

Financial Implications of Article 25-A Case Study of Sindh

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Introduction

Since inception, education has always been acknowledged as a basic right of citizens of Pakistan in all the constitutions. Later, different policy documents¹ also recognized the importance of universal education as a fundamental right. Nevertheless, it was not a legal right of the citizens as previous governments only accepted/documented it as a basic right and did not provide for provision of free education to all. However, with passage of Eighteenth Constitutional Amendment, free and compulsory education for the children of 5-16 years of age group has been accepted as statutory fundamental right by inserting Article 25-A² in the Constitution.

As per article 25-A “*The State shall provide free and compulsory education to all children of the age of five to sixteen years in such manner as may be determined by law*”.

Therefore, the rationale for 25-A is the provision of “quality education for free”. But still, it leaves a scope for debate as it has been made conditional to the manner determined by law. Therefore, inclusion of Article 25-A in the Constitution provides an opportunity for achievement of EFA and MDG goals while reflecting on implementation prospects of Article 25-A. For this purpose, the state needs to delve deep and come up with a workable plan on the basis of serious reflections on the financial, legal, and technical implications of the commitment meted out through Article 25-A.

In this context, present section of the study attempts to calculate the financial resources required to implement the newly inserted Article 25-A. For this, the case of Sindh has been taken to generate estimates for the financial resources that are required to meet the constitutional obligation.

Compliance with 25-A: Challenges Ahead

The total estimated population of the Sindh province was 38.82 million in 2010-11, which is 22% of total population of Pakistan. Around 48% (i.e. 18.83 millions) population of Sindh province comprises females. The province has a total area of 140,914 Sq.Km, with the average population density of 275.5 persons per Sq.Km. According to

¹ Since the First National Education Conference there have been a total of 10 policy documents on Education; 1) Report of the Pakistan National Educational Conference-1947, 2) Report of the Second Pakistan Educational Conference-1951, 3) Report of the National Commission on Education-1959, 4) Report of the Commission on Students Problems and Welfare-1966, 5) Proposals for New Education Policy-1969, 6) New Education Policy-1970, 7) Education Policy-1972-78, 8) National Education Policy-1979, 9) National Education Policy-1992, 10) National Education Policy-1998-2010, 11) National Education Policy 2009

² 25-A: Right to education: “*The State shall provide free and compulsory education to all children of the age of five to sixteen years in such manner as may be determined by law*”

PSLM, 2010-11 literacy rate of the province (10 years and above) is 59% (male 71% and female 46%). Currently, Sindh is confronted with serious challenges in terms of enrolment in including NER and GER, number of teachers, teacher training, infrastructure including classrooms, schools, basic facilities, etc. A detailed description of educational situation of Sindh is given hereafter:

2.1 Enrolment Rate 5-16 (ER)

At present, the GER of the province is 84% at primary level, 48% at Middle and 55% at secondary level. Table 1 provides school level and gender-wise ER (5-16) of the province.

Table 1: School level Enrolment Rate (5-16) 2010-11³

Stage/ Age-group	Population ⁴ (in #)	Enrolment ⁵ (in #)	ER ⁶ (in %)
School Level (5-16)			
Total	12,619,710	5,611,529	44
Male	6,753,103	3,230,637	48
Female	5,866,607	2,380,892	41

Data indicates that girls, when compared with boys, lag behind by 28% at primary level, and 24% at secondary (VI-X) stage. The overall difference of GER from primary to secondary stage is 45%. These variations indicate that level-wise drop-out rate consistently increases to the next level and is required to be minimized through improving the quality of instruction and access to continuing education facilities. (Table 1)

2.2 Net Enrolment Rate (NER)

The NER is 53% in Sindh, which is more for boys vis-à-vis girls at primary, middle, and secondary levels of education. (Table 2)

Table 2: Net Enrolment Rate (NER) 2010-11

	2010-11
NER	

³ SEMIS Data

⁴ Calculated from SEMIS 2010-11 Report

⁵ SEMIS Data 2010-11 (*For Public*) NEMIS data 2010-11 (*For other Public and Private*)

⁶ Definition: Total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year.

Calculation Method: Divide the number of students enrolled in a given level of education regardless of age by the population of the age-group which officially correspond to the given level of education, and multiply the result by 100.

Primary Stage	53%
Boys	57%
Girls	48%
Middle Stage	19%
Boys	21%
Girls	17%
Secondary Stage	11%
Boys	12%
Girls	10%

Source: PSLM, 2010-11

2.3 Out of School Children of 5-16 Year Age Group

Estimated population of 5-16 years age-group in 2010-11 was 12.62 million including 5.866 millions girls. On the basis of past trend of Enrollment Rate at school level (20% of Kachi to Class-X), it has been found that 7 million kids of 5-16 year age-group are out of school.

According to PSLM (2010-11) in Sindh province, 60% population (72% male and 47% female) of 10+ age group attended school in 2010-11. This indicates that 40% of 10+ populations never attended the school. When analyzed by gender, the population (10+ age group) that never attended school comes to 28% for male population and 53% for female population.

According to PSLM (2010-11) in Sindh province, 52% population (62% male and 40% female) of 10+ age group completed primary level or higher education in 2010-11. This indicates that 48% of 10+ populations dropped-out (38% male and 60% female).

2.4. Number of Schools

Statistics indicates a sharp decrease in number of public sector schools at middle, secondary, and higher secondary levels of education for both boys and girls. These are the areas which require particular attention of the government while gearing towards achieving the targets under the article-25.A. A gender-disaggregated analysis highlights that more number of schools are available for boys than girls at primary and high levels of education. However, the number of girls' schools decreases at higher levels of education (Table 3)

Table 3: Number of Public Sector Schools by level and gender in 2010-11⁷

Gender	Primary⁸ Schools	Middle⁹ Schools	Secondary¹⁰ Schools	Higher¹¹ Sec. Schools	Total Schools
Boys	11,406	649	684	88	12,827
Girls	7,112	758	513	75	8,458
Co-Edu	26,004	1,098	444	83	27,546
Total	44,522	2,505	1,641	246	48,914

Source: SEMIS 2010-11 Data

It can be concluded from the table-3 above that for every boy's middle school there are 17.6 feeding primary schools, for girls this ratio is 1:9.38. and for co-education school this ratio is 1:23.7

2.5. Number of Teachers

Data shows that number of teachers decreases at higher levels of education. A gender-disaggregated analysis indicates that there is more number of male teachers vis-à-vis female teachers at all levels of education. (Chart 1)

Chart 1: Number of teachers by level and gender in 2010-11¹²

⁷SEMIS 2010-11

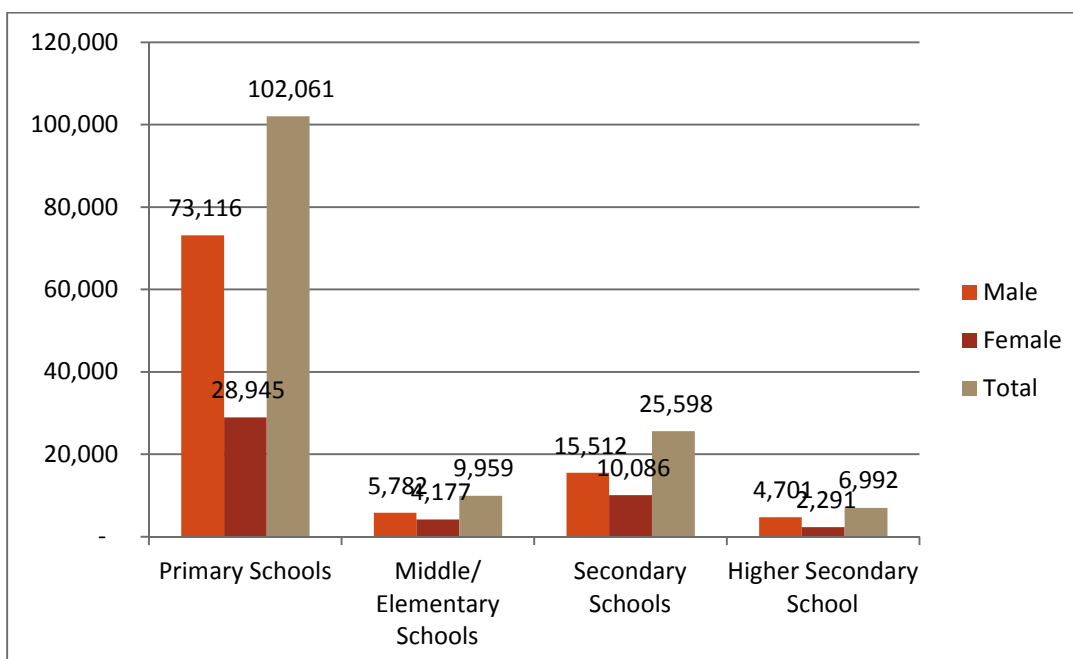
⁸ Primary schools offer pre-primary and primary level education.

⁹ Middle schools offer middle level education (many middle schools in the province of Sindh have the pre-primary and primary sections as well)

¹⁰ Secondary schools offer education from class VI to X (many of the secondary schools have the primary section also).

¹¹ Higher Secondary schools offer education from class VI to XII.

¹² SEMIS 2010-11



Data also indicates that on average there are: 2.3 teachers in each primary school, and 4 in a middle school. Likewise, there are 15.6 teachers in a secondary school and 28.4 in a higher secondary school on the average.

2.5. Missing Facilities

In total, 21% schools are shelter-less, 13% schools buildings are dangerous, 45% schools are without boundary walls, 49% schools do not have water facility, 42% schools are without toilet blocks, and 74% schools are without electricity in Sindh province. Data presents serious challenges of physical infrastructure at primary level of education where higher numbers of schools do not have boundary walls, building, electricity, toilet blocks, and drinking water facility. (Table 4)

Table 4: Missing Facilities 2010-11

Missing Facilities	Primary Schools	Middle/Elementary Schools	Secondary/Higher Sec Schools
Without Boundary wall	21,178 (48%)	728 (29%)	176 (9%)
Without Building	9,844 (22%)	360 (14%)	3 (0.2%)
Dangerous Building	5,574 (13%)	318 (13%)	249 (13%)
Electricity	34,512 (78%)	1,465 (58%)	331 (18%)
Toilet Block	19,876 (45%)	681 (27%)	149 (8%)
Drinking Water	22,800 (51%)	972 (39%)	228(12%)
Total # of Schools	44,522	2,505	1,887

Source: SEMIS 2010-11Data

Analysis of Education Budget

In order to generate estimates of budget required to achieve target set in Article 25-A, it is essential to understand the current pattern of budgetary allocations and spending and on education at district and provincial levels. Hence, analysis of education budget of districts and the province, for fiscal year (FY) 2010-11, is presented hereafter.

Like all other provinces the education budget in Sindh is allocated at two levels i.e. provincial and district. During the FY 2010-11, district and provincial education budget was Rs.63,602.36 million, comprising Rs.59,962.21 million current budget and Rs.3,640.16 million for development budget. In FY 2011-12, Government of Sindh allocated Rs.72,054.98 million to school education sector, which includes 94.8% current budget and 5.2% development budget. (Table 5)

Table 5: Total Education Budget (Provincial and District) Current and Development

	2010-11	2011-12
School Education Budget (Provincial + District)	63,602.36	72,054.98
Current Budget	59,962.21	68,314.57
Development (School Education)	3,640.16	3,740.41

Out of total school education budget of the province, Government of Sindh allocated Rs.72,054.98 million in FY 2011-12, which comprises 94.8% current budget and 5.2% development budget. As compared to FY 2010-11, current budget increased by 14% and development budget was increased by 3%.

Table 6: Allocation Trend (Provincial Budget) Current and Development Budgets

Year	Current		Development	
	Rs. Million	Change (%)	Rs. Million	Change (%)
2007-08	14,556.23		2,500.00	
2008-09	15,055.83	3	4,700.00	88
2009-10	16,494.81	10	5,950.00	27
2010-11	19,424.13	18	7,030.00	18

Moreover, the share of current and development budgets in the overall education budget of Sindh has been increasing gradually, however, the need for steady increase in allocations under different budgetary lines to achieve the targets set in Article 25-A is essential.

At district level, in FY 2010-11, Rs.48,630.19 million were allocated for education, However, in the FY 2011-12, the education budget of districts has increased by 17% over the last year's budget.

(Table 7)

Table 7: Allocation Trend (District Education) Current Budgets

Year	Current		Total District Education Budget	
	Rs. Million	Change (%)	Rs. Million	Change (%)
2010-11	48,630.19		48,630.19	
2011-12	56,676.42	17	56,676.42	17

Financial Resources Estimation for Article 25-A

In this section, financial resources have been estimated for achieving objectives of Article 25-A. While estimating following questions and their respective service ratios as practiced in Sindh has been used.

1. What would be the unit cost per student per year after inclusion of out of school children in the education system?
2. How many teachers need to be recruited and what would it cost?
3. How many teachers need to be trained and what would it cost?
4. How many schools and classrooms are required and what would it cost?
5. What would it cost to provide missing facilities in all the schools?

4.1. Data Sets

In order to calculate estimates for 25-A, three types of statistical data sets have been used, which include:

1. SEMIS Data
2. National Education Management Information System (NEMIS)
3. Pakistan Social Living and Standards Measurement Survey (PSLM)

The reason for using three different datasets stems from the fact that none of the available datasets provides statistics for all required indicators. For example, the NER data has been taken from PSLM for the reason that NER cannot be calculated without conducting a household survey and PSLM is the only data source that conducts household survey.

Similarly, stage/level-wise enrollment data for the private and other public sector (Cantt. & Garrison, PAF, Pakistan Railway, etc) institution has been taken from the NEMIS report as it was not available in the SEMIS database

4.2. Methodology and Variables

- a. Estimated financial requirement for compliance with 25-A has been calculated assuming that all 5-16 years old children would be attending school, and education would be available free to all children up to 10th grade. For generation of estimates, year 2010-11 has been taken as base year and estimations have been projected for the next 15 years, i.e., till 2025-26. Therefore, current statistical data and budgetary information was collected and analyzed to grasp the current state of education in the Sindh province. On the basis of the current situation, projections have been made for the next 15 years.
- b. The Gross Enrollment Rate (GER) for 2010-11 has been calculated on the basis of SEMIS. Stage/ level-wise enrollment data for the public sector schools, the stage/ level-wise enrollment data for private and other public (Cantt. & Garrison, PAF, Pakistan Railway, etc.) sector institution has been taken from the NEMIS report. The population data was taken from the NEMIS and SEMIS. The projections have been made accordingly on the basis of improving the class wise transition rates (calculated for the public sector only). The data for the Net Enrollment Rate (NER) has been taken from the PSLM 2010-11 report for the base year.
- c. Dropout Rates have been calculated from the SEMIS reports of 2010-11. Number of out of school children of 5-16 year age group for the base year has been calculated on the basis of Enrollment Rate data and for next 15 years it has been projected on the basis of enrollments and population figures.
- d. Establishment of new primary schools has been calculated to accommodate the additional enrolment, out-of-school children (those who are not going to school due to lack of access), and to improve the access at this stage.
- e. Number of schools by level for the year 2010-11 is taken from the SEMIS data, and for the years to come, it has been calculated on the basis of need and access. The average number of students in one school for 2010 is calculated from SEMIS data, and projection has been made accordingly. Up-gradation of the school from one level to the next is calculated to accommodate the stage-wise additional enrollment and in improving the access to continuing education facilities.

- f. The ratio between Primary and Middle/ Elementary School is 17.77 Primary Schools feed into 1 (One) Middle School after working out the number of schools to be up-graded, its ratio will become 12.8:1 in 2025-26.
- g. The ratio between Middle/ Elementary School and Secondary school is 1.53 Middle Schools for 1 (One) High School after working out the number of schools to be up-graded, its ratio will become 1.27:1 in 2025-26.
- h. As for the private sector is concerned, the contribution rate has been almost maintained as of base year i.e.46%. It has not been costed owing to the absence of policy on financing private schools.
- i. Number of classrooms has been calculated from SEMIS/NEMIS data. The required additional classrooms have been worked out to accommodate the prescribed policy of forty students per classroom (40:1). The classrooms being added through establishment of new schools and up-gradation of existing schools has been considered while estimating the requirement of additional classrooms.
- j. The requirement of new teachers has been worked out from SEMIS data. Student-teacher ratio at school level for 2010-11 has been calculated from the SEMIS data and projected accordingly as per policy, The demand of additional teachers is calculated on the basis of improved Student-Teacher Ratio from 30:1 in 2010-11 to 40:1 in 2025-26.
- k. The School Management Committee (SMCs), free textbooks, and stipend cost has been worked out from the budget books of Government of Sindh Finance department, for the year 2010-2011. The required budget estimates for the years to come have been calculated on the basis of escalated unit cost.
- l. The inflation rate for 2010-11 was taken from the Economic Survey of Pakistan and this rate has been reduced to 5%
- m. The benchmarks and assumptions have been established on the basis of service ratios of government of Sindh. For example, service ratio of government of Sindh for student teacher ratio is 40:1.
- n. Costing has been done using government rates and unit costs. For example, for addition/construction of new schools, construction rate of government has been used. Therefore, any change in service ratio would affect the costing of projections. If we want to make system work more efficiently by changing the service ratio, then

financial resources need to be recalculated. Moreover, further improvement in the system to enhance quality of education or expanding the definition and scope of ‘free education’ would mean additional money, which would require recalculation of financial estimates.

- o. All employee-related expenses (Pay) have been increased by 5% annually on average. This average has been calculated in accordance with the existing government policy of increments on basic pay scales. For example, average salary of school teachers has been calculated from the district budgets. It has been projected for the next 15 years according to number of teachers being added every year and increasing their average annual salary by 5%. Non-salary expenses for schools have been calculated on the constant rate in the years to come.
- p. Inefficiency cost has not been calculated. It is understood that by calculating the inefficiency costs and ridding the system of these costs will improve efficiency of government and will help achieve the compliance with Article 25-A in a more cost effective manner.

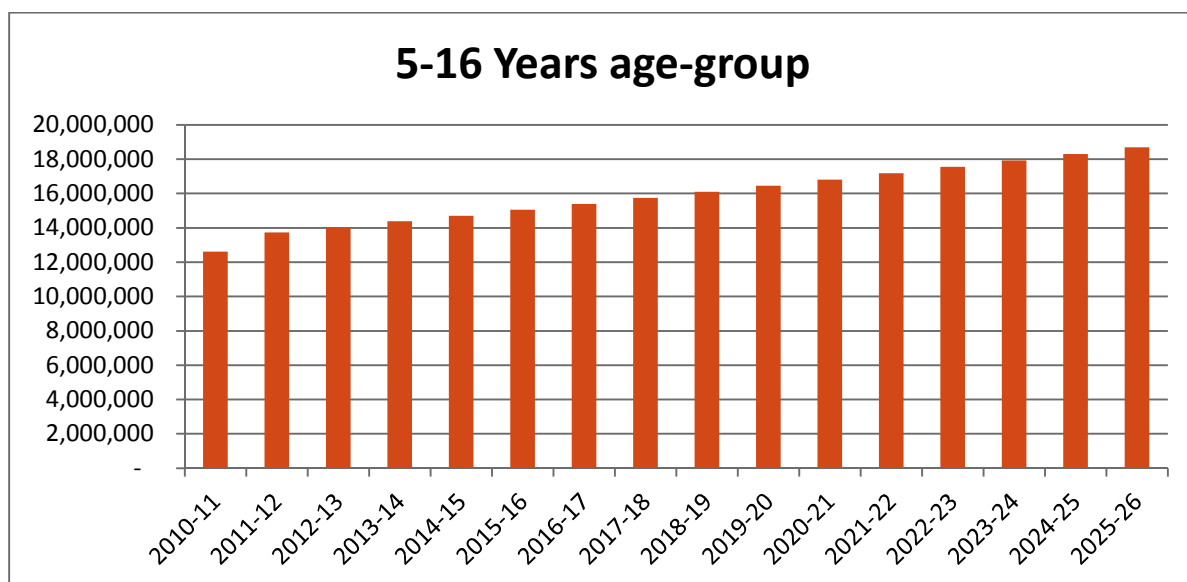
4.3. Projections

The following section describes achievable targets with affordable costs against a wide range of indicators including population, enrolment, number of teachers, number of schools, infrastructure, basic facilities, unit cost per student, unit cost for professional development, etc.

4.3.1. Population

Projections have been made on the basis of SEMIS data.

Chart 2: Population Projection: Children of 5-16 years Age Group



4.3.2. Enrollment

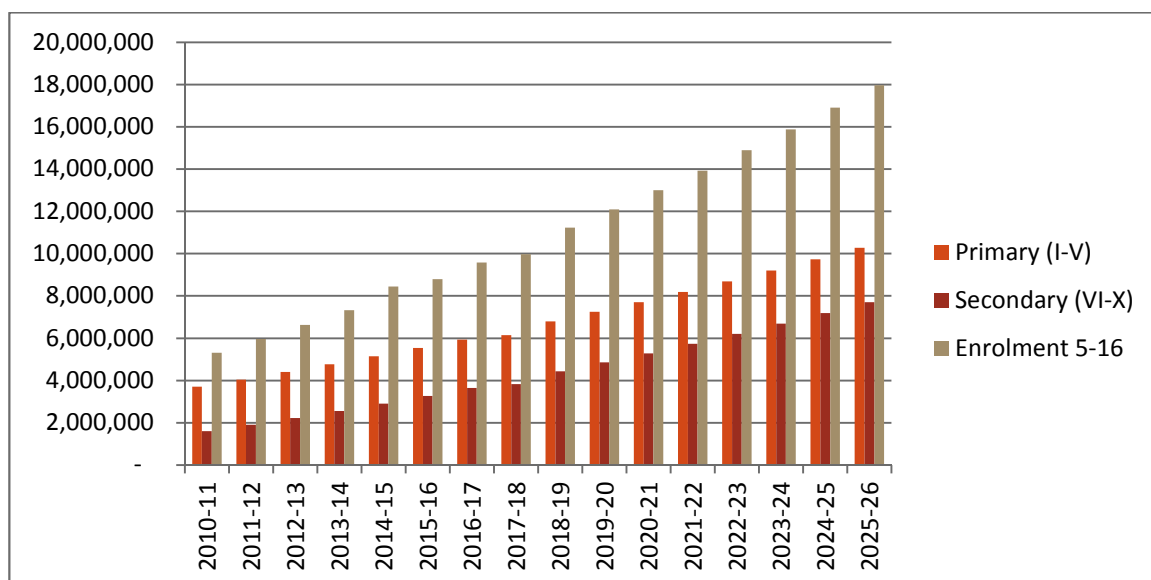
Currently, enrollment rate of 5-16 years old children is 44%. Projections are made to achieve the 98% enrollment of 5-16 years of population by 2025-26. In this case, the projected budget for education stands at an annual average of 260.59 billion to achieve the target in coming 15 years. (Table 8)

Table 8: Projection

Enrolment Rate (5-16)	Base Year (2010-11)	Projection (2025-26)
		44%
Projection	Average Annual Budget	
Achieving target by 2025-26	260.59 billion	

With 260.59 billion average annual education budget, Sindh province can achieve 98% Enrollment Rate (5-16 years age group) till 2025-26. (Chart 3)

Chart 3: Projected Increase in Enrollment based on ER



The costs of textbooks, SMCs, and stipends would increase due to provision of stipends and free textbooks to more students.

4.3.3. Unit Cost Per Student Per Year

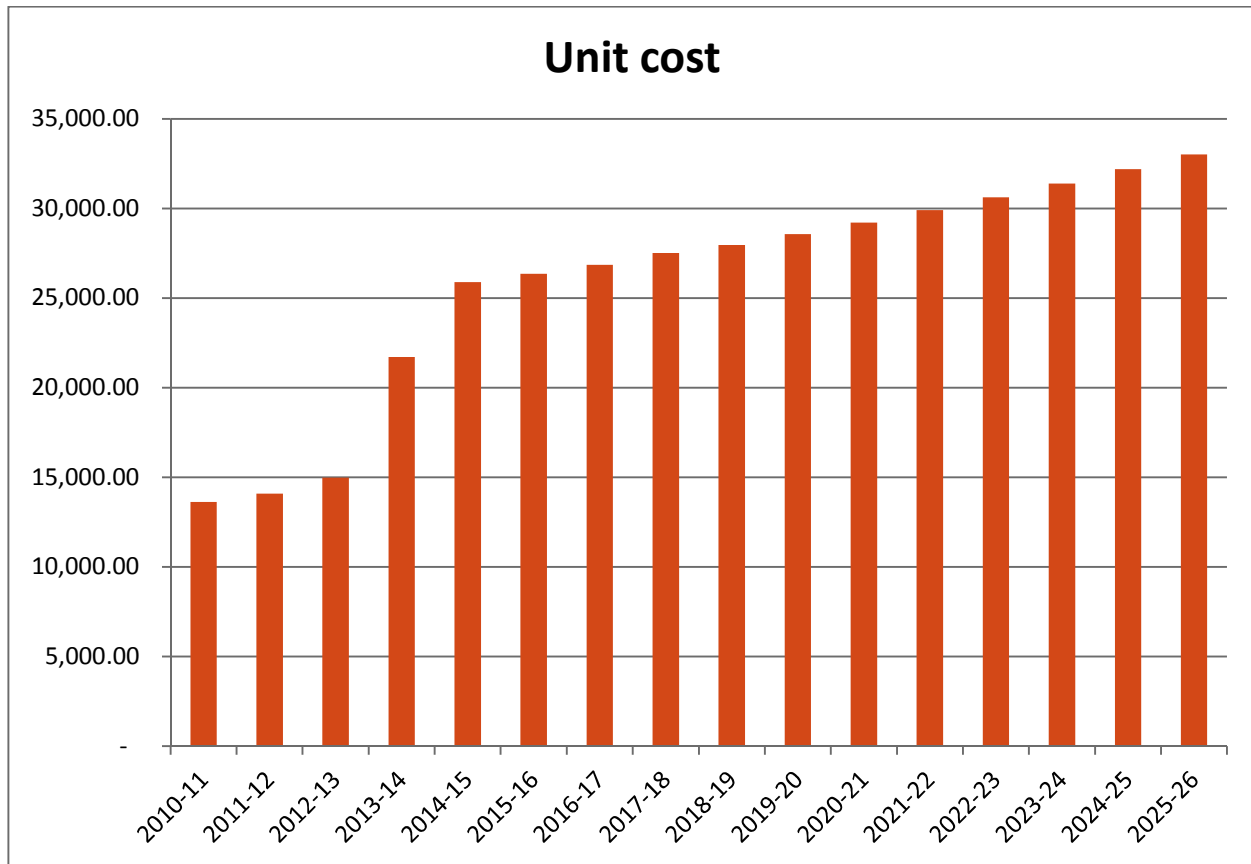
It is assumed that owing to increase in salary cost and number of teachers, projection would elevate the unit cost per child per year to the level of Rs.17,929.69 by 2025-26. (Table 9)

Table 9: Projected Unit Cost Per Student per Year

	Base Year (2010-11)	Projection (2025-26)
Unit Cost (Rs. per child per year)*	13,618.51	33,019.93
*At all levels from pre-primary to secondary and includes non-salary costs of administration too		

The projected unit cost per student per year is shown in the chart 4 below:

Chart 4: Projected Unit Cost Per Student per Year



4.3.4. Classroom Construction

To accommodate additional enrollment and out-of-school children, more classrooms and schools would be required. By taking 2010-11 as base year, projection indicates that 83,874 additional classrooms and 3,612 additional schools would be required by 2025-26 to adjust more students in the classrooms. There is also a need to increase classroom-students ratio to 1:40 in the next 15 years, which is currently around 1:38

Table 10: Projected Increase in Number of Classrooms and Schools

Increase in	Base Year (2010-11)	Projection (2025-26)
Number of Classrooms	115,784	199,658
Number of Schools	48,914	52,930

4.3.5. Basic Facilities

The projection for basic facilities has been made on the assumption that infrastructure backlog and missing facilities will be taken care of approximately within 2 years span. Projection has been worked out for provision of basic facilities

in all those schools, which are without basic facilities, with an estimated cost of Rs.35.23 billion by year 2014-15. Once this backlog is taken care of the resources will be used for up-gradation of existing schools and inclusion of new schools in the system.

4.3.6. Teacher Demand and Supply

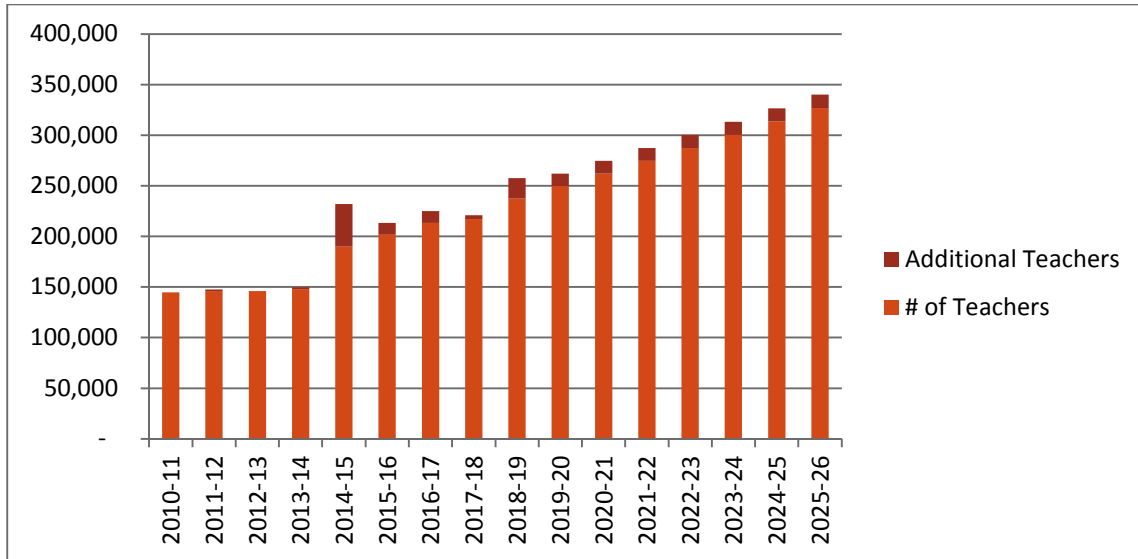
The projection shows a direct proportion between enrolment rate and teacher demand, as increase in enrollment of children would result in an increased demand for teachers. (Table 11) However, availability, recruitment, and training of such a huge human resource in itself are serious challenges for the government.

Table 11: Projected Increase in Number of Teachers

Increase in	Base Year (2010-11)	Projection (2025-26)
Number of Teachers	144,610	326,745
Note: The data does not include principal and subject specialist (SS).		

Therefore, for compliance with 25-A in view of government service ratio, 182,135 additional teachers would be required to bring the student-teacher ratio at 40:1 in the next 15 years.

Chart 5: Annual Teacher Requirement at School Level



4.3.7. In-Service Teacher Training

In-service teacher training is essential for professional development of teachers and for provision of quality education to students. Government of Sindh has institutionalized the in-service teacher-training programme. For this purpose, finances are being provided through development and current budget where major

part of budget is utilized for salary of trainers. According to projection, Rs.4832.7 per teacher would be required.

4.3.8. Budget Projections

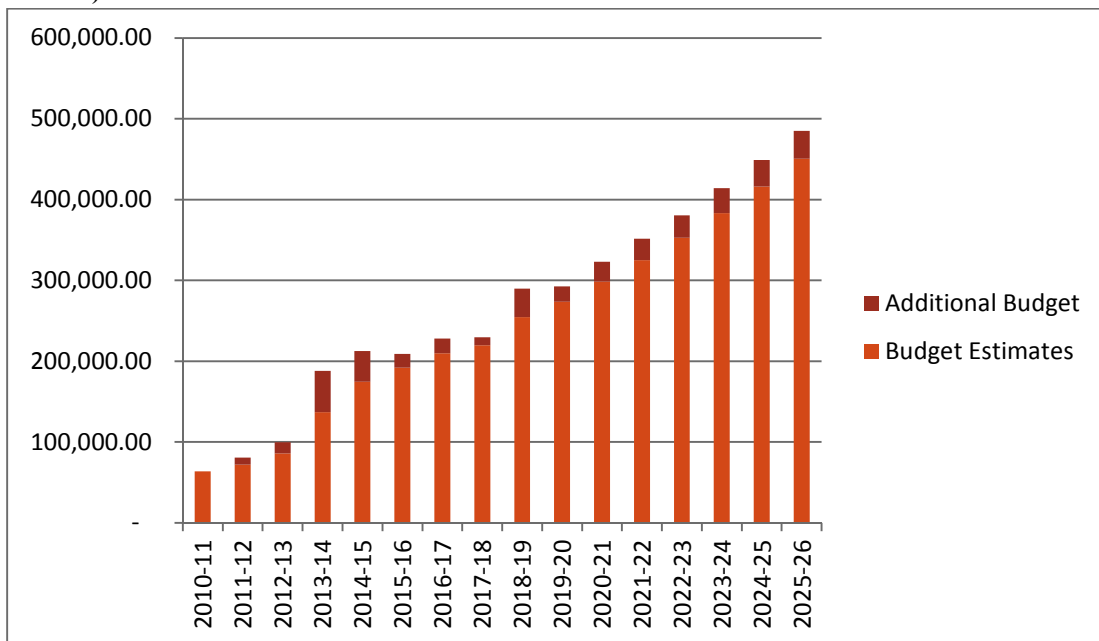
Estimates indicate that on the whole allocation of Rs.3,908.9 billion, with an average increase of around 14,56%, will be required under district and provincial education budgets for achieving 98% enrollment rate by 2025-26. This shows that in 2025-26 there will be need to allocate at least an estimated amount of Rs.450.6 sillion under district and provincial education budgets. (Table 12 and Chart 6)

Table 12: District and Provincial Education Budget

	Base Year (2010-11)	Projection (2025-26)
Current Budget (Rs. Millions)	59,962.21	431,564.50
Development Budget (Rs. Millions)	3,640.16	19,034.61
Total	63,602.36	450,599.11

It is estimated that on average Rs. 260.59 billion will be required each year for next 15 years.

Chart 6: Increase in District and Provincial Education Budget over the Last Year Budget (2010-25)



Conclusion

In order to be compliant with the requirement of Article 25-A, the required financial resources are estimated to be Rs.3,908.90 billion for achieving 98% enrolment rate of 5-16 years of population by 2025-26. It includes Rs.3,699.40 billion current and Rs.209.50 billion development budgets. On average, 260.6 billion rupees over the next 15 years in education budget is required for achieving the targets under 25-A. The achievement of targets is closely linked with the resource absorptive capacity. Various researches have proved that system lacks capacity to efficiently absorb even the available financial resources. This capacity deficit needs to be bridged to effectively manage the additional resources and to seize the opportunities available after the 18th Amendment. Provinces should make sector plans and come up with calculations to engage federal government and international partners for additional targets to achieve the target set in Article 25-A.

Inefficiency costs of system have not been calculated in the projections given in this section. If inefficiency cost is calculated and curtailed it will help get rid of the system inefficiency thus ensuring compliance with Article 25-A in a more cost effective manner. These calculations are based on current practice of single shifts in schools in the province. However, the cost estimates can further be brought down by having two shifts in the schools.