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For Ministry of Education (MOE)

Asian Development Bank

Myanmar Comprehensive Education Sector Review (CESR)

Phase 1: Rapid Assessment

Technical Annex on the Secondary Education Subsector

Final version (revised 7 March 2013)

Foreword

This report was prepared as part of the Rapid Assessment (Phase 1) of Myanmar's Comprehensive Education Sector Review (CESR), which is led by the Union of Myanmar Ministry of Education (MOE), coordinating inputs from other government agencies and support from an array of development partners. The report serves as a Technical Annex to the compilation "Volume 1" for CESR Phase 1. Under the umbrella of the CESR, the analysis reported herein was principally funded by Asian Development Bank (ADB) technical assistance TA 8187-MYA: Support for Education Sector Planning, cofinanced by the Government of Australia (represented by AusAID), as well as additional ADB staff and staff consultancy resources.

Subject to more in-depth analysis under Phase 2 of the CESR, the report presents initial analysis of Myanmar's secondary education subsector (SES), based on various available data and information as well as efforts to consult with various stakeholders as part of the CESR's Rapid Assessment.

While the report was principally drafted by TA 8187 consultant Marion Young and ADB staff consultant Sideth Dy, it reflects a collaborative effort involving inputs from the CESR Team throughout the process, including in particular Tin Tin Shu, Tun Hla, Thin Thin Khine, Ya Min Aung, Aye Aye Myint, Myat Myat Khine, and Khin Yone, as well as CESR international advisers Ian Birch and Maurice Robson. Incorporating research questions posed by the CESR Team, the report also includes a Supplementary Annex prepared by ADB staff Chris Spohr, who also contributed to other sections.

The report also reflects inputs from other members of ADB's core staff team for Myanmar education (Yasushi Hirosato and Wolfgang Kubitzki) and ADB-mobilized consultants supporting CESR Phase 1 (in alphabetical order, Martin Hayden, Carsten Huttemeier, Anthony Welch). It also benefited significantly from dialogue with counterparts from AusAID and UNICEF (which are supporting overall CESR coordination), as well as other development partners supporting the CESR including GIZ, JICA, and UNESCO.

Disclaimer:

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ABBREVIATIONS

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
AY	Academic Year (in Myanmar context : June-April)
BEHS	Basic Education High School
BEMS	Basic Education Middle School
BEPPS	Basic Education Post Primary School
BEPS	Basic Education Primary School
BLC	Basic Learning Competencies
BTC	Basic Teacher Competencies
CAP	Continuous Assessment and Progression
CCA	Child Centered Approach
CESR	Comprehensive Education Sector Review
CFS	Child Friendly Schools
CPD	Continuous Professional Development
DBE	Department of Basic Education
DEPT	Department of Education, Planning and Training
DHE	Department of Higher Education
DTE	Diploma in Teacher Education
DTEC	Diploma in Teacher Education Competency
EC	Education College
ECE	Early Childhood Education
EFA	Education for All
EMIS	Education Management Information System
FY	Financial Year
GMR	Global Monitoring Report
GMS	Greater Mekong Sub-region
HE	Higher Education
HS	High School
IHLCS	Integrated Household Living Conditions Survey 2009-10 (Myanmar)
IOE	Institute of Education
JAT	Junior Assistant Teacher
JATC	Junior Assistant Teacher Certificate
JICA	Japan International Cooperation Agency
LMS	Local Management of Schools
LS	Lower Secondary
MOBA	Ministry of Border Affairs
MOE	Ministry of Education
MORA	Ministry of Religious Affairs
MS	Middle School
MTU	Mandalay Technical University
NQF	National Qualifications Framework
PDF	Portable Document Format
PGDT	Post Graduate Diploma in Teaching
PPE	Post Primary Education
PS	Primary School
REO	Regional Education Office
RQF	Regional Qualifications Framework

SE	Secondary Education
SES	Secondary Education Sector
SY	School Year
TEO	Township Education Office
TVET	Technical and vocational education and training
UDNR	University of Development of National Races
US	Upper Secondary
YTU	Yangon Technical University

EXECUTIVE SUMMARY

1. The Myanmar CESR Phase 1 Rapid Assessment of the Secondary Education Sector (Dec 2012-Jan 2013) outlines the Current Situation and identifies the critical issues and recommendations to be considered in the subsequent CESR phases. The education reform strategy and development plan sits within a national development process that is focused on poverty alleviation, rural development and decentralization.
2. The Education Law and policy instructions are to be updated to provide a basis for the planned education reforms. The reform priorities and implementation plan should be mapped out in a logical sequence, set within a realistic and achievable timeframe. **A review of existing regulations, guidelines and instructions** is needed to ensure equitable and consistent implementation towards improving secondary school performance and management. Comparative analysis of international best practice undertaken during Phase 2 would guide the process of **strengthening of secondary education management and strategic planning**.
3. **Private sector** education is expected to expand in the immediate future with endorsement of the Private Education Registration Law in 2012. Private sector institutions and individuals working in the private education sector will need to be supervised and regulated in accordance with the law. Emphasis should be given to equitable service delivery and monitoring for quality assurance.
4. **A capacity building plan** is needed to strengthen all levels of education management including strengthening of management capacity of SE principals and TEO, REO and central level education officers and administrators. A first step would be **identification of stakeholders** and their roles and responsibilities in the reform process feeding into a **capacity assessment / functional analysis** process and preparation of **an implementation plan for capacity development**.
5. **Public expenditure** to secondary education is the lowest among ASEAN countries (UNESCO - comparative report in progress) though the indication is that the Myanmar Government is committed to increasing the education budget. The CESR process will result in a costed sector plan which will indicate the funding required to achieve Education for All targets and Millennium Development Goals for education. A study of budget allocation and utilization to secondary education should be undertaken, and review of SES short and medium term expenditure plans is needed. More information is needed on **costs of secondary school education**: additional costs for rural students transferring to lower and upper secondary school, tuition costs, adequacy and management of scholarship and grant schemes, and variation in costs between school types, including private school and monastic school costs. A small program of education **scholarships and grants** was started by the Government of Myanmar in AY 2012/13 benefiting 412 high achieving students and 11,000 poor students.
6. **EMIS data collection and analysis** for the SES needs to be improved across a broad range of education indicators. Systematic **disaggregation of data** is needed on access to and quality of education. Capacity development and improved systems are needed to ensure reliability and validation of EMIS data.
7. The recent indication of improvements in secondary school **enrolment and transition** need to be continued. There remain significant differences in **access, transition and achievement rates** by geographic location, poverty incidence and gender. Improved reliability and systematic analysis of disaggregated data on school enrolment, dropout, retention and

repetition rates will provide education planners with the information needed to better target resources. Analysis of the situation of out-of-school youth is also needed, to inform strategies for improvement in access to education.

8. A process of **curriculum reform** is needed to improve education standards in Myanmar, in particular:
   (i) to align student learning outcomes to the rapidly evolving needs of the emerging economy and to meet the needs of a more technology-based society
   (ii) to align with the planned restructuring of school grades and student assessment
   (iii) to improve quality, reduce overload, remove overlap and gaps in content coverage and ensure continuity in the current curriculum
   (iv) to align in the longer term with ASEAN regional qualification standards.
9. The **curriculum reform** process will need to include review and revision of textbooks and teachers' manuals in parallel with (i) adjustment of pre-service and in-service teacher training programs, and definition of teacher competencies; and (ii) definition of basic learning competencies of students and upgrading of assessment and examinations. A review of regional examples of best practice in education sector reform and international best practice will inform the process. The capacity of all those who will be engaged in the curriculum reform process from curriculum revision to curriculum implementation needs to be strengthened.
10. Possible options need to be considered for rollout of new curriculum and textbooks:
    Option 1: cohort rollout of new curriculum starting with Grade 1 and moving annually through the grades requires 12 years. Indicatively, Grade 1 rollout in 2014 will be completed to Grade 12 by 2026
    Option 2: parallel cohort rollout of new curriculum starting with Primary Grade 1 and Lower Secondary Grade 7 and moving annually through the grades requires 6 years. Indicatively, Grade 1 and Grade 7 rollout in 2014 will be completed for all grades by 2019[1].
11. **Restructuring of basic education from 11 to 12 years** will require time and thorough planning and management. The process is highly complex and impacts on many interlinked subsectors. Engagement with the following components of the reform process is essential: curriculum framework, textbook development, student assessment and examinations, teacher competencies, teacher training, teacher deployment, school infrastructure, family finances, school financing, entrance to higher education TVET and the labor market.
12. Three **restructuring options** have been set out for discussion in an Options Paper (Annex 3), including a consideration of the implications of each option. All options require careful consideration of the range of implications to ensure that access and quality of education is improved for the majority of students.
13. In the present system, students enter primary school at 5 years old, they complete primary school at 10 years old and secondary school by 16 years old. This is younger than other ASEAN countries. It impacts on learning achievement and completion rates.
14. **Restructuring of the school system to 5-4-3, 6-3-3 or 6-4-2**[2] would provide an opportunity
    (i) to rationalize the various school types in which secondary school students are enrolled;

[1] Assumes selection of Restructuring Option 1.2 or Option 2.

[2] Change from 5-4-2 to international standard 6-3-3, 6-4-2 or 5-4-3 system is cited as a recommendation in Access to and Quality of Education: Education for All in Myanmar, para 68 (MOE, Feb 2012)

(ii) to introduce a school readiness program for Grade 1 children, especially in rural areas or for poor families with no access to ECE;

(iii) to address the reasons for differences between urban and rural student completion rates and to improve completion rates of poor students, girls and boys.

15. **Reform of grade assessment and Matriculation Examination** is needed. The present assessment and examination system in secondary schools encourages rote learning, cramming and short term memorization of facts rather than developing higher order skills and critical thinking. A review of quality and appropriateness of the Grade 10-11 curriculum, pedagogy and methods of assessment is needed, including issues relating to language of instruction. Myanmar needs to develop and align its NQF to the GMS RQF.

16. A Working Group could be established to review methods of assessment and examinations (continuous assessment, school leaving exam, matriculation exam and university entrance exam) and to review international models to inform the process of reform of the secondary school assessment system in Myanmar. An Options Paper should be prepared to compare models for school leaving and university entrance examinations.

17. The **pre-service teacher training curriculum** will need to be modified and **in-service teacher training** will be needed to familiarize secondary school teachers with the new curriculum reforms and student centered pedagogy as the reforms are introduced into schools. Review of the system of pre-service and in-service teacher training for secondary school teachers should be undertaken to identify areas to be strengthened aligned to the planned restructuring of the education system and curriculum reform.

18. **Continuing professional development** needs to be strengthened through, for example, the development of teacher competency standards linked to assessment of teacher performance. Teacher Competencies for secondary school teachers need to be defined.

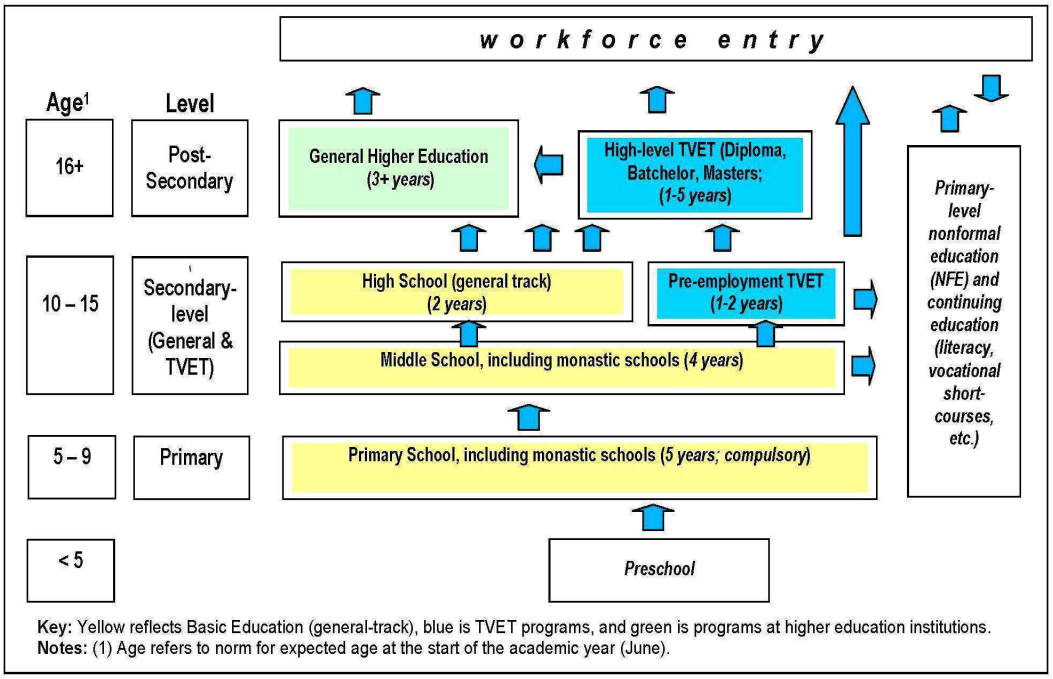
I. POLICY, LEGISLATION AND MANAGEMENT – SECONDARY EDUCATION SECTOR

I.a Current Situation

19. **Legislation and policy framework.** The vision of education in Myanmar is to create a sound education system that generates a learning society capable of dealing with challenges in emerging technology-based society. The 30-year Education Development Plan (2001/02-2030/31) and the EFA National Plan (2003-2015) have given strategic directions for various central and state/regional leadership and management levels. These have been to inform decision making and the issuing of guidelines and instructions to enhance effective interventions at district, township and school levels.

20. The education reform strategy and development plan sits within a national development process that is focused on poverty alleviation, rural development, decentralization, and ending of civil conflict. Education sector reforms will therefore be prioritized on these key areas. Baseline situation analysis is being constructed through the CESR rapid assessment (Phase 1) and in-depth study (Phase 2) to provide the basis for setting of indicators and targets in the Education Sector Plan (Phase 3) that will enable evidence based reporting of progress.

Figure 1: Schematic Diagram of the Myanmar Education System



Source: Draft ADB-Post-Primary Education Assessment, June 2012

21. In Myanmar there are 5 years of free and compulsory primary education[3]. Every citizen, in accordance with the education policy laid down by the Union, shall be given basic education which the Union described by law as compulsory[4]. Attaining nine years of basic education for all remains a challenge, and it requires school policy adjustment and systemic reform. Recent political and economic changes in the ASEAN Region have urged some adaptations in Myanmar including concerns of the human resource development and competitive economy.

22. Education beyond primary level is vitally important for building a productive work force and

[3] Constitution of the Republic of Myanmar (2008) Section 28(c)

[4] Constitution of the Republic of Myanmar (2008) Section 366(b)

for inclusive economic growth. Against this backdrop, further technological knowledge and skills need to be built at the secondary education level, to ensure equitable access to useful education.

23. State/Region Education Offices manage secondary education providers under the overall directions from the Central Level. Myanmar is internally committed to providing free and compulsory primary education to all children regardless of gender and background. Universal primary education is a foundation for secondary education. Comparatively, Myanmar has the shortest free and compulsory education in the ASEAN. Secondary education in Myanmar covers grades 6-11 and for within-age students covering the 10-16 age-group (see figure 1 above). The secondary education subsector is composed of schooling delivered in middle school and high schools.

24. There are various categories and types of schools offering general secondary education. They are principally as follows:
    (i) post-primary schools, for grades 6-8[5];
    (ii) affiliated middle schools, for grades 6-9;
    (iii) branch middle schools offering general education program for grades 6-9;
    (iv) basic education middle schools, for grades 6-9;
    (v) affiliated high schools, for grades 6-11;
    (vi) branch high schools, for grades 6-11;
    (vii) basic education high schools, for grades 6-11.

    Affiliated schools are generally managed and supported by communities, while other schools are managed by township education offices.

25. There are instructions and guidelines of a number of topics on school management, budget and assessment for education administrators and school managers. The Guidelines on Roles and Responsibilities of State/Region Education Offices and Rules on Planning and Allocating Budget are in place and have been used to ensure smooth running of the schools.

26. The total number of government high schools in academic year 2012-13 is 2,468 and the number of teachers in government schools is 26,507, with a general ratio of school and teachers varying according to type of school, ranging progressively from affiliated and branch schools to basic education high schools. There are 671,636 students currently enrolled in government secondary schools in academic year 2012-13 (EMIS).

27. Additionally, the Ministry of Border Affairs has constructed and managed 107 schools with 1,190 teachers and 16,978 students, and there are also several other school settings, such as monastic schools, offering an education program from primary to secondary, in which the standards of student achievement are recognized as equivalent to the general education offered by the Ministry of Education.

28. The Ministry of Religious Affairs (MORA) is responsible for managing a total of 1,431 schools, including 246 post-primary schools, 112 lower secondary schools and 2 upper secondary schools in 2010-11. There were 215,202 students enrolled in monastic schools (MORA).

I.b Critical Issues

29. **Legislation.** Various implementation guidelines and instructions have been issued under the frameworks of the long-term plan and the vision of the Ministry of Education in recent years

[5] No new BEPPS beyond Grade 7 from AY 2012/13

to address emerging issues and to adapt to regional trends in education sector development. The secondary education system, matriculation exam and curriculum have been viewed as due for reform in response to the emerging trends in the political economy and social development. There is some evidence of inconsistency in the application of local instructions such as those relating to upgrading of school types[6]. Policy is needed for registration, regulation, recognition and financing of all public and non-public secondary sector education establishments. The core objectives of policy and instructions should be focused on improvement of secondary education sector performance and management, emphasizing equitable and inclusive access and quality for the achievement of improved learning outcomes.

30. **Institutional and Individual Capacity.** Capacity of high school principals and educational administrators is found to be generally weak and needing both technical and administrative support. It was revealed in a number of CESR discussions that a limited number of stakeholders are involved in financing and supporting the development, management and strategic planning in secondary schools. The dropout in lower secondary school and low graduation rates are a pressing concern, as are the quality of teaching and exam content.
31. **School performance** is associated with effective school management and the performance of teachers. Weak quality assurance mechanisms in the assessment of performance both of teachers and of school principals affects the quality and efficiency of the overall education services.
32. **Public expenditure** on education in Myanmar as a percentage of the total government expenditure in the years 2007-2010 is the lowest among ASEAN countries, based on recent UNESCO comparative studies[7]. Private and non-state involvement in school establishment is still blurred. The Private School Registration Law was adopted in 2011, with households who could afford to do so increasingly preferring to send their children to private high schools in recent years, due to the assumption of higher quality offered by private schools. The fees payable for private education are relatively high, at around US$3,600-4,000 per year in Yangon and other prosperous cities[8].
33. The low level of teacher salaries is a factor in the rise of private tuition at upper secondary school and post-secondary school and may be considered by teachers and Technical and vocational education and training (TVET) tutors as a supplement to their income. Students may not attend formal classes but may choose instead to attend private tuition classes as they believe they will have more chance of passing the matriculation examination by doing so. For these reasons it will be difficult to change or abolish private tuition.

I.c Recommendations for solving / improving the situation

34. Key areas for improvement of the Current situation are as follow:
    (i) The existing regulations, guidelines and instructions for the secondary education subsector should be strengthened as a mechanism for improving secondary education performance and management at all levels. A review of decision making structures and

[6] Feedback from CESR discussions

[7] Working Paper of UNESCO Bangkok – Comparative analysis report on Education Systems in ASEAN+6 countries, January 2013

[8] Discussion with national CESR officials

funding mechanisms for secondary education may indicate additional areas for system strengthening.

(ii) Rationalization of the various secondary school types should be considered.

(iii) A capacity building plan is needed to strengthen all levels of secondary education sector (SES) management, including strengthening of monitoring and evaluation in State/Region and township education offices and strengthening of school management.

(iv) Capacity strengthening and improved EMIS systems are needed to ensure reliability and consistency of SES data collection, analysis and reporting. Data verification is needed to inform planning decisions at all levels, not only self-reporting, for evidence-based monitoring.

(v) Increased budget allocation to the education sector is needed, combined with a review of per capita costs in Lower Secondary and Upper Secondary schools and of costs relating to access in the SES.

I.d Recommendations for Phase 2

35. Key actions that may be undertaken in Phase 2 are as follow:

(i) Undertake a comparative study of international best practice to **strengthen education management and strategic planning**[9].

(ii) A study on education financing in the SES is needed, including budget allocation and utilization, and assessment of existing short and medium term budget expenditure planning, with particular reference to SES. This would complement the Finance Study undertaken by World Bank in CESR Phase 1 and would be undertaken as part of the in-depth finance study in Phase 2.

(iii) More information is needed on **the costs of secondary education**: information gathered and evaluated includes the additional costs for rural students transferring to lower and upper secondary school; government and private school tuition costs; grant and scholarship funding mechanisms; and variation in costs between school types, including private schools and monastic schools. This should be a component of the Phase 2 in-depth finance study.

[9] For example: Cambodia: management responsibilities of the school principal and functioning of the School Support Committee; Vietnam: decentralisation and strengthening of school management; Ofsted internal and external process of quality assurance; decentralization process in UK through local management of schools (LMS).

II. ACCESS TO SECONDARY EDUCATION

II.a Current Situation

36. There were 3,267 lower secondary schools, 2,468 upper secondary schools and 6,664 post primary schools in 2012-13[10]. The Integrated Household Living Conditions Survey (IHLCS) survey identifies **12 MOE recognized school types** in which secondary grade students are enrolled under the existing system. The majority of secondary students are enrolled in Basic Education Post Primary Schools, Basic Education Middle Schools and Basic Education High Schools. Data from the IHLCS (Table 1) indicates that a small percentage of secondary school students are enrolled in schools categorized as primary schools. The IHLCS data analysis is drawn from parents' responses to the survey conducted in 2009/10.

Table 1. Summary information on school types that include secondary grade students (IHLCS, 2009/10)

School Type (from IHLCS data 2009-2010)	**Grades**	**Managed by**	**Share of BE students (Gr 1-11)**	**Share of LS students (Gr 6-9)**	**Share of HS students (Gr 10-11)**
Basic Education Post PS[11]	6+(7)+(8)	MOE	15.0%	16.0%	0.2%
Basic Education MS	6-9	MOE	9.0%	17.2%	0.7%
Affiliated MS	6-9	Community	3.7%	6.4%	0.7%
Branch MS	6-9	MOE	3.4%	4.9%	0.3%
Basic Education HS	6-11	MOE	27.0%	39.4%	79.3%
Affiliated HS	6-11(10)	Community	3.3%	4.9%	5.9%
Branch HS	6-11	MOE	4.4%	6.7%	7.7%
Other including PS, private and monastic schools with secondary grades	1-11	MOE, MORA, private, community	34.4%	4.5%	5.3%

Source: Informal Note on IHLCS Household Survey Analysis as an Input to the CESR (refer to Supplementary Annex to this report)

Note: it is possible that those primary schools in which the data indicates that secondary school students are enrolled are in process of re-categorisation or there may be errors in reporting in the IHLCS data.

37. The MOE instructions provide **guidelines for upgrading schools** to the next type according to number of students, distance to school and transportation difficulties for students in rural areas. Basic education post primary schools provide for primary Grades 1-5 plus Grade 6, Grade 6-7 and Grade 6-8. The plan of MOE is to expand primary schools to include lower secondary grades in future, with instructions issued for the academic year (AY) 2012-13 that no new post-primary schools will be opened beyond Grade 7.

38. **Affiliated schools** are constructed and funded by the community. Teachers working in affiliated schools may or may not have formal government qualification status but they have to meet specified standards, through prior experience rating or other criteria, and each teacher is appointed and paid by the community.

[10] Education Development in Myanmar, Republic of the Union of Myanmar Ministry of Education, May 2012

[11] No new Post Primary Schools beyond Grade 7 from AY 2012-13 Ref: Education Development in Myanmar, Republic of the Union of Myanmar Ministry of Education, May 2012 and MOE Instruction.

39. **Branch schools** generally open due to the distance to school and transportation difficulties for students from rural areas. Branch schools are linked to a Basic Education Middle or High school, managed by the deputy principal of the linked BEMS or BEHS. Teachers in branch and basic education secondary schools have to meet the government national teacher qualification requirements.

40. **Secondary school transition and retention rates** show some overall signs of improvement, and this trend needs to be sustained, though transition from primary to middle school remains a particular concern with 22.2% of students who successfully completed Grade 5 in AY 2009-2010 estimated to have exited schooling[12]. Indicative figures for transition rate from primary to middle school of 78.17% in AY 2009-2010 and 80.53% in AY 2010-11 need to be verified. Similar verification is needed for the transition rate figures of 90.57% from middle to high school in AY 2009-10 compared to 93.23% in AY 2010-11. The retention rate is cited as 73.5% in lower secondary and 85.6% in upper secondary in academic year 2010-11[13]. There remain significant differences in **access and achievement rates** by geographic location, poverty incidence and gender.

41. **Within-age and over-age students:** Children who are on-track in their age cohort will complete primary school at age 10 under the present school system. IHLCS analysis shows that consistently more girls than boys complete primary school in rural and urban samples and for within-age and over-age student groups. Overall, 55.7% of urban and 33.6% of rural girls complete primary school within-age (ie. by 10 years old) compared to 43.5% of urban and 29.3% of rural boys. Similarly for over-age completion (ie by age 10-15), 84.8% of urban and 68.4% of rural over-age girls completed primary school compared to 68.4% of urban and 65.5% of rural boys. In two geographic areas, Bago (East) and Shan (West), a higher percentage of boys than girls complete primary school within-age. In four states (Chin, Bago (East), Bago (West) and Shan (South), a higher percentage of over-age boys than girls completed primary school[14].

42. **Grants and Scholarships (stipends):** Starting from AY 2012-13 the Government of Myanmar has provided a small **grant** allocation for 11,000 poor but able Grade 1-11 students to contribute to the costs of school attendance and **scholarships** were awarded to 412 high achieving students[15]. The grants allocation constitutes 0.23% of secondary school students and 0.08% of the total Grade 1-11 student enrollment in AY 2012-13. The scholarship allocation will be received by 0.02% of secondary school students. The grant and scholarship scheme has yet to be assessed to determine effectiveness, for example in relation to the reliability of the selection process, the adequacy of the amount awarded, systems for

[12] Initial Assessment of PPE in Myanmar. ADB, June 2012

[13] 2009/10 data from MOE Annual Seminar Paper; 2010/11 data from EMIS / National Development Plan 2012

[14] Table 7 Shares of children who have completed Primary School on Time (by age 10) and allowing for some delay (Age 10-15) Informal Note on IHLCS Household Survey Analysis as an Input to the CESR. (refer to Supplementary Annex to this report)

[15] AY 2012-13 LS scholarships (10,000 kyats per month for 4 years) and US scholarships (15,000 kyats per month for 2 years) will be given to 412 students from 330 townships and 82 sub-townships (1 student per township or sub-township). Grants will be awarded to 11,000 students (1000 per grade) who are intelligent, but cannot afford to continue schooling. For LS students a grant of 6,000 kyats per month will be given for 4 years, and for upper secondary students a grant of 8,000 kyats per year for 2 years. Ref: National Development Plan: Education Sector Development Plan, Part 1: Basic Education Sector

monitoring and evaluation, and any impact it may have on transition and retention rates.

43. The basic costs of secondary school education are as follows: 500(0.6 USD) Kyats for Athletic, Stationery and Library fee (ASL) and 500 Kyats (0.6 USD) for PPTA fees plus some other hidden costs (UNESCO Inputs to Focal Area B(i) CESR, 2013). At the beginning of the school year parents purchase the textbooks from the secondary school, and the school repays the money to the MOE. The parents' contribution to school costs is not sufficient. In contrast private school fees are 3,600-4,000 USD annually.

II.b Critical Issues

44. Three critical issues are identified in the CESR rapid assessment that impact on access to secondary education:
    (i) age of entry to primary school at 5 years old
    (j) socio-economic differences in access including urban/rural and geographical location, poverty incidence, gender and ethnicity
    (ii) enrollment, retention and transition of students from primary to secondary school and progression to completion of secondary schooling.

45. Many 5 year old children may not be ready to start formal education, physically, mentally or emotionally. In urban areas where there is more access to early childhood education (ECE)[16] children will generally be better prepared to start school at 5 years old. While enrolment in ECE has been increasing steadily over the past decade[17], access is higher in urban than in rural areas. The IHLCS analysis[18] provides evidence that, even controlling for parental background, household and parental socio-economic factors, there is a statistically significant correlation between participation in ECE and retention in school of 10-15 year olds. Initial analysis of primary school completion indicates that socio-economic factors such as urban/rural and state/region differences, poverty, parents' education and enrolment in ECE appear to have an impact on children's access to schooling. This pattern is likely to also map onto secondary school access and completion. This analysis is consistent with the argument that ECE and other socio-economic indicators are positive factors in student achievement.

46. In rural areas there is less access to ECE so children are less well prepared for formal classroom learning and parents may tend to be more anxious about their 5 year old starting school, especially where school may be some distance from the home. This may cause some parental resistance to any future proposal to raise the primary school entrance age to 6 years old linked to restructuring of the education system.

47. **Cost to Students in accessing Secondary Education:** The IHLCS analysis shows that the direct costs of education and indirect opportunity costs are the main reasons for students exiting from secondary education[19]. The survey recorded that for 43.5% of children in the 10-15 year

[16] The CESR Team observed that there are sizeable gaps between urban and rural access to preschool: half of urban grade 1 students have attended at least some preschool, versus roughly 1 in 6 (17%) for their rural counterpart (Informal Note on IHLCS Household Survey Analysis as an Input to the CESR. Refer to Supplementary Annex to this report)

[17] ADB Initial PPE Assessment, June 2012.

[18] Informal Note on IHLCS Household Survey Analysis as an Input to the CESR. .(Refer to Supplementary Annex to this report).

[19] Informal Note on IHLCS Household Survey Analysis as an Input to the CESR. (Refer to Supplementary Annex to this report, Table 4 and Table 5).

age range (SE) who have never attended school "cost not affordable" was the main reason for non-enrollment. Similarly, 31.5% of children in the 10-13 year age range (LSE) and 33.6% of children in the 14-15 year age range (USE) who have exited formal education "cost not affordable" was cited as the main reason for exiting.

48. **Relevance of secondary education:** "Lack of interest" is the second main reason for children either to have never enrolled or to have exited from school before completion of secondary education[20]. For 32.4% of children in the 10-15 year age range (SE) who have never attended school "lack of interest" was cited as the main reason for non-enrollment. For 29.6% of children in the 10-13 year age range (LSE) and 28.9% of children in the 14-15 year age range (USE) who have exited the school system "lack of interest" was cited as the main reason for exiting before completion of secondary education. Lack of interest may relate to children's and parents' perceptions that the education offered is not relevant to the real world, or it may relate to realities of overcrowded classrooms and poor teaching which lead to low achievement, marginalization and stigmatization of students from weaker academic and socio-economic backgrounds and eventually result in their decision to drop out of formal education.
49. Analysis of EMIS data[21] based on a reconstructed cohort profile from Grade 1 enrollment in AY 2000-2001 to Grade 11 completion in AY 2010-2011 indicates a high student dropout after Grade 1, possibly overstated due some under-reporting of Grade 1 repetition rates. Enrolment of 5 year olds in Grade 1 and related lack of school readiness among some students may be one cause of this early student dropout.
50. **Net enrolment rates** indicate stark disparities across states and regions. The Initial Assessment of PPE in Myanmar[22] notes evidence that disparities are sizeable in primary education access but become much more marked at the secondary level. Net enrollment rates (NER) of 74.7% in Yangon contrast with only 30.9% in Rakhine. Several reasons for these disparities have been suggested in CESR Phase 1 discussions, including poverty, early age of enrollment in Grade 1 and the perceived quality and relevance of the primary school curriculum.
51. Though **transition rates** from primary to lower secondary and from lower to upper secondary levels, show overall gradual improvement, the IHLCS analysis shows that exit from school is particularly marked at the transition from primary to secondary school: among children in that cohort, it appears that nearly 1 in 4 primary school completers never entered Grade 6 though there are some signs of improvement. More than 207,000 Grade 5 students (including 22.2% of students successfully completing grade 5) in AY 2009-2010 are estimated to have exited schooling[23]. This may be related to the young age of entry into primary school, the quality and relevance of education, and poverty, as well as other socio-economic factors.
52. Rural communities generally have good access to primary schools as the official instruction

[20] Informal Note on IHLCS Household Survey Analysis as an Input to the CESR. (Refer to Supplementary Annex to this report, Table 4 and Table 5).

[21] Informal Note on IHLCS Household Survey Analysis as an Input to the CESR Figure 1 Approximated Enrolment Profile of Cohort of New Grade 1 Entrance in SY 2000/01 Showing Transition Across Grades and Levels (Refer to Supplementary Annex to this report)

[22] Initial Assessment of PPE in Myanmar. ADB, June 2012

[23] It is noted that transition rates calculated herein are marginally lower than the 80.2% reported in MOE EMIS data (2012).

from MOE requires primary schools to be provided within two miles of every home. However, transfer between primary and lower secondary school may be more of an issue for families living in rural areas since attendance at lower secondary and upper secondary school usually requires students from rural areas to travel to a larger village or town. The restructuring option to extend primary schooling from 5 to 6 years will benefit families in rural areas and poorer families by delaying for one year any additional costs associated with transfer to secondary education. Students transferring to Grade 7 will also be better prepared for secondary education. Those who may still drop out from school at the end of primary school will have benefited from the additional year of education and will be more mature with a higher level of basic skills to transition into the labor market.

II.c Recommendations for solving / improving the situation

53. Improved reliability and systematic analysis of disaggregated data on school enrolment, dropout, retention and repetition rates will provide education planners with the information needed to better target resources. Specific interventions may be designed to address the reasons for differences between urban and rural student enrolment, retention and completion rates and to improve disparities where they exist in access to secondary education for girls and boys. These would focus on analysis of:
    - Differences in access, retention and completion rates between rural and urban students and lag in completion rates of boys compared to girls
    - Flow rates by level and grade to reconfirm transition rate and mapping of regional disparities.
54. Strategies that may be considered to improve access to secondary education include:
    (i) introduction of a school readiness program for Grade 1 children, especially in rural areas and for poor families with no access to ECE
    (ii) targeted support to students who are most at risk of not entering secondary education or of exiting before completion. The strategy would include as a first stage the identification of the main reasons for non-entry or exit of specific groups of students, with support tailored to address the issues, for example the direct and indirect costs of schooling to the family, adequacy of facilities for adolescent girls, location of schools and availability of transport, and perceived lack of relevance of education
    (iii) development of a grant funding program to support students from poor families. This strategy requires a sound approach to implementation including guidelines and procedures for disbursement, stringent monitoring mechanisms and impact analysis.

II.d Recommendations for Phase 2

55. Further in-depth analysis of disaggregated data is needed on access to secondary education: differences in SE access, transition rates from PS to LS, SE retention and completion rates, comparing rural/urban and female/male students and lag in completion / achievement rates of boys compared to girls. The Phase 2 in-depth analysis of available data on SE access will be able to identify information gaps and inconsistencies in EMIS data which can feed into a longer term process of strengthening EMIS data collection and analysis.
56. A study of out-of-school youth would provide substantive evidence to inform future strategies for more equitable access to secondary education and will be useful in guiding developments in pre-vocational and TVET access and curriculum reforms. The study would include a

representative sample of students who have never enrolled in school and students who have exited the system before completion of basic education.

57. International and regional comparison of enrolment profiles may provide examples of best practice in development of strategies to increase secondary school enrolment. Review and analysis of policy and practice towards achievement of equitable access, implemented in Lao, Thailand and Vietnam for example, may assist in identifying similar challenges to be overcome such as poverty, geographic location and ethnicity. Other factors may be compared such as age of enrollment and participation in ECE, and academic and socio-economic status of parents, as well as systemic factors such as education financing, performance management, quality assurance and systems for assessing student learning outcomes.

III. QUALITY OF SECONDARY EDUCATION

III.a Current Situation

A. Curriculum reform – current situation

58. **The curriculum framework** was developed in 1998. The format is similar to a syllabus, setting out the topics to be covered each month for each subject and each grade. The key components of a comprehensive curriculum framework are (i) the national curriculum as a foundation document which maps out the horizontal and vertical structure and linkages for all levels of formal education and all subjects; (ii) broad guidelines on the methods of teaching and learning, and assessment; (iii) basic learning competencies; and (iv) special provisions, for example multi-grade teaching and remedial teaching for students with learning difficulties. The curriculum framework provides the basis from which to development the content of textbooks and teachers' manuals, teacher training programs, and student assessment.

59. There is limited capacity of key professionals engaged in curriculum development including staff within the **Curriculum Development Section** due to limited opportunity for strengthening of the professional capacity of curriculum developers (curriculum planners, writers, layout, printers, school and township support staff and technical leads, university staff, teachers and teacher trainers). Two members of the Curriculum Development staff have received professional training, one on a short training in India and the second on an MEd course in Japan. Capacity development opportunities have mainly arisen through working alongside UNICEF curriculum development professionals. Externally funded support for curriculum development over the past two decades has focused on primary school subjects and child-centered pedagogy.

60. **Textbooks and teachers' manuals**: There are 35 Grade 6-9 and 37 Grade 10-11 textbook titles (Table 2). The textbook titles by grade and subject are listed in Annex 1c. There are three core subjects in upper secondary general education: Myanmar, English and Mathematics. All other subjects are electives.

Table 2. Summary information on secondary school textbooks

	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11
Number of Textbooks	8	8	9	10	16	21
Subjects						
Myanmar Language	✓	✓	✓	✓	✓	✓
English	✓	✓	✓	✓	✓	✓
Mathematics	✓	✓	✓	✓	✓	✓
Geography	✓	✓	✓	✓		
History	✓	✓	✓	✓	✓	✓
Economics					✓	✓
General Science	✓	✓	✓	✓		
Chemistry					✓	✓
Physics					✓	✓
Biology					✓	✓
Life Skills	✓	✓	✓	✓	✓	✓
Moral and Civics	✓	✓	✓	✓	✓	✓

Source: MOE / CESR, December 2012

61. The Grade 6-9 textbooks were last revised in 2000 and some sections of the Grade 10-11 textbooks were most recently revised in 2007 (see Annex 1. Summary of Curriculum Textbook Revision Schedule). The **curriculum writers** are practicing junior or senior teachers from schools. For US textbook writing of each subject, a university professor is appointed as chair and a lead subject specialist is appointed as secretary.
62. **Teachers' manuals** include a section on the theory of teaching, eg Bloom's Taxonomy, some worked examples (eg for mathematics), outline lesson plans and year plans which provides a summary of the syllabus, and allocation of teaching hours for each section of the textbook.
63. Secondary school laboratory and learning facilities tend to be of a lower standard in rural schools. Science equipment is supplied to all schools but teachers lack the time and skills to conduct practical experiments (eg in Chemistry and Physics). There is very little practical teaching or use of laboratory facilities in secondary schools.
64. **Curriculum revision process:** The process that was followed for textbook revision in 2000 and 2007 began with review of each lesson and agreement on changes to be made. Tasks were then divided among the members of the curriculum writing team. Revised textbooks are not usually piloted or trialed prior to printing, with the exception of the Life Skills materials for primary schools developed with UNICEF support. A layout specialist prepares drafts for editing and produces the camera ready copy. When the textbook revision has been approved by MOE, the PDF version is submitted to the government printing press. The printed copies are delivered to the government warehouse for distribution to schools. 40 million textbooks are printed annually and a sufficient quantity is distributed to all schools. However, the paper quality is poor, and as a result textbooks have to be replaced annually.
65. Since the beginning of AY 2011-2012 textbooks have been free to primary school children. At secondary level books are purchased from the school by the students' families at the price set by the government[24]. The cost of secondary school textbooks ranged from 20 Kyat (0.024 USD) for Grade 8 Myanmar Poetry to 440 Kyat (0.518 USD) for Grade 11 Chemistry. The total cost for the set of eight Grade 6 textbooks is 850 Kyat (1 USD). The cost of the full set of twenty Grade 11 textbooks is 3580 Kyat (4.2 USD) though a student would not require the full set as all elective subjects are counted in this total.
66. A cascade model of teacher training has been used to introduce revised textbooks and teachers' manuals to schools (see Teacher Training section below).
67. **Quality assurance of curriculum implementation**: There are minimum standards for all school levels described in policy instructions but they are limited to facilities and school administration. The criteria and procedures that are used by inspectors during school inspections do not focus on monitoring of learning achievement and effectiveness of the curriculum.
68. UNICEF has supported the development of the **Life Skills curriculum** for primary, lower and upper secondary school grades, including a piloting phase before mainstreaming in to the

[24] UNICEF CESR Rapid Assessment of Textbooks. J Watson, 2012.On the price of textbooks the report states "The system for costing textbooks in Myanmar is not realistic and since the government is both the purchaser and the supplier – through the MOE and the MIE respectively there is no genuine test of what a book does actually cost. Nor is it clear what is included in the costs supplied to the Team by the PPE. The nominal costs of the books for AY 2012/13, supplied in May 2012 are shown in Annex VIII (of the UNICEF report). However these prices are scarcely credible".

curriculum. Teacher training for primary and lower secondary school teachers in Lower Myanmar is completed and will be conducted next in Upper Myanmar. UNICEF is currently piloting new Myanmar language textbooks for primary grades to complement the existing textbooks. JICA has supported the development and introduction of a Teachers Manual for Child Centered Approach (CCA) in primary schools.

69. **Educational media.** There are three modes for broadcasting of education topics to teachers:
    Type 1 - Radio broadcasts
    Type 2 - TV broadcasts
    Type 3 – Information technology (IT) media-based instruction especially for upper secondary schools.

70. Radio is used for broadcast of lessons under the Department of Educational Research Bureau in communication with DEPT curriculum section, universities and DBEs. Demonstration lessons and Matriculation Examination broadcasts are shown on TV broadcasts. Human Rights education programs have been shown through telecast. TV broadcasts are shown at Education College Learning Centers, where teachers can gather to watch programs. Access to IT and computer technology is costly and is restricted due to electricity access. IT-based lessons are being used in some upper secondary schools. Computer classes have been introduced into lower secondary schools for one period per week from AY 2012-2013, and a text book printed and circulated to schools.

B. Restructuring of the education system from 11 to 12 years – current situation

71. The planned restructuring and expansion of education from 11 to 12 years is currently under discussion. This will enable Myanmar to align with international norms. However, the process is highly complex, with significant capacity and cost implications. As this is a decision to be reached after careful in-depth analysis of all factors, some of the critical issues are discussed further in section IIIb-B, and an options paper (Annex 3) elaborates further on some key points.

72. Transition from a 5-4-2 to a 5-4-3 and then a 6-3-3 system is the model which is currently cited in the National Development Plan, Education Sector Development Plan[25]. The Myanmar EFA report on Access and Quality of Education recommends changing from 5-4-2 to the international standard 6-3-3, 6-4-2 or 5-4-3 system[26].

73. One reason for restructuring of the system is to align with international norms for learning achievement at the end of formal education. Entry into primary school at five years old is one year younger than the international and regional norm[27]. In the current system students study for five years in primary school and seven years in secondary school. Students who enroll at five years old and complete with no repetition will graduate from upper secondary school at 16 years old. This in turn is younger than the norm for transition into higher education.

C. Assessment in Secondary Education, Matriculation Examination and School Leaving

[25] Referenced in the National Development Plan: Education Sector Development Plan Part 1: Basic Education Sector. Other re-structuring options are under discussion in CESR including rationale for each one and implications for students, teachers, curriculum reform process, text books, administration, etc

[26] Access to and Quality of Education: Education for All in Myanmar, para 68 (MOE, Feb 2012)

[27] Grade 1 entry age is 6 years old in Cambodia, Indonesia, Lao, Malaysia, Philippines, Thailand and Vietnam. The school starting age in Finland, which today has the best education system in the world, is seven years.

Certificate – current situation

74. **Repetition rates through to completion of secondary schooling**: Chapter test results enable students to move from one grade to another throughout the school system based on total test scores for the year. There is no lower or upper secondary school entrance examination. Entrance into secondary school is based on chapter end test scores. At lower secondary level, Grade 6, 7 and 8, there are a total of seven Chapter End Tests. For Grade 9 there are four Chapter End Tests and only one second semester end test making a total of only five tests for Grade 9 completion. There is an annual scholarship examination taken in March after the Grade 11 Matriculation Exam. Students who are in top position in Grade 5 and Grade 9 are eligible to sit the scholarship examination. Repetition rates for students in lower secondary Grades 6-9 are low (Table 4) as they either pass the grade or, if required, they attend remedial tuition classes to pass the grade. Repetition of Grade 11 is described below as being particular to the Matriculation Examination.

Table 3. Transition rates, dropouts and repeaters (SY 2010/11)

	Grade 6	Grade 7	Grade8	Grade 9	Grade 10	Grade 11
Transition Rate	**87.6%**	**87.0%**	**84.5%**	**78.5%**	**76.3%**	**31% approx**
Repeaters	**0.2%**	**0.1%**	**0.2%**	**1.1%**	**2.1%**	**4.4%**
Pass and Exit	**9.9%**	**10.8%**	**13.6%**	**15.7%**	**15.1%**	**3% approx**
Dropout without pass	**2.4%**	**2.1%**	**1.7%**	**4.6%**	**6.5%**	**61.3%**

Source: Informal Note on IHLCS Household Survey Analysis as an Input to the CESR (File Name: Informal Note on IHLCS analysis_6Nov12_cln_repl_F3) based on EMIS data comparing 2009/10 students in each grade with 2010/11 students in the next grade up.

75. **Approaches to school-based continuous assessment:** Continuous Assessment and Progression (CAP) was introduced into primary schools in 1991, based on assessment of student performance, including social skills. Chapter end tests have replaced CAP as a form of continuous assessment and are given to all students in Grades 1-9 throughout each academic year. The tests are set by teachers and approved by the school principal. Very few students have to repeat a grade (See above, Table 4 for Grade 6-11 repetition rates).

76. **Basic Learning Competencies (BLC)** have been drafted for primary school grades for teachers to be able to assess what children are able to do in each subject and grade level but BLC have yet to be developed and introduced into lower secondary schools. Reference is made in the National Development Plan 2012 for specification of BLC for basic education subjects, implying that these should be developed for lower secondary grades and subjects.

77. The secondary school **Matriculation Examination** is taken at the end of Grade 11. The matriculation examination is set by university academics. There are eleven question sets allocated randomly to the states and regions. This system has been in operation since 1998.

78. Grade 11 students are required to pass all six subjects (three core subjects and three electives) with a minimum 40% pass mark in each subject to gain the Matriculation Examination pass. If a student fails one or more subjects, they have to repeat all subjects and sit all examination

papers again the following year.[28] Students may repeat the grade, enroll in private school or choose to do self-study while they wait to sit the next matriculation examination. There is a process of moderation though a meeting of university teachers appointed as examiners. The meeting is convened to review papers of repeaters to decide whether their result can be adjusted. A score of at least 360 is required for entrance to the TVET diploma course. A score of at least 450 is required for entrance to YTU and MTU Bachelor of Engineering These entry requirements are in the process of change[29].

79. Students may request a School Leaving Certificate when they leave school. After completion of the Matriculation Examination students receive a pass certificate showing the subjects they have passed with distinction. A distinction is awarded for 75% or more in English and Myanmar language and 80% or more for Science. In the application to University, the student must show the subject scores.

80. Initial analysis of EMIS data on Matriculation takers and passers indicates that a high percentage of students repeat from one year to the next. On average, for AY 2007-2008 to AY 2010-2011 (i.e., 2008-2011 Matriculation Exams), nearly 210,000 Grade 11 students (66%) failed the Matriculation Exam. Of these, above 16,000 repeated Grade 11 in formal schools (captured by EMIS) while about 192,000 dropped out. Large numbers of those "drop outs" also appear to retake the exam, in some cases more than once.

81. The **Matriculation pass rate** for all takers was 34.4% in 2010-11[30]. The threshold for passing the Matriculation Examination is higher for girls than for boys. Despite this 36.4% girls passed the Matriculation Examination in 2010-2011 compared with 31.9% boys. “In terms of output from SES, the total number of successful high school graduates—meaning students able to pass the matriculation exam at the end of final year of USE, and thus able to receive a graduation certificate—remained stagnant at roughly 107,000 during the period SY2005/06 – SY2010/11. In fact, this figure declined from an average of just above 127,000 during SY2000/01-SY2004/05, which appears to reflect a combination of increased failure rates on the matriculation exam, increased drop-out during or after grade 10, and the noted sharp drop in grade 11 enrolments in SY2010/11.”[31]

82. Entry into Academic and Vocational Track: Grade 9 students are free to choose to study the academic or pre-vocational track in Grade 10 and 11. The Grade 11 Matriculation Examination is the entry requirement for Higher Education and TVET course enrollment. More detailed and specific analysis on pre-vocational programs and post secondary vocational training, higher education issues is provided in the CESR TVET and HE reports respectively.

D. Teacher education – pre-Service, in-Service and CPD for SES – current situation

83. **Pre-service teacher training for SES teachers:** There are two Institutes of Education (IOE) under the Department for Higher Education (DHE) which offer a Bachelor of Education (BEd) course. The four year BEd course has been extended to five years from AY 2012-2013

[28] The school leaving examination in Cambodia is being reformed and may provide a useful regional comparison.

[29] Other entrance requirements and study pathways may differ and this requires further in-depth analysis to be undertaken by CESR HE and TVET study teams

[30] Reported percentage of passers in the National Development Plan cited as 30.3% in 2010-11 is the percentage of Grade 11 students who passed.

[31] Draft ADB Initial PPE Assessment, June 2012

84. BEd-trained teachers qualify to teach three subjects. The two most popular combinations are (i) Science, Arts and Social Studies, or (ii) Physics, Chemistry and Economics (see Annex 2 for all subject combinations). All trainee teachers have to study Mathematics and English, Civic Education and Myanmar as compulsory subjects, as well as pedagogy, education theory and psychology. There are two practicums of one week each in the third and fourth years of study. In the first year there is one week of school observation.

85. Students who graduate from IOE with BEd are qualified to teach in lower secondary school as Junior Assistant Teachers (JAT). With two years of teaching experience, lower secondary school teachers are automatically eligible to apply to be appointed as upper secondary school teachers, dependent on vacancies.

86. Students who graduate from Education Colleges are qualified as primary school teachers, including those who graduate with a one-year Certificate of Education. With five years of teaching experience, and after completion of the BA or BSc distance education correspondence course, primary school teachers can automatically apply to be appointed as lower secondary school teachers. Education Colleges provide support to students studying through distance education correspondence courses in addition to delivery of primary teacher training programs. In principle, five years' experience is required, but in practice it usually takes seven years before a primary teacher can gain a position in lower secondary school, which causes some level of de-motivation. Very few primary trained teachers from Education Colleges can become lower secondary teachers. With a Certificate of Education they would need to study a four year BA or BSc and a one year JATC correspondence course.

87. Other routes into Secondary School teaching are[32]:
    (i) Two year Diploma in Teacher Education (DTE) courses for those who have passed the Matriculation Examination and the Diploma in Teacher Education Competency (DTEC) courses for university graduates, under the Department of Education, Planning and Training (DEPT). Successful trainees are appointed as primary school teachers. The course includes a one month practicum each year. For outstanding students there is a bridging track into the Institute of Education BEd course. After one year of teaching at primary school plus one year of correspondence course, a DTE teacher may be promoted to Junior Assistant Teacher in a lower secondary school.
    (ii) The Institutes of Education offer a Postgraduate Diploma in Teaching (PGDT) for students with a subject specialist degree.

88. The Ministry of Border Affairs trains primary and secondary school teachers in the University of Development of National Races (UDNR).

89. There is no system in Myanmar for licensing or registering of teachers.

90. **Secondary school teacher supply and deployment:** Teacher deployment is based on vacancies drawn up from monthly reports from schools communicated via the Township Education Officer (TEO) to central level. Teachers generally do not want to teach in rural locations, preferring urban centers. There is sometimes a mismatch between the major a graduate teacher has studied and the subject they are required to teach in school, for example where there is no vacancy or over-supply of one subject and shortage of teachers in another subject. More students opt for mathematics and science teacher training than for arts subjects, giving rise to a surplus of mathematics and science teachers in high schools.

[32] Reference: Education Development in Myanmar, May 2012, Ministry of Education.

91. **SES in-service teacher training and continuous professional development (CPD):** There is no regular program of in-service teacher training for LS and US teachers. A refresher course was delivered through a cascade training model in 2006-2007 to familiarize all US teachers with the new curriculum textbook revisions in all subjects. Teachers with curriculum leadership responsibility from all upper secondary schools attended the training program. The training course was linked to revised textbooks and was conducted on five Saturdays with approximately 40 students in each training session. In 2010-2011 a refresher course was delivered to all mathematics and English teachers in secondary schools through a cascade training model. Schools nominated teachers who were given training at central level, and the outstanding teachers from the central level training were trained as trainers to deliver the program at township and school level.

92. Teaching methodology in pre-service teacher training promotes the use of student-centered and practical learning approaches, but rote-learning is the methodology generally used in schools. The Chapter Test system of assessment encourages rote learning and memorization.

93. Basic Teacher Competencies have been drafted for primary school teachers, specifying three categories – beginner teacher, mid-career teacher, experienced teacher. Basic Teacher Competencies have not been drafted for secondary school teachers.

94. JICA has introduced the Child-Centered Approach (CCA) to primary schools in four townships including lesson study, classroom observation and peer teaching methodology, and cluster level meetings. The approach and some of the lessons learned may be transferable to CPD for secondary schools and as a focus for Primary and Lower Secondary teacher training programs. UNICEF is committed to undertake a six-month in-depth study of four Education Colleges as part of CESR Phase 2. The UNICEF study does not include analysis of pre-service teacher training in Institutes of Education.

III.b Critical Issues

A. Curriculum reform – critical issues

95. Secondary education is the human resource supply line to the labor market, TVET and Higher Education. Curriculum reform will be foundational in ensuring that secondary school graduates are well prepared to face the challenges and opportunities of the rapidly changing social and economic environment in Myanmar. The National Development Plan Basic Education Sub-Sector stresses the requirement for students to develop critical thinking, creative and innovative thinking and problem solving skills recognizing this as the basis for building a stronger workforce and civil society[33 & 34].Curriculum reform must ensure relevance of the curriculum to the world of work and to the participation of graduates in community and society including, for example, parenting and life skills. The curriculum reform will enable Myanmar to align with regional and, ultimately, international standards which will be crucial

[33] GMR 2012 refers to functional skills, transferable skills and technical and vocational skills that all secondary school students should acquire (EFA Global Monitoring Report 2012. Youth and Skills: Putting Education to Work, UNESCO).

[34] JICA research / rapid assessment (2012) includes analysis of three levels of thinking skills in textbooks and examinations.

as the population becomes more mobile and integrated into the regional economy[35].

96. Sufficient time must be built into the curriculum planning process to allow for re-mapping of the sector-wide curriculum framework, textbook writing, editing, layout, design and illustration, printing and distribution to schools. In parallel, revisions to the teacher training curriculum must be undertaken and time allocated to implementation of in-service teacher training; and development of teachers' manuals, development and supply of instructional materials, and revisions to school assessment and the Matriculation Examination must be carried out.

97. In a CESR discussion forum with development partners, the expected outputs from the Curriculum Reform process were summarized[36] as follows: (i) focus on learning achievement through an outcomes-based curriculum; (ii) all-round development including higher level critical thinking and social skills; (iii) participation of all key stakeholders including students, parents, ethnic community representation, employers and teachers; (iv) the curriculum upgraded to international standards including technical and vocational skills standards; (v) the curriculum aligned with government social, economic and political objectives; and (vi) the curriculum in compliance with the National Development Plan.

98. The existing curriculum provides comprehensive coverage of all subjects in the view of the CESR team. However, the present secondary school curriculum is overloaded due to the available teaching time, capacity of students and a high teacher pupil ratio[37]. Teaching is based on transmission methodology emphasizing rote learning. Critical and analytical skills are not developed.

99. The curriculum reform process would need to include a review of the pre-vocational stream particularly in relation to the skills and knowledge that will be required of secondary school graduates in future for entry into the labor market and for progression to post-secondary TVET institutions. The views of employers and community leaders should be considered. The linkage will need to be made between pre-vocational subject content and skills taught in upper secondary school and the curriculum content and skills covered in post-secondary TVET institutions, aligned also to the national qualifications framework. The blending of general and vocational education needs to be considered to ensure for example that there is equivalency in the core upper secondary subjects of Myanmar, English and Mathematics taught in general and pre-vocational courses.

100. A review of textbooks and discussion with the CESR team highlighted some weaknesses in the existing curriculum. Some curriculum content is outdated. There are too many topics to be covered in the upper secondary curriculum leading up to the Matriculation Examination, and the standard is too high, including some topics from university courses. As a consequence, of the 12-15 topics to be covered in each subject, only 6 to 10 topics would be sufficient to gain a pass mark in the Matriculation Examination.

[35] UNESCO is finalizing a comparative study of ASEAN education systems in six countries including Myanmar. Reference: Education Systems in ASEAN: a comparative analysis of selected educational issues (Draft Nov 2012)

[36] JICA Information Sharing Workshop, 7th December 2012, Yankin Education College, Yangon

[37] MOE statistsics (Feb 2012) give student-teacher ratio of 34.6 in lower secondary schools and 25.3 in upper secondary schools, with wide variation across schools and subjects though there is a lack of information.

101. The monthly syllabus must be covered as set out in the Teacher's Manual, and this is checked by school inspectors to ensure that the syllabus is taught. Grade 11 teachers complete the syllabus by the end of December, allowing January and February for revision and private tuition in the run up to the Matriculation Examination. This may be interpreted as cramming for the examination.
102. In some subjects and some grades there is a mismatch between the content of text books and teachers' manuals. There is some variation in content of the teachers' manuals from one subject to another but in general the focus is on description of subject content with little reference to practical activities that students might engage in, few examples of application to the real world and little contextualization to Myanmar. There is a shortage of teachers' manuals in schools because they were printed and distributed only once, and teachers tend to hold on to their own copy of the teacher's manual.
103. **Language of instruction:** Up to Grade 9 students study in Myanmar language. All students learn English, taught as a separate subject from Grade 1-9, but their competency level is not high enough to cope with the level of English required to study Grade 10 and 11 mathematics, physics, biology and chemistry in English. The level of English and the level of subject content is too difficult for students, and as a consequence teachers and students resort to rote learning.

B. Restructuring of the education system from 11 to 12 years – critical issues

104. **Restructuring of the school system to 5-4-3, 6-3-3 or 6-4-2** will impact on all sub-sectors of the education system, and its implementation will require detailed planning and preparation. Key considerations when deciding on options and timing of the restructuring are:
    (i) impact on student learning outcomes and appropriateness of the changes to all students
    (ii) capacity of planners, managers and teachers at each level of the system to implement the changes successfully
    (iii) communication requirements including public awareness and public opinion
    (iv) costs and budget implications.
105. An Options Paper (Annex 3) provides a comparison of two options for restructuring the education system, outlining the key issues and implications, advantages and disadvantages of each option with the impact of each one on students, teachers, school management and administration, curriculum reform, student assessment and examinations, parents, teacher training institutions, higher education institutions, TVET institutions and employers.
106. Restructuring of the education system would provide an opportunity
    (i) to rationalize the various school types in which secondary school students are enrolled
    (ii) to introduce a school readiness program for Grade 1 children, especially in rural areas or for poor families with no access to ECE
    (iii) to address the reasons for differences between urban and rural student completion rates and to improve completion rates of poor students, girls and boys.
107. At Grade 10 and 11 the curriculum is overloaded with some advanced level subject content, and students generally do not have the required standard of English. Furthermore, students graduate from Grade 11 at 16 years old, which is younger than international norms for transition to university. The combination of these factors leads to the conclusion that reform

of upper secondary education is urgently needed. However, the curriculum reform process discussed in this report cites two options for roll-out of the new curriculum following the cohort from Grade 1 through to Grade 12 year by year or following a parallel cohort approach with roll-out through Grades 1 to 6 and Grades 7 to 12 year by year in parallel. Both approaches emphasize that major curriculum and structural changes have to move forward together and move from lower to upper grades through the school system, concluding the process in general education at Grade 12.

108. An additional year of schooling, whether an additional grade in primary school or in secondary school, will have **cost implications** for families. This will have a particular impact on reducing short term opportunity costs for students from rural areas and students from urban poor families (eg loss of a household income earner) as well as on costs of school attendance (eg school fees, transportation and subsistence).

C. Assessment in Secondary Education, Matriculation Examination and School Leaving Certificate – critical issues

109. For the majority of secondary school students the present Matriculation Examination is a barrier to employment, career progression and access to higher education and TVET. The Matriculation Examination serves as a pre-entry qualification for higher education and for TVET. The academic and technical post-secondary track call for greater differentiation in assessment of skills and knowledge relevant to the course and career path to be studied. Provision of careers counseling should be made available for all secondary school students in the final year of lower secondary and during upper secondary grades. Options for school leavers should be clearly mapped out so that students, parents, teachers, post secondary education providers and employers have a clear understanding of career opportunities.
110. The Matriculation Examination questions emphasize subject content and not an assessment of higher level thinking skills, breadth of student knowledge and understanding. No systematic in-depth analysis of the Matriculation results is undertaken at present. A common standard is needed to ensure quality and equivalency in examination papers – standards for question paper development and implementation of examinations need to be strengthened.
111. The examination system was reformed to the present system in 1998. Prior to 1998 there were Grade 5 township level exams, Grade 9 state / regional level exams and Grade 11 central level exams. In the 2012 National Development Plan it is proposed to return to the pre-1998 examination system.
112. The previously implemented Continuous Assessment and Progression (CAP) system and the present chapter and grade tests through to Grade 10 are considered to be easy to pass. The CAP system was not well implemented – its effectiveness is dependent on teacher capacity. CAP is the basis for automatic promotion but it was not used systematically to analyze student learning achievement and therefore did not differentiate between learners.
113. The present Chapter Test system encourages cramming for short term memorization of facts, which are then forgotten. Chapter Test marks are accumulated, making it easy to gain the pass marks for the year. This method of continuous assessment leads to subject learning divided up into small, discrete units. Automatic promotion and repetition performance may affect teachers' salary and promotion.
114. The CAP and Chapter Test systems may be one of the key factors in the high failure rate in the Matriculation Examination. Another related reason is the content of the Grade 10 and 11

curriculum.

115. There are no defined Basic Learning Competencies (BLCs) for secondary school grades and subjects, and the primary school BLCs need to be extended into lower secondary school grades (see the reference in the National Development Plan, Point 3g). Support has been provided for primary schools but no support has been provided to date at secondary level for introduction of BLCs.
116. As a member of ASEAN, Myanmar is a participating country in the development and implementation of the Greater Mekong Sub-region (GMS) Regional Qualification Framework (RQF). A National Qualification Framework (NQF) needs to be developed which will align with the RQF. Depending on timing of the curriculum and examination reforms, it may be necessary to develop an interim NQF during the transition period.

D. Teacher education – pre-service, in-service and CPD for SES – critical issues

117. The pre-service teacher training curriculum will need to be modified, and in-service teacher training will be needed to familiarize secondary school teachers with the new curriculum reforms as they are introduced into schools. Critical areas for improvement identified through CESR consultation are (i) improved pedagogy through the introduction of a more student-centered teaching methodology; (ii) improved knowledge, attitudes and skills of secondary schoolteachers; (iii) material incentives and intrinsic motivations to improve approaches to classroom teaching. The supply of secondary teachers by subject specialization needs to be more closely aligned to the demand from schools, especially during the transition to a restructured system of education. Deployment of new graduates and re-deployment of serving teachers needs to be improved to ensure equity in distribution of teachers by subject, more efficiently matching supply to demand. This may also require a review of incentives to attract the best teachers to the least favored and most underserved schools.
118. **Continuing professional development** needs to be strengthened through, for example, the development of teacher competency standards linked to assessment of teacher performance. Teacher Competencies for secondary school teachers need to be defined.

III.c Recommendations for solving / improving the situation

A. Curriculum reform – recommendations for improving the situation

119. A review of the curriculum framework is needed:
    (i) to align student learning outcomes to the rapidly evolving needs of the emerging economy and to meet the needs of a more technology-based society
    (ii) to improve quality, reduce overload, remove overlap and gaps in content coverage and ensure continuity in the current curriculum
    (iii) to align with the planned restructuring of school grades
    (iv) to align the Myanmar curriculum to the ASEAN regional standard.
120. The curriculum framework needs to ensure horizontal and vertical content and competency linkages, with content and teaching approaches that better serve the needs of the newly emerging labor market and societal change, and which align with the ASEAN curriculum framework.
121. Under the basic education review analysis of the quality and appropriateness of the Grade 1 curriculum, pedagogy and methods of assessment will be critical to ensuring that a solid foundation of learning is laid in the primary years, as this will have a positive impact on

student achievement in subsequent years of learning.

122. A review is needed to assess the quality and appropriateness of the Grade 10-11 curriculum, pedagogy and methods of assessment, including issues relating to language of instruction and university entrance requirements. This review will be critical in ensuring that the curriculum forms a more realistic and achievable completion to secondary education for all learners, including those who will sit the Matriculation Examination.
123. The planned process of curriculum reform must provide opportunities to strengthen the capacity of all those who will be engaged in the curriculum reform process from curriculum revision to curriculum implementation, including the Curriculum Development Section, in-service providers, assessment and examinations experts and SE subject specialists who support teachers in the implementation at school level.
124. The curriculum writing teams need external support to assist in development of the curriculum and work plans for secondary education. A clearer conceptualization of CCA is needed including guidelines for its application to all subjects and secondary school grades.
125. Possible options need to be considered for roll-out of new curriculum and textbooks:
    Option 1: cohort roll-out of the new curriculum starting with Grade 1 and moving annually through to Grade 12. Grade 1 roll-out in AY 2014-2015 would be completed to Grade 12 by AY 2025-2026.
    Option 2: parallel cohort roll-out of the new curriculum starting with Primary Grade 1 and Lower Secondary Grade 7, and moving year by year through each grade. Grade 1 and Grade 7 rollout in AY 2014-2015 would be completed for all grades by AY 20192020.

B. Restructuring of the education system from 11 to 12 years – recommendations for improving the situation

126. The process of restructuring is highly complex and impacts on many interlinked sub-sectors. Engagement with the following components of the reform process is essential: curriculum framework, textbook development, student assessment and examinations, teacher competencies, teacher training, teacher deployment, school infrastructure, family finances, school financing, entrance to higher education TVET and the labor market. All options require careful consideration of the range of implications to ensure that access and quality of education is improved for the majority of students. The opportunity under Option 1 (see Annex 3 Options Paper), to extend upper secondary education by one year, would enable the current overloaded two-year curriculum to be distributed over three years. However, while being the easiest option, it would benefit the least number of students as only those who reach the end of Grade 11 would be affected.
127. A costed **implementation plan for restructuring of the education system** is needed, including realistic timeframes, sequenced tasks, allocation of responsibilities and a strategy for communication to all stakeholders.

C. Assessment in SE, Matriculation Examination and School Leaving Certificate – recommendations for improving the situation

128. Under the curriculum reform process, the quality and appropriateness of the Grade 10-11 curriculum, pedagogy, language of instruction and methods of assessment, will be made more relevant to students and for entry into the labor market and to higher education and TVET.
129. School assessment and examinations should be aligned with the curriculum reform. A regime

of three tests per year is proposed (CESR discussion) as an alternative to the continuous assessment method of Chapter Tests currently used.

130. The Matriculation Examination will need to be aligned with the NQF and RQF.
131. BLCs need to be defined for secondary school grades.

D. Teacher education – pre-service, in-service and CPD for SES – recommendations for improving the situation

132. **Continuing professional development** needs to be strengthened through, for example, the development of teacher competency standards linked to assessment of teacher performance. Teacher Competencies for secondary school teachers need to be defined.
133. Improved **data collection and analysis** of teacher supply and deployment of teachers are needed to enable the system to be more efficient and equitable.
134. A **capacity development plan** should be prepared to provide opportunity to teacher educators, school leaders, subject leaders and CPD leaders and mentors to gain new skills and approaches to upgrade teaching quality and learning outcomes in secondary schools.

III.d Recommendations for Phase 2

A. Curriculum reform – recommendations for Phase 2

135. Review in more depth the curriculum structure / framework for vertical and horizontal flow, teaching and learning methodology, content relevance for the future labor market and alignment with ASEAN curriculum standards[38]. This may include regional or international comparison of secondary school curriculum content to identify appropriate pedagogy for student centered learning (learning to learn), teaching and assessment of higher level thinking skills, and ways in which to blend academic and vocational skills courses.
136. Assessment of capacity development requirements and capacity gaps of all professionals / staff who will be engaged in the curriculum reform process.
137. Review all elements of the curriculum development process and implications for planning (timeframes), resourcing and skills development requirements.

B. Restructuring of the education system from 11 to 12 years – recommendations for Phase 2

138. Capacity assessment / functional analysis for implementation of each proposed option, with a timeframe and implementation plan including revision to education law, policy, financing and instructions. Identification of stakeholders and their roles and responsibilities in the restructuring process (eg school board of trustees, school principal, parents, PTA).
Analysis of size of school and modeling of the minimum number of teachers required to teach all subjects in each secondary school type.
139. A review of regional and international best practice in education sector reform may provide useful models and lessons learned from which to inform the process in Myanmar[39].

[38] JICA may provide support for curriculum development to finalize the syllabus and textbooks for AY 2015-2016 with a focus on review and revision of content rather than a major change.

[39] For example: Lao – restructuring the education system from 11 years to 12 years; Scottish Qualifications Authority (SQA) linking restructuring to school assessment and examinations; other topics: student and teacher competencies; International norms for expanding compulsory education

C. Assessment in SE, Matriculation Examination and School Leaving Certificate – recommendations for Phase 2

140. Working Group: to review methods of assessment (continuous assessment, school leaving exam, Matriculation Exam and university entrance exam) to make the case for reform of the secondary school assessment system in Myanmar. Drafting of an Assessment and Examinations Options Paper comparing best practice models. Review of use of CAP for diagnosis and differentiation of individual learner achievement linked to BLC.

141. Further in-depth analysis of disaggregated data is needed to monitor quality of secondary education. This analysis should include

- Survival rate, completion rates disaggregated data by gender, region, socio-economic background and other dimensions.
- Repetition and dropout by secondary school type, school size, gender, poverty incidence and urban/rural differences
- Pupil-teacher ratio by secondary school type, school size and urban/rural differences
- Matriculation results by secondary school type, school size, gender, poverty incidence and urban/rural differences by secondary school type
- In depth analysis of student performance in Matriculation Examinations disaggregated by gender, rural/urban, poverty, ethnic groups, and performance trends in each subject
- Analysis of size of school and modeling of the minimum number of teachers required to teach all subjects in each secondary school type
- Teacher qualification and deployment by school type, school size, gender and urban/rural differences.

142. The Phase 2 in-depth analysis of available data on SE quality should identify information gaps and inconsistencies in EMIS data which can feed into a longer term process of strengthening EMIS data collection and analysis.

143. A comparison of regional best practice in secondary school assessment and examinations[40].

D. Teacher education – in-service and CPD for SES – recommendations for Phase 2

144. An in-depth study of the system of **pre-service and in-service teacher training** for secondary school teachers should be undertaken to identify areas to be strengthened, aligned to the curriculum reform process and planned restructuring of the education system.

145. Also linked to the curriculum reform process and planned restructuring of the education system, further detailed analysis of secondary school teacher qualification and deployment by school type, school size, gender and urban/rural differences is needed to address disparities in teacher supply across regions. This may prepare the MOE with information necessary to deal with re-deployment issues arising under the re-structuring arrangement in which teachers may have to teach grades they have not been trained to teach (eg Grade 6 teachers teaching in primary school, Grade 10 teachers teaching lower school grades, and Grade 10-11 teachers teaching Grade 12).

146. A review of regional and international examples of best practice in pre-service and in-service

[40] For example: ASEAN countries - standards GMS RQF; examples of Basic Learning Competencies for secondary grades; Japan - model of automatic promotion in which students retake the same exam paper in failed subjects the following week; Cambodian model of examination papers set by teachers and submitted to MOEYS Examination Office in the Department of Secondary Education.

education including CPD models[41] would introduce the Myanmar MOE, secondary school staff and secondary school teacher educators to some innovative approaches to SES CPD.

[41] The Cambodia model for SES CPD is one such example

ANNEX 1a. SUMMARY OF CURRICULUM TEXTBOOK REVISION SCHEDULE

Summary of Curriculum Revision Schedule for Basic Education, Grades 1-11

	Year	Myanmar	English	Mathematics	General Study: Natural Science	Basic Science	General Science	Chemistry	Physics	Biology	Social Study: Geography and History	Geography	History	Moral and Civics	Life Skills	Vocational Education	Aesthetic Education (Teachers Guide only)	Physical Education (Teachers Guide only)	Agriculture	Economics
LAST REVISED	1996										Gr.4-5									
LAST REVISED	1999	Gr.1-5	Gr.1-5	Gr.1-5	Gr.1-3	Gr.4-5								Gr.1-3				Gr.1-5		
LAST REVISED	2000	Gr.6-9	Gr.6-9	Gr.6-9			Gr.6-9						Gr.6-9	Gr.6-11	Gr.6-11		Gr.1-9	Gr.6-9		
LAST REVISED	2001											Gr.6-11	Gr.10-11							
LAST REVISED	2002																			
LAST REVISED	2003																			
LAST REVISED	2004																			
LAST REVISED	2005														Gr.1-5					
LAST REVISED	2006																			
LAST REVISED	2007	Gr.10-11	Gr.10-11	Gr.10-11				Gr.10-11	Gr.10-11	Gr.10-11										Gr.10-11
LAST REVISED	2008																			
LAST REVISED	2009																			
LAST REVISED	2010																			
LAST REVISED	2011																			
IN PROGRESS	2012																		Gr.1-5	

ANNEX 1b. INDICATIVE SCHEDULE FOR REVISION OF CURRICULUM TEXTBOOKS AND TEACHERS' MANUALS – for discussion

<table>
<tr><th>Curriculum Development Cycle</th><th>2013-14</th><th>2014-15</th><th>2015-16</th><th>2016-17</th><th>2017-18</th><th>2018-19</th><th>2019-20</th><th>2020-21</th><th>2021-2022</th></tr>
<tr><td>TB/TG development</td><td>curriculum mapping Gr1-12</td><td>G1 / G7</td><td>G2 / G8</td><td>G3 / G9</td><td>G4 / G10</td><td>G5 / G11</td><td>G6 / G12</td><td></td><td></td></tr>
<tr><td>TB/TG pilot training / school trial</td><td></td><td></td><td>G1 / G7</td><td>G2 / G8</td><td>G3 / G9</td><td>G4 / G10</td><td>G5 / G11</td><td>G6 / G12</td><td></td></tr>
<tr><td>TB/TG printing and distribution to schools</td><td></td><td></td><td>G1 / G7</td><td>G2 / G8</td><td>G3 / G9</td><td>G4 / G10</td><td>G5 / G11</td><td>G6 / G12</td><td></td></tr>
<tr><td>BEd / Cert Ed / Dip Ed / DTEC / INSET curriculum development</td><td rowspan="3">curriculum mapping PRESET / INSET courses</td><td>Accreditation of BEd / Cert Ed /</td><td rowspan="3">Training of PRESET and INSET Trainers</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Pre-Service Teacher Traning</td><td rowspan="2">PRESET/INSET course materials development</td><td colspan="6">Implementation of revised curriculum for Pre-Service Teacher Training</td></tr>
<tr><td>In-Service Teacher Training</td><td colspan="6">Implementation of revised curriculum for In-Service Teacher Training prioritising upgrade training of Gr.10 and 11 teachers to teach Gr.12</td></tr>
<tr><td>Implementation of curriculum reforms / revised TB/TG in all schools</td><td></td><td></td><td></td><td>G1 / G7</td><td>G2 / G8</td><td>G3 / G9</td><td>G4 / G10</td><td>G5 / G11</td><td>G6 / G12</td></tr>
<tr><td>Student Assessment aligned to curriculum reforms</td><td>Review of assessment system</td><td>Specification of BLC for Gr.1-12</td><td>Trialing / standardisation of BLC</td><td>Introduction of Gr.9 assessment</td><td>Evaluation of Gr.9 assessment</td><td>Introduction of Gr.5 / Gr.11 assessment</td><td>Introduction of Gr.12 assessment</td><td>Evaluation of Gr.5 / Gr.11 / Gr.12 assessment</td><td></td></tr>
</table>

ANNEX 1c SECONDARY SCHOOL TEXTBOOKS BY SUBJECT

Secondary School Textbooks	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11
Myanmar	✓	✓	x	x	x	x
Myanmar Grammar	1/1	1/2	1/3	1/4	2/5	2/6
Myanmar Poem	x	x	✓	✓	✓	✓
Myanmar Prose	x	x	x	x	✓	✓
Zataka	x	x	✓	x	x	x
Mahowthadar	x	x	x	✓	x	x
Yethay Play	x	x	x	x	x	✓
Compulsory English Text	x	x	x	x	✓	✓
READER	Five	Six	Seven	Eight	x	x
Mathematics	(1)	(1)	(1)	(1)	✓	✓
Mathematics	(2)	(2)	(2)	(2)	x	x
Geography	✓	✓	✓	✓	x	x
History	✓	✓	✓	✓	x	x
History of Thai-Myanmar	x	x	x	✓	x	✓
Myanmar History	x	x	x	x	✓	✓
World History	x	x	x	x	✓	✓
Economics	x	x	x	x	✓	✓
General Science	✓	✓	✓	✓	x	x
Chemistry	x	x	x	x	✓	✓
Physics	x	x	x	x	✓	✓
Biology	x	x	x	x	✓	✓
Elective Myanmar Poem	x	x	x	x	✓	✓
Elective Myanmar Literature of History	x	x	x	x	✓	✓
Elective Myanmar Fiction	x	x	x	x	✓	✓
Elective Myanmar Poatawwada	x	x	x	x	✓	✓
Chemistory Practical Book	x	x	x	x	x	✓
Physics Practical Book	x	x	x	x	x	✓
Biology Practical Book	x	x	x	x	x	✓
Total Number of Text Books	**8**	**8**	**9**	**10**	**15**	**20**

ANNEX 2 BEd SUBJECT COMBINATIONS

In order to enable students to study their preferred subject combination students are provided extensive and in-depth instruction of individual subject and taught at the international level. They are required to take Myanmar, English and Mathematics as compulsory subjects and a combination of three, of subjects "Physics, Chemistry, Biology, Geography, History, Economics Optional Myanmar" constituting 8 subject combinations at the level of Basic Education High School as follows:

(a) Economics, Physics and Chemistry
(b) Geography, History and Economics
(c) Geography, History and Optional Myanmar
(d) History, Economics, Optional Myanmar
(e) History, Physics, Chemistry
(f) Optional Myanmar, Physics, Chemistry
(g) Physics, Chemistry and Biology
(h) Geography, Physics and Chemistry[42]

[42] Reference: Education Development in Myanmar, May 2012, Ministry of Education.

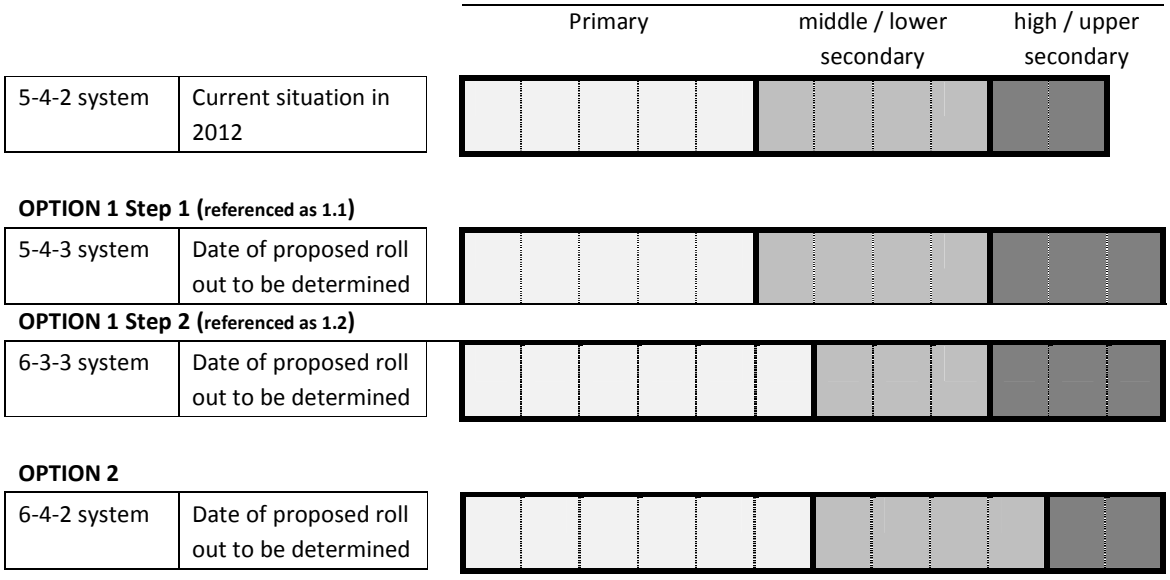
ANNEX 3 RESTRUCTURING OPTIONS PAPER – for discussion

Options for Restructuring of the Education System in Myanmar

1. Two options are discussed in this paper for consideration in planning for the restructuring of the Myanmar education system from 11 years (5-4-2) to correspond with 12 years of schooling as the international norm.

2. The first option is presented as a 2-step process 5-4-2 to 5-4-3, then 5-4-3 to 6-3-3, as indicated in the National Development Plan 2012[43]. It is proposed in the National Plan to make the transition from 5-4-2 to 6-3-3 in two steps phased over a long term period. The second option is a 1-step process from 5-4-2 to 6-4-2.

Diagram 1. Options for Restructuring of the Myanmar Education System



3. Adding the additional grade to primary or upper secondary: Option 1.1 adds one year to upper secondary affecting Gr.12; primary (Gr.1-5) and lower secondary (Gr.6-9) remain unchanged and unaffected. Option 1.2 adds one year to primary and reduces lower secondary by one year affecting Gr.6; upper secondary is unchanged. Option 2 adds one year to primary affecting Gr.6; lower secondary schools change from Gr.6-9 to Gr.7-10 and upper secondary schools change from Gr.10-11 to Gr.11-12. The way in which each grade is affected is considered in detail in Tables 1 and 2 below.

4. Balance between primary and secondary school grades: Options 1.2 and 2 divide the 12 years of education equally between primary and secondary schooling. Option 1.1 increases the present imbalance of 5 years primary and 6 years secondary to 5 years primary education and 7 years secondary education.

[43] National Development Plan, Detailed Plans (MOE, Sept 2012)
Point (3a) Addition of one academic year to the upper-secondary level to increase the duration of basic education to 12 years and its structure to be 5:4:3
Point (3p) In the long term, prescribing pre-school enrolment age as 5+ years and basic education enrolment age as 6+ years and developing the structure of basic education as 6:3:3

5. Increasing primary schooling from 5 to 6 years (option 1.2 and 2): the present school entry age of 5 years old is one year younger than the international and ASEAN regional norm of school entry at 6 years old. The additional year in primary school would provide the opportunity for Grade 1 to be structured and focused on a kindergarten curriculum and teaching approach that would provide a period for home-school transition and school preparedness that will better prepare children for formal learning in the subsequent grades 2-6 of primary school. This will be of particular benefit to children living in rural areas and from poorer families where there may be little opportunity for children to attend early childhood development (ECD) classes and where parents tend to have lower levels of literacy. This structure will also provide a transition stage for future raising of the primary school entry to 6 years old as proposed in the National Development Plan[43].

6. Impact on primary to lower secondary transition: By adding one year to primary school (option 1.2 and 2), the transition from primary to lower secondary school will be delayed by one year to the end of Grade 6. Students will be one year older, more mature and better prepared when they transfer to lower secondary school. Students will be able to achieve a higher level of basic literacy, numeracy and life skills learning on completion of primary school. They will be better prepared for secondary education.

7. Impact on retention and dropout rates: A priority of the MOE is to reduce dropout rates and to increase transition rates from primary to secondary school. International research shows that retention within a school level is not as problematic as transition between school levels. A student who is enrolled and studying in a school has a high probability of completing that level. The transition from primary school close to home to a new school location, perhaps some distance away from home, may be one reason for the high dropout rate observed at the end of Grade 5 in Myanmar. By keeping those students in school for one more year to the end of Gr.6 some may still drop out, but they will have benefited from the additional year of learning, and will be more mature and better prepared to enter the labor market.

8. Balance between lower and upper secondary school grades: Secondary education may be split 4-2 (option 1.1 and 2) or 3-3 (option 1.2). There are justifications for both cases. With the need to improve transition and retention rates for more students to progress from primary school through lower secondary school the 3-3 split may be considered the better option. When students complete primary school the next milestone would be only three more years. The addition of one more year in upper secondary school may enable teachers and students to cover the present Gr.10-11 upper secondary curriculum content[44]. However there is an opportunity under the Curriculum Reform process to review and adjust scope and content of the upper secondary school curriculum. Adaptation of the curriculum to match the learning level of students in each grade is the correct process for solving issues associated with overload or mismatch in the Gr.10-11 curriculum, rather than adapting the grades to fit the curriculum.

9. Extending compulsory education: Option 1.1 and 1.2 would provide the opportunity in future to extend compulsory education by four years from Grade 5 to Grade 9 completion. Option 2 provides the opportunity in future to extend compulsory education to the end of Grade 10. A lower secondary school leaving certificate could be issued at end of Grade 9 (option 1.1 and 1.2) or end of Grade 10 (option 2). The National Development Plan refers to renaming the Matriculation examination as upper school leaving examinations which would be re-scheduled

[44]The National Development Plan identifies language barriers as one of the current limitations in the Basic Education Subsector at upper secondary level leading to lower achievement in subjects; and content at the basic education levels is too much to be burdensome for students. This also impacts on achievement in the Matriculation Examination where the pass rate is 30.3% in 2010/11.

for end of Grade 12. The school leaving certificate would be issued to all upper secondary school graduates in addition to the Matriculation Examination results.

10. Academic and vocational streams in upper secondary schools: Recognition of school completion at Grade 9/10 and Grade 12 provides the opportunity for academically more able students to complete Grade 12 academic stream and less able students to leave school at the end of Grade 9/10 or continue to vocational stream in TVET institutions or upper secondary schools.

TABLE 1. SUMMARY OF ISSUES TO BE CONSIDERED FOR EACH RE-STRUCTURING OPTION

	OPTION 1, Step 1 transition from 5-4-2 to 5-4-3	OPTION 1, Step 2 transition from 5-4-3 to 6-3-3	OPTION 2 transition from 5-4-2 to 6-4-2
Countries where this model operates	Lao PDR, Vietnam	Cambodia, China, Indonesia, Japan, Republic of Korea, Thailand	UK, Philippines, Singapore, Australia
Grade changes to be made at each school level	Additional grade (Gr.12) added to upper secondary school Primary and lower secondary school grades unchanged	Expansion of one additional grade (Gr.6) in primary school and reduction of one grade (Gr.6) in lower secondary school Upper secondary school grades unchanged	Expansion of one additional grade (Gr.6) in primary school Lower secondary school grades changed from Gr.6-9 to Gr.7-10 Upper secondary grades changed from Gr.10-11 to Gr.11-12
Primary school age range and impact	Students enroll in Gr.1 at 5 years old which is one year younger than the international norm for primary education Students complete primary school at 10 years old	Primary school age range is expanded to 5-11 years old An additional year of primary education enables teachers to provide a home to school readiness / transition program for 5 old entrants The additional year of primary schooling raises the level of literacy, numeracy and life skills for primary school leavers	
Balance of grades across primary, lower and upper secondary schools	Students will have only 5 years of primary education and an increase from 6 to 7 years of secondary education, with 4-2 split between lower and upper secondary school	Students will have 6 years of primary education and 6 years of secondary education, with an equal 3-3 split between lower and upper secondary school	Students will have 6 years of primary education and 6 years of secondary education, with 4-2 split between lower and upper secondary school
Impact on retention, completion, dropout, and transition rates	One additional year in secondary school may be a disincentive for students to progress from primary to secondary school, which may impact on dropout rates at transition from primary to lower secondary school	Primary school graduates will be more mature on transition to lower secondary school With only three years to graduation, students will be more motivated to complete lower secondary school.	Primary school graduates will be more mature on transition to lower secondary school With four years to graduation, there is a risk that students may not be motivated to complete lower secondary school (opportunity costs)
Age at lower secondary school completion	Students will be 14 years old on graduation from lower secondary school	Students will be 14 years old on graduation from lower secondary school	Students will be 15 years old on completion of lower secondary school
Raising the level of compulsory education	Compulsory education could be raised from Grade 5 to Grade 9	Compulsory education could be raised from Grade 5 to Grade 6, and later to Grade 9	Compulsory education could be raised from Grade 5 to Grade 6, and later to Grade 10

TABLE 2. SUMMARY OF REQUIREMENTS FOR EACH RE-STRUCTURING OPTION - with implications to guide planning

	Requirements for introduction of OPTION 1.1 (5-4-3)	Requirements for introduction of OPTION 1.2 (6-3-3)	Requirements for introduction of OPTION 2 (6-4-2)
Teachers - Number of teachers	Increase in number of teachers who are qualified (trained) to teach Gr.12	Increase in number of PS teachers and decrease in number of LS teachers	Increase in number of PS teachers
Teachers - Deployment of teachers by school type / grade	US school teachers will have to teach Gr.12 in addition to Gr.10 and 11	Gr. 6 teachers will have to be re-deployed from LS school teacher to PS teacher with implications for status and salary	Gr. 6 teachers will have to be re-deployed from LS school teacher to PS teacher with implications for status and salary Gr. 10 teachers will have to be re-deployed from HS teacher to LS school teacher with implications for status and salary HS will need deployment of teachers to Gr.12 or Gr.11 teachers to teach Gr.11 and Gr.12
Students - grades in each school level	There will be no US school Gr.11 graduates in the first year of restructuring There will be Gr.12 students in US schools	Gr.5 students will remain in PS for one more year, Gr.6, before graduation to LS school Gr.7 There will be no PS Gr.5 graduates transferring to LS school Gr.6 in the first year of this restructuring stage LS schools will reduce the number of students from four grades to three grades Gr.7-9	Gr.5 students will remain in PS for one more year, Gr.6, before graduation to LS school Gr.7 There will be no PS Gr.5 graduates transferring to LS school Gr.6 in the first year of this restructuring stage There will be Gr.7-10 students in LS school There will be no US school Gr.11 graduates in the first year of restructuring There will be Gr.11-12 students in US schools
Students - opportunity costs	Opportunity costs for Gr.11 students of one additional year of US education in Gr.12 - loss of potential income for the family and additional year of school expenses	Opportunity costs for Gr.5 students of one additional year of PS education in Gr.6 - loss of potential income for the family and additional year of school expenses. Potential saving (travel costs to LS) for the family of additional year of PS	Opportunity costs for Gr.5 students of one additional year of PS education in Gr.6, and Gr.11 students of one additional year of US education in Gr.12 - loss of potential income for the family and additional year of school expenses Potential saving (travel costs to LS) for the family of

	Requirements for introduction of OPTION 1.1 (5-4-3)	Requirements for introduction of OPTION 1.2 (6-3-3)	Requirements for introduction of OPTION 2 (6-4-2)
			additional year of PS
Curriculum - revision to Gr.6-12 curriculum content and pedagogy	Gr.12 curriculum to be developed prior to introduction of the additional school grade Curriculum of all secondary school grades correspondingly modified to ensure continuity and flow through to Gr.12	Gr.6 curriculum to be adapted to PS class teaching pedagogy prior to introduction of this restructuring phase Gr.7 curriculum becomes the first year of subject teaching	Gr.6 curriculum to be adapted to PS class teaching pedagogy prior to introduction of this restructuring phase Gr.12 curriculum to be developed prior to introduction of the additional school grade Curriculum of all secondary school grades correspondingly modified to ensure continuity and flow through to Gr.12
Curriculum - revision to HE / TVET curriculum	Continuity in structure and content between Gr.12 and HE / TVET curriculum, including teacher training course content (BEd / Teaching Diploma / Certificate)		Continuity in structure and content between Gr.12 and HE / TVET curriculum, including teacher training course content (BEd / Teaching Diploma / Certificate)
Textbooks	Gr.12 TB / TG will have to be developed, printed and distributed prior to introduction of Gr.12	Gr.6 TB / TG will need to be supplied to PS Gr.6 TB / TG no longer required in LS	Gr.12 TB / TG will have to be developed, printed and distributed prior to introduction of Gr.12 Gr.6 TB / TG will need to be supplied to PS Gr.6 TB / TG no longer required in LS Gr.10 TB / TG will need to be supplied to LS Gr.10 TB / TG no longer required in US
Instructional Materials	Instructional materials will be required for Gr.12 curriculum	Gr.6 curriculum materials required in PS Gr.6 curriculum materials not required in LS	Gr.6 curriculum materials required in PS Gr.6 curriculum materials not required in LS Instructional materials will be required for Gr.12 curriculum Gr.10 curriculum materials required in LS Gr.10 curriculum materials not required in US

	Requirements for introduction of OPTION 1.1 (5-4-3)	Requirements for introduction of OPTION 1.2 (6-3-3)	Requirements for introduction of OPTION 2 (6-4-2)
			Instructional materials will be required for Gr.12 curriculum
Teacher Training - Pre-Service	BEd graduates will need to be trained to teach Gr.12	Primary School teachers certificate (diploma) curriculum will need to cover Gr.1-6	Primary School teachers certificate (diploma) curriculum will need to cover Gr.1-6 BEd graduates will need to be trained to teach Gr.12
Teacher Training - In-Service	In-Service training will need to be provided to upgrade the skills and content knowledge of Gr.10-11 teachers to teach Gr.12	Gr.6 teachers will need to be re-trained to teach upper primary Gr.4-6 using PS pedagogy Upgrade program will be needed for Gr.5 teachers to teach Gr.6	Gr.6 teachers will need to be re-trained to teach upper primary Gr.4-6 using PS pedagogy Upgrade program will be needed for Gr.5 teachers to teach Gr.6 Gr.10 teachers will need to be re-trained to teach LS Gr.7-10 Upgrade program will be needed for Gr.9 teachers to teach Gr.10
Classrooms	PS and LS size would be unchanged; US will need to expand to accommodate Gr.12 classes.	PS would need to expand to accommodate Gr.6 classes; LS would reduce in size as Gr.6 moves to PS; there would be no change to US schools	PS would need to expand to accommodate Gr.6 classes; there would be no change to size of LS and US schools
School Facilities	Laboratory, ICT and library facilities needed for Gr.12		Laboratory, ICT and library facilities needed for Gr.12
Assessment	Gr.12 assessment modified to match Gr.12 curriculum, including Matriculation Examination and Upper School Leaving Examination / Certificate (Gr.12) Consider Lower School Leaving Certificate at end of Gr.9		Gr.12 assessment modified to match Gr.12 curriculum, including Matriculation Examination and Upper School Leaving Examination / Certificate (Gr.12) Consider Lower School Leaving Certificate at end of Gr.10
HE / TVET - Transition of US graduates	There will be no intake of G.11 graduates into HE / TVET / labor market in the first year of restructuring In the second year of re-		There will be no intake of G.11 graduates into HE / TVET / labor market in the first year of restructuring In the second year of re-

	Requirements for introduction of OPTION 1.1 (5-4-3)	Requirements for introduction of OPTION 1.2 (6-3-3)	Requirements for introduction of OPTION 2 (6-4-2)
	structuring, the first batch of G.12 US graduates will enter HE / TVET / labor market		structuring, the first batch of G.12 US graduates will enter HE / TVET / labor market
HE / TVET - Transition of LS graduates	Gr.9 LS graduates could opt for 3 years in academic or vocational stream in US Gr. 10-12	Gr.9 LS graduates could opt for 3 years in academic or vocational stream in US Gr. 10-12	Gr.10 LS graduates could opt for 2 years in academic or vocational stream in US Gr. 11-12
Administration at all levels	Modify KaSaSa to QA Gr.12 - school inspection checklist Issuance of instructions / regulations and guidelines for TEOs to manage implementation of Gr.12		Modify KaSaSa to QA Gr.12 - school inspection checklist Issuance of instructions / regulations and guidelines for TEOs to manage implementation of Gr.12

ANNEX 4. SUMMARY OF NATIONAL DEVELOPMENT PLAN (MOE 2012) RELATING TO SES ACCESS AND QUALITY

The National Development Plan: Education Sector Development Plan, Part 1 Basic Education Sector acknowledges the need to improve net enrollment, retention, completion and matriculation pass rates in secondary schools. The challenges of to improvement of quality include the need to review and reform the curriculum to ensure that it is relevant to the current situation and the need to assess students using questions that demand critical thinking

The following as some of the limitations cited in the National Development Plan relating to SES:

a. In relation to Policy, Legislation and Management: township education offices need to make full use of computerized database programs;
b. In relation to access: there are still no support programs specifically for children from economically disadvantaged families;
c. In relation to quality: The enrollment age is 5; the basic education schooling lasts for only 11 years; the classroom attendance duration is 175 days per year. Therefore the school hours per academic year at the lower primary level and the upper primary level are 720 hours and 840 hours respectively and at the secondary level there are 945 hours so that there is a need of longer duration of classroom attendance.
d. There are no textbooks for additional subjects in the curriculum;
e. At the upper secondary level language barriers lead to lower achievement in subjects;
f. Few opportunities for learning ICT
g. To produce all-round citizens, it is needed to emphasize practical tasks in educational development;

Current Issues and their Root Causes relating to SES are identified as follows:

a. It is necessary to increase the number of scholarships, their amount and the number of grantees;
b. There should be an exact match between teachers and the subjects they teach;
c. There is a time-limit for teaching practice and continuous assessment in teacher training programs
d. Basic Learning Competencies need to be drawn up and specified for subjects taught at different levels of basic education.

Under the Detailed Plan for the Development of the Basic Education Sector heading 2 raises two actions for **school retention at lower secondary and upper secondary levels**:

a. Cooperation with the government, international organizations and donors to provide support to economically disadvantaged students to complete different stages of basic education (see also Detailed Plan heading 4 Awarding Basic Education Scholarships);
b. Formation of coordination bodies to improve enrollment rate, retention rate and completion rate at different levels.

The Detailed Development Plan Heading 3 identifies the following actions for **Upgrading the Basic Education syllabus and curriculum to meet international standards and to devise a relevant assessment system**, specific to SES reform:

a. Addition of one academic year to the upper-secondary level to increase the duration of basic education to be 12 years and its structure to be 5-4-3.
b. Revision of the syllabus and curriculum to be done by national and international specialists in line with the structural change of the basic education system
c. Any change is not to be made to the current duration of the academic year and matriculation examinations are to be held during the first week of April
d. Lengthening of school hours according to the different levels(primary, lower secondary, upper secondary)
e. Renaming the matriculation examinations as upper secondary leaving examinations
f. With the assistance of national and international specialists, specification of basic Learning Competencies (BLC) for different basic education subjects
g. Developing a national curriculum in the ratio of 80% of the national curriculum and 20% of the local curriculum that will enable students to achieve higher order thinking skills
h. To ensure the quality assurance and enhancement of students' learning assessment of the following grades will be undertaken as follows:
   Grade 5 at the cluster or township level
   Grade 9 at the district level
   Grade 11 at the regional or state level
   Grade 12 at the national level
i. Provision of trainings, expanding assessment bodies and enhancing capability to match a teaching learning situation that aims at insightfulness, creativity and reflective practice and a suitable assessment system
j. Including basic information technology in the lower secondary curriculum and as a part of the mathematics curricula of Grade 10 and Grade 11
k. Establishment of a curriculum and syllabus development hub and providing basic infrastructures; cooperation with DPs to upgrade the staffs' ability
l. In the long term, prescribing pre-school enrollment age as 5+ years and basic education enrollment as 6+ years and developing the structure of basic education as 6-3-3

ANNEX 5. SUMMARY OF CRITICAL ISSUES AND RECOMMENDATIONS – for discussion

The Myanmar CESR Phase 1.Rapid Assessment of the Secondary Education Sector (Dec 2012-Jan 2013) identifies the following critical issues and recommendations to be addressed in subsequent phases.

Critical Issues	Recommendations to solve/improve the situation	Recommendations for Phase 2
Policy Implementation – Regulations, Guidelines and Instructions for SES Management and Planning		
The Education Law and related policy instructions need to be reviewed and updated. There are **various types of secondary school** and more consistency is needed in implementation of instructions for school upgrading. **Private sector** participation in education needs to be supervised and regulated.	**Review of existing regulations, guidelines and instructions** to improve school performance and management.	Undertake a comparative study of international best practice to **strengthen education management and strategic planning**[45].
Institutional and Individual Capacity Development		
Institutional and individual capacity development needs to be planned including strengthening of management capacity of SE principals and TEO, REO and central level education officers and administrators.	**Capacity building plan** is needed to strengthen all levels of education management.	**Capacity assessment / functional analysis** for implementation of each proposed option – timeframe and implementation plan including for the revision to education law, policy, financing and instructions. Identification of stakeholders and their roles and responsibilities in the restructuring process eg school board of trustees, school principal, parents, PTA, etc.
Secondary Education Sector Financing		
Public expenditure to secondary education is the lowest in ASEAN (UNESCO).	Increase budget allocation to education sector combined with review of per capita costs in LS and US	Study of **education financing** including budget allocation and utilization to secondary education,

[45] Cambodia: management responsibilities of the school principal and functioning of the School Support Committee; Vietnam: decentralisation and strengthening of school management; Ofsted internal and external process of quality assurance; decentralization process in UK through local management of schools (LMS).

Critical Issues	Recommendations to solve/improve the situation	Recommendations for Phase 2
A **scholarship and grant program** meets some of the education costs for a small number of students (11,412 students in AY 2012/13).	schools and costs relating to access in SES	and review of SES short and medium term budget expenditure plan. More information is needed on **cost of secondary school education**: additional costs for rural students transferring to lower and upper secondary school, tuition costs and variation in costs between school types, including private school and monastic school costs.
Strengthening EMIS Data Collection and Analysis		
EMIS data collection and analysis needs to be improved across a broad range of education indicators. Systematic **disaggregation of data** is needed on access to and quality of education.	Strengthen the use of EMIS for education planning and management, including improvement in disaggregated data collection and analysis. Capacity development and improved systems are needed to ensure reliability and consistency of reported EMIS data.	**Further** analysis of **EMIS data for key indicators** (transition rates, regional disparities, survival and completion rates, etc). Identification of capacity development needs to strengthen EMIS.
ACCESS TO SECONDARY EDUCATION		
The recent indication of improvements in secondary school **transition and retention rates** need to be continued. There remain significant differences in **access and achievement rates** by geographic location, poverty incidence and gender.	Improved reliability and systematic analysis of disaggregated data on school enrolment, dropout, retention and repetition rates will provide education planners with the information needed to better target resources. Strategies to improve access to SE: (i) introduction of a school readiness program for Grade 1 children, especially in rural areas and for poor families with no access to ECE;	Further **disaggregation of data** on access to education is needed[46] including identification of information gaps and inconsistencies in EMIS data. A study of out-of-school youth would provide substantive evidence to inform future strategies for more equitable access to secondary education.

[46] Differences in access, retention and completion rates between rural and urban students and lag in completion rates of boys compared to girls; Flow rates by level and grade to reconfirm transition rates and mapping of regional disparities;

Critical Issues	Recommendations to solve/improve the situation	Recommendations for Phase 2
	(ii) targeted support to students who are most at risk of not entering secondary education or of exiting before completion - identification of the main reasons for non-entry or exit of specific groups of students eg: direct and indirect costs of schooling to the family, adequacy of facilities for adolescent girls, location of schools and availability of transport; (iii) a grant funding program to support students from poor families including guidelines and procedures for disbursement, stringent monitoring mechanisms and impact analysis	
Curriculum Reform		
Curriculum reform will be foundational in ensuring that secondary school graduates are well prepared to face the challenges and opportunities of the rapidly changing social and economic environment in Myanmar. **Curriculum reform** will require a parallel review and revision of textbooks, adjustment of pre-service and in-service teacher training, and upgrading of continuous and summative assessment. Sufficient time must be built into the curriculum planning process to allow for textbook writing, editing, layout, design and illustration, printing and distribution to schools. English is the language of instruction for Grade	A review of the curriculum framework is needed to ensure horizontal and vertical content and competency linkages: (i) to meet the needs of a technology-based society facing rapid socio-economic development (ii) to improve quality, reduce overload, remove overlap and gaps in content coverage and ensure continuity in the current curriculum, (iii) to align with the planned restructuring of school grades, and (iv) to align the Myanmar curriculum to the ASEAN regional standard. Possible options need to be considered for rollout of new curriculum and textbooks: **Option 1: cohort rollout** of new curriculum starting with Gr.1 and moving	Review in more depth the curriculum structure / framework for vertical and horizontal flow, teaching and learning methodology and alignment with ASEAN curriculum standards. Assessment of capacity development requirements and capacity gaps of all professionals / staff who will be engaged in the curriculum reform process. Review all elements of the curriculum development process and implications for planning (timeframes), resourcing and skills development requirements

Critical Issues	Recommendations to solve/improve the situation	Recommendations for Phase 2
11 mathematics, physics, chemistry and biology but students lack sufficient competency in English.	annually through the grades will take 12 years. **Option 2: parallel cohort rollout** of the new curriculum starting with Primary Gr.1 and Lower Secondary Gr.7 and moving annually through the grades will take 6 years. The capacity of all those who will be engaged in the curriculum reform process from curriculum revision to curriculum implementation should be strengthened.	
Restructuring of the School System from 11 years to 12 years		
Restructuring of basic education from 11 to 12 years will impact on all subsectors of the education system and its implementation will require detailed planning and preparation. Students enter primary school at 5 years old, they complete primary school at 10 years old and secondary school by 16 years old. This is younger than other ASEAN countries. It impacts on over-age completion and dropout rates. **Restructuring of the school system to 5-4-3, 6-3-3 or 6-4-2**[47] would provide an opportunity (i) to rationalize the various school types in which secondary school students are enrolled; (ii) to introduce a school readiness program for Grade 1 children, especially in rural areas or for poor families with no access	The process of restructuring is highly complex and impacts on many interlinked subsectors: curriculum framework, textbook development, student assessment, teacher competencies, teacher training, teacher deployment, school infrastructure, family finances, school financing, entrance to higher education TVET and the labor market. A costed **Implementation Plan for Restructuring of the Education System** is needed including realistic timeframes, sequenced tasks, allocation of responsibilities and strategy for communication to all stakeholders (CESR Phase 3).	Review **Restructuring Options** (see Annex 3) All options require careful consideration of the range of implications to ensure that access and quality of education is improved for the majority of students. Capacity assessment / functional analysis for implementation of each proposed option – timeframe and implementation plan including revision to education law, policy, financing and instructions. Identification of stakeholders and their roles and responsibilities in the restructuring process eg school board of trustees, school principal, parents, PTA, etc. Analysis of size of school and modeling of the minimum number of teachers required to teach all subjects in each secondary school type. A review of regional and international best

[47] Change from 5-4-2 to international standard 6-3-3, 6-4-2 or 5-4-3 system is cited as a recommendation in Access to and Quality of Education: Education for All in Myanmar, para 68 (MOE, Feb 2012)

Critical Issues	Recommendations to solve/improve the situation	Recommendations for Phase 2
to ECE; (iii) to address the reasons for differences between urban and rural student completion rates and to improve completion rates of poor students, girls and boys.		practice in education sector reform may provide useful models and lessons learned from which to inform the process in Myanmar
Reform of SES Assessment and Examinations		
Reform of **grade assessment and Matriculation examination** is needed to improve secondary school learning outcomes. There are no defined BLCs for secondary school grades and subjects, expanded from primary schools into lower secondary schools. The present assessment and examination system in secondary schools encourages rote learning, cramming and short term memorization of facts rather than developing higher order skills and critical thinking. Myanmar needs to develop and align its NQF to	A review of quality and appropriateness of the Grade 10-11 curriculum, pedagogy, language of instruction and methods of assessment is needed. School assessment and examinations should be aligned with the curriculum reform. Three tests per year is proposed (CESR discussion) as an alternative to the continuous assessment method of chapter tests currently used. The Matriculation Examination will need to be aligned with the NQF and RQF. BLC need to be defined for secondary school grades.	Working Group: to review methods of assessment (continuous assessment, school leaving exam, matriculation exam and university entrance exam) to inform the process of reform of the secondary school assessment system in Myanmar. Drafting of an Assessment and Examinations Options Paper comparing best practice models. Further in-depth analysis of student performance in Matriculation examinations disaggregated by gender, rural/urban, poverty, ethnicity and performance trends in each subject[48].

[48] Survival rate, completion rates disaggregated data by gender, region, socioeconomic background, etc.
Repetition and dropout by secondary school type, school size, gender, poverty incidence and urban/rural differences
Pupil-teacher ratio by secondary school type, school size and urban/rural differences
Matriculation results by secondary school type, school size, gender, poverty incidence and urban/rural differences by secondary school type
In depth analysis of student performance in Matriculation Examinations disaggregated by gender, rural/urban, poverty, ethnic groups, and performance trends in each subject.
Analysis of size of school and modeling of the minimum number of teachers required to teach all subjects in each secondary school type
Teacher qualification and deployment by school type, school size, gender and urban/rural differences

Critical Issues	Recommendations to solve/improve the situation	Recommendations for Phase 2
the GMS RQF.		Review the use of CAP for diagnosis and differentiation of individual learner achievement. A comparison of regional and international best practice[49]:
Strengthening Secondary Teacher Education and Professional Development		
Pre-service curriculum will need to be modified and **In-service teacher training** will be needed to familiarize secondary school teachers with the new curriculum reforms as they are introduced into schools. Improved **data collection and analysis** of teacher supply and deployment of teachers will enable the system to be more efficient and equitable.	**Continuing professional development** needs to be strengthened through, for example, the development of teacher competency standards linked to assessment of teacher performance. A **capacity development plan** should be prepared to provide opportunity to teacher educators, school leaders, subject leaders and CPD leaders and mentors to gain new skills and approaches to upgrade teaching quality and learning outcomes in secondary schools.	An in-depth study of system of **pre-service and in-service teacher training** for secondary school teachers (by subject) should be undertaken to identify subject areas to be strengthened aligned to the curriculum reform process and planned restructuring of the education system. Further detailed analysis of secondary school teacher qualification and deployment by school type, by subject, by school size, gender and urban/rural differences is needed to address disparities in teacher supply across regions. A review of regional and international examples of best practice in pre-service and in-service education including CPD models

[49] For example: (i) definitions of BLC for secondary school grades / subjects, aligned to ASEAN standards and GMS RQF; (ii) Japanese model of automatic promotion in which students retake the same exam paper in failed subjects the following week; (iii) Cambodian model of examination papers set by teachers and submitted to MOEYS Examination Office in the Department of Secondary Education; Scottish Qualifications Authority (SQA) linking restructuring to school assessment and examinations.

Annex 6 Summary of indicative areas of Development Partner interest relating to SES

The following information has been collated from preliminary discussion and is recorded in order to provide some indication of possible coverage of the subsector. The information is not intended to be taken as an indication of any form of commitment from any development partner organization.

Development Partner	Indicative area of interest in the Secondary Education Sub-sector[50]	Possible intervention
ADB	Secondary Education Subsector	To be defined
	Higher Education Subsector	To be defined
	TVET Subsector	To be defined
JICA	Teacher Training	Teacher Education Policy Study to feed information into the Policy development Development of Teacher Competencies Clarification of planning for future teacher demand and supply
	Curriculum Reform	Review of subject structure including core vs local curriculum Comparison to international standards Child Centered Approach (CCA)[51]
	Student assessment	Criterion referenced vs norm referenced assessment Minimum standards of learning achievement
UNESCO	Restructuring of the Education System from 11 to 12 years of general education	Simulation model for various restructuring options
UNICEF	Teacher Education	In-Depth Study of 4 Education Colleges focused on Teacher Training for basic education schools (primary and lower secondary teaching qualifications)

[50] Clarification is needed on scope of interventions to identify whether they cover primary, lower secondary and upper secondary subsectors. Some interventions are cross-cutting eg policy, while others may be specific and limited to one or two subsectors.

[51] Student Centered Learning for secondary school pedagogy

SUPPLEMENTARY ANNEX

Informal Note on IHLCS Household Survey Analysis as an Input to the CESR[1]

I. Introduction

1. The landmark Comprehensive Education Sector Review (CESR)—which is led by the Myanmar Ministry of Education (MOE), coordinating inputs from other relevant agencies and development partners organizations (DPOs)—will be fundamentally important in strengthening and reshaping Myanmar's education sector. To help guide potential Asian Development Bank (ADB) support to the CESR and provide an input to CESR analysis, during the first half of 2012, ADB staff prepared a draft Initial Assessment of Post-Primary Education (PPE) in Myanmar.[2] Initial quantitative analysis for basic education access in that document principally utilized data from MOE publications and calculations using Education Management Information System (EMIS) data kindly provided by MOE. Findings were presented to MOE officials and the CESR Team in June and September 2012, respectively.

2. Shortly following the CESR Launch, on 29 October and 2 November 2012, the CESR Office hosted an informal 2-part seminar on quantitative analysis, during which the CESR Team explored the potential of utilizing household survey data—in particular, from the Integrated Household Living Conditions Survey in Myanmar, 2009-10 (IHLCS)—to complement administrative data available in the EMIS and other data sources. During the first day, the CESR Team reviewed education-related content in the IHLCS household questionnaire and identified an initial set of research questions that could be analyzed using the IHLCS data and would provide important inputs to broader CESR analysis related to PPE as well as primary education. The second day engaged the CESR Team in reviewing and interpreting the raw findings of first-pass analysis into those questions.

3. Following a short discussion on relevant EMIS-based findings from the noted ADB Initial Assessment of PPE in Myanmar in Section II, this note presents (in Section III) key findings from this first-pass analysis of the IHLCS data, which may input to and be further explored during the remainder of CESR Phase 1 and/or Phase 2.

II. EMIS-based Analysis of Transitions across Basic Education Grades

4. Although estimates for gross enrolment rate (GER) and net enrolment rate (NER)—see also para. 12—provide a useful yardstick for education access at a given level of schooling, they provide a rather limited understanding of the dynamics and underlying issues. Caution is also needed in interpreting these figures: e.g., a higher GER is not necessarily better (since, for example, repetition tends to inflate GERs, which may be above 100%). The same applies for other singular indicators: e.g., estimates of the completion rate using the official normative age of completion often substantially understate the actual share of children completing a given level of schooling. Where possible, singular indices like GER and NER should be complemented by approaches that allow for more detailed investigation of dynamics, which can help better understand these indexes (e.g., including, for example, a large gap between the GER and NER) and also give policy-relevant information as to the underlying dynamics (e.g., pinpointing where in the education cycles is drop-out occurring).

5. While the EMIS in Myanmar (and nearly all countries) does not allow for tracking individual students across multiple calendar years (i.e., it does not provide true "panel data"), EMIS data can provide a very useful, if only approximated, picture of grade progression via at least 2 approaches: (i) tracking a cohort across numerous years of data; and (ii) look at grade-specific transitions across 2 recent years of data.

II.1 Cohort tracking using 11 years of EMIS data

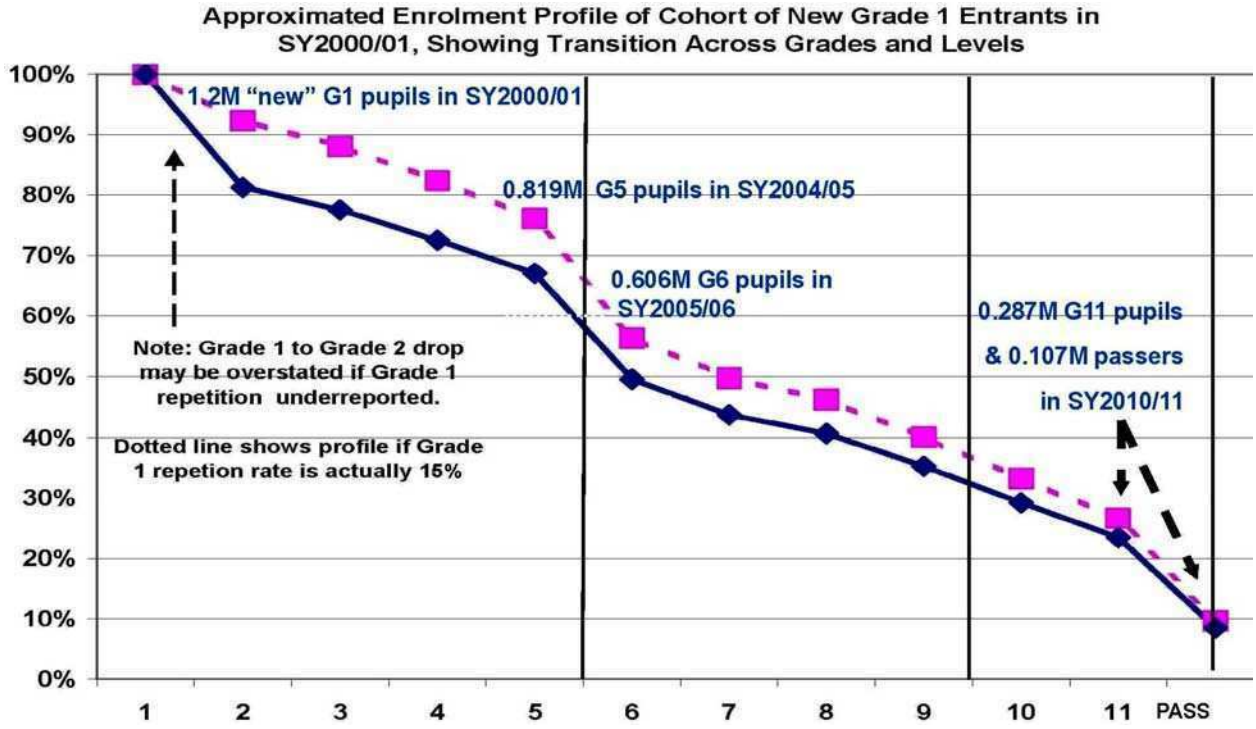
6. While this approach involves some simplifying assumptions (particularly regarding repetition), it approximately allows tracking of children entering grade 1 in a given year across subsequent years of data, which

[1] This document was prepared in early November 2012 by Chris Spohr, Senior Education Economist, Asian Development Bank (ADB) at the request of the CESR Office, with minor updates in January 2013 to add survey weights and some requested findings. The note attempts to respond to very astute inquiries raised by the CESR Team, however, any errors herein are those of the author alone. While figures generally show 1 decimal place, this is **not intended to convey precision**, particularly for analysis using subsamples of the data.

[2] PPE consists of the secondary education subsector (SES), technical and vocational education and training (TVET), and higher education subsector (HES).

in turn captures how students in that cohort progressed across grades or dropped out from the education system between certain grades. The noted Initial Assessment of PPE in Myanmar used EMIS data for SY2000/01 through SY2010/11 to construct a cohort profile showing an approximated transition path of **new entrants** to primary school (grade 1) in SY2000/01 as they progressed across grades of primary education, lower secondary education (LSE or "middle school"), and upper secondary education (USE or "high school"), or alternately exited from schooling. While data limitations preclude more rigorous and precise assessment, Figure 1 gives a crude indication of the profile of shares of children progressing through successive grades.[3]

Figure 1



7. The shares indicated for grades of SES would tend to imply a lower NERs for primary and secondary education than published estimates from the 2009-10 IHLCS (see also para. 12) of 87.7% and 52.5%.[4] One potential explanation would be a possible understatement of grade 1 repetition rates in EMIS figures (reported as only 14,838 or 1.2% of an enrolment of 1.24 million children in grade 1 in SY2000/01), and thus an overstatement of new grade 1 entrants. If the actual repetition rate were higher, this would decrease the apparent large drop-off from primary grade 1 in SY2000/01 to grade 2 in SY2001/02, and thus drag the remainder of the graph upwards. However, this should not overly affect relative drop-offs across subsequent grades, and the crude profile is at minimum useful to understand qualitative patterns. In particular, the Figure suggests that that much of primary school dropout occurs during or immediately after grade 1 (though the magnitude depends on accuracy of repetition figures), but also that exit from school is particularly marked at the transition from primary to secondary school: among children in that cohort, it appears that fully 1 in 4 primary school completers never entered middle school. Importantly, analysis using IHLCS reported in Appendix 1 generally collaborates the EMIS-based profile shown in Figure 1, while suggesting (i) just above 96% of children in recent cohorts have completed at least primary grade 1; (ii) sizeable shares of children repeat grade 1, and among grade 1 completers, there is very little sign of dropout up through grade 3, which further supports the view that EMIS may be underreporting true grade 1 repetition, thus leading to overestimation of dropout after grade 1 (see Figure 1); and (iii) the rate of dropout accelerates after grade 3, with a particularly marked drop after grade 5: roughly 1 in 5 primary graduates in recent years appear not to have continued into middle school. Looking at either EMIS or IHLCS data, a key question is thus what happens to this large number (more than 200,000) of primary school completers who do not enter SES, and to what extent they may be able to avail of various forms of skill training or nonformal education.

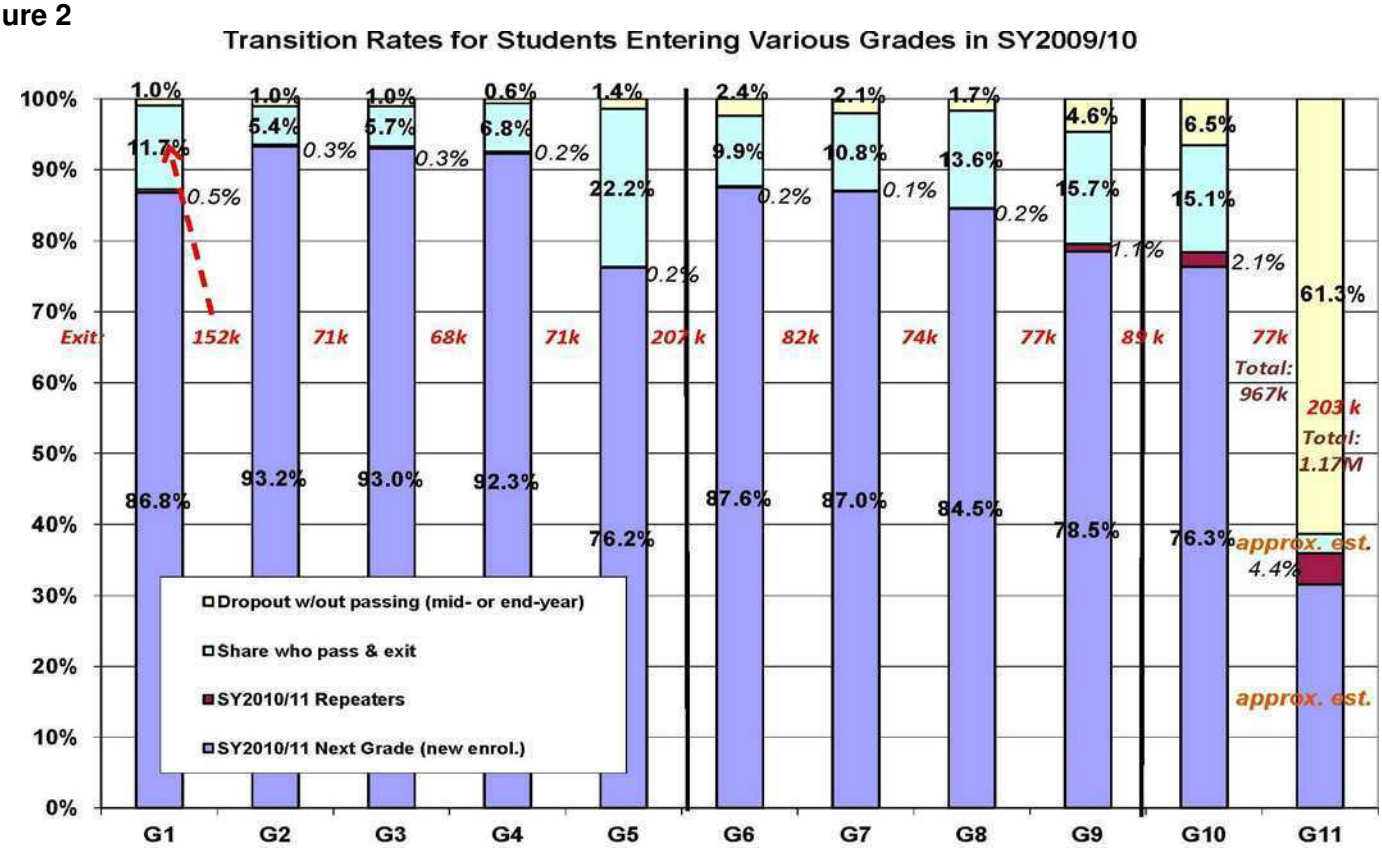
[3] The calculations reflected in the figure involve simplifying assumptions, including related to grade repetition, and should thus be treated as indicative.

[4] Published reports for the Multiple Indicator Cluster Survey, 2009-2010 (MICS) estimate the net attendance ratio for primary of 90.2% and 58.3% for secondary education.

II.2 Grade-specific transitions using EMIS data for SY2009/10 and SY2010/11

8. This analysis uses 2 years data (in this case for SY2009/10 and SY2010/11) to look at students in grade X to the next grade (X+1): e.g., of grade 1 students in SY2010/11, what shares moved on to grade 2, repeated grade 1, dropped out in the middle of grade 1, or completed grade 1 but did not continue further. While this analysis allows the use of more recent data, it should be noted that each grade-specific transition refers to a different cohort. Figure 2 shows estimated transition rates across the latest 2 years of EMIS data.[5] The share of grade 1 students in SY2009/10 who entered grade 2 the following year appears to have risen (dropout has fallen to 11.7%). However, transition to middle school remains problematic: more than 207,000 grade 5 students (including 22.2% of students successfully completing grade 5) in SY2009/10 are estimated to have exited schooling.[6] Problems of SES dropout, repetition, and failure to graduate high school also appear to remain sizeable. The CESR Team proposed further analysis of repetition using IHLCS, with initial results in Appendix 1.

Figure 2



III. Analysis Using IHLCS Household Survey Data

9. In addition to issues noted above, a shortcoming of aggregate (national-level) analysis of EMIS data is that this cannot provide any information on potentially sizeable geographic and socioeconomic gaps. While not elaborated here, the Initial Assessment of PPE in Myanmar notes evidence that disparities in access are sizeable in primary education access but become much more marked at the secondary level. The noted drop-off at the transition from primary to middle school likely exacerbates inequality, as prospects for entry into middle school appear to be weakest for disadvantaged groups (e.g., ethnic group students from remote rural areas), who may also have weaker academic preparedness, increasing their risk of dropout if they do enter secondary education. That Initial Assessment also compiles published estimates using the MICS household surveys (particularly the MICS) that suggest, among others:

[5] In contrast to Figure 1, Figure 2 shows different cohorts of children at different grades. Data on numbers of new HES entrants in SY2010/11 was not available, though it is believed that most of the 34.3% of grade 11 finishers who passed the matriculation exam (shown at the far right) probably entered HES the following year.

[6] It is noted that transition rates calculated herein are marginally lower than the 80.2% reported in MOE (2012).

(i) Disparities across **states and regions** (and likely between affluent and poor areas) are stark. The data indicate an NER in Yangon of roughly 74.7% versus only 30.9% in Rakhine: more than four-fifths of children age 10-15 in Yangon are in school (at least in primary), while more than half (52.9%) in Rakhine are already out-of-school;

(ii) The relationship between **wealth quintile** and share of 10-15 year olds who are out-of-school youth (OSY) is dramatic and strikingly linear, confirming that enrolment and dropout are strongly affected by socioeconomic status;[7]

(iii) In terms of **gender**, while a marginally larger share of girls (58.6%, versus 58.3% of boys) age 10-15 is in secondary school, the share of girls out-of-school is also slightly larger (30.5%, versus 29.8% for boys). Moreover, poverty appears to more strongly affect female dropouts: with the exception of the richest quintile, the gender gap in shares of OSY is roughly inversely related to wealth quintile, and for the poorest quintile, the share of OSY girls is 7 percentage points higher than for boys. The share of girls who are OSY is also slightly higher in rural areas and marginally lower in urban areas. These gender dynamics are much sharper for children of secondary school age (10-15 years old) than those of primary school age (5-9 years old).[8]

10. This informal note uses a larger dataset from the second round of the IHLCS, also conducted during 2009-10.[9] IHLCS is reported to be a nationally representative sample consisting of more than 95,000 individuals from more than 18,600 households in all 17 states and regions.[10] During the 29 October session of the noted seminar, the CESR Team reviewed education-related content in the IHLCS questionnaire and identified an initial set of research questions that can be analyzed using the IHLCS data and would provide important inputs to broader CESR analysis related to PPE as well as primary education. These queries can be clustered into 7 areas:

1. Estimates on enrolment rates by age group/level;
2. Shares of primary school students with preschool experience;
3. Distribution of basic education (grade 1-11) students by type of school;
4. Numbers of children who have never attended school and the main reasons;
5. Number of out-of-school youth (OSY) and the main underlying reasons;
6. Initial analysis on role of parents' education and socioeconomic status; and
7. Other questions on participation, including TVET, and role of socioeconomic status.

11. The seminar's second day (2 November) engaged the CESR Team in reviewing and interpreting the raw findings of first-pass analysis into those questions, as summarized below: ***see also footnote 1 on precision***.

III.1 Estimates on enrolment rates by age group/level

12. In the absence of a recent national census, the CESR Team recognized that IHLCS (as well as MICS) may play a key role in estimating GERs and NERs for various levels of education.[11] Published reports for IHLCS[12] and MICS[13] provide GER and NER estimates for primary and secondary education, with MICS also providing an estimate for preschool participation. However, neither of these reports presents any analysis on enrolment in higher education or TVET (including various forms of training), despite their coverage in the questionnaires. The CESR Team was unaware of any estimates of enrolment rates for post-secondary levels of education, and proposed to obtain NER and GER estimates for higher education and other levels using the IHCLS. Section 5 of Table 1 presents estimates of NER and GER for higher education based on 2 age groups: (i) 16-19 year-olds, based on Myanmar's official norms; and (ii) 18-21 year-olds, as used in many countries. As these are the first known estimates of NER and GER for higher education, they cannot be compared to estimates

[7] IHCLS breaks children into 2 groups, suggesting secondary NERs of 35% and 59% for the poor and non-poor, with rural and urban NERs of 47% and 75% for rural versus urban children.

[8] Based on MICS, at the primary level, Rakhine is the only state in which noticeably more girls are out-of-school (26.3% versus 22.0% of boys), though there is at least indication that slightly more girls may drop out at age 9.

[9] The IHLCA office kindly provided ADB a copy of the IHLCS dataset to support analysis related to the CESR.

[10] This 2009-10 second round of the IHLCS, was conducted in 2 sub-rounds, in December 2009-January 2010 and May 2010. Analysis reflected in this note uses education variables collected during the first of these sub-rounds.

[11] GER and NER cannot be calculated from EMIS data, since EMIS does not capture the age of children in school or the total number of children in Myanmar in a given cohort.

[12] IHLCA Project Technical Unit. 2011. *Integrated Household Living Conditions Survey in Myanmar: Poverty Profile (2009-10)*. Yangon.

[13] MNPED, MoH, UNICEF. 2011. Multiple Indicator Cluster Survey 2009-2010. Yangon.

from other sources, however, they appear fairly plausible, especially once corroborated by more detailed analysis in Section III.7 of this note.

Table 1

Calculations of Gross and Net Enrolment Rates Using IHCLS (with Weights), based on Age at Date of Survey

	Total obs.	*Share of sample*	GER	NER	IHCLS published	*Out-of school*	*In-school*
(1) Primary school-age							
Children of primary age (5-9)	8,289	*0.0872*					
Primary enrollees	9,682	*0.1019*	1.168				
On-time primary enrollees (age 5-9)	7,264	*0.0765*		0.876	0.877		
Out-of-school youth (OSY), age 5-9	**932**	***0.0098***				***11.2%***	***88.8%***
(2) Secondary school-age							
Children of secondary age (10-15)	11,054	*0.1163*					
Secondary enrollees	7,268	*0.0765*	0.657				
On-time secondary enrollees (age 10-15)	5,766	*0.0607*		0.522	0.525		
Out-of-school youth (OSY), age 10-15	**2,894**	***0.0305***				***26.2%***	***73.8%***
(3) Middle school-age							
Children of middle school age (10-13)	7,378	*0.0777*					
Middle school enrollees	5,066	*0.0533*	0.687				
On-time middle school enrollees (age 10-13)	3,744	*0.0394*		0.507			
Out-of-school youth (OSY), age 10-13	**1,317**	***0.0139***				***17.9%***	***82.1%***
(4) Highschool-age							
Children of Highschool age (14-15)	3,676	*0.0387*					
Highschool enrollees	2,202	*0.0232*	0.599				
On-time Highschool enrollees (age 14-15)	942	*0.0099*		0.256			
Out-of-school youth (OSY), age 14-15	**1,576**	***0.0166***				***42.9%***	***57.1%***
(5) Post-secondary-age groups							
Population aged 16-19	7,974	*0.0839*					
Tertiary enrolment (incl. part-time)	1,529	*0.0161*	0.192				
Enrollees aged 16-19	856	*0.0090*		0.107			
Out-of-school youth (OSY), age 16-19	**5,706**	***0.0600***				***71.6%***	***28.4%***
Population aged 18-21	7,716	*0.0812*					
Tertiary enrolment (incl. part-time)	1,529	*0.0161*	0.198				
Enrollees aged 18-21	815	*0.0086*		0.106			
Out-of-school youth (OSY), age 18-21	**6,467**	***0.0681***				***83.8%***	***16.2%***
(6) Preschool age[1]							
Population aged 2-4	3,838	*0.0404*					
Preschool enrollees age 2-4	642	*0.0068*		0.167			
Out-of-school youth (OSY), age 2-4	**3,196**	***0.0336***				***83.3%***	***16.7%***

Note [1] The IHLCS questionnaire only asks questions related to preschool/ECCD for children aged 2-4. IHLCS data may thus understate actual participation rates if sizeable numbers of children enrol in preschool at age 5 or above (later than the Myanmar norm).

13. Estimates for primary and secondary GER and NER (shown section 1-2 of the table) are similar to published estimates.[14] It is noted that the NER for primary may be slightly understated, since the IHCLS survey was conducted in December 2009-January 2010 (such that a minority of 5 year-old respondents would actually have been 4 years old at the June start of the SY2009/10 school year), while the effect on secondary GER is ambiguous. For both levels, the CESR Team observed the sizeable distinction between GER and NER rates, particularly for primary schooling (with GER estimated at 1.17). This could suggest sizeable shares of late commencement and/or grade repetition, and is investigated further using more detailed analysis in Section III.7.

14. The analysis went beyond published figures by subdividing secondary education into middle and high school levels. Comparison of GERs or NERs shows a steady decline at successive tiers of education. NER

[14] NER estimates for primary (87.6%) and secondary schools (52.2%) are very similar (but not identical) to published IHLCS estimates.

estimates suggest that roughly 10-11% of youth in either age group analyzed (age 16-19 or 18-21) are enrolled in higher education. The more precise patterns of enrolment in higher education and other levels (including skill training) enrolment is also investigated in Section III.7.

III.2 Shares of primary school students with preschool experience

15. As per the notes at the bottom of Table 1, IHCLS does not capture information on possible participation in preschool by children age 5 or older. That table thus shows an estimated NER for 2-4 year olds' participation in preschool of 16.7%, however this may understate the actual share of children participating in preschool, and it is not possible to accurately estimate a GER. The CESR Team thus proposed to use the IHLCS data to estimate the share of current primary students who are reported to have completed at least some preschool (Table 2).[15]

Table 2

IHLCS2-based Estimates for Shares of Current Primary Students who Had Previously Attended at Least Some Preschool

	Total	Urban	Rural
Share with preschool experience			
Current primary enrollees	18.8%	49.1%	11.6%
Grade 1 enrollees	22.5%	58.5%	15.7%

16. Among respondents currently enrolled in primary school (grade 1-5), 1 in 5 (18.8%) have participated in preschool, with a somewhat larger share (22.5%) among primary grade 1 pupils. The latter may reflect an increase in preschool participation in recent years. The CESR Team also observed that there are sizeable gaps between urban and rural access to preschool: more than half of urban grade 1 students have attended at least some preschool, versus fewer than 1 in 6 (15.7%) for their rural counterparts.

III.3 Distribution of basic education students by type of school

17. The CESR Team also proposed investigation of the shares of basic education students enrolled in various types of schools. The overall breakdown by level is show in Table 3.

Table 3

IHLCS2-based Estimates for Shares of Basic Education Students by Type of Institution

	Basic Educ. (G1-11)	Primary (G1-5)	Middle/LSE (G6-9)	High/USE (G10-11)
Public/community schools				
Basic ed. primary school (BEPS)	33.3%	56.4%	3.5%	0.2%
Branch primary school (BPS)	0.8%	1.3%	0.3%	0.0%
Affiliated primary school (APS)	0.6%	0.8%	0.4%	0.0%
Basic ed. Post-primary school (BEPPS)	14.6%	17.4%	15.7%	0.2%
Basic ed. middle school (BEMS)	9.0%	6.2%	18.0%	0.8%
Branch middle school (BMS)	3.7%	3.6%	5.4%	0.3%
Affiliated middle school (AMS)	4.0%	3.0%	7.3%	0.8%
Basic ed. high school (BEHS)	25.0%	6.4%	37.4%	78.5%
Branch high school (BHS)	3.8%	1.9%	6.0%	7.1%
Affiliated high school (AHS)	3.4%	1.6%	5.3%	6.8%
Monastic/private schools				
Monastic	0.9%	1.2%	0.7%	0.4%
Private school	0.7%	0.1%	0.1%	5.0%

Note: IHCLS2 does not include type of provider for preschool, TVET, or higher education

18. For primary grades (1-5), IHLCS data suggest that basic education primary schools (BEPS) account for a narrow majority (56.4%) of total enrolments.[16] The table also indicates that BEPS also appear to be providing

[15] Unlike current participation in preschool, the questionnaire asks prior preschool participation of all respondents age 5 and up.

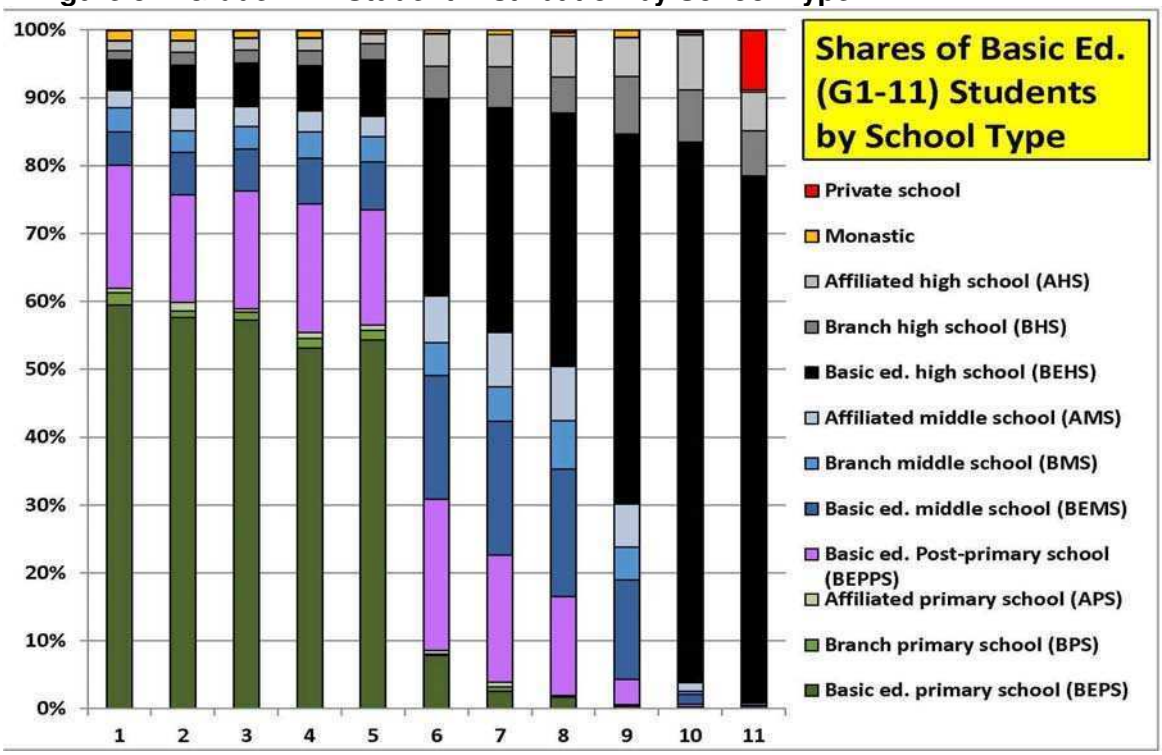
[16] IHLCS' sample and household-level weighting is expected to produce fairly accurate percentages but not total population/headcount measures. EMIS data indicate there were a total of roughly 5.13 million primary students in SY2009/10, so 56.4% would this would

secondary grade education to a small but non-negligible share of students: the CESR Team conjectured this might reflect the situation in the most remote rural areas. Basic education post primary schools (BEPPS) account for 17.4% of enrolments in grades 1-5 (the second a largest share), followed by basic education high schools (BEHS, at 6.4%) and basic education middle schools (BEMS, at 6.2%). The IHLCS data suggest that the monastic system enrolls only 1.2% primary students (which would comprise roughly 60,000 based on EMIS data).

19. For SES students (grades 6-11), the table shows that BEHS comprise the largest share: IHCLS data suggest that BEHS account for roughly 37.4% of middle school (grade 6-9) and 78.5% of high school (grade 10-11) students.[17] BEMS and basic education post-primary schools (BEPPS) account for sizeable shares of middle school students (18.0% and 15.7% respectively). Shares in monastic schools remain non-negligible, but drop at higher levels. Interestingly, 5.0% of high school enrollees are reported to attend private schools in SY2009/10, even though this preceded the promulgation of the Private School Registration Law, effective in SY2012/13.

20. It is possible that such shares are not constant within grade levels. In particular, MOE reports suggest that BEPPS typically cover only 1-3 grades of middle school. Figure 3A presents a more detailed breakdown, decomposing enrolments by each specific grade. It shows shares for enrolments at each of grades 1-11, where the total height of the segmented bar refers to 100% of students enrolled in a given grade level in SY2009/10. Dark green shows BEPS, with lighter shades depicting branch and affiliated primary schools, and similar shading for middle schools (in blue) and high schools (in black/grey), with other types in brighter colors.

Figure 3A. Grade 1-11 Student Distribution by School Type



21. While the breakdown of primary enrolments across school type is relatively stable across grades 1-4 (with dark green segments showing the share enrolled in BEPS), shares show more variation within middle school and high school grades. As expected, the share of middle school students in BEPPS (light purple segments) falls from at least 20% of grade 6 or 7 students to roughly 15% of grade 8 students and less than 4% for grade 9. By contrast, the share of middle school students enrolled in BEHS (black segments) rises from grade 6 to 9, with the majority of grade 9 students enrolled in BEHS. Also noteworthy is the sharp emergence of private schools (red segments at the top) in grade 11: initial analysis suggests that this reflects "cramming schools" (one type of private tuition), including for repeating grade 11 students who failed the matriculation exam on the first try.

represent 2.9 million students in BEPS.

[17] EMIS data indicate there were a total of roughly 2.18 million middle school and 673,719 high school students in SY2009/10, so the Table would suggest that BEHS served roughly 815,000 grade 6-9 and 530,000 grade 10-11 students.

22. To assess whether these patterns differ by geographic area, Figures 3B and 3C give the breakdown of urban and rural basic education students by type of school. Unsurprisingly, BEHS comprise a much larger share of student enrolments in each basic education grade in urban versus rural areas. Another key conclusion with important implications for education policy and management is that rural education provision is much more diverse, particularly in middle school (especially grades 6-9). In urban areas, at least 80% of grade 6-8 students are in "mainstream" schools (the dark BEMS and BEHS bars) and roughly 90% of high school students are in BEHS. By contrast, in rural areas, BEMS and BEHS account for only around 40% of grade 6-8 enrolments—8 different types of schools account for at least 5% of grade 6 enrolments, with BEPPS covering the largest share—and affiliated and branch high schools and each account for roughly 10% of high school enrolments.

Figure 3B. Urban Grade 1-11 Student Distribution by School Type

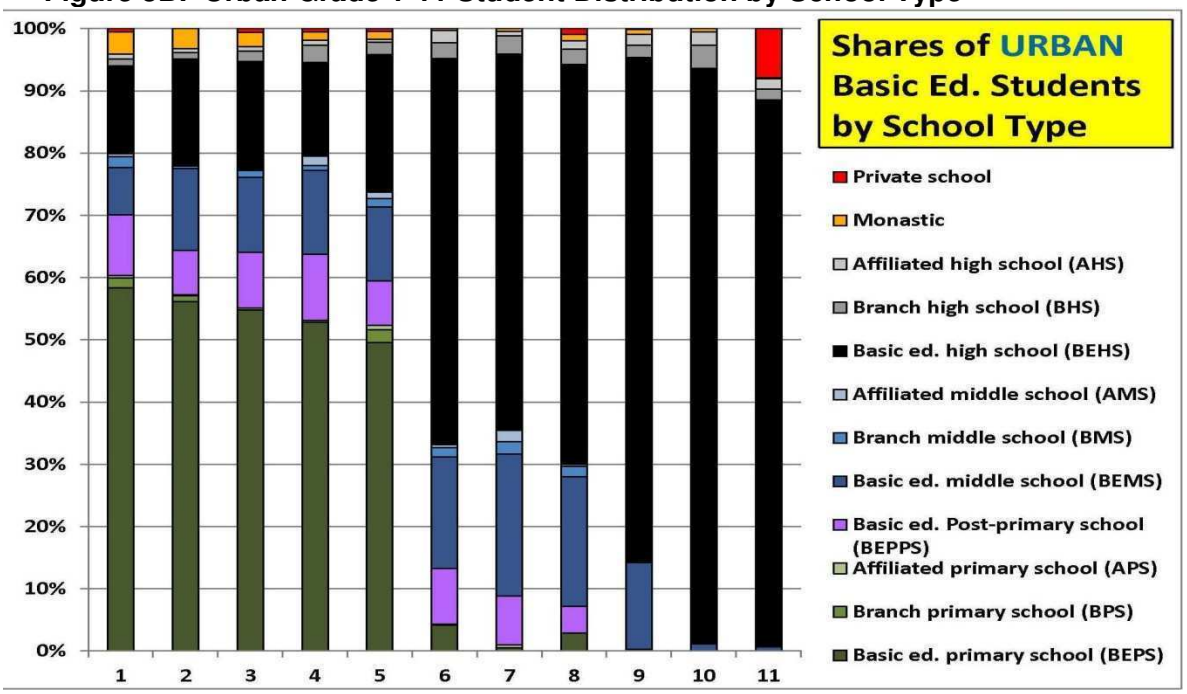
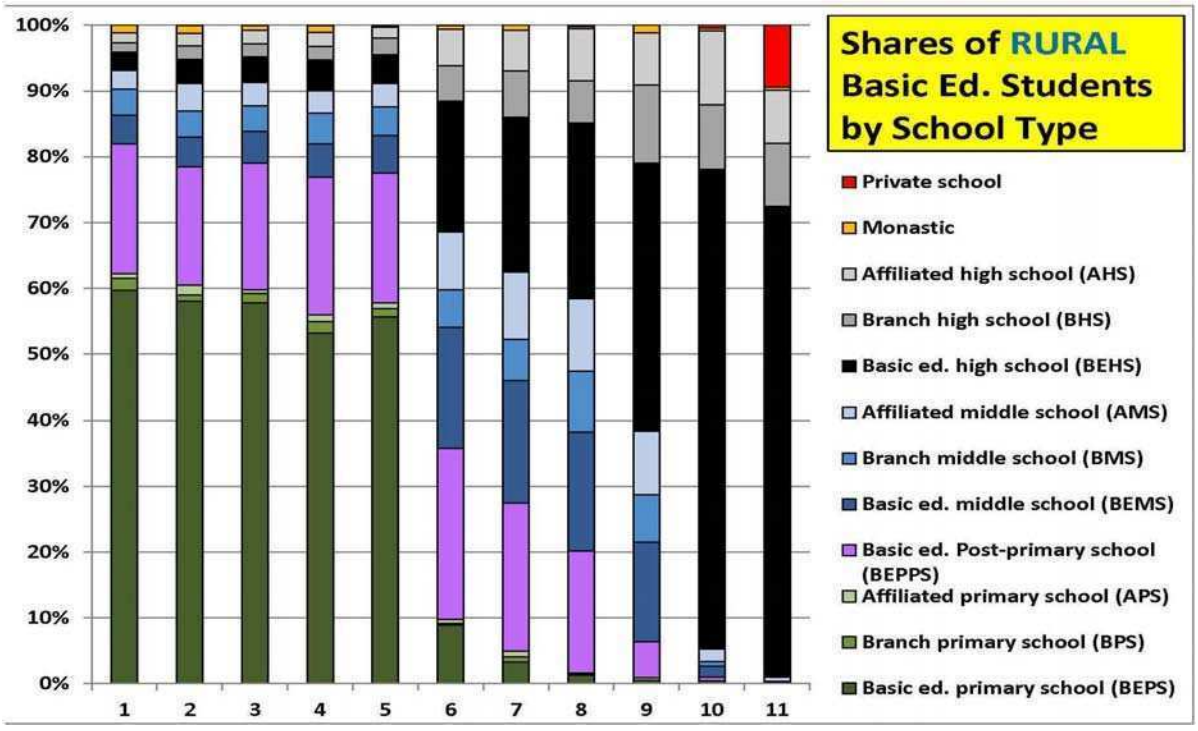
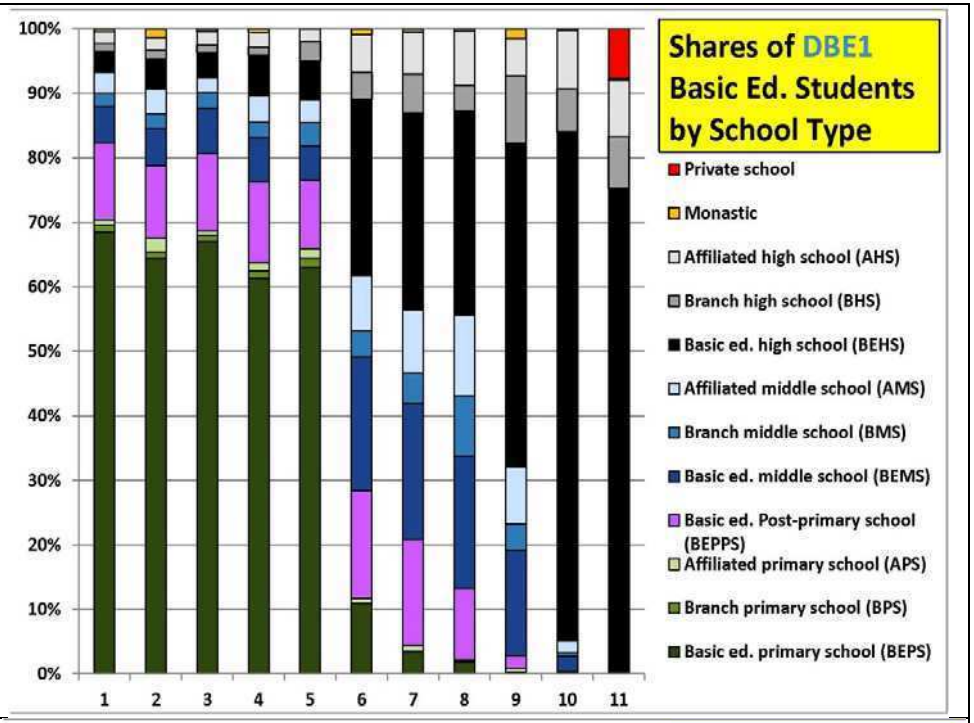
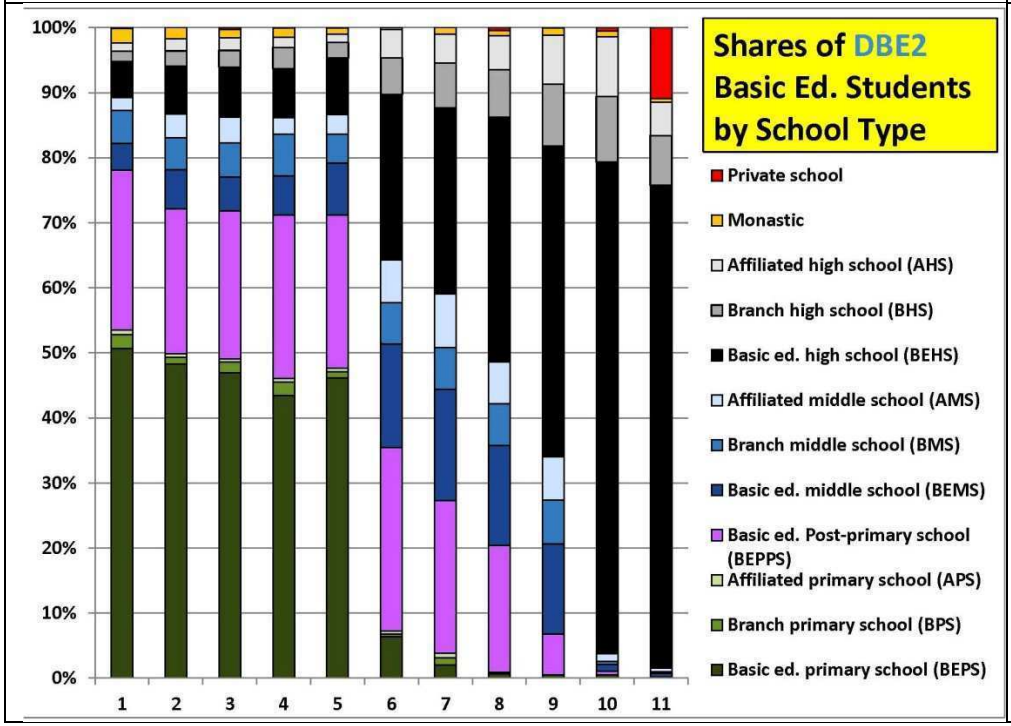


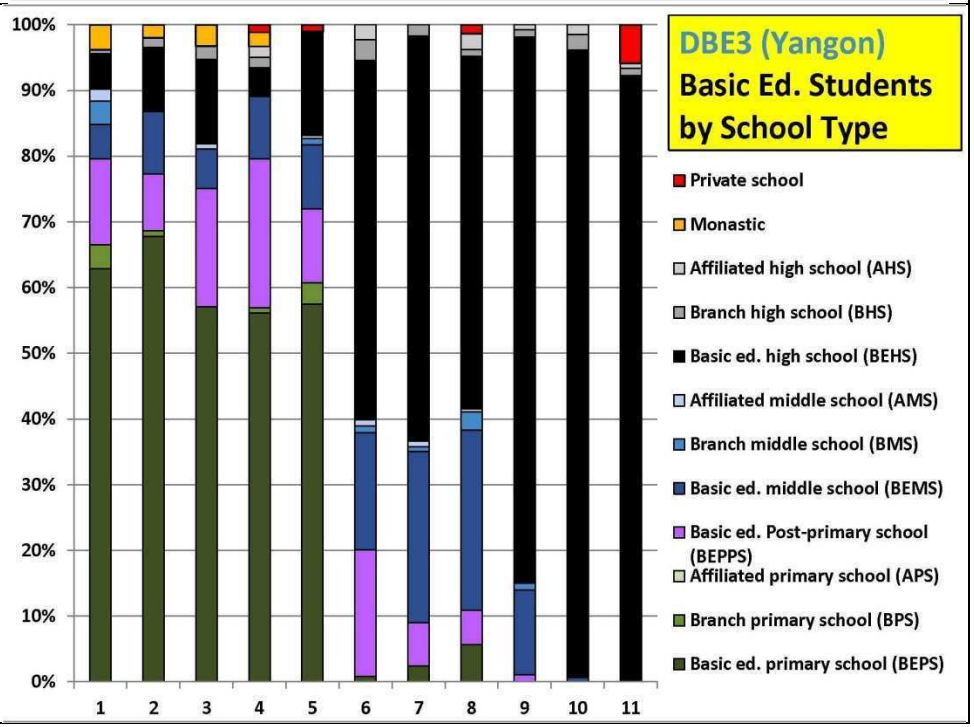
Figure 3C. Rural Grade 1-11 Student Distribution by School Type



23. Finally, it was proposed by the team working on CESR Phase 1 finance study to run similar analysis dividing students residing in areas administered by MOE's 3 departments of basic education (DBEs). Distributions of grade 1-11 students in areas covered by DBE1, DBE2, and DBE3 are shown in Figures **3D-F** on this page. Among distinctions, BEHS account for the largest shares of middle school (more than 50%) and high school (nearly 95%) students in Yangon (covered by DBE3). Branch and affiliated schools at various levels cover substantial numbers of students in areas administered by DBE1 and DBE2, with post-primary schools account for the largest shares of students at both primary and middle school levels in areas administered by DBE2. DBE2 is also characterized by having the smallest shares of primary students in "mainstream" BEPS and middle school students in BEMS, as well as a marginally larger share of grade 11 students in private schools.







III.4 Numbers of children who have never attended school and the main reasons

24. The CESR Team noted the importance of understanding how many children never enroll in school and the main underlying reasons. Table 4 presents this for official primary age children (age 5-9) and various age groups of respondents.

Table 4

IHLCS2-based Estimates for Shares of Children/Indivduals of Different Ages Who Had Never Attended Any Formal School and Reasons

	Primary age (age 5-9)	Age 10-15	Age 16-19	Age 20-29	Age 30 & up
Share who never attended formal schooling	*8.7%*	*2.3%*	*3.4%*	*4.4%*	*12.6%*
Of whom, reasons:					
Costs not affordable	19.3%	47.3%	46.1%	45.0%	27.8%
Personal illness	11.2%	12.9%	8.0%	6.5%	2.8%
Lack of interest	13.1%	28.1%	22.0%	24.4%	14.3%
Care for family	0.2%	2.6%	7.3%	8.5%	15.3%
Agricultural work	0.0%	3.5%	9.0%	7.4%	13.9%
Other (non-ag.) work	0.0%	0.2%	0.4%	0.8%	2.0%
School too far	1.6%	1.1%	3.2%	3.8%	19.4%
Other reasons	54.4%	4.3%	4.0%	3.7%	4.5%

25. The first column suggests that many children start school at least one year behind the normative age of 5 (the category "other reasons" likely principally reflects parents' decisions that a child is not yet mature enough to enroll). The timing of the IHCLS survey in December 2009-January 2010 also means that a minority of 5 year-old respondents would actually have been 4 years old at the June start of the SY2009/10 school year. Section III.7 allows for more detailed investigation of age of entry into primary school. Comparing remaining columns in the lead row of the table suggests that access to schooling has increased in recent years: namely, the estimate of 2.3% of 10-15 year-olds who have never attended school is sizeable, but much smaller than the corresponding share for successively older cohorts (who would have been of primary schooling age 10 or more years ago).

26. The CESR Team also discussed the reasons for why some children had never attended schooling. The table shows that, for all age groups, the lead reason relates to direct costs. In many countries, the direct costs of schooling include (i) tuition, specific fees (e.g., for textbooks, registration, school upkeep, activities, etc.), and/or other forms of contributions; and (ii) costs of purchasing uniforms/clothing and various school supplies, transportation, food, etc. A second type of cost is "opportunity cost": i.e., the fact that a child attending school cannot be spending that same time working in the home, family farm, etc., to support their family's income. These opportunity costs would be captured principally in rows for agricultural work, non-agricultural work, and appear (at least based on parents' expressed responses) to be considerably less important.[18] The CESR may shed further light on such direct and opportunity costs in the Myanmar context.

27. The team also observed the large share of responses for "lack of interest", which were cited in nearly one-third of cases of 10-15 year-olds who have never been schooled. This is discussed further below in Section III.5. Illness plays a sizeable role, accounting for roughly 12.9% of cases of 10-15 year-olds who have never enrolled. Finally, it is rather encouraging that for recent cohorts of children, few parents cite distance from schools—a key type of "physical access" barrier in many countries—as a reason why their child has never attended school, suggesting an expansion of Myanmar's primary school network in recent years.

III.5 Number of out-of-school youth (OSY) and the main underlying reasons

28. Table 5 reflects the CESR Team's similar investigation of the phenomenon of out-of-school youth (OSY),

[18] Older children may also need to spend time caring for younger siblings, freeing up their parents to work, so "care for family" might in some cases be viewed as a type of opportunity cost.

breaking the sample down into children of normative age ranges for primary education, LSE (middle school), and USE (high school) levels.

Table 5

IHLCS2-based Estimates for Shares of Children/Indivduals of Various Ages Who are not Enrolled and Reasons for Exiting From Formal Education

	Primary age (age 5-9)	LSE age Age 10-13	USE age Age 14-15	Higher Ed. Age Ranges Age 16-19	Age 18-21	Age 22-29	Age 30 & up
Share who are out-of-school	*11.2%*	*17.9%*	*42.9%*	*64.0%*	*82.7%*	*94.2%*	*99.4%*
Of whom, reasons:							
Costs not affordable	7.5%	33.1%	35.4%	27.4%	24.5%	20.3%	18.4%
Personal illness	2.1%	3.0%	3.4%	2.0%	1.7%	1.6%	1.5%
Lack of interest	5.9%	29.3%	26.6%	30.6%	29.5%	24.0%	18.7%
Got married/pregnant	0.0%	0.0%	0.2%	0.8%	1.0%	2.1%	2.2%
Care for family	0.9%	6.5%	8.3%	8.1%	8.4%	9.3%	16.5%
Agricultural work	1.2%	7.7%	9.4%	11.9%	12.2%	11.2%	11.3%
Other (non-ag.) work	0.5%	3.3%	6.6%	7.0%	6.7%	7.1%	7.0%
School too far	0.4%	2.4%	1.8%	1.7%	1.8%	1.8%	3.3%
No teacher	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
No school supplies	0.0%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%
No clothing/shoes	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Bad weather	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Finished at least undergrad. diploma	0.5%	0.0%	0.2%	3.0%	7.8%	16.8%	7.5%
Never started school	77.3%	12.2%	5.9%	4.8%	4.7%	4.8%	12.6%
Other reasons/not reported	3.6%	2.4%	2.0%	2.6%	1.6%	1.0%	0.8%

29. As with the results in Section III.4, the estimated share of OSY among primary age children may largely capture children starting late and those who may have turned age 5 just prior to the survey: of the 11.2% of children who are OSY in this age group, more than three-quarters have never (at least not yet) enrolled. The share of OSY rises rapidly in higher age groups, with 17.9% and 42.9% of children of LSE (middle school) and particularly USE (high school) age being OSY, rising further to 64.0% and 82.7% among youth aged 16-19 and 18-21. Since enrolment here is defined to include participation in training programs, the fact that only 0.6% of the population above age 30 is enrolled suggests that participation in adult training programs is very limited (something explored further in Section III.5).

30. Excepting the age 5-9 group noted above, the leading reasons for being out-of-school are once again direct costs and what is termed “lack of interest”, followed by opportunity costs (e.g., a total of 18.9% of youth aged 16-19 have earlier exited education in order to work in either agriculture or other sectors). The large share of OSY reporting lack of interest is rather puzzling, though ADB analysis of household data for the Philippines shows a very similar phenomenon. At least in the Philippines case, dropout or other forms of exit from the schooling sector (e.g., between primary and LSE levels) due to "lack of interest" appears to reflect both demand-side factors (e.g., low parental recognition of the value of education) as well as quality-related issues. The latter, in turn, may range from students’ and parents’ perceptions that the education offered is not relevant to the real world, to a dynamic wherein rote-based instruction and classroom overcrowding promotes a cycle wherein children with weaker academic and socioeconomic backgrounds are allowed to slip increasingly far behind, become marginalized and/or stigmatized, and then eventually dropout. The potential explanation in the Myanmar context merits further assessment during Phase 2 of the CESR.

31. IHLCS responses (assuming these accurately reflect the real reasons) suggest that other supply-side factors such as distance to schools or lack of teachers may be less important. The fact that “illness” is cited less frequently for reasons for exiting education compared to children who never entered schooling is at least consistent with the explanation that disabilities are being enumerated as “illness”, and that disability is a more significant deterrent to entry to school than to progress once enrolled.

32. Finally, Table 6 looks at adolescent respondents in the age range of 10-18, who (according to normative ages in Myanmar) should have completed primary education. The left portion shows that just under half (46.9%) of these adolescents have indeed completed primary schooling and remain in schooling, while another 28.9% have completed primary but subsequently exited education. A sizeable share (12.6%) remain enrolled in primary school, while 11.4% have dropped out of or never commenced primary schooling, which suggests they will face the most daunting obstacles to participation in the modern economy. For this final group of adolescents, the right portion of the table then shows the responses for the reasons they are out-of-school.

Table 6

Further Analysis of 10-18 Year-Olds and Out-of-School Youth (OSY)

Categorized status of all 10-18 year olds		**10-18 year-olds who are (i) OSY; and (ii) haven't completed primary school**	
		Share OSY & non-completers	11.4%
Share of 10-20 year olds who are:		**Of whom, reasons:**	
(1) Completed primary & still in school	*46.1%*	Costs not affordable	32.4%
(2) Completed primary but now OSY	*29.8%*	Personal illness	2.8%
(3) Not yet completed primary & still in school	*12.6%*	Lack of interest	22.7%
(4) Not completed primary & OSY	*11.4%*	Got married/pregnant	0.4%
	100.00%	Care for family	5.4%
		Agricultural work	6.5%
		Other (non-ag.) work	3.9%
		School too far	1.2%
		No teacher	0.0%
		No school supplies	0.0%
		No clothing/shoes	0.1%
		Bad weather	0.0%
		Finished at least undergrad. diploma	0.0%
		Never started school	23.0%
		Other reasons/not reported	1.6%

33. The table suggests that the lead reasons why these adolescents had been unable to complete primary school are direct costs, lack of interest, as well as non-entry to grade 1 (perhaps due to these same factors). As this group exited (or never entered) specifically at the primary level, it is not surprising that factors such as opportunity costs (i.e., work), distances to schools, and marriage/pregnancy are less important.

34. In the tables above, it is encouraging that supply-side measures (e.g., factors like “school too far” and “no teacher”) are not cited as key reasons for lack of entry to or for exiting from education. At least for primary education, physical access does not appear to be the most binding constraint. However, this should not be interpreted as saying that supply-side issues are not important. It is possible, for example, that the noted “lack of interest” variable at least partly captures parents and/or children’s low valuation of education because of inadequate infrastructure and equipment/books, and/or a poor perceived quality of teachers. Similarly, in some other countries, the need to provide fees or other contributions for school repairs, provision of furniture, etc. are major cost deterrents to enrolment. Such factors merit further investigation during the CESR. Likewise, another area for further investigation is to assess the relative importance of reasons for dropout from middle school and high school, as well differences in reasons for exiting schooling among children from rural versus urban areas, etc. While such analysis will continue during CESR Phase 2, the CESR Team proposed urgent, first-pass analysis to try to explain EMIS-based findings (see Section II) suggesting that between 1 in 4 to 1 in 5 primary completers in recent years have not proceeded into middle school. Initial IHLCS analysis of transition rates and especially exit by primary completers (i.e., low primary-to-secondary school transition rates) is reported in Appendix 1*.

III.6 Initial analysis on role of parents’ education and socioeconomic status

35. The CESR Team proposed further analysis on the determinants of access to education: in particular, whether parents’ education makes it more or less likely that a child will complete primary schooling, or whether

only factors such as location by state/region or in rural versus urban areas are important. As noted in para. 9, published MICS analysis used cross-tabulation to show large apparent gaps in children's education access across various dimensions, including gaps across households in different geographic areas, between poor and non-poor households, and based on grouping by mothers' education. However, if more educated parents also tend to live in more urban areas and/or are wealthier, it would be difficult to clearly attribute any differential in children's education access to parents' education vis-à-vis influences from these other factors. Econometricians often use regression methodologies to capture correlation across multiple variables. Although considerable caution is needed in setting up and interpreting regressions, the basic idea is that a regression looks for a correlation between variable X and variable Y after distinguishing (or "controlling for") the effects of other variables factors. At the request of the CESR Team, an initial analysis was thus conducted, using as the outcome variable an indicator or dummy variable (with values of 0 and 1) for whether IHLCS respondents age 10-15 had completed primary schooling. Several "explanatory variables" were selected from among factors that could conceivably affect children's education in a causal manner.[19]

36. As a useful starting point prior to regression analysis, Table 7 shows shares of primary completers among children age 10 (per the norm) and also age 10-15, cross-tabulating averages by location groupings. In the absence of any time trends, the shares shown would be equivalent to the likelihood that a child in these areas would of complete primary school by a given age.

Table 7

Shares of Children Who Have Completed Primary School on Time (by Age 10) and Allowing for some Delay (Age 10-15)

	Age 10			Age 10-15		
State/Region	**ALL**	**BOYS**	**GIRLS**	**ALL**	**BOYS**	**GIRLS**
Nationwide	35.0%	33.1%	37.2%	70.5%	69.1%	72.0%
By urban/rural						
Urban	49.6%	45.4%	54.8%	84.2%	81.8%	86.6%
Rural	31.3%	29.8%	33.0%	66.9%	65.8%	68.2%
Rural proxy-poor	23.0%	19.4%	27.2%	57.2%	55.6%	59.0%
By state/region						
Tachin	39.9%	38.6%	41.4%	77.6%	75.6%	80.2%
Kayah	38.0%	16.2%	55.3%	84.4%	80.7%	88.9%
Kayin	30.3%	29.0%	32.1%	68.5%	65.9%	71.3%
Chin	27.7%	18.8%	34.4%	71.4%	71.4%	71.3%
Sagaing	40.9%	36.0%	46.3%	78.7%	77.4%	80.1%
Taninthayi	25.2%	25.6%	24.6%	68.6%	64.4%	73.5%
Bago (East)	27.0%	37.3%	13.3%	69.2%	71.2%	66.7%
Bago (West)	29.2%	22.6%	35.7%	66.9%	67.4%	66.4%
Magwe	33.0%	29.4%	36.1%	69.8%	69.1%	70.3%
Mandalay	42.6%	40.5%	44.6%	76.3%	75.0%	77.6%
Mon	41.4%	29.8%	54.1%	75.5%	71.0%	79.8%
Rakhine	21.2%	19.8%	22.7%	45.5%	44.3%	46.9%
Yangon	39.3%	34.1%	44.6%	83.0%	81.5%	84.6%
Shan (South)	52.7%	53.8%	50.9%	77.5%	76.1%	79.0%
Shan (North)	28.8%	23.1%	34.6%	69.0%	63.7%	74.0%
Shan (East)	32.1%	32.3%	31.8%	61.1%	54.2%	68.4%
Ayeyarwady	32.3%	32.0%	32.5%	65.0%	65.3%	64.8%

37. For the entire sample ("ALL") and for subsamples of boys and girls, the table demonstrates sizeable gaps by geographic area, with similar patterns to cross-tabulations reported in the noted IHLCS and MICS publications.

[19] For example, it appears safe to assume that a parents' education (likely completed before a child's birth) could causally affect a child's access to education, and not the reverse. Similarly, the state/region in which a household lives would seem to be valid (in econometrics terminology, "exogenous") as an explanatory variable, except if a substantial number of households migrate across state/region specifically to provide better education for their children.

For example, in rural households, only roughly 31.3% of 10 year-olds have already completed primary school, versus 49.6% in urban areas, with values of 66.4% and 84.2% for 10-15 year olds in rural and urban areas. As part of the first-pass analysis, the CESR Team proposed to use poor housing conditions (namely, residence in a hut with post life of only 1-3 years) as a proxy for rural poverty that would not be subject to manipulation (since IHLCS enumerators visually inspected housing). For this group (labeled "rural proxy-poor"), less than 3 in 5 (57.2%) children aged 10-15 had completed primary school. Other poverty measures may be constructed later. The latter part of the table suggests that only around 46% of 10-15 year old children in Rakhine have completed primary school, versus 83% in Yangon and 84% Kayah (a gap of 37-38 percentage points).

38. Appendix 2 then tabulates the results from a first-pass multivariate regression analysis, with the explanatory variables shown in the left column, and values in each column to the right being the set of coefficients from a given regression specification (columns 1-8 use the subsample of boys, and columns 9-18 use the subsample of girls). Columns 1-4 and 9-12 use a specification based on the approximated years of schooling of these adults, while columns 5-8 and 13-16 use sets of 0-1 dummy variables for whether the adult male (variables starting with "dad") and adult female (variables starting with "mom") have completed specific tiers of education.[20] The initial rows in Appendix 2 reflect the same variables used in Table 7 above, except that these are now included as variables in the same regression. As elaborated below, the coefficients in the columns to the right show the relative influence of living in urban and rural areas and in each of the 17 states and regions. Subsequent rows then add proxy variables for parents' education. Since is not possible to identify which adults in a given household are the parents of a given 10-15 year-old child, the analytical routine (programmed in Stata software) identified the male and female adult aged 25 or above with the highest level of education in the household: in the large majority of cases, these are likely to be the father and the mother. Finally, as shown in the last set of rows, the regression includes dummy variables for respondents' ages to allow for a time trend or specific effects (e.g., the fact that many 10 year olds are still in primary school compared to 15 year olds). .

39. Since the outcome variable is a discrete variable that can only be valued either 0 or 1, logit regression is used in most of the columns as a basis to show whether variables appear have a statistically significant effect. Columns 4, 8, 12, and 16 present coefficients from a more standard ordinary least squares (OLS) regression, with further explanation given below. OLS is not, strictly speaking, appropriate (particularly in terms of standard errors generated), given the 0-1 outcome variable, the coefficients are easier to interpret, since a value of "0.1" or "-0.1" approximates an increase or decrease of 10 percentage points per unit of the explanatory variable.

40. **Basic regression results.** Near the top of Panel A1 (for 10-15 year-old boys) and boys) and Panel A2 (for 10-15 year-old girls) of Appendix 2, regression coefficients tabulated column 4 suggest that, controlling for the other variables, living in a rural area decreases the probability of a boy having already completed primary school by around 6.5 percentage points compared to boys residing in urban areas: for 10-15 year-old girls (column 12), rural residence is associated with an 8.1 percentage point decrease in the probability of having completed primary school.[21] The effect of rural poverty (proxied by poor housing conditions) is associated with a further drop of 10.9 percentage points for boys and 9.4% for girls vis-à-vis rural residents living in less poor conditions—in other words, adding these effects together, rural living in poor conditions (as proxied herein) are roughly 17.5 percentage points less likely to have completed primary school by the time surveyed than urban counterparts, even after controlling for state/region and other factors included.

41. Further down the tables in Appendix 2, Panels A1 (boys) and A2 (girls), differences in values of the next set of coefficients confirm that state and region of residence remain an important determinant of education access. However, the effect is smaller than suggested by simple cross-tabulation. Using OLS results in columns 4 and 12 again (for ease of interpretation, but with the caveats noted), after controlling for urban/rural status and the other variables in the regression, the gap between coefficients associated with residence in Yangon and Rakhine is 21.4 and 24.5 percentage points for boys and girls respectively. Differences in coefficient values also suggest slightly more regional variation for girls: being a girl in Kayah versus Rakhine would be associated with an

[20] For example, if the adult male has completed only middle school, this would be reflected as values of 1 for "dadprim" and "dadmid" (since he completed primary as well as middle school), with zeros for the other dummy variables. So each coefficient captures the marginal impact of an additional level of education.

[21] As noted in Appendix 2, logit regressions find the effects of both residence in a rural area alone and the additive effect of living in poor rural housing conditions (i.e., the variable ruralproxypoor) to be statistically significant at the 5% level.

increase in likelihood of completion of 34 percentage points, while the largest regional gap for boys is roughly 31 percentage points (Shan-South versus Rakhine).

42. The next set of coefficients in column 4 indicates that the likelihood that a 10-15 year old boy has already completed primary school rises by around 0.8 percentage points per additional year of schooling for either the father or mother (proxied by the co-resident male or female adult with the most education). Both of the effects are strongly statistically significant, while the effect of the father's education appears very marginally stronger than that for mother's education. By contrast, for girls (columns 9-12), the effect of father's education is smaller and only marginally significant, and logit results suggest that the effect of mother's education is at least twice as large, with the difference being statistically significant: OLS coefficients would suggest that each additional year of mother's education raises the likelihood that a 10-15 year-old daughter has completed primary schooling by roughly 1 percentage point (versus 0.4 percentage points for each additional year of father's education). This echoes results from many developing countries, which find that mother's education is particularly important for children's educational prospects, especially for girls.[22] The specifications in columns 5-8 and 13-16 show a particularly robust and statistically significant impact effect of either parents' completion of primary education on sons' or daughters' educational opportunities. For example, per column 16, mother's primary school completion appears associated with a 10.2 percentage point rise in the chance that a daughter will have completed primary schooling, while the effect of father's primary school completion is a 4.0 percentage point rise. Coefficients on other levels of completion are mostly positive but not statistically significant (though sometimes larger), due to larger estimated standard errors.[23]

43. **The role of ECCD participation.** Numerous studies suggest that ECCD plays an important role in children's school readiness and other education outcomes. The CESR Team thus suggested the analysis additionally look for effects of ECCD participation on primary school completion. To assess this, similar sets of logit and OLS regressions were run after adding a variable for whether a child has previously attended any ECCD. Results are reported in Panels A2 and B2 in Appendix 1, however, some caution is needed in interpreting the coefficient on this variable ("everpreschool"). In economics terminology, a child's participation in ECCD is not exogenous (e.g., randomly determined; see also footnote 19): the fact that child *A* received ECCD and child *B* may reflect a variety of factors ranging from parents' valuation of education, to the availability of local ECCD services, to the child's inherent maturity or demonstrated intelligence at an early age. It is very likely that such hidden factors—which can at best only be partially controlled by other variables included the regression—would also positively affect the outcome variable regardless of ECCD participation, and these combined influences are being captured in the estimated coefficient on everpreschool: i.e., the latter would likely have a "positive bias" if interpreted as a measure of the impact of actual ECCD participation alone. With those caveats, Panels A2 and B2 suggest that ECCD participation has a strong and statistically significant correlation with children's later primary school completion, which appears strongest for boys. After controlling for the other variables, prior participation in ECCD is associated with a nearly 11 percentage point rise in the likelihood that 10-15 year old boy respondents have completed primary school (versus 8 percentage points in the case of girls). Overall, addition of the variable everpreschool does not change the remaining regression results: i.e., the coefficients on parents' education are virtually unchanged, though it does marginally decrease the effects of rural versus urban residence as well as distinctions linked to state/region of residence. In short, ECCD participation appears to be an important predictor of primary school completion, though this may be capturing other factors (e.g., parents' valuation of education).

44. In sum, while more analysis is needed, results from this first-pass regression analysis are fairly plausible and consistent with findings from similar analyses in other countries. Even after controlling for factors such as locality of residence, parents' education and children's prior participation in ECCD appear to be strong positive determinants of children's access to and ability to progress through schooling (proxied by completion of primary school), while rural residence, a proxy measure for rural poverty, and residence in certain states/regions appear to pose considerable obstacles to educational attainment.

[22] See for example Chris Spohr, "Formal Schooling and Workforce Participation in a Rapidly Developing Economy: Evidence from "Compulsory" Junior High School in Taiwan", *Journal of Development Economics*, Vol. 70/2 (April 2003), pp. 291 – 327, and sources therein.

[23] The dummy variables are defined to provide marginal effects of each subsequent level, which may explain why some coefficients are negative (but not statistically significant).

III.7 Other questions on participation, including TVET, and role of socioeconomic status

45. Finally, the CESR Team proposed further analysis, in order to better understand the dynamics of not only enrolment but also grade progression, while shedding light on such questions as age of entry, at what ages or grade levels disparities among different groups (e.g., urban versus rural) emerge, and other dimensions. The CESR Team requested that this include post-secondary education, since little is known about the share of youth and young adults enrolled in such programs. The latter is particularly true in the case of TVET programs, defined herein to include programs below the tertiary level that may be either prior to entry into employment or mid-career: partly due to the structure of the data, but consistent with definitions used in some countries, this **excludes** engineering/technical programs at level of undergraduate diploma and up (captured as higher education).

46. **Age-specific enrolment and grade progression profiles.** An approach believed to be developed by ADB provides an analytical tool for exploring such dimensions and including all forms of education (including formal and informal TVET) that are included in a household survey, including Myanmar's IHLCS. The analysis uses household survey data to generate age-specific enrolment rates for children and youth grouped into (in this case) 22 groups corresponding with each age in the range 2-23 years of age, and estimates what percentage of children at that specific age are enrolled in some form of education institution. As noted above, this first-level disaggregation provides at least indicative age-specific enrolments for children in each age cohort. However, the analysis goes beyond that first level to ask the distribution of children by grade level, **for each age cohort** in the range 2-23 years-old (in this case). This analysis can be run in parallel for IHLCS subsamples of children grouped by gender, urban or rural residence, etc., thus allowing for comparisons of detailed profiles of how children of different socioeconomic status progress through (and exit) the school system. For example, it allows at least approximate comparisons of not only whether the shares of children enrolled in some form of education at a given age differ between urban and rural areas, but also a deeper (albeit somewhat imprecise[24]) understanding of whether there are differences in patterns of the shares of children whose grade progression is "on track" or lagging vis-à-vis national norms.

47. Detailed quantitative estimates are not reported herein, but in general suggest that the gross majority of girls and boys at least enter schooling, even in rural areas and those appearing to be from poor rural families (based on the housing condition-related proxy noted above, for purposes of this first-pass analysis). However, as captured in the graphical depictions further below), the figures suggest that age-specific enrolments begin to drop off starting around age 11, and there are stronger (albeit signs of repetition), particularly in rural areas. The net effect is disparities in participation (both in terms of enrolment and shares of children on-track and lagging in grade progression) widen starting from the early grades of primary education, with substantially lower levels of participation in rural areas in higher education and TVET (defined as noted above).

48. To better understand these dynamics, the analysis focused principally on generate graphical enrolment profiles depicting grade progression and dropouts by age cohort. For brevity, findings for four IHCLS subsamples are shown herein, comparing the enrolment profiles of (i) children or youth aged 2-23 (denoted "children" for brevity) in the sample, (ii) children in urban areas, (iii) rural children, and (iv) children in rural households that appear to be poor using the noted proxy measure. Analysis was also conducted for other groupings, though (for example) patterns for girls and boys appear fairly similar and are not reported herein.

49. Profiles generated by this analysis using the 4 subsamples are presented in Appendix 3. The first figure reflects the entire IHLCS sample of children (nationwide, and including boys and girls), with total height of each bar capturing the **age-specific participation rate**: i.e., the share of children in each age cohort in the range 3-23 years who is participating in some form of education service. The 3 dark red bars to the far left thus represent shares of children aged 2, 3, and 4 participation in various types of preschool (ECCD). Starting with age 5, the center depicts grade progression for basic education for each age cohort: for a given age (along the x-axis). Again, the total height of the segmented bars measures overall participation in some form of education: while that for age 5 is likely understated (since the survey does not include participation of 5 year olds in preschool), the first 3 segmented bars suggest that roughly 65.2% of 5 year-olds are in primary school, rising to roughly 89.4% for

[24] The "on track" baseline refers to those entering grade 1 at age 5 and progressing without repetition. As noted earlier, IHLCS surveys age at the date of survey (December or January), hence it may somewhat overstate the share of children lagging behind.

children age 6 and 95.2% for children age 7. Looking at the specific colored segments **within** each bar, the purple segment captures the share of children that are in school at a grade level that is "on-track" vis-à-vis MOE's norm of entry to grade 1 at age 5, the green segment depicts the share who are further advanced than expected, while the turquoise segment shows the share of children lagged by 1 year, and the remaining colored segments show attainment lagging by 2, 3, or at least 4 years. Further to the right, the reduction in the total height of the bars captures the extent to which children are exiting the school system, while the collapse of the green and purple segments relative to the other segments is suggestive of at least modest repetition. While only 5.4% of 9 year-olds are OSY, that share rises to 12.0% of 11 year-olds and 38.0% of 14 year-olds, rising to 59.9% by age 16. The segments to the far right show shares of youth age 16 and up who are still enrolled in basic education, or are enrolled in higher education (dark blue segments), TVET (red segments), or both (yellow segments). The very small share of youth enrolled in TVET—as noted above, measured in IHLCS as "other trainings", while engineering/technical studies towards a higher education diploma or degree or captured as higher education—is particularly striking.

50. The remaining profiles show sharp distinctions between urban, rural, and rural poor subsamples. Among these, at the basic education level, the pace of exit from the system (captured by the total height of the bars) is much more rapid in the rural and particularly the rural poor subsamples. Meanwhile, the relative shifts across segments (including the collapse of the purple and blue bars for progressing on-schedule or at most 1 year lagged) suggest more substantial repetition in the rural poor subsample, particularly in grade 1. Looking to the right, much larger shares of urban youth enter TVET and higher education, and do so at a somewhat younger age. Among urban households, roughly 33.0% of 18 and 19 year-olds are enrolled in higher education, TVET, or both, compared to only 4.2% of those in poor rural households.

51. Finally, further analysis during the CESR is clearly needed into the very low participation in TVET, particularly in rural areas and the poor, and in skills relevant to Myanmar's agricultural and industrial sectors. As an input to that, Table 8 captures the breakdown of adolescents and adults by general-track educational attainment and participation in various sub-types of TVET.

Table 8

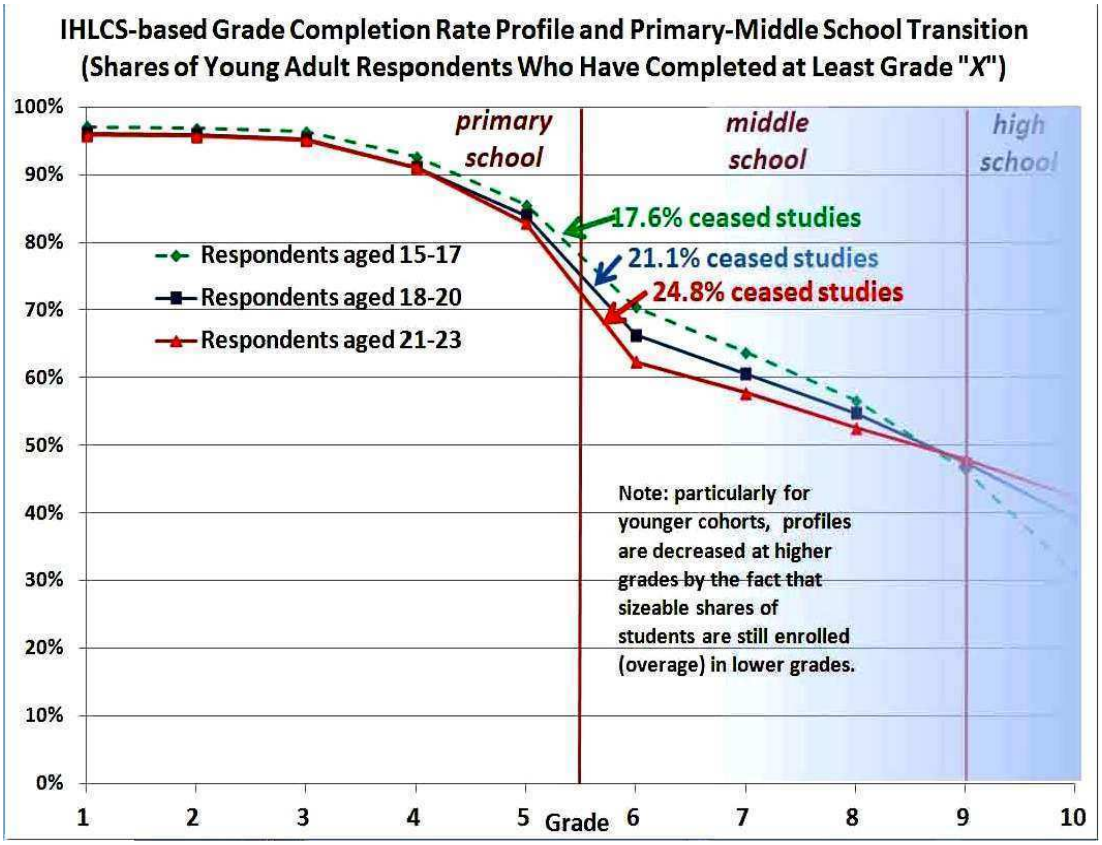
Training Participation and Educational Attainment among Youth and in the Workforce

	Age group			
	15-19	20-29	30-39	40 & up
Completed general-track education:				
At least 5 years (primary)	85.14%	81.46%	73.92%	60.45%
At least 9 years (middle)	47.64%	44.49%	32.06%	20.61%
At least 11 years (HS)	14.93%	25.66%	17.24%	9.11%
At least HES diploma/degree	2.02%	15.23%	12.44%	5.48%
Ongoing training				
At least 1 type	***1.46%***	***1.34%***	***0.40%***	***0.12%***
language	0.55%	0.46%	0.12%	0.00%
computers	0.97%	0.71%	0.11%	0.02%
primary (e.g. agric.)	0.01%	0.02%	0.01%	0.01%
industrial	0.31%	0.14%	0.06%	0.02%
crafts	0.14%	0.11%	0.09%	0.04%
clerical/business	0.01%	0.03%	0.00%	0.00%
others	0.24%	0.20%	0.09%	0.04%
Completed training				
At least 1 type	***1.90%***	***4.74%***	***3.20%***	***1.45%***
language	0.44%	1.80%	1.00%	0.45%
computers	1.20%	2.88%	1.82%	0.42%
primary (e.g. agric.)	0.10%	0.12%	0.12%	0.09%
industrial	0.22%	0.49%	0.50%	0.29%
crafts	0.24%	0.49%	0.35%	0.24%
clerical/business	0.05%	0.21%	0.18%	0.10%
others	0.21%	0.84%	0.38%	0.41%

Appendix 1. Additional Initial Analysis (Pending Further Review during CESR Phase 2)

52. **Grade completion profiles.** As noted in para. 7, as a comparator for EMIS-based estimates, the CESR Team proposed the use of IHLCS data to further investigate the educational attainment profile and, in particular, primary-to-secondary school transition rates. IHLCS can be used to generate estimates for highest grade of school completed, with some limitations.[25] Among these, using recent cohorts can only generate estimates through early secondary school grades, since (for example), IHLCS suggests that 2% of 15 year-olds are still in primary schools, but calculations would count them as never having transitioned to middle school (even if some of them will later do so). The problem becomes more serious with younger cohorts and later grades. In view of this, the analysis focused principally on primary grade completion and the transition to grade 6, using IHLCS data to generate a completion profile similar to the EMIS-based enrolment profile (Figure 1) for for 3 cohorts: (i) youth aged 15-17 at the time of the survey (i.e., those born sometime around 1993), who would have most recently progressed through schooling compared to the other 2 cohorts; (ii) 18-20 year-olds; and (iii) 21-23 year-olds (i.e., those born sometime around 1987). The resulting profile is shown below.

Figure A1.1



53. Overall, the shape corresponds fairly closely to that of the EMIS-based enrolment profile shown in Figure 1, while noting that the cohorts and data (i.e., grade completion versus enrolment) are not identical. Additionally, the IHLCS-based completion profile shown in Figure A1.1 and additional analysis noted below suggest that (i) just above 96% of children in recent cohorts have completed at least primary grade 1; (ii) among grade 1 completers, there is very little sign of dropout up through grade 3 (the profile is nearly horizontal), in contrast to the EMIS-based profile—as noted below, IHLCS points to much larger shares of children repeating grade 1 compared to EMIS, which would partly explain the divergence in the profile in early gradescompared to EMIS based Figure 1; and (iii) the rate of dropout accelerates after grade 3, with a particularly marked drop after grade 5. On the latter point, comparisons of the 3 cohorts points to modest improvement in recent years. Namely, the analysis suggests

[25] IHLCS includes a question (q32003) on highest grade or level "passed". However, investigation suggests that responses with children still in school may have confused this question with highest grade or level "reached", particularly in cases where the child is repeating a grade. The analysis attempts to adjust q32003 for this, so as to measure grades successfully completed.

that only 82.9% of children in the oldest cohort shown (those born sometime around 1987) completed primary school and 62.4% completed at least grade 6 (i.e., 24.8% of grade 5 completers did not continue into middle school), whereas 85.5% of children in the youngest cohort shown (those born sometime around 1993) completed primary school and 70.5% completed at least grade 6 (i.e., 17.6% of grade 5 completers did not continue into middle school).

54. **Transitions from primary to secondary school.** At the CESR Team's request, further analysis was also conducted to look at the reasons for non-transition from primary to secondary school, using the same framework reflected in Table 5 but restricting the focus to exit from school precisely at the threshold of entry into middle school (i.e., grade 6). Table A1.1 below shows findings for the same age groups used in Table 5, but is noted that caution is needed in interpreting the first 3 columns, since (as in the case noted above) sizeable shares of children in younger age ranges may still be in primary school (overage) with at some possibility of continuing to middle school. The top portion of Table A1.1 breaks all respondents into 5 categories, ranging from those who never completed any schooling, to those who have completed at least grade 6 (in most cases, more). The latter portion of the table then records the reasons for exiting of the group denoted #4. For example, of the 17.9% of 18-21 year-old respondents (orange column) who completed exactly 5 years of education[26], the largest share (32.5%) are reported to have exited schooling due to high costs, 25.0% cited lack of interest, and 18.3% cited agricultural work. Compared to Table 5 (showing exit at any grade level), it appears that financial and opportunity costs (particularly the need to work on the farm) are particularly important in explaining exit after grade 5. While still a major factor, "lack of interest" appears somewhat less important among those exiting after grade 5. Deeper analysis using various data sources is required during Phase 2.

Table A1.1

IHLCS2-based Estimates for Shares of Children/Indivduals of Various Ages Who Completed Primary but did not Transition to Middle School

	Primary age (age 5-9)	LSE age Age 10-13	USE age Age 14-15	Higher Ed. Age Ranges Age 16-19	Age 18-21	Age 22-29	Age 30 & up
Share of children who							
1. were never schooled	*8.7%*	*2.2%*	*2.5%*	*2.8%*	*3.9%*	*4.5%*	*12.6%*
2. had incomplete primary	*2.2%*	*6.4%*	*10.2%*	*10.5%*	*12.0%*	*14.5%*	*23.0%*
3. are still in primary school	*87.6%*	*30.4%*	*3.5%*	*0.6%*	*0.2%*	*0.0%*	*0.0%*
4. Finished primary but not any middle school grades [1]	*0.2%*	*4.9%*	*11.5%*	*15.2%*	*17.9%*	*21.4%*	*25.9%*
5. had at least some middle school	*1.4%*	*56.4%*	*72.3%*	*71.0%*	*66.0%*	*59.6%*	*38.6%*
	100%	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***
Of group #4 (primary completers who didn't enter middle school), reasons for exit: [2]							
Costs not affordable	33.1%	34.2%	39.6%	34.2%	32.5%	30.6%	24.5%
Personal illness	13.5%	2.6%	2.6%	1.0%	1.2%	1.5%	1.5%
Lack of interest	21.1%	32.2%	26.9%	27.4%	25.0%	22.8%	18.8%
Got married/pregnant	0.0%	0.1%	0.2%	0.1%	0.7%	1.3%	1.3%
Care for family	19.6%	6.9%	10.3%	9.2%	11.3%	12.7%	21.9%
Agricultural work	7.0%	13.1%	11.6%	17.0%	18.3%	19.7%	18.8%
Other (non-ag.) work	5.7%	4.2%	5.6%	7.6%	6.8%	6.5%	6.3%
School too far	0.0%	4.4%	2.1%	2.5%	2.9%	4.1%	6.1%
No teacher	0.0%	0.0%	0.0%	0.2%	0.2%	0.0%	0.1%
No school supplies	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
No clothing/shoes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bad weather	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Finished at least undergrad. diploma							
Never started school							
Other reasons/not reported	0.0%	2.3%	1.2%	0.8%	0.9%	0.7%	0.6%

Notes: [1] Group #4 includes students who may have entered but did not complete grade 6.

[2] Caution is needed in interpreting gray values, since large shares of children are still in primary school.

[26] It is noted that row for group #4 and other rows at the top calculate shares of **all** children in each category, whereas figures in the immediately preceding paragraphs and tables focus on shares of children who have completed at least primary school (i.e., the denominator is different).

55. As a feed-in to Phase 2 analysis, Tables A1.2 and A1.3 show the same analysis after breaking the IHLCS sample into rural and urban subsamples. From the top sections of both tables, it is noted that a much smaller share of rural youth enter at least middle school (row #5). For example, only 59.6% of rural respondents age 18-21 (born around 1989) completed any middle school (or higher), with at least 18.6% failing to complete primary schooling (the sum of rows for groups #1 and #2) and 21.5% of these individuals exiting schooling after completing grade 5. By contrast, for rural youth in the same cohorts, 88.6% completed at least grade 6 while only about 6.1% failed to complete primary school and 5.3% completed primary but did not transition to secondary school. Not surprisingly, comparisons of Tables A1.2 and A1.3 suggest that the need to work on the farm is a much stronger contributor to exit from schooling among rural children completing grade 5. Distance to the nearest school offering middle school grades also appears to be an issue only for rural children: it still ranks as only a secondary obstacle, however, it is likely that many parents may conceive of distances more in terms of costs in their responses. For urban youth, costs and lack of interest explain much larger shares of grade 5 completers who exit schooling, followed by non-agricultural employment (likely in the urban informal sector). The larger share of exiters attributed to costs in urban versus rural areas may possibly suggest a greater private cost burden for urban schooling (e.g., in many countries, urban schools impose a greater range of sanctioned and/or informal fees), however, this requires further investigation.

Table A1.2

IHLCS2-based Estimates for Shares of RURAL Children/Indivduals of Various Ages Who Completed Primary but did not Transition to Middle School

	Primary age (age 5-9)	LSE age Age 10-13	USE age Age 14-15	Higher Ed. Age Ranges Age 16-19	Age 18-21	Age 22-29	Age 30 & up
Share of children who							
1. were never schooled	*9.5%*	*2.4%*	*3.1%*	*3.3%*	*4.5%*	*5.6%*	*15.5%*
2. had incomplete primary	*2.4%*	*6.9%*	*11.8%*	*12.6%*	*14.1%*	*17.5%*	*27.6%*
3. are still in primary school	*86.6%*	*33.2%*	*4.4%*	*0.6%*	*0.2%*	*0.0%*	*0.0%*
4. Finished primary but not any middle school grades [1]	*0.2%*	*5.8%*	*14.1%*	*18.5%*	*21.5%*	*26.5%*	*31.0%*
5. had at least some middle school	*1.4%*	*51.8%*	*66.8%*	*65.0%*	*59.6%*	*50.4%*	*25.9%*
	100%	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***
Of group #4 (primary completers who didn't enter middle school), reasons for exit: [2]							
Costs not affordable	39.7%	34.0%	38.5%	33.5%	32.1%	30.0%	23.9%
Personal illness	17.0%	2.3%	2.5%	0.8%	1.0%	1.3%	1.3%
Lack of interest	24.7%	32.2%	27.3%	27.0%	24.1%	22.7%	17.6%
Got married/pregnant	0.0%	0.0%	0.2%	0.1%	0.7%	0.9%	1.0%
Care for family	2.7%	6.6%	10.4%	9.6%	11.6%	13.0%	21.6%
Agricultural work	8.7%	13.9%	12.1%	18.0%	19.6%	21.4%	21.7%
Other (non-ag.) work	7.2%	3.9%	5.7%	7.5%	6.7%	5.4%	5.6%
School too far	0.0%	4.5%	2.2%	2.7%	3.2%	4.3%	6.6%
No teacher	0.0%	0.0%	0.0%	0.2%	0.2%	0.0%	0.1%
No school supplies	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
No clothing/shoes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bad weather	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Finished at least undergrad. diploma							
Never started school							
Other reasons/not reported	0.0%	2.4%	1.1%	0.8%	0.9%	0.8%	0.6%

Notes: [1] Group #4 includes students who may have entered but did not complete grade 6.

[2] Caution is needed in interpreting gray values, since large shares of children are still in primary school.

Table A1.3

IHLCS2-based Estimates for Shares of URBAN Children/Indivduals of Various Ages Who Completed Primary but did not Transition to Middle School

	Primary age (age 5-9)	LSE age Age 10-13	USE age Age 14-15	Higher Ed. Age Ranges Age 16-19	Age 18-21	Age 22-29	Age 30 & up
Share of children who							
1. were never schooled	*5.5%*	*1.2%*	*0.6%*	*1.2%*	*1.7%*	*1.5%*	*5.7%*
2. had incomplete primary	*1.3%*	*4.1%*	*4.7%*	*3.3%*	*4.4%*	*6.1%*	*12.2%*
3. are still in primary school	*91.8%*	*19.5%*	*0.2%*	*0.6%*	*0.1%*	*0.0%*	*0.0%*
4. Finished primary but not any middle school grades [1]	*0.2%*	*1.3%*	*2.3%*	*4.2%*	*5.3%*	*7.0%*	*14.0%*
5. had at least some middle school	*1.3%*	*74.2%*	*92.1%*	*90.9%*	*88.6%*	*85.4%*	*68.1%*
	100%	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***
Of group #4 (primary completers who didn't enter middle school), reasons for exit: [2]							
Costs not affordable	7.2%	36.3%	63.9%	44.7%	38.7%	37.6%	27.1%
Personal illness	0.0%	7.1%	4.7%	4.2%	4.2%	3.0%	2.6%
Lack of interest	7.3%	32.4%	18.4%	34.5%	38.5%	24.2%	25.1%
Got married/pregnant	0.0%	1.7%	0.0%	0.0%	0.8%	5.5%	3.0%
Care for family	85.5%	11.2%	7.0%	4.1%	7.1%	9.1%	23.5%
Agricultural work	0.0%	0.0%	0.9%	3.1%	0.5%	1.4%	3.9%
Other (non-ag.) work	0.0%	9.1%	2.6%	8.8%	8.4%	17.6%	10.2%
School too far	0.0%	2.3%	0.0%	0.0%	0.0%	1.2%	3.6%
No teacher	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
No school supplies	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
No clothing/shoes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bad weather	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Finished at least undergrad. diploma							
Never started school							
Other reasons/not reported	0.0%	0.0%	2.5%	0.6%	1.7%	0.3%	0.7%

Notes: [1] Group #4 includes students who may have entered but did not complete grade 6.

[2] Caution is needed in interpreting gray values, since large shares of children are still in primary school.

56. Further analysis is required during Phase 2, if possible, also looking at transitions across higher levels of education (though IHLCS may not support such analysis). At the same time, an urgent priority for policy dialogue would seem to be to expand pathways for youth exiting formal education prior to or during SES to avail of various forms of skill training or nonformal education: Section III.7 (including Table 8) and Appendix 3 suggest that such opportunities are very limited, suggesting that it will be very difficult for youth exiting prior to completion of high school to obtain decent jobs, even at the base of the skill pyramid and particularly in modern sectors.

57. **Repetition.** At the CESR Team's request, analysis was done to generate at least imperfect estimates for repetition, calculated as shares of students currently in each Basic Education grade, summarized in Table A1.4.[27]

Table A1.4.

IHLCS-Estimated Repetition Rates for Current Students, by Grade and Subsample

	Grade	Repetition Rates Total	Rural	Urban
Primary School	1	12.0%	12.5%	9.6%
	2	2.8%	3.0%	1.7%
	3	1.1%	1.2%	0.9%
	4	1.6%	1.5%	2.1%
	5	0.3%	0.3%	0.2%
Middle School	6	1.1%	1.0%	1.5%
	7	0.3%	0.3%	0.5%
	8	0.2%	0.2%	0.3%
	9	0.2%	0.0%	0.6%
High School	10	0.9%	1.0%	0.6%
	11	8.2%	8.6%	7.7%

[27] The survey form asks up to 3 questions for each individual in the household: (i) highest grade or diploma completed; (ii) grade/level enrolled in the prior school year (SY2008/09), if any; and (iii) grade/level enrolled in the current school year (SY2009/10), if any.

58. These initial estimates based on IHLCS confirm EMIS-based evidence that grade repetition is generally highest in high school—particularly in grade 11, likely due to the matriculation exam. Going beyond EMIS' aggregated estimates, IHLCS suggests that repetition rates are higher in rural areas for primary and high school grades, but perhaps marginally lower than in urban areas for middle school grades. Where IHLCS departs most markedly from EMIS is that survey responses suggests very sizeable grade 1 repetition rates, particularly in rural areas, where an estimated 12.5% of current grade 1 students are repeaters. Even these figures are likely a lower bound, since repetition is self-reported and parents may be embarrassed to report repetition.

Appendix 2: Logit and OLS Regression Results for the Likelihood that Children Aged 10-15 Have Completed Primary School

Panel A1: BOYS

	Logit			OLS	Logit			OLS
	Coef.	*Std. Err.*		Coef.	Coef.	*Std. Err.*	Sig.	Coef.
Variables	(1)	(2)		(4)	(5)	(6)	(7)	(8)
Area type								
rural	-0.491	0.144	**	-0.065	-0.549	0.138	**	-0.075
ruralproxypoor	-0.576	0.104	**	-0.109	-0.580	0.104	**	-0.109
State/region								
Tachin	2.041	0.404	**	0.868	2.164	0.423	**	0.885
Kayah	2.290	0.210	**	0.902	2.395	0.236	**	0.910
Kayin	1.776	0.388	**	0.829	1.904	0.367	**	0.840
Chin	1.772	0.275	**	0.828	1.869	0.288	**	0.833
Sagaing	2.343	0.243	**	0.916	2.409	0.268	**	0.916
Taninthayi	1.520	0.369	**	0.782	1.689	0.356	**	0.799
Bago (East)	1.831	0.226	**	0.839	2.015	0.241	**	0.858
Bago (West)	1.842	0.273	**	0.842	1.885	0.299	**	0.837
Magwe	1.967	0.240	**	0.861	2.091	0.248	**	0.873
Mandalay	2.109	0.250	**	0.882	2.224	0.267	**	0.891
Mon	1.700	0.216	**	0.821	1.859	0.231	**	0.837
Rakhine	0.786	0.179	**	0.630	0.906	0.185	**	0.642
Yangon	1.915	0.253	**	0.843	2.086	0.263	**	0.862
Shan (South)	2.457	0.360	**	0.939	2.636	0.365	**	0.958
Shan (North)	1.608	0.317	**	0.797	1.744	0.312	**	0.813
Shan (East)	1.293	0.513	**	0.735	1.424	0.529	**	0.749
Ayeyarwady	1.735	0.243	**	0.824	1.880	0.264	**	0.837
Highest education level of male and female adults in household (generally father and mother)								
(i) Measured as adults'/parents' years of formal education								
edyears_male	0.059	0.011	**	0.009	n.a.	n.a.		n.a.
edyears_fem	0.048	0.012	**	0.007	n.a.	n.a.		n.a.
(ii) Measured as adults'/parents' highest completed level								
dadprim	n.a.	n.a.		n.a.	0.351	0.099	**	0.061
dadmid	n.a.	n.a.		n.a.	0.061	0.142		0.012
dadhs	n.a.	n.a.		n.a.	0.204	0.260		0.020
dad_HE_dip~h	n.a.	n.a.		n.a.	0.113	0.283		0.009
dadpostgrad	n.a.	n.a.		n.a.	0.973	0.995		0.145
momprim	n.a.	n.a.		n.a.	0.407	0.107	**	0.070
mommid	n.a.	n.a.		n.a.	0.166	0.136		0.022
momhs	n.a.	n.a.		n.a.	0.147	0.244		0.019
mom_HE_dip~h	n.a.	n.a.		n.a.	-0.412	0.338		-0.056
mompostgrad	n.a.	n.a.		n.a.	0.292	0.831		-0.031
Dummy variables for child's age at time of survey								
aged10	-2.705	0.213	**	-0.515	-2.706	0.213	**	-0.516
aged11	-1.372	0.167	**	-0.229	-1.402	0.172	**	-0.234
aged12	-0.854	0.154	**	-0.129	-0.862	0.155	**	-0.130
aged13	-0.279	0.177		-0.035	-0.285	0.176		-0.036
aged14	-0.077	0.226		-0.007	-0.101	0.226		-0.011

Panel B1: GIRLS

	Logit			OLS	Logit			OLS
	Coef.	*Std. Err.*	Sig.	Coef.	Coef.	*Std. Err.*	Sig.	Coef.
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Area type								
rural	-0.650	0.200	**	-0.081	-0.728	0.203	**	-0.092
ruralproxypoor	-0.502	0.112	**	-0.094	-0.480	0.110	**	-0.089
State/region								
Tachin	2.267	0.276	**	0.912	2.359	0.295	**	0.910
Kayah	2.923	0.494	**	0.985	3.003	0.457	**	0.979
Kayin	1.945	0.257	**	0.858	1.982	0.244	**	0.847
Chin	1.819	0.258	**	0.840	1.902	0.244	**	0.837
Sagaing	2.422	0.273	**	0.928	2.447	0.276	**	0.914
Taninthayi	1.883	0.307	**	0.849	1.978	0.277	**	0.844
Bago (East)	1.560	0.316	**	0.793	1.685	0.283	**	0.795
Bago (West)	1.729	0.323	**	0.824	1.714	0.317	**	0.802
Magwe	1.950	0.316	**	0.862	2.009	0.287	**	0.854
Mandalay	2.217	0.268	**	0.901	2.269	0.263	**	0.891
Mon	2.155	0.329	**	0.886	2.272	0.303	**	0.885
Rakhine	0.811	0.252	**	0.641	0.862	0.245	**	0.637
Yangon	2.223	0.462	**	0.885	2.294	0.470	**	0.879
Shan (South)	2.392	0.250	**	0.924	2.523	0.237	**	0.928
Shan (North)	2.032	0.323	**	0.867	2.134	0.320	**	0.868
Shan (East)	1.790	0.400	**	0.827	1.909	0.415	**	0.836
Ayeyarwady	1.621	0.316	**	0.804	1.697	0.300	**	0.798
Highest education level of male and female adults in household (generally father and mother)								
(i) Measured as adults'/parents' years of formal education								
edyears_male	0.029	0.015	*	0.004	n.a.	n.a.		n.a.
edyears_fem	0.076	0.012	**	0.010	n.a.	n.a.		n.a.
(ii) Measured as adults'/parents' highest completed level								
dadprim	n.a.	n.a.		n.a.	0.250	0.095	**	0.040
dadmid	n.a.	n.a.		n.a.	0.139	0.139		0.018
dadhs	n.a.	n.a.		n.a.	-0.083	0.294		-0.019
dad_HE_dip~h	n.a.	n.a.		n.a.	0.138	0.270		0.020
dadpostgrad	n.a.	n.a.		n.a.	0.303	0.929		0.122
momprim	n.a.	n.a.		n.a.	0.613	0.078	**	0.102
mommid	n.a.	n.a.		n.a.	0.075	0.148		0.004
momhs	n.a.	n.a.		n.a.	-0.646	0.333	*	-0.088
mom_HE_dip~h	n.a.	n.a.		n.a.	0.815	0.279	**	0.106
mompostgrad	n.a.	n.a.		n.a.	1.479	0.877	*	0.144
Dummy variables for child's age at time of survey								
aged10	-2.438	0.174	**	-0.463	-2.449	0.173	**	-0.461
aged11	-1.081	0.162	**	-0.172	-1.088	0.162	**	-0.173
aged12	-0.724	0.152	**	-0.108	-0.721	0.155	**	-0.106
aged13	-0.074	0.156		-0.010	-0.069	0.157		-0.008
aged14	0.113	0.167		0.012	0.121	0.166		0.014

Notes: Regressions drop state/region dummy variables for age=15, hence age dummy coefficients shown measure relative likelihood vis-à-vis 15 year-olds

In the "Sig." columns 3, 7, 11, and 15, the mark ** denotes strong statistical signifance at the 95% confidence level, while * denotes statistical signifance at the 90% confidence level.

Appendix 2 (con't): Logit & OLS Regression Results for Likelihood that Children Aged 10-15 Have Completed Primary School

Panel A2: BOYS (adding ECCD participation)

	Logit			OLS	Logit			OLS
	Coef.	*Std. Err.*	Sig.	Coef.	Coef.	*Std. Err.*	Sig.	Coef.
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Area type								
rural	-0.310	0.155	**	-0.039	-0.367	0.149	**	-0.049
ruralproxypoor	-0.577	0.108	**	-0.109	-0.581	0.107	**	-0.109
State/region								
Tachin	1.772	0.472	**	0.834	1.877	0.487	**	0.846
Kayah	1.909	0.271	**	0.847	2.000	0.307	**	0.850
Kayin	1.611	0.375	**	0.807	1.722	0.357	**	0.814
Chin	1.563	0.290	**	0.799	1.638	0.300	**	0.800
Sagaing	2.199	0.252	**	0.894	2.247	0.277	**	0.891
Taninthayi	1.362	0.373	**	0.761	1.513	0.359	**	0.774
Bago (East)	1.703	0.230	**	0.822	1.867	0.245	**	0.837
Bago (West)	1.693	0.282	**	0.822	1.717	0.304	**	0.813
Magwe	1.826	0.245	**	0.842	1.932	0.254	**	0.849
Mandalay	1.919	0.261	**	0.855	2.018	0.278	**	0.861
Mon	1.565	0.222	**	0.803	1.706	0.237	**	0.815
Rakhine	0.625	0.212	**	0.609	0.731	0.225	**	0.619
Yangon	1.669	0.241	**	0.809	1.825	0.253	**	0.824
Shan (South)	2.191	0.302	**	0.900	2.356	0.311	**	0.915
Shan (North)	1.413	0.343	**	0.769	1.534	0.341	**	0.781
Shan (East)	1.063	0.493	**	0.704	1.183	0.509	**	0.715
Ayeyarwady	1.599	0.253	**	0.805	1.725	0.273	**	0.814
Highest education level of male and female adults in household (generally father and mother)								
(i) Measured as adults'/parents' years of formal education								
edyears_male	0.057	0.011	**	0.008	n.a.	n.a.		n.a.
edyears_fem	0.042	0.012	**	0.006	n.a.	n.a.		n.a.
(ii) Measured as adults'/parents' highest completed level								
dadprim	n.a.	n.a.		n.a.	0.344	0.100	**	0.060
dadmid	n.a.	n.a.		n.a.	0.060	0.145		0.010
dadhs	n.a.	n.a.		n.a.	0.182	0.259		0.017
dad_HE_dip~h	n.a.	n.a.		n.a.	0.108	0.300		0.006
dadpostgrad	n.a.	n.a.		n.a.	0.892	0.981		0.125
momprim	n.a.	n.a.		n.a.	0.389	0.104	**	0.067
mommid	n.a.	n.a.		n.a.	0.150	0.140		0.017
momhs	n.a.	n.a.		n.a.	0.078	0.262		0.009
mom_HE_dip~h	n.a.	n.a.		n.a.	-0.423	0.349		-0.054
mompostgrad	n.a.	n.a.		n.a.	0.340	0.827		-0.015
Dummy variable for child having attended ECCD								
everpreschool	0.837	0.144	**	0.106	0.851	0.138	**	0.109
Dummy variables for child's age at time of survey								
aged10	-2.752	0.205	**	-0.518	-2.755	0.206	**	-0.518
aged11	-1.412	0.163	**	-0.235	-1.445	0.168	**	-0.239
aged12	-0.893	0.145	**	-0.134	-0.901	0.147	**	-0.136
aged13	-0.294	0.171	*	-0.037	-0.301	0.172	*	-0.039
aged14	-0.088	0.222		-0.008	-0.114	0.221		-0.012

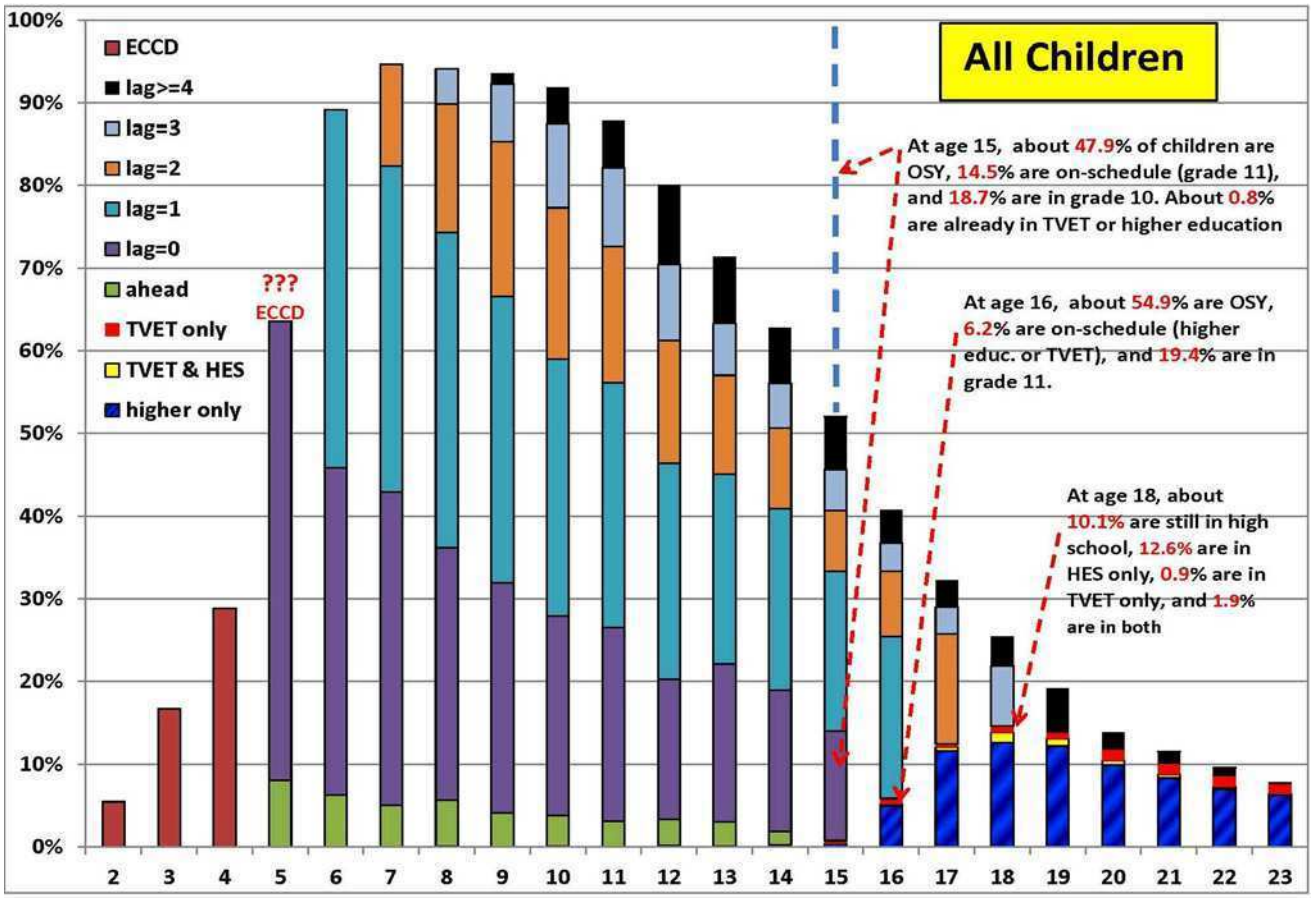
Panel B2: GIRLS (adding ECCD participation)

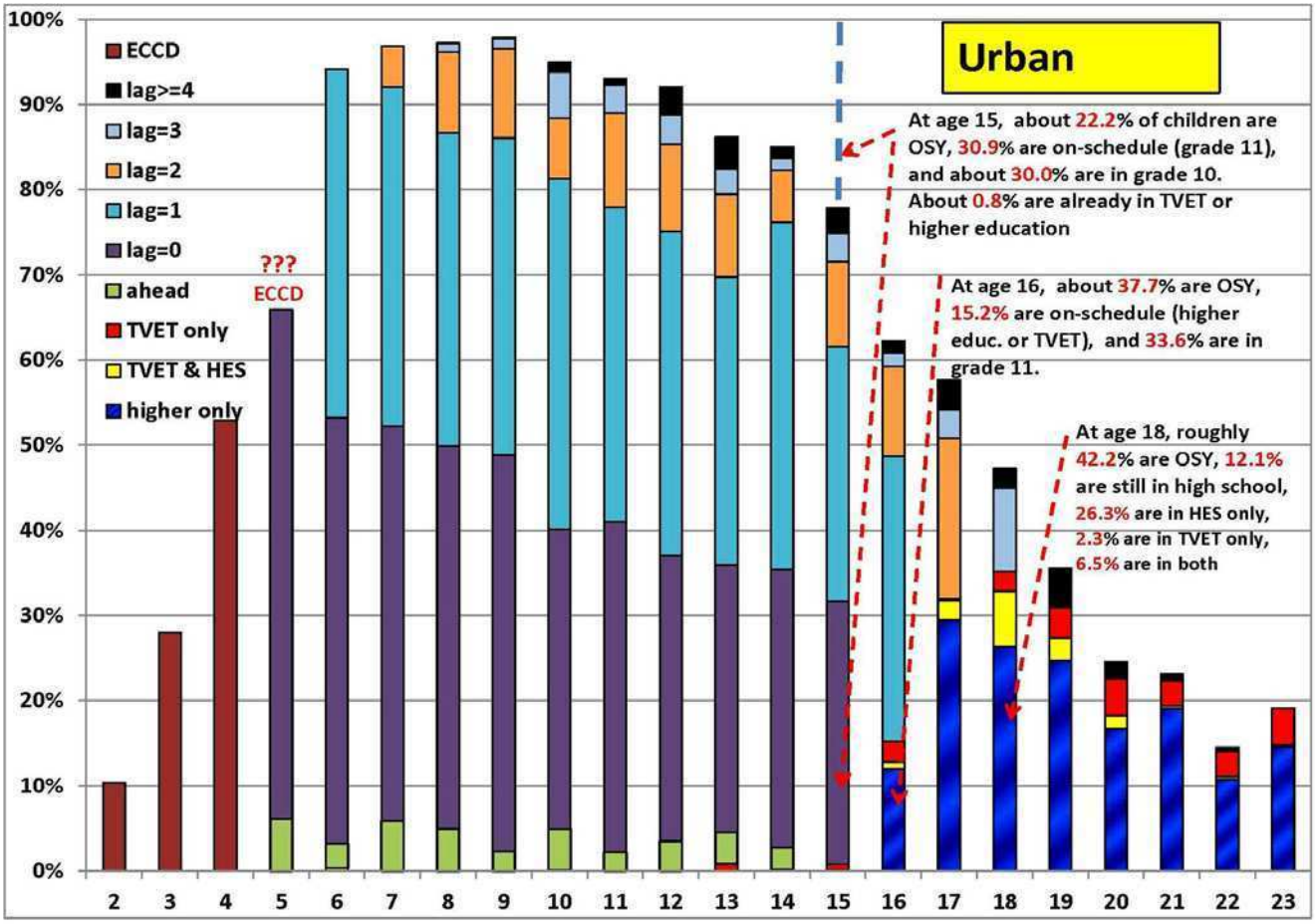
	Logit			OLS	Logit			OLS
	Coef.	*Std. Err.*	Sig.	Coef.	Coef.	*Std. Err.*	Sig.	Coef.
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Area type								
rural	-0.514	0.202	**	-0.060	-0.586	0.202	**	-0.070
ruralproxypoor	-0.503	0.112	**	-0.094	-0.481	0.111	**	-0.089
State/region								
Tachin	2.047	0.315	**	0.881	2.118	0.337	**	0.875
Kayah	2.641	0.517	**	0.938	2.700	0.466	**	0.928
Kayin	1.805	0.270	**	0.834	1.819	0.256	**	0.819
Chin	1.686	0.277	**	0.823	1.748	0.264	**	0.817
Sagaing	2.302	0.291	**	0.911	2.303	0.294	**	0.893
Taninthayi	1.760	0.328	**	0.834	1.833	0.295	**	0.826
Bago (East)	1.455	0.328	**	0.779	1.556	0.295	**	0.777
Bago (West)	1.603	0.330	**	0.806	1.564	0.320	**	0.780
Magwe	1.824	0.323	**	0.844	1.860	0.295	**	0.833
Mandalay	2.065	0.287	**	0.879	2.091	0.283	**	0.866
Mon	2.019	0.334	**	0.866	2.114	0.308	**	0.862
Rakhine	0.691	0.220	**	0.625	0.723	0.208	**	0.618
Yangon	2.018	0.467	**	0.858	2.058	0.469	**	0.846
Shan (South)	2.208	0.240	**	0.897	2.320	0.228	**	0.898
Shan (North)	1.900	0.335	**	0.846	1.983	0.331	**	0.843
Shan (East)	1.634	0.401	**	0.805	1.734	0.412	**	0.811
Ayeyarwady	1.515	0.323	**	0.788	1.568	0.306	**	0.779
Highest education level of male and female adults in household (generally father and mother)								
(i) Measured as adults'/parents' years of formal education								
edyears_male	0.028	0.015	*	0.003	n.a.	n.a.		n.a.
edyears_fem	0.073	0.012	**	0.010	n.a.	n.a.		n.a.
(ii) Measured as adults'/parents' highest completed level								
dadprim	n.a.	n.a.		n.a.	0.245	0.091	**	0.039
dadmid	n.a.	n.a.		n.a.	0.140	0.143		0.018
dadhs	n.a.	n.a.		n.a.	-0.078	0.298		-0.021
dad_HE_dip~h	n.a.	n.a.		n.a.	0.100	0.275		0.016
dadpostgrad	n.a.	n.a.		n.a.	0.431	0.958		0.146
momprim	n.a.	n.a.		n.a.	0.613	0.077	**	0.101
mommid	n.a.	n.a.		n.a.	0.053	0.150		0.001
momhs	n.a.	n.a.		n.a.	-0.709	0.334	**	-0.096
mom_HE_dip~h	n.a.	n.a.		n.a.	0.831	0.284	**	0.110
mompostgrad	n.a.	n.a.		n.a.	1.464	0.914		0.133
Dummy variable for child having attended ECCD								
everpreschool	0.624	0.185	**	0.077	0.664	0.182	**	0.082
Dummy variables for child's age at time of survey								
aged10	-2.496	0.178	**	-0.469	-2.514	0.178	**	-0.468
aged11	-1.096	0.163	**	-0.175	-1.104	0.162	**	-0.175
aged12	-0.742	0.152	**	-0.110	-0.739	0.155	**	-0.109
aged13	-0.092	0.155		-0.013	-0.088	0.157		-0.011
aged14	0.091	0.167		0.009	0.098	0.166		0.010

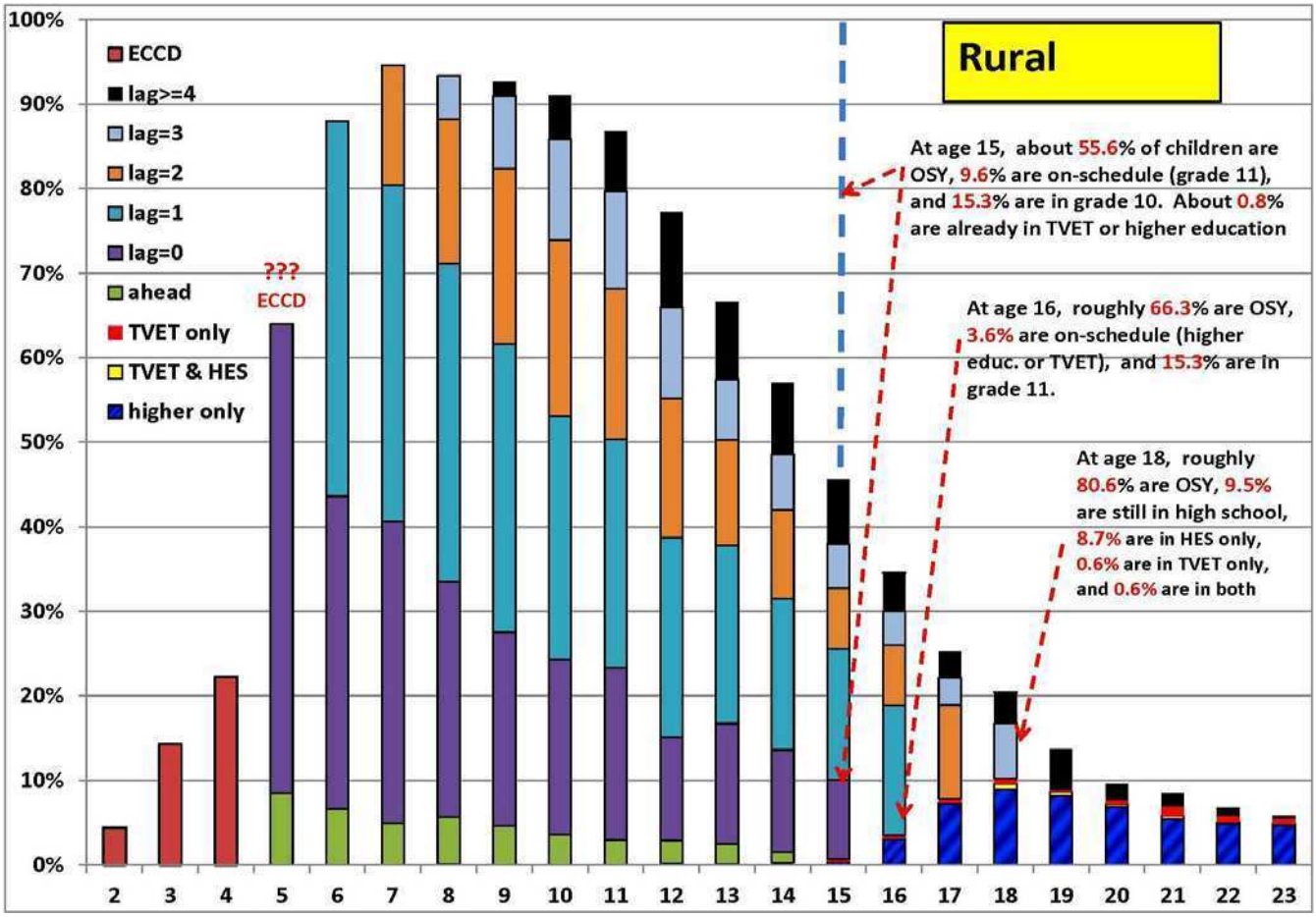
Notes: Regressions drop state/region dummy variables for age=15, hence age dummy coefficients shown measure relative likelihood vis-à-vis 15 year-olds

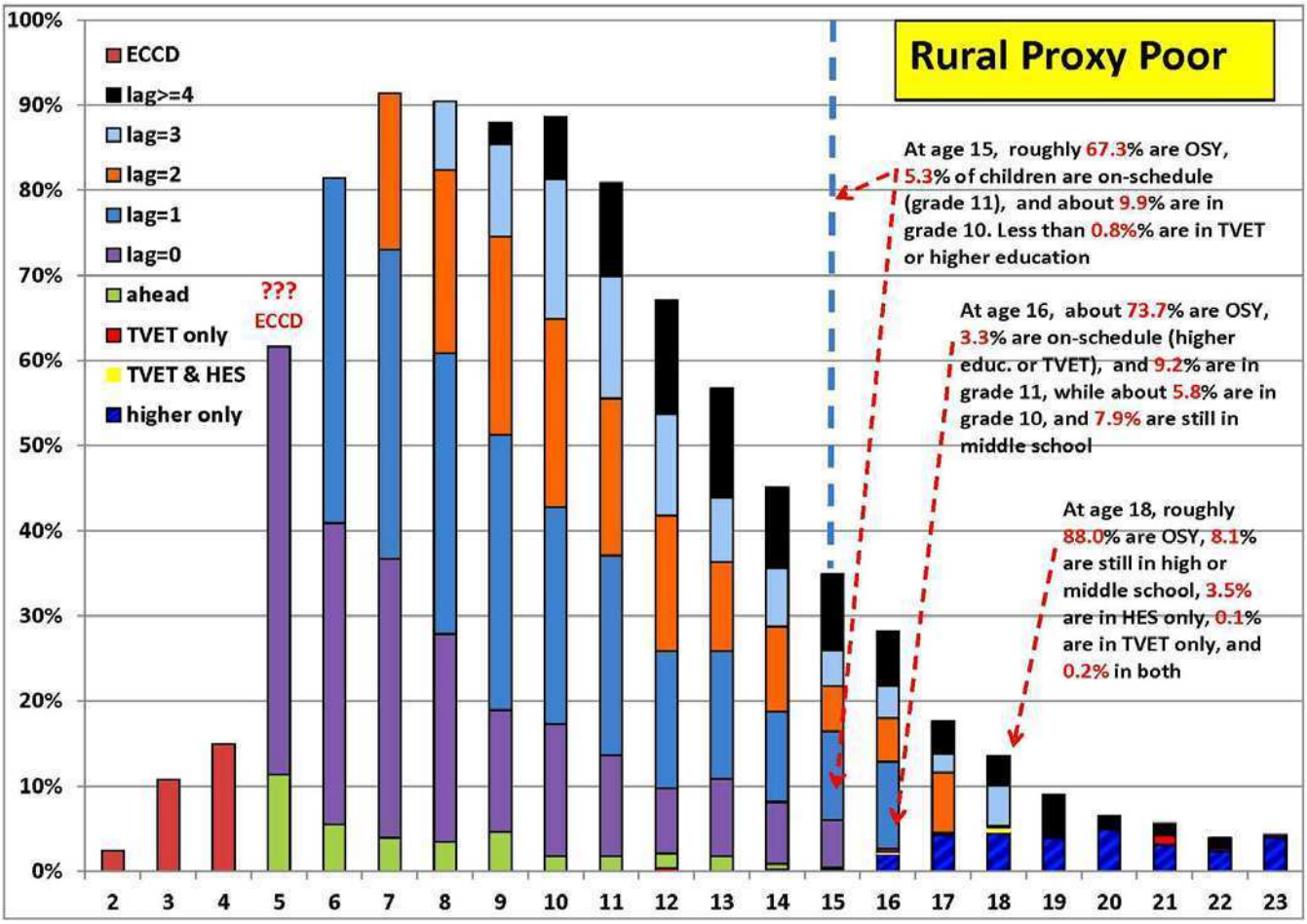
In the "Sig." columns 3, 7, 11, and 15, the mark ** denotes strong statistical signifance at the 95% confidence level, while * denotes statistical signifance at the 90% confidence level.

Appendix 3: Indicative Age-Specific Enrolment Profiles Based on Initial IHLCS Analysis






Rural
ECCD
lag>=4
lag=3
lag=2
lag=1
lag=0
ahead
TVET only
TVET & HES
higher only
??? ECCD
At age 15, about 55.6% of children are OSY, 9.6% are on-schedule (grade 11), and 15.3% are in grade 10. About 0.8% are already in TVET or higher education
At age 16, roughly 66.3% are OSY, 3.6% are on-schedule (higher educ. or TVET), and 15.3% are in grade 11.
At age 18, roughly 80.6% are OSY, 9.5% are still in high school, 8.7% are in HES only, 0.6% are in TVET only, and 0.6% are in both
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23


Rural Proxy Poor
ECCD
lag>=4
lag=3
lag=2
lag=1
lag=0
ahead
TVET only
TVET & HES
higher only
??? ECCD
At age 15, roughly 67.3% are OSY, 5.3% of children are on-schedule (grade 11), and about 9.9% are in grade 10. Less than 0.8%% are in TVET or higher education
At age 16, about 73.7% are OSY, 3.3% are on-schedule (higher educ. or TVET), and 9.2% are in grade 11, while about 5.8% are in grade 10, and 7.9% are still in middle school
At age 18, roughly 88.0% are OSY, 8.1% are still in high or middle school, 3.5% are in HES only, 0.1% are in TVET only, and 0.2% in both
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23