	238 751	235 705
<i>Impact of the phasing-in on class size</i>						
Current average class size	24	24	24	24	24	24
% more pupils above normal	0%	0%	102%	0%	0%	0%
New average class size with no new classrooms	24	24	24	24	24	24
Demand for new classrooms to maintain average class size			9 841			

Source: Demographic data for Tajikistan from the World Bank Databank (2018) and own calculations based on this data

Having a double-age cohort of pupils enrolling in a single year (2020) creates enormous challenges:

- ➡ to maintain the average class size at 24 pupils will require around 9 800 extra classrooms to be built before the shift can take place. It is estimated that this will cost around TJS 999 million;
- ➡ the 9 800 classrooms would need to be furnished at an estimated cost of TJS 295 million. This may have to happen twice as the children grow – and require larger furniture;
- ➡ new textbooks would need to be printed for each grade as the double-age cohort moves up through the grades. This would cost an estimated TJS 324 million, and the extra textbooks for each grade would only be used for one year;

➡ additional teachers would need to be employed to teach the extra cohort. More challenging is the fact that the group of teachers serving the extra cohort would need to change as it moves up through the grades – and subjects change; and

➡ when the double-age cohort reaches the upper grades it could make scheduling the use of specialised facilities like science and computer laboratories complicated.

A breakdown of the cost implications of the “single-year approach” to the transition to a 12-year education system are set out in the following table:

Table 14. Cost of the “single-year approach” to the transition to a 12-year education system

Total setup and one year operational costs							
	Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4A	Scenario 4B	Scenario 5
	B-Baseline 2020	S1-1yr forward 2020	S2-6mths forward 2020	S3-stretch 2020	S4A-ECE school 2020	S4B-ECE various 2020	S5-Gr 12 only 2020
Summary of costs TJS	Baseline cost	Costs additional to baseline					
Total operational costs	2 567 803 715	632 414 231	640 855 676	480 527 959	321 200 774	321 200 774	328 767 431
PCF normative expenditure	2 567 803 715	311 077 943	311 077 943	311 077 943	311 077 943	311 077 943	311 077 943
Management of additional year	-	2 134 512	4 099 238	-	2 134 512	2 134 512	2 134 512
Printing textbooks	-	322 498 380	324 836 520	169 677 480	2 338 140	2 338 140	18 851 580
Income from the "renting" of textbooks	-	5 845 350	5 845 350	5 845 350	-	-	5 845 350
Ongoing in-service training of teachers	-	2 548 747	6 687 325	5 617 887	5 650 180	5 650 180	2 548 747
Total setup costs	-	1 308 125 200	1 326 676 000	1 196 596 600	1 116 216 200	934 411 400	597 841 600
Infrastructure - new classrooms	-	998 555 000	998 555 000	998 555 000	935 517 500	764 240 000	495 075 000
New furniture and equipment	-	295 188 600	295 188 600	178 281 600	174 407 100	163 879 800	88 385 000
Curriculum development	-	5 400 000	22 700 000	12 100 000	150 000	150 000	5 400 000
New offices for management	-	1 321 600	2 572 400	-	1 321 600	1 321 600	1 321 600
Public awareness campaigns	-	7 660 000	7 660 000	7 660 000	4 820 000	4 820 000	7 660 000

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

The funds flowing to schools through the PCF normative would need to increase by about TJS 311 million from 2020 onwards. However, the most costly items for a single-year transition scenario are infrastructure, new furniture and textbooks. Note that the cost of textbooks in the above table reflects the full cost of textbooks for the transition double-age cohort for all the applicable grades (i.e. not assuming the textbooks are for three years).

6.2.2 “Multi-year approach”

The “multi-year approach” to moving to a 12-year education system under scenario 1 suggests that the transition can be managed over a period of time instead of all in a single year.* Phase-in periods of 2, 3, 4, 6 and 12 years were explored and, based on a range of considerations, a phase-in period of six years was identified as providing a good balance between implementation time, practicality and costs.

The following table illustrates how a six-year phase-in process will work in relation to Scenario 1:

*It is not possible to structure a multi-year phase-in for scenario 2, and while to accommodate a multi-year phase-in for scenario 3 would require the transition being divided into two parts (i) reducing the enrolment age for Grade 1 down to 6 years and then (ii) introducing the additional grade in the primary school phase

Table 15. The six year transition to phasing in a 12-year education system

Months	2018	2019	2020	2021	2022	2023	2024	2025	2026
6 year olds	227 072	231 460	236 176	239 313	238 751	235 705	234 761	233 717	232 615
12	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
11	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
10	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
9	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
8	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
7	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
6	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
5	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
4	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
3	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
2	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
1	18 923	19 288	19 681	19 943	19 896	19 642	19 563	19 476	19 385
7 year olds	221 058	227 062	231 450	236 166	239 303	238 741	235 695	234 751	233 707
Impact of the phasing-in on class size									
Current average class size	24	24	24	24	24	24	24	24	24
% more pupils above normal	0%	0%	17%	17%	17%	16%	16%	16%	0%
New average class size during phase-in	24	24	29	29	28	28	28	28	24

Source: Demographic data for Tajikistan from the World Bank Databank (2018) and own calculations based on this data

The six-year “multi-year approach” divides the 6-year-old cohort into six parts consisting of two months each (assuming a uniform spread of birthdays across months). Starting from 2020, all pupils that are seven (231 450) and those turning seven in January and February (39 363) will enrol in Grade 1. In 2021, the remaining ten months of the previous year’s 6-year-old cohort (i.e. the remaining 7-year-olds (196 803)) and those in the new 6-year-old cohort turning seven in January, February, March and April (79 771) will enrol in Grade 1. And so on for six years; so that by 2026, only 6-year-old pupils will enrol in Grade 1.

The lower part of the above table shows the impact that this phase-in will have on the average class size. In 2017, the average class size was between 19 and 27 pupils across regions, with a national average class size of 24 pupils*. Over the phase-in period, about 17 per cent more pupils will be enrolled each year, which will result in the average class size increasing to 28/29 pupils.

This increase of 4 or 5 pupils per class can probably be managed within the existing classroom infrastructure and with the existing complement of teachers. If this is so, then the six-year approach will bring about at least an 80 per cent saving in setup costs over the “single-year approach”, as it will eliminate the need to build 9 800 classrooms at an estimated cost of around TJS 999 million. There will probably be a need to build some classrooms

when the new Grade 12 is introduced from 2032 onwards, but the number required will depend on the nature of the Grade 12 curriculum and whether the additional grade can be accommodated within the existing high school infrastructure.

There will also be other savings relative to the “single-year approach”, including:

- ➡ a reduction in the number of textbooks to be printed because they can be used by successive groups of pupils over the phase-in period;
- ➡ a reduction in the amount of new furniture required, given that most schools likely have some unused furniture that can be brought into service given the limited number of additional pupils; and
- ➡ a reduction in the number of teachers to be employed.

In addition, the funds flowing to schools through the per capita funding normative would increase gradually – by TJS 4.6 million in 2020 moving up to an additional TJS 51 million in 2026 – until the new Grade 12 is introduced from 2032 onwards. This gradual increase will be more manageable from a fiscal perspective.

*Khomidova, S. and Mirzoev, S., (2018), pages 16 and 17

A breakdown of the cost implications of the first six years of the transition to a 12-year education system envisaged under Scenario 1 are set out in the following table:

Table 16. Cost of the first 6 years of the transition to a 12-year education system

	Baseline		Phase in over 6 years												
	B-Baseline	S1 - 1 yr forward	2020	2019	2020	2021	2022	2023	2024	2025					
		2020													
Summary of costs TJS	Costs additional to baseline														
Total operational costs	2 567 803 715	-	55 548 379	165 759 557	222 158 604	279 648 089	340 447 702	340 293 716	350 443 323						
Per capita expenditure	2 567 803 715	-	51 846 324	156 190 005	207 316 777	258 001 839	308 141 195	306 388 105	305 043 019						
Management of additional year	-	-	-	-	-	-	-	-	-	-					
Printing textbooks	-	-	4 676 280	12 504 460	18 737 440	26 494 267	38 096 673	39 662 837	51 132 253						
Income from the "renting" of textbooks	-	-	974 225	-	2 934 908	-	3 895 613	-	4 848 017	-	5 790 167	-	5 757 225	-	5 731 950
Ongoing in-service training of teachers	-	-	-	-	-	-	-	-	-	-	-				
Total setup costs	-	1 720 000	21 204 500	1 720 000	1 720 000	1 720 000	1 720 000	1 720 000	1 720 000	1 720 000	-				
Infrastructure - new classrooms	-	-	-	-	-	-	-	-	-	-	-				
New furniture and equipment	-	-	19 484 500	-	-	-	-	-	-	-	-				
Curriculum development	-	-	-	-	-	-	-	-	-	-	-				
New offices for management	-	-	-	-	-	-	-	-	-	-	-				
Public awareness campaigns	-	1 720 000	1 720 000	1 720 000	1 720 000	1 720 000	1 720 000	1 720 000	1 720 000	1 720 000	-				

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

Note that when the new Grade 12 is introduced from 2032 onwards, there would be additional costs depending on the nature of the curriculum, levels of enrolment and the extent to which the new Grade 12 can be accommodated within the high school infrastructure available at that time. To get an idea of the costs involved, see section 6.2.4 below.

6.2.3 “Multi-year approach” – introducing a new pre-primary grade over five years

As noted above, Tajikistan spends substantially less on pre-primary education compared to other countries in the region, and consequently has substantially lower levels of enrolment in pre-primary. Thus, there is an opportunity for Tajikistan to substantially increase spending on pre-primary by introducing a compulsory ECE year, or pre-primary grade, at the start of the current school system.

Research has highlighted that there are many, many advantages to investing in preschool education, including enabling pupils to perform better in later schooling, and so improve the

effectiveness of spending on later education. From a practical perspective, the main advantage of adding a pre-primary grade is that it can be done without disrupting the functioning of the existing education system.

The following table shows a proposed set of implementation arrangements that will see preschool coverage move from the current level of around 25 per cent among 6-year-olds to close to 100 per cent over five years. Note that this scenario assumes that the existing kindergarten and early learning centres would form part of the new pre-primary grade, and that a large percentage of the new pre-primary grade facilities would consist of either modified existing structures or new facilities built by communities – which could be located in communities and on existing school premises.

Table 17. Introducing a pre-primary grade over five years

Implementation planning information	Phase in over 5 years							
	S4B - Introduce an initial ECE year in facilities at schools or ECE centres							
	2018	2019	2020	2021	2022	2023	2024	2025
Rollout of new classrooms	-	2 200	2 600	2 100	800	600	-	-
Number of available classrooms	2 286	4 486	6 086	7 186	7 986	8 586	8 586	8 586
Percentage of pupils covered	24%	24%	46%	62%	73%	82%	89%	89%
Number of pupils	54 864	54 864	107 664	146 064	172 464	191 664	206 064	206 064
Number of teachers	2 286	4 486	6 086	7 186	7 986	8 586	8 586	8 586
Number of teacher assistants	-	-	-	-	-	-	-	-

Source: Demographic data for Tajikistan from the World Bank Databank (2018) and own calculations based on this data

Table 18 below sets out the cost of introducing a pre-primary grade over five years as described in. This costing assumes that a pre-primary grade will become part of the per capita funding normative system.

Table 18. Cost of introducing a pre-primary grade over five years

Summary of costs TJS	Phase in over 5 years							
	S4B - Introduce an initial ECE year in facilities at schools or ECE centres							
	0	2020	2021	2022	2023	2024	2025	2026
Total operational costs	5 830 372	7 137 038	151 276 989	203 019 620	238 633 512	264 178 161	283 336 647	283 336 647
Per capita expenditure	-	-	143 241 618	194 330 915	229 454 807	254 999 456	274 157 943	274 157 943
Management of additional year	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512
Printing textbooks	1 076 640	1 460 640	1 724 640	1 916 640	2 060 640	2 060 640	2 060 640	2 060 640
Income from the "renting" of textbooks	-	-	-	-	-	-	-	-
Ongoing in-service training of teachers	2 619 220	3 541 887	4 176 220	4 637 553	4 983 553	4 983 553	4 983 553	4 983 553
Total setup costs	-	283 353 400	195 000 000	134 600 000	98 360 000	72 480 000	-	-
Infrastructure - new classrooms	-	225 500 000	164 000 000	112 750 000	82 000 000	61 500 000	-	-
New furniture and equipment	-	54 661 800	29 280 000	20 130 000	14 640 000	10 980 000	-	-
Curriculum development	-	150 000	-	-	-	-	-	-
New offices for management	-	1 321 600	-	-	-	-	-	-
Public awareness campaigns	-	1 720 000	1 720 000	1 720 000	1 720 000	-	-	-

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

Table 18 shows that, with the proposed five-year phase-in of a pre-primary grade, operational costs will increase from TJS 5.8 million in 2019 to TJS 151 million in 2020 when a pre-primary grade is brought onto the per capita funding normative system, and then increasing up to TJS 283 million in 2025 and holding more or less constant thereafter.

The setup costs for the five-year phase-in period are substantial – TJS 783 million over the five years, of which about 82 per cent are infrastructure costs related to the building of new classrooms. Spreading these costs over five years makes them more manageable from a fiscal perspective.

The highest cost will be in 2020, at TJS 283 million, which is 1.5 per cent of the state budget. Thereafter it declines each year down to TJS 72 million in 2024, or 0.3 per cent of the state budget.

6.2.4 “Multi-year approach” to introducing Grade 12 over five years

The specified scenarios for the transition to a 12-year education system all assume that it is necessary to shift the starting age for Grade 1 down to 6 years, so that pupils are 17 years old when they enter the new Grade 12. However, is it really necessary to wait twelve years for the 6-year-olds starting in Grade 1 to reach Grade 11 before introducing Grade 12?

There does not seem to be any reason why a substantial number of pupils completing Grade 11 now would not continue to Grade 12, despite being 18 years old, if the extra year at school significantly improved their employment prospects. The government should therefore consider introducing a new Grade 12 earlier than originally planned within the specified scenarios. This would enable the current pupils moving through the education system to benefit from the new Grade 12.

The following table shows a proposed set of implementation arrangements for Grade 12.

Table 19. Introducing Grade 12 over five years

Implementation planning information	Phase in Grade 12 over 5 years						
	2024	2025	2026	2027	2028	2029	2030
Number of available classrooms	800	1 600	2 600	3 800	5 200	6 600	7 600
Percentage of Grade 11 pupils covered	-	-	20%	40%	60%	80%	100%
Number of pupils	-	-	29 119	63 394	103 345	140 442	175 250
Number of teachers	-	-	1 213	2 641	4 306	5 852	7 302

Source: Demographic data for Tajikistan from the World Bank Databank (2018) and own calculations based on this data

Depending on the nature of the curriculum for Grade 12, levels of enrolment and the scheduling of classes, it might be possible to phase in Grade 12 within the current high school infrastructure, or with only minimal infrastructure additions required. This would make it unnecessary to incur the cost of building the classrooms shown in the table below.

Table 20 sets out the cost of introducing Grade 12 over five years as described in Table 17.

Table 20. Cost of introducing Grade 12 over five years

Summary of costs TJS	Phase-in Grade 12 over five years						
	2024	2025	2026	2027	2028	2029	2030
Total operational costs	2 166 805	2 166 805	42 626 580	90 251 694	145 762 682	197 307 505	245 672 817
Per capita expenditure	-	-	38 741 121	84 343 108	137 495 668	186 850 591	233 161 442
Management of additional year	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512
Printing textbooks	-	-	1 747 128	3 803 664	6 200 712	8 426 496	10 515 000
Income from the "renting" of textbooks	-	-	727 970	1 584 860	2 583 630	3 511 040	4 381 250
Ongoing in-service training of teachers	32 293	32 293	731 790	1 555 270	2 515 420	3 406 947	4 243 113
Total setup costs	32 640 000	84 220 000	116 860 000	114 020 000	136 260 000	155 680 000	155 680 000
Infrastructure - new classrooms	30 750 000	51 250 000	82 000 000	102 500 000	123 000 000	143 500 000	143 500 000
New furniture and equipment	1 890 000	3 150 000	5 040 000	8 700 000	10 440 000	12 180 000	12 180 000
Curriculum development	-	27 000 000	27 000 000	-	-	-	-
New offices for management	-	-	-	-	-	-	-
Public awareness campaigns	-	2 820 000	2 820 000	2 820 000	2 820 000	-	-

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

6.3 Deciding how to proceed

The Government of Tajikistan needs to decide how it wishes to proceed, given its priorities for improving the standard of general secondary education in the country. There are essentially five different paths forward to choose from:

- (a) **Consolidate current reforms:** in this option, the government will seek to consolidate the current initiatives to strengthen general secondary education, namely:
 - continue with gradual rollout of ECE;
 - review and strengthen the curriculum;
 - improve the quality and availability of learning materials;
 - use existing hours more efficiently and provide for more hours of learning within the current system;
 - attract and retain high-quality teachers, and provide in-service training;
 - upgrade infrastructure – eliminate three-shift schools and address maintenance backlogs.
- (b) **Phase in a pre-primary grade:** in this option, the government will continue with the activities set out under A above, and also introduce a compulsory pre-primary grade – phasing it in over a period of time, for instance five years as described in section 6.2.3.
- (c) **Phase in a 12th year of education:** in this option, the government will continue with the

activities set out under A above and begin the process of moving to a 12-year education system by lowering the enrolment age for Grade 1 down to 6 years old – phasing it in over six years as described in section 6.2.2.

- (d) **Phase in Grade 12:** in this option, the government will continue with the activities set out under A above and phase in Grade 12 over five years without first lowering the enrolment age for Grade 1 down to 6 years.
- (e) **Combine options B, C and D in a grand reform programme:** in this option, the government will continue with the activities set out under A above and develop a grand reform programme that includes options B, C and D, either implementing them simultaneously or sequentially. Running these options simultaneously will be significantly more financially challenging than if they were sequenced.

When choosing how to proceed, the Government of Tajikistan, led by the Ministry of Education and Science, needs to decide what course of action will give the greatest value, taking into consideration what each line of action will cost and what resources are likely to be available. The costing model developed for this research assignment will be an invaluable tool in this process, as it can be changed to explore the implications of different scenarios. Also see the recommendations at the end of the paper.

7

Sources of Funding for the Transition

Unfortunately, there is no magic formula that can generate the funds required to implement the proposed changes to the education system discussed in the previous sections. Every government is faced with the same set of macroeconomic and fiscal opportunities and constraints, obviously strongly influenced by local circumstances and domestic policy choices.

When looking to fund any new policy, governments can consider the following options:

- (a) Adopt measures to increase economic growth;
- (b) Increase government revenues by increasing taxes;
- (c) Reprioritise budget allocations so as to release funds for the new policy;
- (d) Improve the efficiency of existing programmes so as to release funds for the new policy;
- (e) Persuade development partners to contribute to funding the new policy;
- (f) Introduce charges on the consumers of the new services provided under the new policy;
- (g) Use the proceeds from privatising state assets to fund the new policy;
- (h) Increase government borrowing to finance the new policy.

Each of these options operate within the system of intergovernmental financial relations that exist within the country, and the division of responsibilities for implementing the new policy. In this regard, local authorities in Tajikistan are primarily responsible for budgeting for preschool and general secondary education; consequently, the impact on local budgets need to be carefully considered.

7.1 Evaluating possible sources to fund the proposed education reforms

When evaluating the suitability of each of the above funding options in relation to funding the transition to a 12-year education system and the introduction of a pre-primary grade, the following factors need to be taken into account:

- ➡ General secondary education is regarded as a core public service which the government takes primary responsibility for funding. While there are currently certain user-charges within the education sector, concerns have been expressed about the equity impact of these charges on children's right to education.
- ➡ The ongoing operational costs of the proposed policy changes to the education system are substantial; consequently, they will need to be funded from public revenues raised through the republican/local budgets. Funding from development partners, privatisation proceeds, possible efficiency dividends and debt financing are not sustainable funding options for the operational costs.
- ➡ The setup costs of the proposed policy changes to the education system are also substantial (depending on the implementation scenario). However, their once-off nature means that a range of non-recurrent funding sources can be used.

The following sections explore opportunities for obtaining funding from each of the listed sources of funding.

7.1.1 Adopt measures to increase economic growth

Obviously, it is easier to introduce new policies if the economy is growing strongly, contributing to increasing tax revenues.

In 2016, Tajikistan launched the National Development Strategy of the Republic of Tajikistan for the Period Up To 2030 (NDS 2030), laying out its master plan of the country's future economic development. The NDS 2030 defines raising the population's living standards as the ultimate goal of the country, and aims to do so by doubling the country's GDP in 10 years, which requires the country to maintain at least a 7 per cent real annual growth rate.

Although the NDS 2030 and the underlying development strategies set ambitious economic and social goals, clear guidance on implementation is lacking, such as the necessary policy measures, monitoring and implementation arrangements, and a realistic financing envelope.*

The World Bank's 2018 Tajikistan Systematic Country Diagnostic document explores in detail measures the government should/could adopt in order to make the NDS 2030 successful. In this report, the World Bank projects that Tajikistan's economy will grow at around 6 per cent in 2018 through to 2020. This is a respectable level of real growth, but still below the level postulated by the NDS 2030.

Is this level of economic growth sufficient to fund the proposed shift to a 12-year education system as described? To answer this question, consider the following:

- ➡ In 2018, the Ministry of Finance set the aggregate state budget (total expenditure) at TJS 20 525 million.**
- ➡ If the real growth in GDP results in an equivalent level of real growth in state budget revenue, then, at 6 per cent, growth in 2018 will be around TJS 1 232 in additional revenues in 2019. This would gradually increase each year.
- ➡ If the government chose to phase in a pre-primary grade, Grade 12 and start the process of shifting the enrolment age for Grade 1 down to 6 years as shown in the multi-year implementation scenarios in sections 6.2.2, 6.2.3 and 6.2.4 above, the new costs would reach TJS 744 million in 2025 and stabilise around TJS 1 billion from 2029 onwards.
- ➡ This means that the proposed changes to the education system would require around

35 per cent of the new revenue collected as a result of economic growth in 2020, moving up to about 60 per cent in 2025 before stabilising at around 80 per cent from 2029 onwards.

However, it is very unlikely that all three of these reforms would be introduced simultaneously, meaning the level of funding required would be significantly lower. If the reforms were sequenced, the required level of funding would start at about 20 per cent of the growth dividend and gradually move up to 50 per cent from 2026 onwards.

So yes, real economic growth of 6 per cent is sufficient to fund the proposed changes to the education system. However, this would require the Government of Tajikistan to show a very high level of political commitment to these changes in the face of the funding needs of all the other initiatives set out in the NDS 2030.

7.1.2 Increase government revenues by increasing taxes

In 2017, tax revenues accounted for TJS 14 338 million, or 73 per cent, of the TJS 19 569 million state budget. As noted above, if all three reforms were introduced as modelled above, new costs would reach TJS 744 million in 2025 and stabilise around TJS 1 billion from 2029 onwards. So, assuming all other things remain the same, this means that funding the proposed changes to the education system would require a maximum 7 per cent increase in tax revenues.

It is unlikely that a single tax could be increased to provide this revenue. Indeed, it would be bad public finance management to link the funding of such a large and important education reform to the revenues from a single tax. There are also no obvious new taxes that can be introduced that can provide this level of revenue on an ongoing basis.

It is also unlikely that local authorities will be able to raise the required revenues by increasing one or more of the exclusive local government taxes, namely property tax, retail sales tax and vehicle tax. These taxes are not large enough to fund the proposed reform.

If the Government of Tajikistan decided to fund the proposed education reforms through raising taxes, it would be well-advised to increase the rates of a range of different taxes so as to spread the burden across different economic role-players and mitigate the

*World Bank (2018) Tajikistan Systematic Country Diagnostic page ix.

**Mirzoev, S., (2018): page 2

revenue risk. The World Bank notes that boosting revenue collection is challenging given the small private sector (tax base), and problems with tax policy and tax administration, including very high collection costs.* An increase of around 1.5 per cent, or TJS 215 million, in tax revenue is therefore probably realistic.

A decision to fund the proposed education reforms through raising tax revenues would require changes to be made to the sharing of revenues/funds through the intergovernmental relations system. Those provinces/districts with strong tax bases might have their share of tax revenues adjusted upward to provide the funding for the reforms; whereas the national government would need to increase the republic budget subventions to those provinces/districts with weaker tax bases.

7.1.3 Reprioritise budget allocations, so as to release funds for the new policy

The idea of reprioritising the allocation of budgets from low priority areas to fund high priority, new policies is attractive, because it means you do not have raise taxes and it should make government more effective (in theory, at least). However, to avoid unforeseen consequences, one needs to have a thorough understanding of the existing budget, and the performance of the different government programmes and their beneficiaries, before proposing funding shifts.

Reprioritising may assist to fund part of the proposed education reforms or certain components, but it is unlikely that reprioritising existing government budgets will raise sufficient funds to fund the entire reform package, unless there is a major programme that government wants to discontinue.

7.1.4 Improve the efficiency of existing programmes

Efficiency gains are widely touted as a possible source of funding for new policies, but in reality, pinning down funds from efficiency gains so that they can be reallocated is very difficult. Also distinguishing between underspending and efficiency requires a clear understanding of a programme's planned and actual performance.

Generally, government officials are not motivated to find efficiencies if they know the resultant savings are to be allocated away from their budgets. They are far more likely to find efficiencies if it allows them to do more within their own area of action. Therefore, ministries of finance generally allow

ministries to keep any efficiency gains and reallocated them within their own budgets.

Are there significant efficiency gains to be realised within the education sector? To fund TJS 500 million a year to implement the proposed reforms would require efficiency gains of around 14 per cent on the 2018 total expenditure on education. It is very unlikely that this level of inefficiency exists within the current education system, which is dealing with three-shift schools, teachers with excessive workloads, problems with teacher retention, infrastructure backlogs, school heating, etc.

It is probably far more useful to look for ways to improve the efficiency of the proposed education reform package itself so as to reduce its need for new funding to the minimum. In this regard, the proposals around the phase-in of the transition and the use of community facilities for the introduction of a pre-primary grade are important.

7.1.5 Persuade development partners to contribute to funding the new policy

Development partners are an important source of funding for the education sector in Tajikistan. Data from 2017 shows that international development partners have committed a total of USD 187 million to education projects running from 2012 to 2021. This gives an annual average expenditure of around USD 20 million or TJS 176 million (at an exchange rate of 8.5 in 2017).

This suggests that if the government can persuade key international development partners to buy in to and support the proposed education reforms there is a good possibility that they can make a substantial contribution to funding certain of the setup costs. Currently, many development partners are very keen to support initiatives related to expanding access and improving the quality of ECE, and so are likely to support an initiative to rollout a pre-primary grade.

7.1.6 Implement charges on the consumers of the new services

Tajikistan's commitment to universal access to free basic education is impressive and key to addressing poverty and inequality. Any move to introduce further charges within the education system would tend to undermine equitable

*World Bank, (2018): page xiii and 54

access and should therefore be discouraged. Indeed, it would be worthwhile to review the equity impact of the existing charges for textbooks and fees for early learning centres, and explore whether these fees should be retained or a system of exemptions for poor families is needed.

7.1.7 Use the proceeds from privatising state assets

In principle, it is a good idea to use the proceeds from privatising state assets to build new social infrastructure, such as schools or classrooms, rather than to use the proceeds to fund consumption expenditure. The aim of doing so would be to preserve the asset base of the state and ensure the funds are invested in areas that contribute to economic growth and poverty alleviation.

The NDS 2030 only mentions privatisation once, in relation to eliminating corruption in such processes. The Strategy does not identify any plans to privatisate specific SOEs or other state assets. There is also no mention of such plans in the other documents reviewed, although the World Bank's Country Diagnostic certainly highlights the urgent need to restructure many SOEs without mentioning privatisation.* Nevertheless, if the Government of Tajikistan proposes any significant privatisation

initiatives in the coming years, it would be well advised to use the proceeds to invest in strengthening the education system – which may include funding the introduction of a pre-primary grade and a new Grade 12.

7.1.8 Increase government borrowing to finance the new policy

Tajikistan's level of public debt at 55 per cent of GDP in 2017** is very high, and future debt financing is almost entirely committed to the building of the Rogun Dam, Hydropower Plant and transmission lines. There is thus very little scope for using debt to finance even just the infrastructure components of the proposed education reforms. And debt financing should definitely not be used to fund ongoing operational costs.

7.2 Summary of possible funding sources

The following table summarises the possible funding sources available to fund the transition to a 12-year education system and the introduction of a pre-primary grade.

Table 21. Summary of possible funding sources

Possible funding sources	Discussion	Sustainability	Likely funding (TJS millions)
1 <i>Adopt measures to increase economic growth</i>	Successful implementation of the NDS 2030 should support economic growth. The World Bank currently projects real growth of 6% for 2018 to 2020	Suitable for funding both operational and setup costs	1,232
2 <i>Increase government revenues by increasing taxes</i>	Proposed changes in the education system would require a 3.7% increase in tax revenue. There are no obvious new taxes that can raise the required funds. The private sector tax base is small and tax administration is weak, so a limited increase in tax revenues of around 1.5% is probably realistic	If tax administration is improved, this can be a sustainable source of revenue suitable for funding both operational and setup costs	215
3 <i>Reprioritise budget allocations</i>	It is unlikely that reprioritising existing government budgets will raise sufficient funds to fund the entire education reform package, unless there is a major programme that government wants to discontinue	It depends whether the reallocated funds come from ongoing or once-off programmes	none identified
4 <i>Improve the efficiency of existing programmes</i>	Difficult to mobilise from other sectors. Would require 14% efficiency gains from within the education sector, which are unlikely to exist	It depends whether the efficiency gains come from ongoing or once-off programmes	none identified
5 <i>Development partner funding</i>	Currently contributing around USD 20 million per year to the education sector. Likely to support initiatives to rollout ECE	Only suitable for funding setup costs	176
6 <i>Introduce consumer charges on the new services</i>	Further charges within the education system would tend to undermine equitable access and should therefore be discouraged	Can be sustainable, but not a large revenue source	none
7 <i>Use the proceeds from privatising state assets</i>	In principle it is a good idea to use the proceeds from privatising state assets to build new social infrastructure such as schools or classrooms. However, there are no plans to privatisate any SOEs or other state assets	Only suitable for funding setup costs	none identified
8 <i>Use government borrowing</i>	Current levels of public debt are very high, and future debt is committed to the Rogun Dam, etc.	Only suitable for funding setup costs	none

*World Bank, (2018): pages 33 and 52

**World Bank, (2018): page 60

8

Conclusions and Recommendations

8.1 Key conclusions of the research

Structure of the education system and the funding of education

- ➡ Local authorities are primarily responsible for budgeting for preschool and general secondary education. In 2016, only 6.4 per cent of the school budgets were financed from the republican budget. The rest was allocated and disbursed through local budgets.
- ➡ Subventions from the republican budget to local budgets and tax revenue sharing arrangements on the revenue side of local budgets are important sources of funding for preschool and general secondary education.

Trends in public spending on education

- ➡ In 2017, government planned spending on education was TJS 3 581 million*. This represents 6.1 per cent of GDP and 18 per cent of the state budget. Overall, spending on education grew at an annual average rate of 17 per cent between 2011 and 2017. This is higher than the 15 per cent average annual growth in the state budget and the 11.7 per cent annual average growth in GDP for the same period; which indicates that the government has been prioritising spending on education.
- ➡ Between 2011 and 2017 there was rapid growth in spending on preschool education. This aligns with the growth in coverage from 6.6 per cent in 2009 to 9.2 per cent in 2014 and 12.5 per cent in 2016.
- ➡ By contrast, the average annual growth in spending on general secondary education at 14.8 per cent for the period was the lowest

of the education sectors, and also lower than the 15.1 per cent average annual growth in the state budget. This indicates that the government is not prioritising increasing spending on general secondary education to the same extent as spending on other education sectors. The deprioritisation of spending on general secondary education dates from 2015.

➡ The education system in Tajikistan is currently under enormous pressure as it has to absorb the higher number of children born in the period 2004 to 2012. Pupil numbers have grown rapidly from 1 691 000 in 2011 to 1 835 000 in 2017. This is an increase of 144 000 pupils. Overall, pupil numbers are expected to increase by another 452 000 to 2 287 000 in 2029, after which they should gradually decline, since the number of children enrolling in Grade 1 is expected to decline from 2021 onwards.

➡ As Tajikistan goes through this demographic transition, the funding required for the pupil component of the PCF normative will increase from TJS 1.575 billion in 2018 to TJS 1.933 billion in 2029. This is an increase of TJS 358 million, or 23 per cent. After 2029, the demand for funding is expected to decline as enrolment declines.

Spending on education – international comparisons

- ➡ In 2000, Tajikistan's expenditure on education was 2.3 per cent of GDP, which was the second lowest among the fourteen Central Asian Countries. By 2015, Tajikistan's expenditure on education had moved up to 5.2 per cent of GDP, which places it sixth.

*Ministry of Education and Science (2018): 217

- ➡ Between 2010 and 2015 many Central Asian Countries' spending on education as a percentage of GDP declined. Tajikistan was the only country that sustained meaningful positive growth in education spending over this period.
- ➡ In 2015 Tajikistan was second among Central Asian Countries in terms of allocating public resources to education. This indicates that Tajikistan is prioritising education within the state budget.
- ➡ Data for 2012 shows Tajikistan is performing significantly worse than most other Central Asian Countries when it comes to adequately funding education, but better than other lower-income countries. Data for 2017 indicates that Tajikistan's public expenditure on education has moved in the right direction in terms of adequacy, but the improvement has been relatively small.
- ➡ In 2015 Tajikistan spent the least on pre-primary education as a percentage of GDP compared to other Central Asian Countries.

Country experiences with changing the number of years of schooling

- ➡ Increasing the number of years of schooling is not an easy exercise, and a number of countries have embarked on the process and failed due to a combination of inadequate planning, poor management and lack of funding.
- ➡ The more recent changes to the number of years schooling have focussed on introducing one or more years of compulsory ECE or preschool.
- ➡ Introducing compulsory pre-primary or ECE can be very beneficial, but this depends on whether the time is used effectively, which in turn depends on the quality of the teachers and the curriculum.
- ➡ Expanding the number of years of compulsory education tends to benefit girls more than boys and children living in rural areas more than children living in urban areas, thus narrowing gender and rural/urban inequalities.
- ➡ The impact of increasing the number of years of compulsory education seems to depend on the country context and the number of years before and after the reform. Generally, extending the number of years of compulsory education does reduce dropout rates, improve likely earnings and reduce

inequality. It may also have other benefits, such as reducing fertility rates and HIV prevalence. However, where the level of secondary schooling is already high, then adding or reducing a year does not necessarily have a significant impact on human capital acquisition.

- ➡ Above a certain minimum level of instruction time, the marginal return on adding additional instruction time very often does not justify the cost. Similarly, above a certain minimum level, there does not appear to be a strong correlation between increased instruction time and student performance.

The cost of the transition to a 12-year education system

- ➡ To introduce a 12th year of education would require setup costs to be incurred between a low of TJS 598 million and a high of TJS 1 327 million in additional spending on education depending on the scenario. The setup costs would add spending amounting to between 0.9 and 2 per cent of GDP to the current 3.8 per cent baseline spending on education. Similarly, the setup costs would require general secondary education's share of the state budget to increase from the baseline 12.5 per cent to between 15.4 and 19 per cent. Such increases are substantial and it is very unlikely that the fiscal space exists to finance them in a single year.
- ➡ The operational costs of introducing a 12th year of education are relatively modest, representing between 0.5 and 1 per cent of GDP. To finance the operating costs would require general secondary education's share of the state budget to increase by between 1.6 and 3.1 per cent depending on the scenario.
- ➡ Around 80 per cent of the setup cost is for new classrooms. So, from a financing/budgeting perspective, the setup cost of building new classrooms represents the greatest challenge to introducing a 12th year of education based on the specified scenarios.

Options for phasing in the 12-year education system

- ➡ To create space in the education system to add a new Grade 12 (without requiring pupils to stay in general secondary education beyond the age of 17), it is necessary to shift the start age of pupils entering Grade 1 down from 7 years to 6. The way the scenarios are currently described assumes that this shift will happen in a single year.
- ➡ This “single-year approach” results in there being double-age cohort of pupils enrolling in a single year, which creates enormous practical and funding challenges, especially the building of around 9 800 extra classrooms before the shift can take place so as to maintain the average class size at 24 pupils. It is estimated that this will cost around TJS 946 million.
- ➡ Analysis of phase-in options indicates that with a six-year phase-in, about 17 per cent more pupils will be enrolled each year, which will result in the average class size increasing from 24 to 28/29 pupils. This increase of 4 or 5 pupils per class can probably be managed within the existing classroom infrastructure and with the existing complement of teachers. If this is so, then the “multi-year approach” will bring about at least an 85 per cent saving in setup costs over the “single-year approach”, as it will eliminate the need to build 9 800 classrooms at an estimated cost of around TJS 946 million.
- ➡ The costs of phasing in a pre-primary grade and Grade 12 are also explored.
- ➡ Ultimately, the Government of Tajikistan, led by the Ministry of Education and Science, needs to decide what course of action will give the greatest value, taking into consideration what each line of action will cost and what new resources are likely to be available.

Sources of funding for the transition

- ➡ The most reliable source of funding for the transition will be increased government revenue resulting from real economic growth. The World Bank projects that Tajikistan's economy will grow at around 6 per cent in 2018 through 2020, meaning there will be around TJS 1 232 million in additional revenues in 2019, and this would gradually increase each year.

➡ Increasing revenue from taxes is likely to be challenging given the small private sector (tax base) and problems with tax policy and tax administration, including very high collection costs. An increase of around 1.5 per cent, or TJS 215 million, in tax revenue is probably realistic.

➡ International development partners play an important role in funding education, contributing around USD 20 million, or TJS 176 million, per year. The government would need to persuade the partners to contribute to the funding of the proposed phase-in of a 12th year of education. This may not be too difficult if priority is given to introducing a compulsory a pre-primary grade.

➡ Other possible sources of funding are unlikely to deliver the level of financing required, or are simply not available.

8.2 Recommendations for moving forward

In light of the above conclusions, the following recommendations, listed in order of priority, are made for the consideration of the Ministry of Education and Science, and the Government of Tajikistan:

- 1 **The Government of Tajikistan should give priority to properly funding and implementing the existing initiatives to improve the effectiveness of the current 11-year education system, a namely:**
 - a. review and strengthen the competency-based curriculum;
 - b. improve the quality and availability of learning materials;
 - c. attract and retain high quality teachers, and providing in-service training on the new curriculum;
 - d. use existing hours more efficiently and provide for more hours of learning within the current system;
 - e. strengthen pupil assessment instruments; and
 - f. upgrade infrastructure – eliminate three-shift schools and address maintenance backlogs.

- 2** The Government of Tajikistan should prioritise the introduction of a pre-primary grade, and other quality ECE programmes, because they are likely to offer the greatest returns in terms of improving the quality of education. A new universal ECE / pre-primary grade should be phased in over a period of 5 years or more.* Pre-primary classrooms should be located either in community centres or schools so as to reduce infrastructure costs. Given current economic growth expectations, there are sufficient fiscal resources to fund both the setup and operational costs of a new pre-primary grade. Also, international development partners can be expected to make a meaningful contribution to funding the setup costs.
- 3** The Government of Tajikistan should explore whether expanding the number of years of compulsory education from 9 to 10 years (or even 11 years) would offer greater benefits than adding a Grade 12. At present, enrolment levels in grades 10 and 11 are at about 65 per cent. There is thus significant scope for expanding enrolment in these grades, either by way of encouragement or by making them compulsory. International research indicates that expanding the number of years of compulsory education has positive equity results – benefiting girls and rural students most.
- 4** The Government of Tajikistan should postpone the process of transitioning to a 12-year education system by lowering the enrolment age for Grade 1 down to 6 years until after 2029, which is when the pressure being experienced as a result of the current demographic transition will begin to abate and consequently more resources will be available, and the education system will not be under so much pressure. (Note that lowering the enrolment age for Grade 1 to 6 years implies also lowering the enrolment age for pre-primary to 5 years old.).
- 5** If the Government of Tajikistan, decides to lower the enrolment age for Grade 1 down to 6 years, it should adopt a “multi-year approach” that involves a phase-in over six years. This approach will be easier to manage and will greatly reduce the setup costs – especially the need for new classrooms and teachers.
- 6** The Government of Tajikistan should review the curriculum for grades 10 and 11, and prepare plans for the introduction of Grade 12. Depending on the nature of the curriculum for Grade 12, levels of enrolment and the scheduling of classes, it might be possible to phase in Grade 12 within the current high school infrastructure. Also, there is no need to wait twelve years for the 6-year-olds starting in Grade 1 to reach Grade 11 before introducing Grade 12. There is no reason why a substantial number of students completing Grade 11 would not continue to Grade 12, despite being 18 years old, if the extra year at school significantly improved their employment prospects.

* Ideally, the expansion of access to ECE opportunities should be for all children, and the introduction of a pre-primary grade should not be at the expense of younger children accessing ECE

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List of people interviewed and workshop participants

1. Key informant interviews – 16 to 26 September 2018

People interviewed	Institution
1 Fathiddin Usmonzoda	Deputy Minister, Ministry of Education and Science (MOES) (focal point on finance and planning)
2 Latofat Naziri	Deputy Minister, MOES (focal point on pre-school and secondary education)
3 Viasiddin Ismoilov	Chief specialist, Dept on Secondary Education, MOES
4 Badriddin Muzaffarov	Head of the Dept on Economics and Planning, MOES
5 Firuza Ganieva	Chief specialist, Dept on Economics and Planning, MOES
6 Khushbakht Solehzoda	Leading specialist, Dept on Economics and Planning, MOES
7 Daler Haidarov	Leading specialist, Dept on Economics and Planning, MOES
8 Dustmurod Sherov	Chief specialist, Dept on Economics and Planning, MOES
9 Ravshan Sobirzoda	Economic officer, DFID
10 Bobizoda Gulomkodir Mukamal	President of the Education Academy of Tajikistan
11 Shuhrat Mirzoev	Consultant on Joint Sector Review, Human Dynamics
12 Saodat Bazarova	Senior Education specialist, World Bank
13 Andrea Berardo	Head of programme, World Food Programme
14 Tavakkal Saidovich Malikov	Head of the Dept on development of social sectors, MEDT
15 Muslihiddin Usmonov	Deputy head of the Department on development of social sectors and Head of the Department on innovations, science and information resources
16 Nematullo Himatullozoda	Minister, Ministry of Economic Development and Trade
17 Meeting of a Working group on improving the investment climate in the education sector. Participants included:	<ul style="list-style-type: none"> • Secretariat of the Consultative Council on improving the investment climate under the President of Tajikistan • Heads of departments of the MOES • Ministry of Finance • Ministry of Industry • Tax Committee • Directors of private schools from regions of Tajikistan
18 Munira Abdullaevna Inoyatova	CBT Development Coordinator, ADB/VET project
19 Abdulmajid Bobokhonov	Team leader / National Industry Partnership Specialist, ADB/VET project
20 Zulobi Mamadfozilov	AKDN
21 Farida Shohkosimova	UNESCO specialist on education
22 Nazarkhudo Dastambuev	Soros Foundation
23 Sarvar Kurbanov	Department of Social Sector, Ministry of Finance
24 Mayjuda Nabieva	Education Management Specialist, USAID
25 Diana Dimova	Programme manager – Education Sector EU Delegation

2. Workshop to agree on scenarios to be costed – 25 September 2018

Workshop participants	Institution
1 Nuriddin Said	Minister of education
2 Fathiddin Usmonzoda	Deputy minister of education
3 Kutbiddin Muhiddinov	Head of the Department on Secondary Education, MOES
4 Viasiddin Ismoilov	Chief specialist of the Department on Secondary Education, MOES
5 Badriddin Muzaffarov	Head of the Dept on Economics and Planning, MOES
6 Khushbakht Solehzoda	Leading specialist of the Department on Economics and Planning, MOES
7 Daler Haidarov	Leading specialist of the Department on Economics and Planning, MOES
8 Dustmurod Sherov	Chief specialist of the Department on Economics and Planning, MOES
9 Bobizoda Gulomkodir Mukamal	President of the Education Academy of Tajikistan
Participants from UNICEF	
10 Jamshed Kurbonov	Education Officer/Early Childhood Education
11 Mariya Zhukova	Project Assistant
12 Manzura Makhkamova	National consultant

3. Key informant interviews – 21 to 25 January 2019

People interviewed	Institution
1 Ravshan Akhmedov	Head of the Education Section under the Dept on Budget of the Social Sector, Ministry of Finance
2 Sobirjon Abdujabborov	Head of Department on Budget of the Social Sector, Ministry of Finance
3 Fathiddin Usmonzoda	Deputy Minister MOES (focal point on finance and planning)
4 Lutfiya Rajabova	Head of the Committee on Science, Education, Culture and Youth Policy, Lower Chamber of Parliament
5 Nurullo Okilzoda	Deputy head of the Committee on Science, Education, Culture and Youth Policy, Lower Chamber of Parliament
6 Jamshed Murtazakulov	Member of the Committee on Science, Education, Culture and Youth Policy, Lower Chamber of Parliament
7 Latofat Naziri	Deputy Minister of MOES (focal point on pre-school and secondary education)
8 Azizi Muhammadali Mirali	Head of the Dushanbe city Education Department under MOES

4. Key Findings Validation Workshop – 25 January 2019

People interviewed	Institution
Representative of the Ministry of Education and Science	
1 Nuriddin Said	Minister
2 Mirboboev R.	1st Deputy Minister
3 Latofat Naziri	Deputy Minister
4 Fathiddin Usmonzoda	Deputy Minister
5 Kutbiddin Muhiddinov	Head of Department of preschool and general secondary education, MOES
6 Hokimkhon Valizoda	Head of Department of primary and middle professional education, MOES
7 Fahriddin Haidarov	Head of Department of higher professional and post-diploma education, MOES
8 Badriddin Muzaffarov	Head of Department of economics and planning, MOES
9 Abdurahmon Gulov	Head of Department of statistics and Information system of education management
10 Ahroriddin Bobiev	Head of Department of marketing, property and state procurement
11 Gulomkodir Bobizada	President of the Tajikistan Academy of Education
12 Khurshed Ziyoi	Head of the Institute of Education development
13 Mahmudali Azizi	Head of Department of Education of Dushanbe City
14 Dilvarsho Isoev	Head of Department of Education of Khatlon Province
15 Eraj Jonmirzoev	Head of Department of Education of GBAO
16 Osim Kosimi Karimzoda	Chief specialist of the Department of preschool and general secondary education, MOES
17 Ikromiddin Tavarov	Chief specialist of the Department of preschool and general secondary education, MOES
18 Mahmadmurod Bobomurodov	Chief specialist of the Department of preschool and general secondary education, MOES
19 Dustmurod Sherov	Chief specialist of the Department of Economics and Planning, MOES
20 Khonali Kurbonzoda	Rector of the Republican Institute of qualification enhancement
Representatives of other ministries and entities	
21 Lutfiya Rajabova	Head of the Committee on science, education, culture and youth politics, Lower Chamber of Parliament
22 Nurullo Okilzoda	Deputy-head of the Committee on science, education, culture and youth politics, Lower Chamber of Parliament
23 Tavakkal Malikov	Head of MEDT, Dept of social sectors development
24 Muslihiddin Usmonov	Deputy head of MEDT, Dept of social sectors development
25 Sobir Abdujabborov	Ministry of Finance
26 Ravshan Akhmedov	Ministry of Finance
27 Navruz Shoev	Head of Department on children's rights and juvenile justice, Ministry of Justice
28 Zafar Safaralizoda	Head of Department on child rights protection, Department of human rights of the Executive Office of President
29 Rajabmo Habibullozoda	Ombudsman Commissioner on children's rights
Representatives of donor agencies, development partners and projects of international organizations	
30 Luciano Calestini	Representative UNICEF
31 Aferdita Spahiу	Head of Education component UNICEF
32 Jamshed Kurbonov	UNICEF
33 Parviz Boboev	UNICEF
34 Yusuf Bafozoda	UNICEF
35 Marina Zhukova	UNICEF
36 Shuhrat Mirzoev	Consultant on Budget brief UNICEF consultant
37 Saodat Bazarova	Senior education specialist World Bank
38 Mayjuda Nabieva	Education specialist USAID

39	Diana Dimova	Manage EU
40	Munira Inoyatova	Coordinator ADB VET project
41	Galia Bozhanova	Project manager EU project "Technical assistant to the Min of Labor"
42	Zulobi Mamadfozilov	Head of Education component AKF
43	Andrea Berardo	Programme manager WFP
44	Terry Giles	Manager, USAID "Read with me"
45	Hurmat Dushanbiev	Deputy manager USAID "Read with me"
46	Nazarkhudo Dastambuev	Director of Programs: Early Childhood Development, Education Support, Scholarships, Arts and Social Activism, OSIAF
47	Gulchehra Kabilova	Specialist, OSIAF
48	Lola Babaeva	
49	Sergij Gabrscek	Deputy manager GESP 1
50	Bobokhon Ismoilov	National coordinator, EU project on support of quality of education
51	Fahriddin Rahimov	Specialist, EU project "Technical assistant to the Min of Labor"
52	Ibodullo Safarov	ADB project
Research consultants		
53	Conrad Barberton	International consultant, UNICEF
54	Manzura Makhkamova	Local consultant, UNICEF

5. Technical work on the costing model – 25 January 2019

Workshop participants	Institution
Representative of the Ministry of Education and Science	
1 Fathiddin Usmonzoda	Deputy Minister, MOES
2 Kutbiddin Muhiddinov	Head of Department of preschool and general secondary education, MOES
3 Badriddin Muzaffarov	Head of Department of economics and planning, MOES
4 Abdurahmon Gulov	Head of Department of statistics and Information system of education management
5 Ikromiddin Tavarov	Chief specialist of Department of preschool and general secondary education, MOES
6 Mahmadmurod Bobomurodov	Chief specialist of Department of preschool and general secondary education, MOES
7 Dustmurod Sherov	Chief specialist of Department of Economics and Planning, MOES
8 Khushbakht Solehzoda	Leading specialist of Department of Economics and Planning, MOES
9 Daler Haidarov	Leading specialist of Department of Economics and Planning, MOES
10 Robiya Mirzoeva	Specialist of Department of Economics and Planning, MOES
Representatives of other ministries and entities	
11 Tavakkal Malikov	Head of MEDT, Dept of social sectors development
12 Muslihiddin Usmonov	Deputy head of MEDT, Dept of social sectors development
13 Sarvar Kurboniyon	Ministry of Finance
Representatives of donor agencies, development partners and projects of international organizations	
14 Jamshed Kurbonov	Officer UNICEF
15 Parviz Boboев	Officer UNICEF
16 Shuhrat Mirzoev	Consultant on Budget brief UNICEF consultant
Consultants / Technical support	
17 Conrad Barberton	International consultant UNICEF
18 Manzura Makhkamova	Local consultant UNICEF

Annexure A – Overview of the research assignment

The Government of Tajikistan is seeking to improve human capital development and education and science results so as to enable the creation of a knowledge economy.

The *Mid-Term Development Strategy of Tajikistan* has set the following objectives for the education sector:

- (a) increase enrolment in preschool education, especially in the age of 3-6 years, with the benefit of children with disabilities;
- (b) create basis for transition to 12 years of education system and improve the efficiency in education, universal coverage, improve quality of teaching and learning;
- (c) introduce inclusive education in the country's educational system, including professional education;
- (d) improve primary and secondary vocational education system by 2020.

To support the above objectives, UNICEF is committed to supporting the Government of Tajikistan with analysis and evidence to take informed decisions regarding the transition to a 12-year education system.

For several years, the Government has been considering the option of increasing the number of years of education from 11 to 12 years. In 2015, UNICEF supported the development of a concept note to provide an opportunity for reflection on whether an additional year should be provided in the next 5 years in Tajikistan.* This concept note set out eight different options (which are set out in section 5.3 above), and considered the pedagogical, legal, parental and financial implications of the proposed change and the likely challenges. The concept note captured current international thinking that focuses on improving the relevance and quality of education.

To assist in making an informed decision on the issue, the Government of Tajikistan requested UNICEF provide refined descriptions of the potential scenarios and a detailed costing of the proposed options for a potential move to a 12-year education system.

Purpose, objective and expected results



Purpose:

To feed critical evidence into the policy dialogue related to the feasibility of moving to a 12-year education system in Tajikistan.



Objective:

To identify and cost the preferred scenarios of transition to a 12-year education system.



Expected results:

The scenarios of transition to a 12-year education system, that takes into consideration impact of scenario on the quality and equity in education, are identified in a consultative manner and costed, with funding requirements and sources identified.

*Mark Todd, "Concept note and options for a possible move from an 11 years system of education to 12 years in Tajikistan", 16 September 2015

The research process

From the outset, the research was designed to be firmly grounded in the Tajikistan context. To achieve this, the research assignment consisted of the following components:

- 1** *Desk review of relevant documents:* we reviewed a wide range of documents relevant to the issue of the transition to a 12-year education system to gain an understanding of:
 - the structure of the current education system in Tajikistan;
 - the challenges currently confronting the education system;
 - government's policies and plans for improving the quality of education;
 - the thinking behind and analysis of proposals to transition to a 12-year education system;
 - the arrangements for funding education; and
 - the current state of the economy and government finances in Tajikistan.
- 2** *International literature review:* we reviewed the academic literature on country experiences with changing the number of years of schooling, focussing on countries within the European Higher Education Area, post-Soviet/post-socialist states and lower middle-income countries.
- 3** *Key informant interviews:* in September 2018 we interviewed a wide range of role-players within the education sector, and within Government more generally, to gather information on:
 - current proposed scenarios for the transition to a 12-year education system;
 - the key costs drivers within the education system; and
 - other data relevant to the costing and financing of the proposed transition.
- 4** *Building a costing model:* using information from the desk review and the key informant interviews, we built a costing model for calculating the cost of the different scenarios for moving to a 12-year education system. This is one of the key deliverables of this research assignment. It is translated into Russian for the express purpose of making it more accessible to officials so that they can use it in future analysis and planning.
- 5** *Analysing financing options:* once the cost of the different transition scenarios was available, we explored the issue of affordability, and options for financing the cost.
- 6** *Validating the costing model and the analysis:* in January 2019 we presented the preliminary results of the study to a range of role-players within the education sector and within Government to confirm the key findings with them. We also presented the preliminary results at a validation workshop attended by a wide range of officials and other role-players.
- 7** *Preparation of the final report:* based on the feedback received through the validation meetings and workshop, the Costing Model was finalised and the final report written.

To round this process off, we held a workshop with officials and the political leadership of the Ministry of Education and Science, during which we presented and discussed the scenarios that had been identified from the desk review and interviews, and which would be taken forward into the costing process.

Challenges encountered

Overall, the assignment ran very smoothly. Nearly all the meetings took place as planned, people participated actively in discussions, and in most instances shared what information they had access to. Nevertheless, we did encounter the following challenges:

- ➡ It would have been good to have had more engagement with the unit responsible for planning and budgeting within the Ministry of Education and Science. They have access to a range of experience and information that, if made available, would have strengthened the costing results.
- ➡ We obtained demographic and enrolment information from the Agency for Statistics and from the Databank of the World Bank. These two sets of information differed quite significantly. Consequently, we decided to build the Costing Model so that the user can choose which set of information to use. In the final report, we use the data from the World Bank because it provides a longer time line which facilitates better forecasting.
- ➡ Recent information on the structure and budget allocations in the republican budget are at a very high level, and do not provide the detail required to support a detailed analysis of spending on education. Also, recent aggregate information on local budgets, and their allocations to education, is not available. This made it difficult to explore the issue of financing the transition at a deeper level of detail.

Annexure B – Analysis of the Selected Scenarios

This Annexure supports the analysis in section 5 of the main report, in that it provides a detailed description of each of the scenarios that were selected for costing. Each scenario description sets out:

- ➡ a summary description of the scenario, which includes key characteristics based on those set out in Table 10; and
- ➡ a list of the practical implications of the scenario – which are important for costing;
- ➡ a discussion of possible timeframes for the earliest introduction of the scenario;

- ➡ a table showing the impact that introducing the scenario will have on enrolment through to 2030;
- ➡ cost implications through to 2030 of introducing the scenario in 2020; and
- ➡ an analysis of the advantages and disadvantages of the scenario.

The following figure shows the structure of each of the selected scenarios that were costed.

Figure 10. Structure of the scenarios that were costed

Age	Baseline Scenario	Scenario 1 1yr forward	Scenario 2 6 mths forward	Scenario 3 stretch	Scenario 4A ECE school	Scenario 4B ECE various	Scenario 5 Grade 12 only
18							
17	XI	XII	XII	XII	XI	XI	XI
16	X	XI	XI	XI	X	X	X
15	IX	X	X	X	IX	IX	IX
14	VIII	IX	IX	IX	VIII	VIII	VIII
13	VII	VIII	VIII	VIII	VII	VII	VII
12	VI	VII	VII	VII	VI	VI	VI
11	V	VI	VI	VI	V	V	V
10	IV	V	V	V	IV	IV	IV
9	III	IV	IV	IV	III	III	III
8	II	III	III	III	II	II	II
7	I	II	II	II	I	I	I
6		I	I	I	0	0	
5							
structure	4+5+2	4+5+3	½+4+5+2½	5+5+2	1+4+5+2	1+4+5+2	4+5+3
total years	11	12	12	12	12	12	13
compulsory	9	10	10	10	10	10	11

● Upper secondary school ● Lower secondary school ● Primary school ● Preschool	Grade 0 located only at schools Grade 0 located at both schools and communities
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Baseline Scenario – Maintain current 11-year education system

Key characteristics
Same as current system

This scenario envisages keeping the current 4+5+2 system going forward, with the first nine years being compulsory.

Even if the Government of Tajikistan decides NOT to shift to a 12-year education system, there are ongoing processes to improve the quality of education in the current 11-year system – which need to continue. The *National Strategy of Education Development of the Republic of Tajikistan till 2020* identified the following focus areas:

- ➡ Increasing access to ECE using a variety of modalities.
- ➡ Increasing access to quality general secondary schools through infrastructure support programme focusing on the poorest and most vulnerable section of the population (including WASH).
- ➡ Reviewing the curriculum to make it relevant to the national vision and specifying the standards students are expected to achieve.
- ➡ Improving the quality of learning through pre-service and in-service teacher training reform and retaining this essential resource.
- ➡ Using assessment and the EMIS for evidence-based policy planning.

An Education Action Plan 2015 – 2017 was prepared to operationalise the above strategy, and there is a costing for the different programmes. The overall cost of the action plan in 2015 is given as USD 661 883 180 and of that, the General Secondary work is USD 581 682 211.* It is not clear how much of this Action Plan has been implemented, and therefore what outstanding work still needs to be done, and the cost of such work (that was not the focus of this study).

Nevertheless, it is probably realistic to assume that significant work remains to address the challenges of ensuring the existing 11-year system offers quality, effective education, and the costs of doing so are high.

*Todd, M., 2015: page 7

Practical implications

The following table highlights some of the practical implications of remaining with the current 11-year education system.

Demand for additional infrastructure and equipment	
- Classrooms	<ul style="list-style-type: none"> • School infrastructure is already under pressure. In 2016, 87% of schools operated with two-shifts and 4% of schools with three-shifts. • Pupil numbers are projected to grow over the next 10 years as a result of demographic trends and increasing enrolment. • Urbanisation is resulting in a shift in where schools are required. • Not moving to a 12-year system will allow the Government of Tajikistan to focus on dealing with the existing school infrastructure backlog.
- Furniture	<ul style="list-style-type: none"> • Similar to above. • Not moving to a 12-year system will allow the Government of Tajikistan to focus on dealing with the existing backlogs.
Pedagogical implications	
- School readiness	<ul style="list-style-type: none"> • In 2017 the ECE coverage of 6-year-olds was about 30%. This means a large proportion of children entering Grade 1 are not ready to learn.
- Learning time	<ul style="list-style-type: none"> • Tajikistan has considerably fewer learning hours than international norms. However, the experience of a number of countries suggests that learning outcomes are not strongly influenced by increasing learning hours; rather, the quality of teaching is more important. • There is scope to increase the number of learning hours within the current 11-year system if this is deemed necessary. • There is scope to encourage higher enrolment in grades 9, 10 and 11.
- Compulsory years	<ul style="list-style-type: none"> • The current system provides for nine compulsory years of education. • Consideration should be given to increasing the number of compulsory years of education, as there are clear benefits in terms of equity and gender.
- Curriculum	<ul style="list-style-type: none"> • Tajikistan is moving towards a competency, skills and knowledge-based curriculum. • Making sure this new curriculum is effectively implemented will take time.
- Teachers	<ul style="list-style-type: none"> • Improving teachers' professional capacity is being addressed through new PRESET and INSET programmes. • Efforts to improve teachers' pay need to continue so as to attract and retain good teachers.
- Learning materials	<ul style="list-style-type: none"> • There are ongoing processes to improve the quality of learning materials and ensure they are equitably distributed.
- Assessment	<ul style="list-style-type: none"> • The process of putting in place clearly defined learning outcomes is ongoing; these need to be linked to a strong assessment framework, with assessment used in the classroom to improve learning and, at the national level, to adjust policy and strategy.
Other implications	
- Legal implications	<ul style="list-style-type: none"> • Remaining with the current 11-year system does not require any existing laws to be modified.
- Parents	<ul style="list-style-type: none"> • None. • Means communication with parents can focus on getting their support for the ongoing reforms: improving coverage for ECE, the new competency-based curriculum and increasing enrolment in grades 10 and 11.
- Pupils	<ul style="list-style-type: none"> • None.

Realistic timeframes

The Baseline Scenario does not provide for a transition to a 12-year education system. This means the Government of Tajikistan can focus on implementing its existing plans to improve the 11-year system. Given the nature and extent of the planned improvements, implementing them fully is likely to take at least another eight years, if not longer.

The demographic analysis of future trends in school enrolment shows that the education system in Tajikistan is currently under enormous pressure as

it has to absorb the higher number of children born in the period 2004 to 2012. Pupil numbers have grown rapidly from 1 691 000 in 2011 to 1 835 000 in 2017. This is an increase of 144 000 pupils. Overall pupil numbers are expected to increase by another 452 000 to 2 287 000 in 2029, after which they should gradually decline.

With enrolment increasing towards an all-time high, and with funding for general secondary education under pressure through to 2029, it would be wise to consolidate reforms for the existing 11-year system.

Impact on enrolment to 2030

The Baseline Scenario keeps the current 11-year system, so enrolment will only change in response to demographic trends and changes in enrolment rates. The following table sets out the projected

enrolment numbers from 2018 to 2030. The pink highlights show when the number of pupils in each grade are expected to reach a maximum and then decline.

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Grade 1	218 104	223 961	228 263	232 929	235 995	235 478	232 460	231 526	230 498	229 410	228 407	227 374	226 340
Grade 2	215 189	217 289	223 099	227 399	232 020	235 112	234 582	231 573	230 644	229 618	228 539	227 537	226 508
Grade 3	201 688	214 163	216 331	222 160	226 401	231 009	234 071	233 560	230 566	229 635	228 614	227 539	226 544
Grade 4	181 748	200 706	213 315	215 462	221 163	225 373	229 998	233 070	232 547	229 551	228 628	227 618	226 549
Grade 5	168 786	180 617	199 438	211 951	214 068	219 755	223 941	228 531	231 580	231 060	228 087	227 169	226 165
Grade 6	162 561	167 835	179 651	198 421	210 808	212 898	218 571	222 745	227 311	230 333	229 816	226 863	225 951
Grade 7	163 906	161 168	166 417	178 195	196 784	209 025	211 117	216 751	220 896	225 416	228 408	227 900	224 973
Grade 8	157 307	162 314	159 705	164 924	176 559	194 909	207 082	209 173	214 749	218 844	223 317	226 291	225 789
Grade 9	131 884	126 105	130 980	129 490	133 928	142 432	157 415	167 495	169 264	173 708	176 882	180 566	183 013
Grade 10	132 694	111 666	107 521	111 359	109 842	113 606	120 955	133 758	142 225	143 691	147 486	150 209	153 337
Grade 11	129 717	123 587	104 731	100 556	103 908	102 492	106 123	113 055	124 936	132 811	134 201	137 770	140 314
Grade 12	106 132	120 815	115 912	97 946	93 828	96 955	95 741	99 192	105 598	116 666	124 039	125 360	128 694
Total	1 863 584	1 889 411	1 929 451	1 992 846	2 061 476	2 122 089	2 176 315	2 221 237	2 255 216	2 274 077	2 282 385	2 286 836	2 285 483
Growth over 2018	25 827	65 867	129 262	197 892	258 505	312 731	357 653	391 632	410 493	418 801	423 252	421 899	
Grades 1-9	1 601 173	1 654 158	1 717 199	1 780 931	1 847 726	1 905 991	1 949 237	1 974 424	1 988 055	1 997 575	2 000 698	1 998 857	1 991 832
Grades 10-11	262 411	235 253	212 252	211 915	213 750	216 098	227 078	246 813	267 161	276 502	281 687	287 979	293 651

Source: Own projections based on population and school enrolment data from the World Bank Databank (2018)

Cost implications

Maintain current 11-year olds	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total baseline	2 480 170 935	2 514 532 479	2 567 803 715	2 652 147 622	2 743 456 436	2 824 099 030	2 896 244 036	2 956 010 531	3 001 217 907	3 026 311 534	3 037 364 916	3 043 286 715	3 041 486 651
Key operational costs													
PCF normative	2 480 170 935	2 514 532 479	2 567 803 715	2 652 147 622	2 743 456 436	2 824 099 030	2 896 244 036	2 956 010 531	3 001 217 907	3 026 311 534	3 037 364 916	3 043 286 715	3 041 486 651

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

Advantages and disadvantages of the Baseline Scenario

Advantages	Disadvantages
<ul style="list-style-type: none"> Enables the education system to deal with the pressure of growing enrolment resulting from the medium-term demographic youth "bulge". Enables the Government of Tajikistan to focus on addressing the backlog in school infrastructure without adding to the pressure. Enables the Ministry of Education and Science to focus on ensuring the current planned education reforms are completed reviewed and embedded in the system. Does not place additional funding demands on the state budget, which is already under pressure. Does not preclude the option of moving to a 12-year system in future. Rather, it provides space for thinking about both whether an additional year is needed and if so, where an additional year is most effective. 	<ul style="list-style-type: none"> Requires that the Government of Tajikistan postpone its plans to move to a 12-year education system.

Scenario 1 – Move the current curriculum forward by a full year

Key characteristics
<ul style="list-style-type: none">• Additional year is part of the formal education system.• Adds year at the end of the current education system.• Additional year is not compulsory – at least not initially.• Does shift the starting age down from 7 to 6 years old.• Additional year is introduced in a single year.

Scenario 1 envisages introducing a 12-year education system by moving the current curriculum forward by a full year so as to make space for another year of skills training (Grade 12) to be added to the Upper Secondary Phase to give a 4+5+3 system.

Transitioning to this system can either be done in a single year or more gradually. Here the focus is on the cost of a single-year transition for Scenario 1. In section 6.2.2, the cost of six-year transition process for Scenario 1 is explored.

The single year transition requires all 6- and 7-year-olds enrol in Grade 1 in the year the transition starts (2020). Both groups would follow the current curriculum up until the end of Grade 11 (in 2030) when the 7-year-old cohort would graduate out of school, while the 6-year-old cohort would continue with Grade 12.

Practical implications

The following table highlights some of the practical implications of introducing Scenario 1 in a single-year transition process starting in 2020.

Demand for additional infrastructure and equipment	
- Classrooms	<ul style="list-style-type: none"> About 9 800 additional classrooms will need to be built ready at the start of 2020 to provide space to enrol the 6-year-olds in the same year as the 7-year-olds.
- Furniture	<ul style="list-style-type: none"> Furniture for the 9 800 additional classrooms and desks for about 236 000 additional pupils will need to be provided at the start of 2020. When the 6-year-old cohort reaches the age of 11 years in 2025, another set of larger furniture will need to be provided.
Pedagogical implications	
- School readiness	<ul style="list-style-type: none"> In 2017, the ECE coverage of 6-year-olds was about 30%. It is even lower among 5-year-olds. This means enrolling the 6-year-olds a year "early" will mean that very few of them will enter Grade 1 ready to learn, which will jeopardise their entire school career.
- Learning time	<ul style="list-style-type: none"> Scenario 1 does not change the amount of learning time in grades 1 to 11; it simply adds an additional year at the end of the curriculum. Enrolment drops to around 65% in Grade 10 and 60% in Grade 11. This means that around 45% of children will not benefit from the additional learning time in Grade 12.
- Compulsory years	<ul style="list-style-type: none"> This scenario does not change the number of compulsory years of education.
- Curriculum	<ul style="list-style-type: none"> The intention is to use Grade 12 for vocational training. The curriculum for grades 10 and 11 will need to be reviewed, and that for Grade 12 developed.
- Teachers	<ul style="list-style-type: none"> About 9 800 additional school teachers will need to be hired from the start of 2020 to the end of 2023 to take the 6-year-old cohort through primary school. About 10 000 additional secondary school teachers will need to be hired from the start of 2024 to the end of 2030 to take the 6-year-old cohort through lower secondary and upper secondary school, depending on the range of subjects on offer in these grades. About 5 800 additional teachers would be required to introduce Grade 12 from 2031 onwards, depending on the range of subjects on offer.
- Learning materials	<ul style="list-style-type: none"> Learning materials for about 236 000 pupils will need to be printed for each of grades 1 to 11 as the 6-year-old cohort moves through the grades. Learning materials for around 140 000 pupils will need to be printed for Grade 12.
- Assessment	<ul style="list-style-type: none"> Processes and systems to assess the new Grade 12 will be required.
Other implications	
- Legal implications	<ul style="list-style-type: none"> Legislation will need to be changed to require parents to enrol 6-year-olds in Grade 1 from 2020 onwards, and to make provision for the introduction of Grade 12 from 2031 onwards.
- Parents	<ul style="list-style-type: none"> There will need to be an extensive public awareness campaign to get parents' buy-in for moving to a 12-year education system, and to get them to enrol their 6-year-old children in Grade 1 in 2020.
- Pupils	<ul style="list-style-type: none"> Many 6-year-olds who would otherwise have attended an ECE programme in 2020 will be required to enrol in Grade 1 in 2020. Consequently, they will be denied the opportunity to become school-ready, which could hinder their learning throughout their school career.

Realistic timeframes

It would be irresponsible to start the transition to Scenario 1 in 2020, because the education system is simply not ready to manage a double-age cohort of pupils:

- ➡ In 2017, 30 679 places were added through the construction of schools and classrooms. Assuming this rate of construction can be increased by 50 per cent, it would take about five years to build and furnish the additional 9 800 classrooms required to accommodate the additional 236 000 pupils.
- ➡ It is not clear that there are 9 800 primary school teachers available to be hired from the start of 2020, or that there will be sufficient additional secondary school teachers from 2024 onwards. Indeed, a thorough assessment of the staffing requirements of the transition process needs to be conducted before embarking on it.



The government needs to give parents at least two years' notice of the transition so that they can enrol their 5-year-olds in ECE programmes so they are school-ready when they enrol in Grade 1 at 6 years.

Taking the above into consideration, and given the amount of advance planning that needs to take place, 2027 is the earliest realistic date for starting the transition based on Scenario 1.

Impact on enrolment to 2030

The single-year transition to Scenario 1 requires all 6- and 7-year-olds to enrol in Grade 1 in 2020. This double-age cohort would then progress through the education system for the next 11 years until the 7-year-old cohort exits after Grade 11 and the 6-year-old cohort continues to Grade 12 in 2031. The

following table sets out the projected enrolment numbers from 2018 to 2031.

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
	7-year olds		6+7-yr olds	6-year olds											
Grade 1	218 104	223 961	462 077	236 920	236 363	233 348	232 413	231 380	230 289	229 278	228 243	227 206	226 187	226 187	
Grade 2	215 189	217 289	223 099	460 328	235 995	235 478	232 460	231 526	230 498	229 410	228 407	227 374	226 340	226 187	
Grade 3	201 688	214 163	216 331	222 160	458 421	235 112	234 582	231 573	230 644	229 618	228 539	227 537	226 508	226 340	
Grade 4	181 748	200 706	213 315	215 462	221 163	456 382	234 071	233 560	230 566	229 635	228 614	227 539	226 544	226 508	
Grade 5	168 786	180 617	199 438	211 951	214 068	219 755	453 939	233 070	232 547	229 551	228 628	227 618	226 549	226 544	
Grade 6	162 561	167 835	179 651	198 421	210 808	212 898	218 571	451 276	231 580	231 060	228 087	227 169	226 165	226 549	
Grade 7	163 906	161 168	166 417	178 195	196 784	209 025	211 117	216 751	448 207	230 333	229 816	226 863	225 951	226 165	
Grade 8	157 307	162 314	159 705	164 924	176 559	194 909	207 082	209 173	214 749	444 260	228 408	227 900	224 973	225 951	
Grade 9	131 884	126 105	130 980	129 490	133 928	142 432	157 415	167 495	169 264	173 708	400 199	226 291	225 789	224 973	
Grade 10	132 694	111 666	107 521	111 359	109 842	113 606	120 955	133 758	142 225	143 691	147 486	330 775	183 013	225 789	
Grade 11	129 717	123 587	104 731	100 556	103 908	102 492	106 123	113 055	124 936	132 811	134 201	137 770	293 651	183 013	
New Grade 12														140 314	
Baseline enrolment	1 863 584	1 889 411	1 929 451	1 992 846	2 061 476	2 122 089	2 176 315	2 221 237	2 255 216	2 274 077	2 282 385	2 286 836	2 285 483	2 444 206	
Scenario 1 enrolment	1 863 584	1 889 411	2 163 265	2 229 766	2 297 839	2 355 437	2 408 728	2 452 617	2 485 505	2 503 355	2 510 628	2 514 042	2 511 670	2 584 520	
Additional enrolment	-	-	233 814	236 920	236 363	233 348	232 413	231 380	230 289	229 278	228 243	227 206	226 187	140 314	

Source: Own projections based on population and school enrolment data from the World Bank Databank (2018)

Cost implications

Move the current curriculum forward by a full year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total cost of adding 12th year	-	-	1 967 531 676	655 743 605	657 718 169	663 613 173	671 879 961	678 742 912	683 917 879	686 423 407	686 718 465	686 374 408	684 987 081
Key operational costs													
PCF normative	-	-	311 077 943	315 210 322	314 469 261	310 457 953	309 213 982	307 839 626	306 388 105	305 043 019	303 666 003	302 286 326	300 930 597
Other operational costs													
Yes Management of additional year of education	-	-	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512
Yes Printing textbooks required for introduction of additional year	-	-	322 498 380	333 265 680	344 494 500	354 359 460	363 759 600	371 804 520	378 118 260	381 754 380	383 367 180	384 291 120	384 172 920
Yes Income from the "renting" of textbooks for additional year	-	-	- 5 845 350	- 5 923 000	- 5 909 075	- 5 833 700	- 5 810 325	- 5 784 600	- 5 757 225	- 5 731 950	- 5 706 075	- 5 680 150	- 5 654 675
Yes Ongoing in-service training of teachers and staff for additional year	-	-	2 548 747	2 448 431	2 528 972	2 494 948	2 582 193	2 748 754	3 034 228	3 223 447	3 256 845	3 342 600	3 403 727
Setup costs													
Yes Infrastructure – new classrooms for additional year	-	-	998 555 000	-	-	-	-	-	-	-	-	-	-
Yes New classrooms – furniture and equipment	-	-	295 188 600	-	-	-	-	-	-	-	-	-	-
Yes Curriculum development	-	-	5 400 000	-	-	-	-	-	-	-	-	-	-
Yes New office for management of additional year	-	-	1 321 600	-	-	-	-	-	-	-	-	-	-
Yes Public awareness campaigns	-	-	7 660 000	-	-	-	-	-	-	-	-	-	-

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

Advantages and disadvantages of Scenario 1

Advantages	Disadvantages
<ul style="list-style-type: none"> Only the curriculum for grades 10, 11 and 12 will need to be reviewed/developed. Would ensure there is no break in graduates for University. 	<ul style="list-style-type: none"> The additional classrooms are only required while the double-age cohort is moving through the system. The additional textbooks would only be used for one year as the double-age cohort moves through each grade. It is not clear that there are sufficient teachers available for the transition period. There is an opportunity cost as children will be in school for one more year. Household expenditure costs (one more year of any costs such as uniforms, transport, informal payments). The cost of the single-year transition for Scenario 1 is high, and it is not clear that it is an effective use of funds.

Scenario 2 – Move the current curriculum forward by 6 months

Key characteristics
<ul style="list-style-type: none"> Additional year is part of the formal education system. Adds year at the beginning and end of the current education system. Additional year is not compulsory – at least not initially. Does shift the starting age down from 7 to 6 years old. Additional year is introduced in a single year.

Scenario 2 envisages introducing a 12-year education system by requiring children to start at 6 years. The first 6 months in Grade 1 would be used for ECE, then the current curriculum would be moved forward by six months so as to make space for six months of skills training to be added to the Upper Secondary Phase to give a $\frac{1}{2}+4+5+2+\frac{1}{2}$ system.

Transitioning to this system can only be done in a single year because there needs to be a “clean” switch from the old curriculum to the new curriculum.

The transition to this Scenario requires all 6- and 7-year-olds enrol in Grade 1 in the year the transition starts (2020). The 7-year-old cohort would follow the current curriculum and exit the education system at the end of Grade 11 while the 6-year-old cohort would follow the new curriculum, starting with 6 months ECE. This would make space for 6 months skills training in Grade 12, which would be

added in, from 2031 onwards, to the end of the Upper Secondary Phase.

Practical implications

The following table highlights some of the practical implications of introducing Scenario 2 starting in 2020.

Demand for additional infrastructure and equipment	
- Classrooms	<ul style="list-style-type: none"> About 9 800 additional classrooms will need to be built ready at the start of 2020 to provide space to enrol the 6-year-olds in the same year as the 7-year-olds.
- Furniture	<ul style="list-style-type: none"> Furniture for the 9 800 additional classrooms and desks for about 236 000 additional pupils will need to be provided at the start of 2020. When the 6-year-old cohort reaches the age of 11 years in 2025, another set of larger furniture will need to be provided.
Pedagogical implications	
- School readiness	<ul style="list-style-type: none"> Seeks to address the issue of school readiness by introducing 6 months ECE at the start of Grade 1.
- Learning time	<ul style="list-style-type: none"> Scenario 2 does not change the amount of learning allocated to grades 1 to 11 in the current curriculum; it simply adds 6 months ECE at the start and 6 months vocational training at the end. Enrolment drops to around 65% in Grade 10 and 60% in Grade 11. This means all children leaving at the end of grades 9, 10 and 11 will receive 6 months less formal education than under the Baseline Scenario.
- Compulsory years	<ul style="list-style-type: none"> This scenario does not change the number of compulsory years of education.
- Curriculum	<ul style="list-style-type: none"> A suitable 6 months ECE module will need to be developed. A suitable 6 months of vocational training will need to be added to Grade 12. The entire curriculum for grades 1 to 11 will need to be revised to align it with the new year intervals resulting from the 6-month forward shift.
- Teachers	<ul style="list-style-type: none"> Grade 1 teachers would need to be trained to offer the ECE module. About 9 800 additional school teachers will need to be hired from the start of 2020 to the end of 2023 to take the 6-year-old cohort through primary school. About 10 000 additional secondary school teachers will need to be hired from the start of 2024 to the end of 2030 to take the 6-year-old cohort through lower secondary and upper secondary school, depending on the range of subjects on offer in these grades. About 5 800 additional teachers would be required to introduce Grade 12 from 2031 onwards, depending on the range of subjects on offer.
- Learning materials	<ul style="list-style-type: none"> Learning materials for about 236 000 pupils will need to be printed for each of grades 1 to 11 as the 6-year-old cohort moves through the grades. Learning materials for around 140 000 pupils will need to be printed for Grade 12.
- Assessment	<ul style="list-style-type: none"> The learning outcomes, processes and systems to assess all grades will need to be reviewed and aligned with the new year intervals resulting from the 6-month forward shift.
Other implications	
- Legal implications	<ul style="list-style-type: none"> Legislation will need to be changed to require parents to enrol 6-year-olds in Grade 1 from 2020 onwards, and to make provision for the introduction of Grade 12 from 2031 onwards.
- Parents	<ul style="list-style-type: none"> There will need to be an extensive public awareness campaign to get parents' buy-in for moving to a 12-year education system and to get them to enrol their 6-year-old children in Grade 1 in 2020.
- Pupils	<ul style="list-style-type: none"> Introducing 6 months quality ECE at the start of Grade 1 will improve pupils' readiness to learn, which will benefit them throughout their school career. The 6-month forward shift in the curriculum means that pupils leaving at the end of grades 9, 10 and 11 will receive 6 months less formal education than under the Baseline Scenario. Pupils that complete Grade 12 would benefit from having 6 months additional vocational training.

Realistic timeframes

As with Scenario 1, it would be irresponsible to start the Scenario 2 transition in 2020 because the education system is simply not ready to manage a double-age cohort of pupils:

- ➡ In 2017, 30 679 places were added through the construction of schools and classrooms. Assuming this rate of construction can be increased by 50 per cent, it would take about five years to build and furnish the additional 9 800 classrooms required to seat the additional 236 000 pupils.
- ➡ It is not clear that there are 9 800 primary school teachers available to be hired from the start of 2020, or that there will be sufficient additional secondary school teachers from 2024 onwards. Indeed, a

thorough assessment of the staffing requirements of the transition process needs to be done before embarking on it, including the readiness of Grade 1 teachers to offer a quality ECE module.

➡ This scenario requires the entire school curriculum, all learning materials and the assessment system to be re-aligned to the new school intervals resulting from the 6-month forward shift. It will take a minimum of two years to get the Grade 1 materials ready, and the rest would follow on.

Taking the above into consideration, and given the amount of advance planning that needs to take place, 2027 is the earliest realistic date for starting the transition based on Scenario 2.

Impact on enrolment to 2030

Scenario 2 will have the same impact on enrolment as Scenario 1. Scenario 2 requires all 6- and 7-year-olds enrol in Grade 1 in 2020. This double-age cohort would then progress through the education system for the next 11 years until the 7-year-old cohort exits after Grade 11 and the 6-year-old cohort continues on to Grade 12 in 2031. The

following table sets out the projected enrolment numbers from 2018 to 2031.

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
	7-year olds		6+7-yr olds	6-year olds											
Grade 1	218 104	223 961	462 077	236 920	236 363	233 348	232 413	231 380	230 289	229 278	228 243	227 206	226 187	226 187	
Grade 2	215 189	217 289	223 099	460 328	235 995	235 478	232 460	231 526	230 498	229 410	228 407	227 374	226 340	226 187	
Grade 3	201 688	214 163	216 331	222 160	458 421	235 112	234 582	231 573	230 644	229 618	228 539	227 537	226 508	226 340	
Grade 4	181 748	200 706	213 315	215 462	221 163	456 382	234 071	233 560	230 566	229 635	228 614	227 539	226 544	226 508	
Grade 5	168 786	180 617	199 438	211 951	214 068	219 755	453 939	233 070	232 547	229 551	228 628	227 618	226 549	226 544	
Grade 6	162 561	167 835	179 651	198 421	210 808	212 898	218 571	451 276	231 580	231 060	228 087	227 169	226 165	226 549	
Grade 7	163 906	161 168	166 417	178 195	196 784	209 025	211 117	216 751	448 207	230 333	229 816	226 863	225 951	226 165	
Grade 8	157 307	162 314	159 705	164 924	176 559	194 909	207 082	209 173	214 749	444 260	228 408	227 900	224 973	225 951	
Grade 9	131 884	126 105	130 980	129 490	133 928	142 432	157 415	167 495	169 264	173 708	400 199	226 291	225 789	224 973	
Grade 10	132 694	111 666	107 521	111 359	109 842	113 606	120 955	133 758	142 225	143 691	147 486	330 775	183 013	225 789	
Grade 11	129 717	123 587	104 731	100 556	103 908	102 492	106 123	113 055	124 936	132 811	134 201	137 770	293 651	183 013	
New Grade 12														140 314	
Baseline enrolment	1 863 584	1 889 411	1 929 451	1 992 846	2 061 476	2 122 089	2 176 315	2 221 237	2 255 216	2 274 077	2 282 385	2 286 836	2 285 483	2 444 206	
Scenario 1 enrolment	1 863 584	1 889 411	2 163 265	2 229 766	2 297 839	2 355 437	2 408 728	2 452 617	2 485 505	2 503 355	2 510 628	2 514 042	2 511 670	2 584 520	
Additional enrolment	-	-	233 814	236 920	236 363	233 348	232 413	231 380	230 289	229 278	228 243	227 206	226 187	140 314	

Source: Own projections based on population and school enrolment data from the World Bank Databank (2018)

Cost implications

Move the current curriculum forward by 6 months	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total cost of adding 12th year	-	-	1 967 531 676	655 743 605	666 258 096	672 071 280	680 253 882	686 981 769	691 948 015	694 305 682	694 545 554	694 114 877	692 655 887
Key operational costs													
PCF normative	-	-	311 077 943	315 210 322	314 469 261	310 457 953	309 213 982	307 839 626	306 388 105	305 043 019	303 666 003	302 286 326	300 930 597
Other operational costs													
Yes Management of additional year of education	-	-	4 099 238	4 099 238	4 099 238	4 099 238	4 099 238	4 099 238	4 099 238	4 099 238	4 099 238	4 099 238	4 099 238
Yes Printing textbooks required for introduction of additional year	-	-	324 836 520	335 634 880	346 858 130	356 692 940	366 083 730	374 118 320	380 421 150	384 047 160	385 649 610	386 563 180	386 434 790
Yes Income from the "renting" of textbooks for additional year	-	-	- 5 845 350	- 5 923 000	- 5 909 075	- 5 833 700	- 5 810 325	- 5 784 500	- 5 757 225	- 5 731 950	- 5 706 075	- 5 680 150	- 5 654 675
Yes Ongoing in-service training of teachers and staff for additional year	-	-	6 687 325	6 722 165	6 740 541	6 654 849	6 667 357	6 709 084	6 796 747	6 848 215	6 836 777	6 846 283	6 845 937
Setup costs													
Yes Infrastructure – new classrooms for additional year	-	-	998 555 000	-	-	-	-	-	-	-	-	-	-
Yes New classrooms – furniture and equipment	-	-	295 188 600	-	-	-	-	-	-	-	-	-	-
Yes Curriculum development	-	-	22 700 000	-	-	-	-	-	-	-	-	-	-
Yes New office for management of additional year	-	-	2 572 400	-	-	-	-	-	-	-	-	-	-
Yes Public awareness campaigns	-	-	7 660 000	-	-	-	-	-	-	-	-	-	-

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

Advantages and disadvantages of Scenario 2

Advantages	Disadvantages
<ul style="list-style-type: none"> The introduction of 6 months ECE at the start of Grade 1 has the potential to improve pupils' readiness to learn, but this is dependent on the quality of the delivery of the module. Pupils that complete Grade 12 would benefit from having 6 months additional vocational training. Would ensure there is no break in graduates for University. 	<ul style="list-style-type: none"> The additional classrooms are only required while the double-age cohort is moving through the system. It is not clear that there are sufficient teachers available for the transition period. The entire curriculum, learning outcomes and assessment system will need to be re-aligned to the new year intervals. New textbooks aligned to the revised curriculum will need to be developed and printed. The 6-month forward shift in the curriculum means that pupils leaving at the end of grades 9, 10 and 11 will receive 6 months less formal education than under the Baseline Scenario. There is an opportunity cost as children will be in school for one more year. Household expenditure costs (one more year of any costs such as uniforms, transport, informal payments). Scenario 2 is the most expensive of the five scenarios costed, and it is not clear that it is an effective use of funds.

Scenario 3 - Stretch the current primary curriculum

Key characteristics
<ul style="list-style-type: none"> Additional year is part of the formal education system. Adds an additional year in the middle of the current education system. Additional year is compulsory from the outset. Does shift the starting age down from 7 to 6 years old. Additional year is introduced in a single year.

Scenario 3 envisages introducing a 12-year education system by adding an additional year to the primary school phase, thus allowing the current primary curriculum to be stretched across five years as opposed to the current four. To accommodate the additional year, children would be required to start Grade 1 at 6 years. This will give a 5+5+2 system.

Transitioning to this system can only be done in a single year because there needs to be a "clean" switch from the old curriculum to the new curriculum.

This Scenario requires all 6- and 7-year-olds enrol in Grade 1 in the year the transition starts (2020). The 7-year-old cohort would follow the current curriculum and exit the education system at the end of Grade 11. The 6-year-old cohort would follow the

new curriculum, which would include an additional year in the primary phase.

Practical implications

The following table highlights some of the practical implications of introducing Scenario 3 starting in 2020.

Demand for additional infrastructure and equipment	
- Classrooms	<ul style="list-style-type: none"> • About 9 800 additional classrooms will need to be built ready at the start of 2020 to provide space to enrol the 6-year-olds in the same year as the 7-year-olds.
- Furniture	<ul style="list-style-type: none"> • Furniture for the 9 800 additional classrooms and desks for about 236 000 additional pupils will need to be provided at the start of 2020.
Pedagogical implications	
- School readiness	<ul style="list-style-type: none"> • In 2017, the ECE coverage of 6-year-olds was about 30%. It is even lower among 5-year-olds. This means enrolling the 6-year-olds a year "early" will mean that very few will enter Grade 1 ready to learn.
- Learning time	<ul style="list-style-type: none"> • Scenario 3 adds an additional year of learning time to the primary phase. • Because the additional learning time falls within the compulsory phase, all children will benefit from it.
- Compulsory years	<ul style="list-style-type: none"> • This scenario adds an additional year of compulsory education, raising it from 9 to 10 years.
- Curriculum	<ul style="list-style-type: none"> • The curriculum for the new grades 1 to 5 would need to be re-aligned to stretch over five years.
- Teachers	<ul style="list-style-type: none"> • About 9 800 additional school teachers will need to be hired from the start of 2020 to the end of 2024 to take the 6-year-old cohort through primary school.
- Learning materials	<ul style="list-style-type: none"> • Learning materials for about 236 000 pupils will need to be printed for each of grades 1 to 5 as the 6-year-old cohort moves through the grades.
- Assessment	<ul style="list-style-type: none"> • Processes and systems to assess the primary phase will need to be re-aligned.
Other implications	
- Legal implications	<ul style="list-style-type: none"> • Legislation will need to be changed to require parents to enrol 6-year-olds in Grade 1 from 2020 onwards, and to make provision for an additional year in the primary phase, as well as extend compulsory education to 10 years.
- Parents	<ul style="list-style-type: none"> • There will need to be an extensive public awareness campaign to get parents' buy-in for increasing the number of years of compulsory education, for moving to a 12-year education system, and to get them to enrol their 6-year-olds in Grade 1 in 2020.
- Pupils	<ul style="list-style-type: none"> • Many 6-year-olds that would otherwise have attended an ECE programme in 2020 will be required to enrol in Grade 1 instead. Consequently, they will be denied the opportunity to become school-ready, which could hinder their learning throughout their school career. • The additional year of compulsory primary education could ensure better grounding in the competency-based way of working.

Realistic timeframes

As with scenarios 1 and 2, it would be irresponsible to start the Scenario 3 transition in 2020, because the education system is simply not ready to manage a double cohort of pupils:

- ➡ In 2017, 30 679 sitting places were added through the construction of schools and classrooms. Assuming this rate of construction can be increased by 50 percent it would take about five years to build and furnish the additional 9 800 classrooms required to seat the additional 236 000 pupils.
- ➡ It is not clear that there are 9 800 primary school teachers available to be hired from the start of 2020. Indeed, a thorough assessment of the staffing requirements of the transition process needs to be done before embarking on it.
- ➡ The government needs to give parents at least two-years notice of the transition, so that they can enrol their 5-year-olds in ECE programmes so they are school-ready when they enrol in Grade 1 at 6 years.

Taking the above into consideration, and given the amount of advance planning that needs to take place, 2027 is the earliest realistic date for starting the transition based on Scenario 3.

Impact on enrolment to 2030

The transition under Scenario 3 requires all 6- and 7-year-olds enrol in Grade 1 in 2020. The 7-year-old cohort would follow the current curriculum and exit after Grade 11 (2030). The 6-year-old cohort would follow the extended curriculum in the primary phase (grades 1 to 5) and then proceed to secondary school (grades 6 to 12) and exit in 2031.

The following table sets out the projected enrolment numbers from 2018 to 2030.

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
	7-year olds		6+7-yr olds	6-year olds											
Grade 1	218 104	223 961	462 077	236 920	236 363	233 348	232 413	231 380	230 289	229 278	228 243	227 206	226 187		
Grade 2	215 189	217 289	223 099	460 328	235 995	235 478	232 460	231 526	230 498	229 410	228 407	227 374	226 340		
Grade 3	201 688	214 163	216 331	222 160	458 421	235 112	234 582	231 573	230 644	229 618	228 539	227 537	226 508		
Grade 4	6-year olds		181 748	200 706	213 315	215 462	221 163	456 382	234 071	233 560	230 566	229 635	228 614	227 539	226 544
7-year olds	New Grade 5							229 998	233 070	232 547	229 551	228 628	227 618	226 549	
Grade 5	Grade 6	168 786	180 617	199 438	211 951	214 068	219 755	223 941	228 531	231 580	231 060	228 087	227 169	226 165	
Grade 6	Grade 7	162 561	167 835	179 651	198 421	210 808	212 898	218 571	222 745	227 311	230 333	229 816	226 863	225 951	
Grade 7	Grade 8	163 906	161 168	166 417	178 195	196 784	209 025	211 117	216 751	220 896	225 416	228 408	227 900	224 973	
Grade 8	Grade 9	157 307	162 314	159 705	164 924	176 559	194 909	207 082	209 173	214 749	218 844	223 317	226 291	225 789	
Grade 9	Grade 10	131 884	126 105	130 980	129 490	133 928	142 432	157 415	167 495	169 264	173 708	176 882	180 566	183 013	
Grade 10	Grade 11	132 694	111 666	107 521	111 359	109 842	113 606	120 955	133 758	142 225	143 691	147 486	150 209	153 337	
Grade 11	Grade 12	129 717	123 587	104 731	100 556	103 908	102 492	106 123	113 055	124 936	132 811	134 201	137 770	140 314	
Baseline enrolment		1 863 584	1 889 411	1 929 451	1 992 846	2 061 476	2 122 089	2 176 315	2 221 237	2 255 216	2 274 077	2 282 385	2 286 836	2 285 483	
Scenario 1 enrolment		1 863 584	1 889 411	2 163 265	2 229 766	2 297 839	2 355 437	2 408 728	2 452 617	2 485 505	2 503 355	2 510 628	2 514 042	2 511 670	
Additional enrolment		-	-	233 814	236 920	236 363	233 348	232 413	231 380	230 289	229 278	228 243	227 206	226 187	

Source: Own projections based on population and school enrolment data from the World Bank Databank (2018)

Cost implications

Stretch the current primary curriculum	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total cost of adding 12th year	-	-	1 967 531 676	655 743 605	657 718 169	663 613 173	671 879 961	678 742 912	683 917 879	686 423 407	686 718 465	686 374 408	684 987 081
Key operational costs													
PCF normative	-	-	311 077 943	315 210 322	314 469 261	310 457 953	309 213 982	307 839 626	306 388 105	305 043 019	303 666 003	302 286 326	300 930 597
Other operational costs													
Yes Management of additional year of education	-	-	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512
Yes Printing textbooks required for introduction of additional year	-	-	322 498 380	333 265 680	344 494 500	354 359 460	363 759 600	371 804 520	378 118 260	381 754 380	383 367 180	384 291 120	384 172 920
Yes Income from the "renting" of textbooks for additional year	-	-	- 5 845 350	- 5 923 000	- 5 909 075	- 5 833 700	- 5 810 325	- 5 784 500	- 5 757 225	- 5 731 950	- 5 706 075	- 5 680 150	- 5 654 675
Yes Ongoing in-service training of teachers and staff for additional year	-	-	2 548 747	2 448 431	2 528 972	2 494 948	2 582 193	2 748 754	3 034 228	3 223 447	3 256 845	3 342 600	3 403 727
Setup costs													
Yes Infrastructure – new classrooms for additional year	-	-	998 555 000	-	-	-	-	-	-	-	-	-	-
Yes New classrooms – furniture and equipment	-	-	295 188 600	-	-	-	-	-	-	-	-	-	-
Yes Curriculum development	-	-	5 400 000	-	-	-	-	-	-	-	-	-	-
Yes New office for management of additional year	-	-	1 321 600	-	-	-	-	-	-	-	-	-	-
Yes Public awareness campaigns	-	-	7 660 000	-	-	-	-	-	-	-	-	-	-

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

Advantages and disadvantages of Scenario 3

Advantages	Disadvantages
<ul style="list-style-type: none"> Only the curriculum for the new grades 1 to 5 will need to be reviewed/developed. The additional year of primary education could be very beneficial in terms of learning outcomes, both in terms of literacy and numeracy, but also in terms of readiness for secondary school. The additional year of compulsory education could have positive equity and gender outcomes. Would ensure there is no break in graduates for University. 	<ul style="list-style-type: none"> It is not clear that there are sufficient primary school teachers available for the transition period, and to teach the new Grade 5. There is an opportunity cost as children will be in school for one more year. Household expenditure costs (one more year of any costs such as uniforms, transport, informal payments).

Scenarios 4A and 4B – Introduce an initial ECE year

Key characteristics of Scenario 4A

- Additional year is part of the formal education system.
- Adds year at the beginning of the current education system.
- Additional year is not compulsory – at least not initially.
- Does not shift the starting age for Grade 1 down from 7 to 6 years old.
- Additional year is phased in over a number of years.

Key characteristics of Scenario 4B

- Additional year is not part of the formal education system.
- Adds year at the beginning of the current education system.
- Additional year is not compulsory – at least not initially.
- Does not shift the starting age for Grade 1 down from 7 to 6 years old.
- Additional year is phased in over a number of years.

Scenarios 4A and 4B envisage introducing an ECE / pre-primary year before pupils enter Grade 1. This pre-primary year would initially not be compulsory for 6-year-olds, though it could be made compulsory later. This will give a 1+4+5+2 system.

The difference between Scenarios 4A and 4B is as follows:

- Scenario 4A requires that the pre-primary grade would only be offered in facilities built on school premises.
- Scenario 4B allows the pre-primary grade to be offered either in facilities built on school premises or as part of accredited community-based ECE centres.

Transitioning to this system can either be done in a single year or more gradually. Here the focus is on the cost of a single-year transition for Scenarios 4A and 4B. In section 6.2.3 above, the cost of a five-year transition process for Scenario 4B is explored.

The single-year transition requires all 6-year-olds enrol in the new pre-primary grade in a specified year (2020). Because the additional year is being added on at the front end of the current education system, it will not impact on the rest of the system.

Practical implications

The following table highlights some of the practical implications of introducing Scenarios 4A and 4B starting in 2020.

Demand for additional infrastructure and equipment	
- Classrooms	<ul style="list-style-type: none"> For Scenario 4A: in 2017 there were 615 kindergartens located at schools. This means an additional 9 100 kindergartens will need to be built ready at the start of 2020 to provide space to enrol all the 6-year-olds. For Scenario 4B: in 2017 there were 2 286 kindergartens and ECE centres. This means an additional 7 450 kindergartens / ECE centres will need to be built ready at the start of 2020 to provide space to enrol all the 6-year-olds.
- Furniture	<ul style="list-style-type: none"> Furniture for the additional ECE facilities noted above for each of the scenarios needs to be provided at the start of 2020.
Pedagogical implications	
- School readiness	<ul style="list-style-type: none"> In 2017, the ECE coverage of 6-year-olds was about 30%. These scenarios envisage making the pre-primary grade ECE year compulsory, which has the potential to greatly improve school readiness.
- Learning time	<ul style="list-style-type: none"> These scenarios do not change the amount of learning allocated to the current grades 1 to 11. However, the investment in ECE upfront has the potential to improve the effectiveness of current teaching time.
- Compulsory years	<ul style="list-style-type: none"> This scenario adds a year of compulsory ECE to the current 9 years compulsory education.
- Curriculum	<ul style="list-style-type: none"> Already prepared. Does not impact on the current curriculum.
- Teachers	<ul style="list-style-type: none"> Some already prepared. An additional 8 000 ECE practitioners will be required to introduce a compulsory pre-primary grade.
- Learning materials	<ul style="list-style-type: none"> Already prepared – need to be purchased for about 236 000 pupils.
- Assessment	<ul style="list-style-type: none"> Already in place.
Другие последствия	
- Legal implications	<ul style="list-style-type: none"> Legislation will need to be changed to require parents to enrol 6-year-olds in a pre-primary grade from 2020 onwards, and to make it compulsory.
- Parents	<ul style="list-style-type: none"> Advocacy already being done. Additional advocacy around making a pre-primary grade compulsory, and to get them to enrol their 6-year-old children in a pre-primary grade in 2020.
- Pupils	<ul style="list-style-type: none"> Significant benefit in terms of school readiness and learning how to learn.

Realistic timeframes

The Government of Tajikistan is already actively working to extend access to ECE.

The question is: can the process be accelerated?

There is probably scope to accelerate efforts to extend access to ECE, but it is unlikely that the required ECE classrooms can be built ready for the start of 2020. Also, additional ECE practitioners need to be trained. Given the nature of ECE, the appropriate route to follow is to move toward universal access and, once this is achieved, to then make a pre-primary grade compulsory.

Taking the classroom backlog into consideration, 2025 is probably the earliest realistic date achieving universal access.

Impact on enrolment to 2030

If the proposed pre-primary grade were made compulsory in 2020, it would mean all 6-year-olds would need to enrol. The following table sets out the projected enrolment numbers from 2018 to 2030.

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Voluntary		Compulsory										
Grade 0	89 920	68 744	233 814	236 920	236 363	233 348	232 413	231 380	230 289	229 278	228 243	227 206	226 187
Grade 1	218 104	223 961	228 263	232 929	235 995	235 478	232 460	231 526	230 498	229 410	228 407	227 374	226 340
and so on...													
Baseline enrolment	1 863 584	1 889 411	1 929 451	1 992 846	2 061 476	2 122 089	2 176 315	2 221 237	2 255 216	2 274 077	2 282 385	2 286 836	2 285 483
Enrolment for Scenario 4A & 4B	1 863 584	1 889 411	2 163 265	2 229 766	2 297 839	2 355 437	2 408 728	2 452 617	2 485 505	2 503 355	2 510 628	2 514 042	2 511 670
Change in enrolment	-	-	233 814	236 920	236 363	233 348	232 413	231 380	230 289	229 278	228 243	227 206	226 187

Source: Own projections based on population and school enrolment data from the World Bank Databank (2018).

Cost implications for Scenario 4A

Introduce an initial ECE year in facilities at schools	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total cost of adding 12th year	-	-	1 437 416 974	325 439 180	324 678 709	320 565 168	319 289 356	317 879 874	316 390 916	315 011 501	313 599 338	312 184 494	310 793 779
Key operational costs													
PCF normative	-	-	311 077 943	315 210 322	314 469 261	310 457 953	309 213 982	307 839 626	306 388 105	305 043 019	303 666 003	302 286 326	300 930 597
Other operational costs													
Yes Management of additional year of education	-	-	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512
Yes Printing textbooks required for introduction of additional year	-	-	2 338 140	2 369 200	2 363 630	2 333 480	2 324 130	2 313 800	2 302 890	2 292 780	2 282 430	2 272 060	2 261 870
Yes Income from the "renting" of textbooks for additional year	-	-	-	-	-	-	-	-	-	-	-	-	-
Yes Ongoing in-service training of teachers and staff for additional year	-	-	5 650 180	5 725 147	5 711 307	5 639 223	5 616 733	5 591 937	5 565 410	5 541 190	5 516 393	5 491 597	5 466 800
Setup costs													
Yes Infrastructure – new classrooms for additional year	-	-	935 517 500	-	-	-	-	-	-	-	-	-	-
Yes New classrooms – furniture and equipment	-	-	174 407 100	-	-	-	-	-	-	-	-	-	-
Yes Curriculum development	-	-	150 000	-	-	-	-	-	-	-	-	-	-
Yes New office for management of additional year	-	-	1 321 600	-	-	-	-	-	-	-	-	-	-
Yes Public awareness campaigns	-	-	4 820 000	-	-	-	-	-	-	-	-	-	-

Cost implications for Scenario 4B

Introduce an initial ECE year in facilities at schools or ECE	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total cost of adding 12th year	-	-	1 255 612 174	325 439 180	324 678 709	320 565 168	319 289 356	317 879 874	316 390 916	315 011 501	313 599 338	312 184 494	310 793 779
Key operational costs													
PCF normative	-	-	311 077 943	315 210 322	314 469 261	310 457 953	309 213 982	307 839 626	306 388 105	305 043 019	303 666 003	302 286 326	300 930 597
Other operational costs													
Yes Management of additional year of education	-	-	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512
Yes Printing textbooks required for introduction of additional year	-	-	2 338 140	2 369 200	2 363 630	2 333 480	2 324 130	2 313 800	2 302 890	2 292 780	2 282 430	2 272 060	2 261 870
Yes Income from the "renting" of textbooks for additional year	-	-	-	-	-	-	-	-	-	-	-	-	-
Yes Ongoing in-service training of teachers and staff for additional year	-	-	5 650 180	5 725 147	5 711 307	5 639 223	5 616 733	5 591 937	5 565 410	5 541 190	5 516 393	5 491 597	5 466 800
Setup costs													
Yes Infrastructure – new classrooms for additional year	-	-	764 240 000	-	-	-	-	-	-	-	-	-	-
Yes New classrooms – furniture and equipment	-	-	163 879 800	-	-	-	-	-	-	-	-	-	-
Yes Curriculum development	-	-	150 000	-	-	-	-	-	-	-	-	-	-
Yes New office for management of additional year	-	-	1 321 600	-	-	-	-	-	-	-	-	-	-
Yes Public awareness campaigns	-	-	4 820 000	-	-	-	-	-	-	-	-	-	-

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

Advantages and disadvantages of Scenarios 4A and 4B

Advantages	Disadvantages
<ul style="list-style-type: none"> Provides all children with very important pre-school preparation. Programme already prepared, materials designed, teacher training programme ready. Lower cost as a number of classrooms are already available for small children and teaching is only 4 hours per day. Would not cause any disruption to the rest of the education system. Locating a pre-primary grade in a combination of school-based and community-based ECE centres will reduce the cost of classroom infrastructure. 	<ul style="list-style-type: none"> Does not address the low number of hours overall in the school system. A large number of ECE facilities are still required.

Scenario 5 - Introduce Grade 12 only

Key characteristics
<ul style="list-style-type: none"> Additional year is part of the formal education system. Adds year at the end of the current education system. Additional year is not compulsory – at least not initially. Does not shift the starting age for Grade 1 down from 7 to 6 years old. Additional year is phased in over a number of years.

impact on the rest of the system. Nevertheless, it might be sensible to revisit the curriculum for grades 10, 11 and 12 to ensure they function as a coherent whole.

Practical implications

The following table highlights some of the practical implications of introducing Scenario 5 starting in 2020.

Scenario 5 proposes that another year of skills training (Grade 12) be added to the Upper Secondary Phase, with no other changes to the education system, i.e. the starting age for Grade 1 would remain at 7 years old. This will give a 4+5+3 system.

The introduction of a Grade 12 can be done in a single year or more gradually. Here the focus is on the cost of a single-year transition. In section 6.2.4, the cost of a five-year transition process for Scenario 5 is explored.

The single-year transition would simply give all Grade 11 pupils the option to study for another year in Grade 12. Senior secondary school is not compulsory, so the level of enrolment would depend on whether pupils (and/or their parents) see value in the additional year of study. It would also depend on whether passing Grade 12 is made a requirement for entrance to university. This is something that could be changed over time.

Because the additional year is being added to the back end of the current education system, it will not

Demand for additional infrastructure and equipment	
- Classrooms	<ul style="list-style-type: none"> Enrolment for Grade 11 is about 65%, and is likely to be lower for Grade 12. This will reduce the need for additional classrooms. The need for additional classrooms also depends on the nature of the Grade 12 curriculum and the extent to which the classes can be accommodated in existing upper secondary school facilities. In 2020, estimated enrolment for Grade 12 would be some 115 000 pupils. Assuming a class size of 24, about 4 800 additional classrooms will be required at the start of 2020.
- Furniture	<ul style="list-style-type: none"> Furniture for 115 000 pupils and 4 800 additional classrooms would be required at the start of 2020.
Pedagogical implications	
- School readiness	<ul style="list-style-type: none"> This scenario does not address the issue of school readiness.
- Learning time	<ul style="list-style-type: none"> Scenario 5 does not change the amount of learning allocated to the current grades 1 to 11, but adds a year to the higher secondary phase. Enrolment drops to around 65% in Grade 10 and 60% in Grade 11. This means all children leaving at the end of grades 9, 10 and 11 will not benefit from the additional learning time provided by the additional schooling year.
- Compulsory years	<ul style="list-style-type: none"> Does not change the 9 years of compulsory education.
- Curriculum	<ul style="list-style-type: none"> The curriculum for grades 10 and 11 will need to be reviewed, and that for Grade 12 developed.
- Teachers	<ul style="list-style-type: none"> About 4 800 additional teachers would be required to introduce Grade 12 from 2020 onwards, depending on the range of subjects on offer.
- Learning materials	<ul style="list-style-type: none"> Need to be developed and produced for 115 000 pupils in 2020.
- Assessment	<ul style="list-style-type: none"> Processes and systems to assess the new Grade 12 will be required.
Other implications	
- Legal implications	<ul style="list-style-type: none"> Legislation will need to make provision for the introduction of Grade 12 from 2020 onwards.
- Parents	<ul style="list-style-type: none"> There will need to be an extensive public awareness campaign to get parents' buy-in for moving to a 12-year education system, and to persuade them to get their children in Grade 11 to proceed to Grade 12.
- Pupils	<ul style="list-style-type: none"> Opportunity cost of attending an additional year of school.

Realistic timeframes

The number of new classrooms required to implement Scenario 5 is significantly lower than for the other scenarios.

- ➡ It will take at least three years to build the required number of classrooms.
- ➡ It is not clear that there are 4 800 senior secondary school teachers available to be hired from the start of 2020, or that there will be sufficient additional secondary school teachers from 2024 onwards. Indeed, a thorough assessment of the staffing requirements of the transition process needs to be done before embarking on it.

Taking the above into consideration, and given the amount of advance planning that needs to take place, 2025 is the earliest realistic date for starting Scenario 5.

Impact on enrolment to 2030

Grade 12 will not be compulsory. Therefore, enrolment depends on pupils seeing value in the additional year. The following table sets out the projected enrolment numbers from 2018 to 2030.

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
and so on...													
Grade 10	132 694	111 666	107 521	111 359	109 842	113 606	120 955	133 758	142 225	143 691	147 486	150 209	153 337
Grade 11	129 717	123 587	104 731	100 556	103 908	102 492	106 123	113 055	124 936	132 811	134 201	137 770	140 314
Grade 12		115 912	97 946	93 828	96 955	95 741	99 192	105 598	116 666	124 039	125 360	128 694	
Baseline enrolment	1 863 584	1 889 411	1 929 451	1 992 846	2 061 476	2 122 089	2 176 315	2 221 237	2 255 216	2 274 077	2 282 385	2 286 836	2 285 483
Enrolment for Scenario 5	1 863 584	1 889 411	2 045 363	2 090 792	2 297 839	2 219 044	2 272 056	2 320 429	2 360 814	2 390 743	2 406 424	2 412 196	2 414 177
Change in enrolment	-	-	115 912	97 946	93 828	96 955	95 741	99 192	105 598	116 666	124 039	125 360	128 694

Source: Own projections based on population and school enrolment data from the World Bank Databank (2018)

Cost implications

Introduce Grade 12 only	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total cost of adding 12th year	-	-	926 609 031	331 970 344	331 927 109	327 702 273	327 222 501	327 288 292	328 288 099	328 575 007	327 507 465	326 881 888	326 070 681
Key operational costs													
PCF normative	-	-	311 077 943	315 210 322	314 469 261	310 457 953	309 213 982	307 839 626	306 388 105	305 043 019	303 666 003	302 286 326	300 930 597
Other operational costs													
Yes Management of additional year of education	-	-	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512	2 134 512
Yes Printing textbooks required for introduction of additional year	-	-	18 851 580	18 100 080	18 703 440	18 448 560	19 102 140	20 349 900	22 488 480	23 905 980	24 156 180	24 798 600	25 256 520
Yes Income from the "renting" of textbooks for additional year	-	-	- 5 845 350	- 5 923 000	- 5 909 075	- 5 833 700	- 5 810 325	- 5 784 500	- 5 757 225	- 5 731 950	- 5 706 075	- 5 680 150	- 5 654 675
Yes Ongoing in-service training of teachers and staff for additional year	-	-	2 548 747	2 448 431	2 528 972	2 494 948	2 582 193	2 748 754	3 034 228	3 223 447	3 256 845	3 342 600	3 403 727
Setup costs													
Yes Infrastructure – new classrooms for additional year	-	-	495 075 000	-	-	-	-	-	-	-	-	-	-
Yes New classrooms – furniture and equipment	-	-	88 385 000	-	-	-	-	-	-	-	-	-	-
Yes Curriculum development	-	-	5 400 000	-	-	-	-	-	-	-	-	-	-
Yes New office for management of additional years	-	-	1 321 600	-	-	-	-	-	-	-	-	-	-
Yes Public awareness campaigns	-	-	7 680 000	-	-	-	-	-	-	-	-	-	-

Source: calculated using the Costing Model: Costing the transition to a 12-year education system in Tajikistan

Advantages and disadvantages of Scenario 5

Advantages	Disadvantages
<ul style="list-style-type: none"> Can be phased-in which will spread setup costs over a longer time period, making it more affordable. Phase-in will not cause a break in the supply of students for university. The enrolment rate for grades 10 and 11 are around 65%, which means they will be even lower for Grade 12, which reduces the cost of implementation. Does not require a double-age cohort to be managed through the education system. 	<ul style="list-style-type: none"> Pupils that remain to do grade 12 will only leave school at 18 years old. Will only benefit those pupils that choose to remain for Grade 12, unlike adding an ECE year which will benefit all pupils.

Annexure C – Transition options described in 2015 research

In 2015, Mark Todd was commissioned by the Ministry of Education and Science (working in partnership with UNICEF) to investigate options for moving to a 12-year education system in Tajikistan. The resultant paper, Concept note and options for a possible move from an 11 years system of education to 12 years in Tajikistan, gives a very

useful discussion of the context and a range of issues that need to inform the any decision regarding the transition to a 12-year education system.

The following table sets out the options for moving to a 12-year education system as described in this paper:

Table 22. Options discussed in 2015 for transitioning to a 12-year education system

Description of Options	Ages	Primary Grades	Lower secondary Grades	Upper secondary Grades	Notes
Option 1a Current General Education Programme 4+5+2 system	7-17	I - IV	V - IX	X - XI	5 788 hours of instruction Gr I – IX 11 years, of which 9 years compulsory
Option 1b Keep current system but increase hours 4+5+2 system	7-17	I - IV	V - IX	X - XI	Increase number of hours in the existing system in all grades closer to Russia (6 747) or OECD norms (7 384) 11 years, of which 9 years compulsory
Option 2 1+4+5+2 system	6-17	I + I - IV	V - IX	X - XI	Add one year preschool 11 years, of which 9 years compulsory
Option 3 Additional year at beginning of primary school 5+5+2 system	6-17	I - V	VI - X	XI - XII	This was done by Ukraine 12 years, of which 10 years compulsory
Option 4 Additional year to primary school 5+5+2 system	7-18	I - V	VI - X	XI - XII	Creates space for additional topics in primary school 12 years, of which 10 years compulsory
Option 5 Additional year to lower secondary 4+6+2 system	7-18	I - IV	V - X	XI - XII	Creates space for additional topics in lower secondary school 12 years, of which 10 years compulsory
Option 6 Additional year to upper secondary 4+5+3 system	7-18	I - IV	V - IX	X - XII	Creates space for additional topics in upper secondary school. System followed in Armenia, Finland, Poland, South Korea 12 years, of which 9 years compulsory
Option 7 Additional year to upper secondary, but shift starting age to 6 years 4+5+3 system	6-17	I - IV	V - IX	X - XII	Creates space for additional topics in upper secondary school, 12 years, of which 9 years compulsory
Option 8 Reallocate years between primary and lower secondary, and add a year to upper secondary 6+3+3 system	7	I - IV	VII - IX	X - XII	Expands primary education to 6 years, and creates space for additional topics in upper secondary school. This model is followed in China, Indonesia, Japan, Republic of Korea, Thailand 12 years, of which 9 years compulsory

Source: Todd, M., (2015) Concept note and options for a possible move from an 11 years system of education to 12 years in Tajikistan. Document prepared for UNICEF Tajikistan

Based on an analysis of the advantages and disadvantages of each of the above options, Mark Todd* offers the following recommendations for consideration by the Ministry of Education and Science and the Government of Tajikistan:

- (a) All efforts should be to prepare, initiate, monitor and evaluate the new curriculum and build the capacity of the teaching profession to work in new ways. The NSED Action Plan should be reviewed and adjusted as needed. A high-level sector development working group, chaired by the Minister, should be established to monitor the reform progress and take action as needed. The Annual Sector Review has to be comprehensive, critical and creative.
- (b) In the medium to long term, evaluate the curriculum demands (in order to achieve the curriculum learning goals, is more time needed?). The evaluation is through assessment of the outcomes of the reform against the standards. Consideration should be given to increasing the number of hours in the school year to bring them closer to international norms.
- (c) Do not add an additional year in the basic education calendar. It will be disruptive, complex and very expensive.
- (d) In the light of the TVET and higher education reform programmes, consider the need for additional learning time in the upper secondary levels. This might be additional time in an academic stream only to better prepare children for university.
- (e) Expand coverage of ECE using a variety of delivery modalities (as already planned).
- (f) Consider a compulsory preschool programme. International experience would suggest that this could have a major impact on the quality of learning throughout basic education. The standards and teaching guidelines are already established. Teacher training programmes are available. The costs are considerable, and meeting them has to be guaranteed before the legal steps are taken. The costs include investment in accommodation for 200 000 children, and recurrent costs include providing teachers to deliver an additional 700 000 hours of teaching, administration and management costs.

*Todd, M., (2015) see page 31-32

