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Report No: PAD4267

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
PROGRAM APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF
US$250 MILLION

TO

INDIA

FOR

SUPPORTING ANDHRA'S LEARNING TRANSFORMATION OPERATION

PROGRAM-FOR-RESULTS

May 20, 2021

Education Global Practice
South Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective {April 30, 2021})

Currency Unit	=	India Rupee
INR74.06	=	US$1

FISCAL YEAR
April 1 - March 31

Regional Vice President:	Hartwig Schafer
Regional Director:	Lynne D. Sherburne-Benz
Country Director:	Junaid Kamal Ahmad
Practice Manager:	Mario Cristian Aedo Inostroza
Task Team Leader(s):	Kartik Pental, Harsha Aturupane

ABBREVIATIONS AND ACRONYMS

AP	Andhra Pradesh
APEWIDC	Andhra Pradesh Education & Welfare Infrastructure Development Corporation
AWPB	Annual Work Plans and Budget
CFMS	Comprehensive Financial Management System
CRCC	Cluster Resource Center Coordinator
CwSN	Children with Special Needs
DIET	District Institutes of Education Training
DIKSHA	Digital Infrastructure for Knowledge Sharing
DLI	Disbursement Linked Indicator
DoSE	Department of School Education
DoWCDSC	Department of Women, Children, Disabled and Senior Citizens
DRM	Disaster Risk Management
ECE	Early Childhood Education
EMIS	Education Management Information System
ESSA	Environmental and Social Systems Assessment
FA	Facilitating Agency
FM&P	Financial Management & Procurement
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GO	Government Order
GoAP	Government of Andhra Pradesh
IPF	Investment Project Financing
ISM	Implementation Support Mission
IVA	Independent Verification Agency
LMS	Learning Management System
MEO	Mandal Education Officer
NAS	National Achievement Survey
NEP	New Education Policy
NGC	National Green Corp
PAL	Personalized Adaptive Learning
PC	Parent Committee
PE	Procurement Entity
PDO	Program Development Objective
PforR	Program for Results
PMC	Project Management Consultant
PPSD	Project Procurement Strategy for Development
RA	Results Area
SAC	SCERT Assessment Cell
SC	Scheduled Caste
SCERT	State Council for Education Research and Training
SIEMAT	State Institute of Education Management and Training
SIS	State Implementation Society
SLAS	State Learning Achievement Survey
SSU	Sustainable Schools Unit
ST	Scheduled Tribe
STARS	Strengthening Teaching-Learning and Results for States
TLM	Teaching Learning Material

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DATASHEET

BASICINFORMATION

Country(ies)	Project Name		
India	Supporting Andhra's Learning Transformation		
Project ID	Financing Instrument	Does this operation have an IPF component?	Environmental and Social Risk Classification (IPF Component)
P173978	Program-for-Results Financing	Yes	Low

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Fragile State(s)
[ ] Contingent Emergency Response Component (CERC)	[ ] Fragile within a non-fragile Country
[ ] Small State(s)	[ ] Conflict
[ ] Alternate Procurement Arrangements (APA)	[ ] Responding to Natural or Man-made Disaster
[ ] Hands-on Enhanced Implementation Support (HEIS)	

Expected Project Approval Date	Expected Closing Date
17-Jun-2021	31-Dec-2026

Bank/IFC Collaboration

No

Proposed Program Development Objective(s)

The PDO is to improve learning outcomes, quality of teaching practices and school management in basic education

Organizations

Borrower :	India
Implementing Agency :	State of Andhra Pradesh
Contact:	Budithi Rajsekhar
Title:	Principal Secretary, Department of School Education, Governm
Telephone No:	0863-2444270

Email:	secy.se.edn@gmail.com

COST & FINANCING

SUMMARY

Government program Cost	12,824.00
Total Operation Cost	1,020.00
Total Program Cost	999.38
IPF Component	20.00
Other Costs	0.63
Total Financing	1,020.00
Financing Gap	0.00

Financing (USD Millions)

Counterpart Funding	**770.00**
Borrower/Recipient	770.00
International Bank for Reconstruction and Development (IBRD)	**250.00**

Expected Disbursements (USD Millions)

Fiscal Year	2021	2022	2023	2024	2025	2026	2027
Absolute	0.00	77.80	64.50	47.20	15.50	43.00	2.00
Cumulative	0.00	77.80	142.30	189.50	205.00	248.00	250.00

INSTITUTIONAL DATA

Practice Area (Lead)

Education

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Moderate
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	Substantial
10. Overall	Substantial

COMPLIANCE

Policy

Does the program depart from the CPF in content or in other significant respects?

[ ] Yes [✔] No

Does the program require any waivers of Bank policies?

[ ] Yes [✔] No

Legal Operational Policies

	Triggered
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant

Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Not Currently Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Currently Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Not Currently Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Not Currently Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description

Operation Agreement, Schedule, Section I.A

Without limitation on the provisions of Article V of the Program General Conditions, the Implementing Entity shall carry out the Program in accordance with financial management, procurement and environmental and social management systems acceptable to the Bank, including those set out in the ESSA and the Program Action Plan, which are designed to ensure that:

1. the Loan proceeds are used for their intended purposes, with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability; and
2. the actual and potential adverse environmental and social impacts of the Program are identified, avoided, minimized, or mitigated, as the case may be, all through an informed decision-making process.

Operation Agreement, Schedule, Section I.B

The Implementing Entity shall recruit, and maintain throughout the period of the Operation, a Project Management Consultant (PMC), comprising of experienced and qualified personnel, in sufficient numbers and under terms of reference acceptable to the Bank, which shall be responsible for day-to-day implementation and monitoring of the Operation, including, inter alia: (a) monitoring the results under each Results Area under the Program; (b) monitoring compliance with social and environmental obligations; and (c) preparing progress reports and ensuring their timely submission to the Bank.

Operation Agreement, Schedule, Section I.C

The Implementing Entity shall implement the Program Action Plan agreed with the Bank, in a manner and

substance satisfactory to the Bank.

Operation Agreement, Schedule, Section I.D
The Implementing Entity shall prepare, approve and adopt a Program Operation Manual (POM) in a manner and substance satisfactory to the Bank, and thereafter carry out all procurement under the Program in accordance with the provisions of the POM, which manual shall include, inter alia, all procurement orders and/or procedures applicable for the Program.

Operation Agreement, Schedule, Section III.B
The Implementing Entity shall:
a. maintain, at all times during the implementation of the Program, one or more Independent Verification Agent(s) under terms of reference acceptable to the Bank, to verify the data and other evidence supporting the achievement of one or more DLRs as set forth in the table in Schedule 4 to this Agreement and recommend corresponding payments to be made, as applicable; and
b. ensure that the Independent Verification Agent(s) carries out verification and process(es) in accordance with the Verification Protocol; and (ii) submits to the Bank the corresponding verification reports in a timely manner and in form and substance satisfactory to the Bank, prior to submission of any withdrawal application under Categories (1) to (8) of the table in Section IV.A of Schedule 2 to the Loan Agreement.

Conditions

Type	Financing source	Description
Effectiveness	IBRD/IDA	Loan Agreement, Section 4.01: 1. The Implementing Entity has established a web-based grievance redressal/ feedback mechanism. 2. The Implementing Enity has prepared, approved and adopted a Program operation manual which consolidates all procurement orders and/or procedures applicable for the Program. 3. The Implementing Entity has recruited a Project Management Consultant (PMC), comprising of experienced and qualified personnel, in sufficient numbers and under terms of reference acceptable to the Bank, for the day-to-day implementation and monitoring of the Operation.

I. STRATEGIC CONTEXT

A. Country Context

1. **India's Gross Domestic Product (GDP) growth has slowed in the past three years, and the COVID-19 outbreak is expected to have had a significant impact.** Growth has moderated from an average of 7.4 percent during FY15/16-FY18/19 to an estimated 4.0 percent in FY19/20. The slowdown was caused by a decline in private consumption growth and shocks to the financial sector. Against this backdrop, the outbreak of COVID-19 has had a significant impact. Growth is estimated to have contracted in FY20/21. On the fiscal side, the general government deficit widened in FY20/21, owing to higher spending and mostly low revenues. Going forward, as per the latest projections of the Government of India (GoI), growth is expected to be above 10 percent, which is the mid-point of the World Bank's recent projection range of 7.5 to 12.5 percent. The expected recovery will put India among the world's fastest-growing economies[1].

2. **Although India has made remarkable progress in reducing absolute poverty in recent years, the COVID-19 outbreak has reversed the course of poverty reduction.** Between 2011-12 and 2017, India's poverty rate is estimated to have declined from 22.5 percent to values ranging from 8.1 to 11.3 percent. However, recent projections of GDP per capita growth, taking into account the impact of the pandemic, suggest that poverty rates in 2020 have likely reverted to estimated levels in 2016[2]. Labor market indicators from high frequency surveys -including from the Centre for Monitoring Indian Economy (CMIE)- suggest that vulnerability has increased, particularly for urban households. Overall, the pandemic and its economic impacts are estimated to have raised urban poverty, creating a set of "new poor" that are relatively more likely to be engaged in the non-farm sector and to have received at least secondary education.

B. Sectoral (or Multi-Sectoral) and Institutional Context

3. **Andhra Pradesh (AP) has one of the faster-growing economies in the country. However, poverty, illiteracy, and malnutrition remain a concern.** The state has a Gross State Domestic Product at current prices (2019-20) of about US$130 billion[3]. It is the seventh-largest state in India by area, has a population of 49 million, and a per capita income (current prices) of US$2,260. In 2018, the state adopted a Multidimensional Poverty Index[4] (MPI) that estimated the poverty headcount at 21 percent. The state has a literacy rate of 68 percent (74 percent for India) and a sex ratio of 992 females (900 for India) per 1,000 males[5]. About 31.2 percent of children (0 to 59-month-old) are stunted[6]. The Scheduled Caste (SC) and Scheduled Tribe (ST)[7] share in the state population is 16 percent and 7 percent respectively.

4. **The school education system of the state is managed by the Department of School Education (DoSE) with the State Implementation Society for *Samagra Shiksha* playing a key role in the implementation of interventions directed at improving quality of service delivery in government-managed schools.** The state budget covers the cost of teacher salaries and provides subsidies to private-aided schools. It also augments the expenditure on textbooks, uniforms, mid-day meals, and stipends/scholarships for students. School infrastructure and facilities provision and repair are other aspects mostly funded through the state budget. On the other hand, *Samagra Shiksha*, a centrally sponsored scheme on school education supports government-managed schools by provides funding for the aforementioned student entitlements, and quality interventions (teacher and teacher educator professional development, teacher education institution development, remedial education, teaching-learning material etc.) under a 60:40 sharing ratio between the Government of India and the GoAP. Central funding for *Samagra Shiksha* helps in ensuring stable funding for quality

[1] The IMF projects that India's economy will grow at 11.5 in FY22
[2] Foot note: To address them, the Government of India has deployed significant resources toward social assistance, including toward urban poor households and migrants
[3] Socio-Economic Survey of Andhra Pradesh, Department of Planning, GoAP
[4] The MPI is based on health, education and standard of living.
[5] Unified District Information System for Education (UDISE) Flash Statistics (2016-17)
[6] National Health and Family Survey – 5 (2019-20), Ministry of Health and Family Welfare, Government of India
[7] The 'Scheduled Tribes' are backward sections of the Indian population who still observe their tribal ways, their own peculiar customs and cultural norms. The tribal people have remained backward because they live in inaccessible forests and hilly regions and have thus been cut off from the main currents of national life. The 'Scheduled Tribes' are backward sections of the Indian population who still observe their tribal ways, their own peculiar customs and cultural norms. The tribal people have remained backward because they live in inaccessible forests and hilly regions and have thus been cut off from the main currents of national life.

interventions, and the State Implementations Society for *Samagra Shiksha* acts as the nodal institution for managing it.

5. **Access to basic education[8] and school transition rates are generally high in AP.** There are about 63,621 schools in the state, of which about 70 percent, or 45,013 schools, are government-managed and serve 3.9 million children (49.5 percent of overall enrolment) and have approximately 190,000 teachers. Elementary and secondary Gross Enrolment Ratios (GER) for all schools in the state are 86 and 82 percent respectively; and the primary to upper primary and upper primary to secondary transition rates are 97 and 96 percent respectively. The difference in the transition rates for boys and girls is negligible, but SC and ST students lag by 7-10 percentage points[9]. The majority of students in government schools are girls, and together with SC and ST students, account for more than 70 percent of government school students[10]. This is largely because, in many low-income households, parents prefer to use their limited funds to send their sons to private schools, perceived as offering higher-quality education. A network of more than 50,000 *Anganwadis*[11] managed by the Department of Women, Children, Disabled and Senior Citizens (DoWCDSC), Government of Andhra Pradesh (GoAP) is responsible for providing three years of Early Childhood Education (ECE) to 43.3 percent of three to six-year-old children in the state. About 19.2 percent of children in this age group are not enrolled in any form of ECE.

6. **Although AP performs far above the national average in student learning outcomes on the National Achievement Survey (NAS), overall learning deficiencies remain a concern**. The results of the most recent NAS 2017 indicate that AP performs well, and in many cases far better than most other states, across all grades (3, 5, 8, and 10) and subject areas tested. For instance, AP students ranked first on the Grade 10 Mathematics test and second on the Grade 3 Language test. The NAS 2017 results indicate that 40 percent of grade 5 (age 10) students do not meet minimum grade-level proficiency for Language. By grade 8 (age 14), this statistic worsens to 62 percent. Across grades and subjects, girls outperform boys. However, SC and ST students tend to lag their peers. These learning deficiencies are expected to worsen due to the COVID-19 pandemic. Even though government-managed schools in AP perform above the national average across grades and subjects, the average performance of students in private schools is better. This has contributed to a gradual dip in the enrolment in government-managed schools. For example, between 2015-16 and 2018-19, enrolment in government-managed schools decreased from 4.12 million to 3.90 million.

7. **AP has achieved significant gains in improving enrolment, transition, and retention rates as well as learning outcomes amongst girls.** At the elementary level, the state level GER is 86.5 percent for boys and 85.2 percent for girls. Similarly, at the secondary level, the GER is 75.7 percent for boys and 77.0 percent for girls. However, global evidence[12] suggests that stereotypes communicated by teachers in classroom transactions, either consciously or unconsciously, negatively impact girls' skills, career choices, and transition to STEM-related careers. Additionally, virtual consultations[13] pointed towards instances of early marriage amongst adolescent girls in certain districts of the state leading to drop-out from secondary schools. These gender gaps are expected to amplify in the medium term due to the skewed impact of COVID-19 on girls[14]. Schools can emerge as important institutions for addressing persistent gender norms and socio-cultural practices through subtle pedagogical shifts and prioritization of girls' safety by the PCs.

8. **Basic education (Kindergarten to Grade 10) in AP's government-managed schools is negatively impacted by the limited focus on foundational learning (Kindergarten to Grade 2), along with poor infrastructure, low teacher capacity, and inefficient administration practices.** The state faces several key challenges in education service delivery, exacerbated by weak levels of institutional capacity attributable to the bifurcation of the state in 2014. Post the bifurcation, state-level nodal educational institutions located in *Hyderabad* became a part of the education system of the newly created state of Telangana. Limited access to quality ECE options mean children don't get the right start and lack

[8] Basic education refers to K to 10 education (age 3 to 16) and includes ECE (age 3 to 6), elementary education (Grades 1 to 8; age 6 to 13), and secondary education (Grades 9 and 10; age 14 to 16). ECE and the first two grades (early grades) of primary education are also referred to as foundational education (K to Grade 2; age 6 to 8). Elementary education has two subparts to it – primary (Gardes 1 to 5; age 6 to 10), and upper primary (Grades 6 to 8; age 10 to 13).
[9] UDISE Plus (2018-19)
[10] Individually, girls, SC and ST account for 51.4 percent, 25.7 percent and 10 percent of enrolment in government managed schools.
[11] *Anganwadis* are early childhood care and development centers operated under the Integrated Child Development Services (ICDS) scheme of the Government of India. Amongst other key childcare services, these centers provide early childhood education.
[12] Failing to notice? Uneven teachers' attention to boys and girls in the classroom; Journal of Labor Economics (2018)
[13] Project-level consultations organized across two districts and one state-level consultation
[14] UNICEF, 2020

early literacy and numeracy skills. This learning gap is further exacerbated by limited teacher capacity in primary and secondary grades. Many teachers have been unable to transition from more traditional, curriculum-based teaching practices to the more desirable, competency-based approaches. This is due, in part, to poor institutional capacity to provide high-quality professional development opportunities for teachers and school leaders. Teachers lack the capacity to leverage schools-based assessments to diagnose gaps in students' learning/understanding and to create and deliver student-specific remedial education plans. This leads to the accumulation of learning gaps.

9. **The key issues associated with the absence of quality ECE are limited pedagogical connections between the ECE services offered at *Anganwadis* and early school grades, lack of professional development opportunities for teachers, and limited availability of Teaching Learning Material (TLM) to support play-based pedagogy.** In line with the New Education Policy (NEP) 2020, the state has taken steps to establish a greater pedagogical continuum between the ECE offered by *Anganwadis* and the early grade education offered in government-managed schools. The DoSE, GoAP has partnered with the DoWCDSC to support the ECE activities of these centers. Across primary schools, extra teachers have been recruited to fill vacancies that were leading to multi-grade teaching. Recognizing that the learning levels are lowest for ST students, a one-year preparatory grade (school-based ECE) has been introduced across about 3,500 primary schools catering to habitations with a high percentage of ST families. The limited system-wide experience in the area of foundational learning, and the specific nature of the support required in the area of teacher professional development position it as an area that needs special focus.

10. **Lack of basic infrastructure and facilities adversely affects the quality of education, especially for young children in government-managed schools.** As of 2018-19, the percentage of schools with functional girls' and boys' toilets and functional drinking water facilities was 61 percent, 55 percent, and 74 percent respectively. Most classrooms needed repairs and lacked furniture. Further, despite being connected to the electric grid, they did not have electrical fixtures. This lack of essential facilities is a key reason for the gradual decrease in enrolment in government-managed schools. Reversing this trend could reduce the per-pupil expenditure, enhance expenditure efficiency and impact learning levels. Deficiencies in key facilities can explain up to 16 percent of the variance in student learning levels[15] and to address these, the government has initiated the *Nadu Nedu* initiative. For this school facility upgradation and infrastructure repair initiative, PCs have been empowered to carry out assessments of facilities and identify gaps. A community contracting model is being used to carry out the required development works. Standardized designs have been developed; civil engineers have been engaged to oversee technical aspects, and a system has been set up for GIS-enabled monitoring.

11. **Current model of service delivery for teacher professional development, school leadership development, state, and school-level assessments, and remedial education programs:** Along with the District Institutes of Education and Training (DIETs), the State Council of Education Research and Training (SCERT), and the State Institute of Education Management and Training (SIEMAT) are responsible for managing all academic and school management-centric interventions in the state. The SCERT and the DIETs are responsible for the development of teacher modules for professional development, provision of training, and development and delivery of guidebooks. They are also expected to develop, implement, and analyze state and school-level assessments and associated remedial education support for academically weak students. At the block, cluster, and school levels, the Mandal Education Officers (MEOs), Cluster Resource Center Coordinators (CRCCs)[16], and school leaders are expected to provide school-based academic leadership.

12. **Weak institutional capacity is hindering opportunities for need-based professional development and coaching of teachers, limiting the state's ability to transition from curriculum to competency-based teaching-learning across all grades.** The training made available to teachers has been held centrally and is not necessarily aligned with their professional development needs. This was exacerbated by the fact that, as of 2019-20, over 90 percent of academic positions at the SCERT and DIETs were vacant. Of late, the state has proactively taken steps to address this. Using a merit-

[15] Barrett, P. S., F. Davies, Y. Zhang, and L. Barrett. 2015. "The Impact of Classroom Design on Pupils' Learning: Final Results of a Holistic, Multi-Level Analysis." Building and Environment 89: 118–33

[16] Under the administrative system and structure in India, each state comprises of a certain number of districts. In turn each district comprises of administrative Blocks (referred to as *Mandals* in AP). Under the administrative structure/system managing school education, each Block is further divided into a set of Clusters, each comprising of between 10-12 schools. AP has 13 districts and 676 *Mandals*.

based model, teachers have been selected to staff the SCERT, SIEMAT, and DIETs. However, this newly recruited staff has not received any training and needs to be appropriately oriented. In line with the recommendations of the NEP (2020), the state has created about 4,000 school complexes (cluster of schools), each led by a secondary school and its principal, and pedagogically guided by the senior faculty of the secondary school(s) in the complex. With this, AP has made school complexes the unit for facilitating need-based professional support, peer-to-peer learning, and coaching for teachers. This will also facilitate classroom observation-based mentoring of teachers by senior faculty.

13. **The SCERT Assessment Cell (SAC) has limited capacity for developing and managing large-scale student and school-based assessments. As a result, the data from these assessments are not yet fully utilized.** The state conducts periodic State Learning Achievement Surveys (SLAS) that cover a sample of schools and students. These have been mostly managed by independent firms/consultants. Teachers lack the capacity to develop and manage school-based diagnostic assessments. This is an area where the SAC can support them by developing standardized tests or test items. The SAC needs considerable capacity-building support to be able to develop and manage these initiatives. More importantly, the state has yet to fully define competency-based learning standards, and this remains a constraint on the quality and utility of the SLAS and school-based diagnostic assessments. It is also negatively impacting the utility of teacher professional development programs. Currently, it takes a year or more to collate and analyze data from SLAS or school-based diagnostic assessments. Further, teachers lack access to opportunities for professional development that would allow them to better understand the link between school-based diagnostic assessments and remedial education support for students. The recent remedial education initiative undertaken by the state has provided some form of structured response during the COVID-19 pandemic. However, it is largely designed to address the key learning gaps identified at an aggregate level. Further adaptations to identify and address student-specific remedial needs would be a better approach.

14. **SCERT, DIETs, and SIEMAT lack the necessary capacity for delivering the required professional development and remedial education programs, and to administer state and school-level assessments.** Until recently (June 2020), these institutions had more than 90 percent of staff vacancies. Although the state has since filled these positions, the staff have limited experience in developing and delivering professional development programs for teachers and school leaders, student learning assessments, remedial education initiatives, etc. Their capacity is limited by the lack of a system of Annual Work Plan and Budget (AWPB) development and appraisal that they can use to seek funds against clearly defined results. They lack access to the data, and tools that can enable them to discharge their responsibilities effectively. These include frameworks to measure and improve school leadership, technology-based tools to facilitate school audits, feedback from beneficiaries, and an Education Management Information System (EMIS) to track school-level data.

15. **At the school level, nascent engagement of PCs in school monitoring and management contributes to poor school development plans, resource utilization, and institutional accountability:** National legislations and guidelines place the responsibility of school-level planning, budgeting, management, and monitoring in the hands of Parent Committees (PCs). However, this vision largely remains unrealized across the country. These functions have become the responsibility of the administration and decentralized education functionaries, leading to more top-down planning and budgeting. Using the Comprehensive Financial Management System (CFMS), AP can directly transfer funds to schools. As a result, unlike other states, school-level plans/budgets do not need to be aggregated at the block and district levels before being taken up for appraisal at the state level. Along with the schoolteachers and school leader, the PCs can prepare a school-level plan and budget based on their assessment of the school's development needs, and directly seeks funds from the state. This has unlocked possibilities of realizing the vision of the Right to Education Act (2009) of making PCs responsible for school management and monitoring. The *Nadu Nedu* initiative is an example of such decentralized school-level management. However, there is a need to increase their say in the process by providing them with the information required to make more informed decisions. The former requires the support of tools that the community can use to monitor and report school performance. The latter requires them to have open access to school report cards.

16. **Lack of an EMIS and limited capacity building support for decentralized education functionaries and school leaders have restricted their ability to perform their academic responsibilities.** The ability of school leaders, MEOs, and CRCCs to focus on academic responsibilities is constrained by issues such as paper-based relay of notifications and teacher grievances; and physical collection and record-keeping of school-level data. Further, they have limited access to the

professional development opportunities required to build the required leadership competencies.

17. **The prevailing problem of poor learning levels has been made worse by the COVID-19 pandemic. In response to the pandemic, the state has initiated multiple channels for home-based learning. However, the utility of these channels is limited by the depth and quality of content, and the lack of parental support.** To address the learning losses due to school closures caused by the pandemic, AP is leveraging television and radio broadcasts, paper-based learning kits, and online lessons. Before the COVID-19 pandemic, the state had initiated a program to provide students with remedial workbooks based on an analysis of state-level student assessment data. During the unforeseen and prolonged school closures caused by the pandemic, these workbooks were distributed to students to facilitate home-based learning. Through door-to-door visits, teachers have been counseling students and parents to reduce their anxiety about the perceived impact of the pandemic on their child's academic progress. AP has the lowest literacy rates (68 percent) in India, which affects parents' ability to support their children's remote learning. Given this context, on November 2, 2020, AP became one of the first states to initiate the process of gradually reopening its schools. However, depending on how the pandemic evolves, the state may have to re-impose school closures. Going forward, the focus needs to be on strengthening the quality of content being disseminated through the various channels for home-based learning.

C. Relationship to the CPS/CPF and Rationale for Use of Instrument

18. **The proposed SALT operation is consistent with the India Country Partnership Framework (CPF): FY18-22; report No. 126667-IN, July 25, 2018 discussed at the Board on September 20, 2018. To respond to the COVID crisis the CPF program has been adjusted as further described in Annex 1.** It seeks to help children realize their human capital potential. It responds to this vision through two focus areas of the CPF: (a) Enhanced investment in the early years of children's development and (b) Improvement in the quality of education in schools and colleges. The operation aims to leverage the need-based engagement of technical experts for strengthening public sector institutions. It focuses on the capacity development of three nodal service delivery institutions that are at the core of the state's learning transformation: SCERT, SIEMAT, and SAC. Given that many south Indian states have a similar sector context, the lessons, technical tools, and management and monitoring approaches from the operation can facilitate cross-learning. In doing so, the operation will support the concept of 'Lighthouse India'[17].

19. The SALT operation will strive for more in-depth interventions in key results areas (foundational learning, teacher professional development, classroom-based assessment, and learning enhancement programs) identified under the STARS operation. Through the SALT operation, and aligned with the NEP, AP will become the first state in India to focus on the provision of long-term, in-service professional development certificate courses for ECE, use Personalized Adaptive Learning (PAL), and roll out classroom observation backed and school complex-based teacher professional development. The successful implementation of these initiatives would inform the strategies of other states.

20. **Results-based financing through the PforR lending instrument:** Within the larger school education program of the state and the budget that supports it, the use of the PforR instrument for SALT will provide a results orientation by linking funding to key educational outcomes. In doing so, the instrument will provide the state and the decentralized education institutions the flexibility to design, deploy, and iterate initiatives in line with the local context. This will be facilitated by a system of annual planning and budgeting, which would allow nodal institutions to plan for activities against the results to be achieved under the Program. These plans would be appraised by the DoSE, GoAP and provided with funds from the Program. The PforR Program will be supported by an IPF component (project) that can be used to engage technical experts who can provide capacity building and implementation support to these institutions. This will be especially important to adequately leverage the operational flexibility provided under the PforR Program.

II. PROGRAM DESCRIPTION

A. Government Program

21. **The overall government program comprises *Samagra Shiksha*, multiple state-level initiatives, and support to**

[17] https://documents.worldbank.org/en/publication/documents-reports/documentdetail/277621537673420666/india-country-partnership-framework-for-the-period-fy18-fy22

private-aided schools. The state budget primarily funds teacher salaries (including grants to private-aided schools[18]), and supplementary expenditure to enhance the student entitlements and student meal programs funded under *Samagra Shiksha*. Funding for most of the initiatives associated with quality enhancement is through *Samagra Shiksha*. This includes funding for foundational learning, teacher and school leader professional development, learning enhancement programs, assessment system strengthening, and development of teacher education institutions. It also provides funds to meet administrative expenses (primarily salaries), provision of vocational education, and salaries of teacher educators.

22. **About 81 percent of the education budget is being used to support teacher salaries, and about 9 percent of it is being used to fund school meals, scholarships, student entitlements, and regular school operation expenditure.** This limits the funding available for investments in initiatives directed at improving the quality of education. Most schools require major repairs and lack basic infrastructure and facilities. However, there is little funding available for this. The GoAP views SALT as a way to address these deficiencies and transform government schools into vibrant and competitive institutions. The Program will also focus on foundational learning, teacher professional development, assessment system strengthening, remedial education, and school leadership development. It places a heavy emphasis on support to students from marginalized groups by focusing on Children with Special Needs (CwSN), ST students, and girls. The Program covers all 44,500 government-managed schools providing foundational education, elementary education, and secondary education; all state and district level nodal educational institutions (SCERT, SAC, SIEMAT, and DIETs); decentralized education management functionaries (MEOs, CRCCs and School Leaders), and 190,000 teachers.

B. Theory of Change

23. **SALT seeks to strengthen the quality of foundational learning to provide children with a strong start to schooling.** It seeks to sustain early gains and address existing learning poverty by improving the quality of teacher-student interactions across all grades. This will be achieved through the provision of appropriate teacher professional development opportunities and remedial education linked to technically sound state-level and school-based assessments. SALT also supports the strengthening of the institutional capacity required to achieve these results.

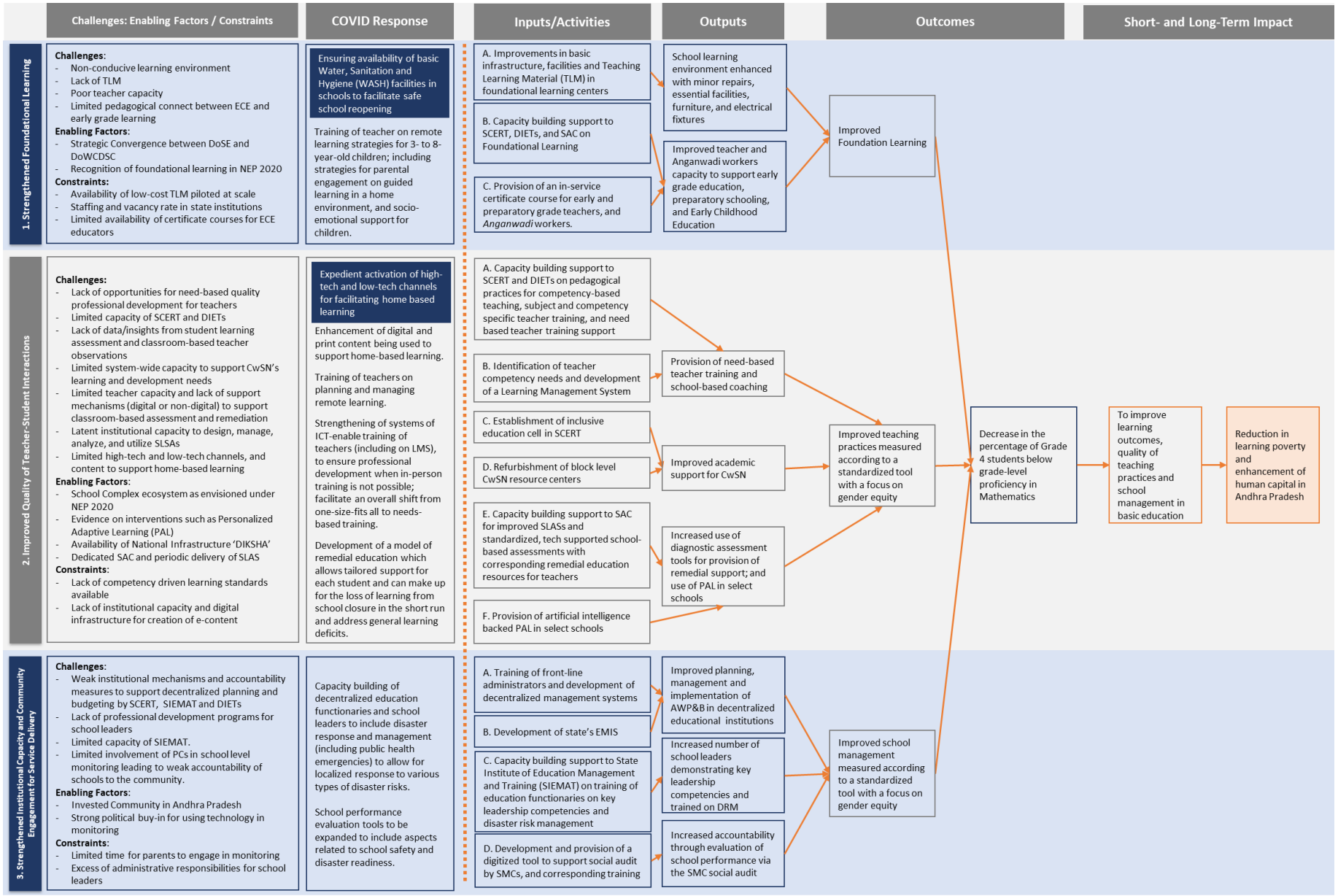
A. PforR Program Scope

24. **The overall government program comprises multiple schemes and initiatives of the state and *Samagra Shiksha*. The SALT Program focuses on those aspects of these schemes and initiatives that directly impact students' education outcomes across foundational, elementary, and secondary levels of schooling.** While the state budget accounts for most of the expenditure, it mostly covers teacher salaries; school construction, repair and maintenance; and provision of student entitlements (free textbooks, uniforms, mid-day meals, etc.). *Samagra Shiksha* provides most of the funding for quality enhancement initiatives but while this can sustain initiatives, it is not enough for the development and rollout of large-scale transformational programs. The SALT Program seeks to address this gap by focusing on three results areas.

25. **Results Area 1 (RA-1) – Strengthened Foundational Learning:** (a) Development and provision of short-term training course to Anganwadi workers and early grade schoolteachers; (b) Provision of standardized training and learning materials across Anganwadis and early grade classrooms; (c) Provision of teacher training and training and learning materials to tribal schools; (d) Design and implementation of behavior change and communication strategy in tribal blocks to promote enrolment of children in preschool education and their continuous school education thereafter; and (e) Infrastructure repairs and facilities upgradation in schools.

26. **The SALT Program will align with the NEP (2020) and focus on operationalizing the convergence between the DoSE and the DoWCDSC to facilitate the provision of quality foundational learning.** The Program will enable the SCERT to support the DoWCSSC in enhancing the quality of ECE offered in *Anganwadis*, establishing a pedagogical continuum between the ECE offered by these centers and the early-grade education offered in primary schools. The Program will seek to facilitate a shift from the current curriculum-based model of teaching-learning to a play-based, developmentally appropriate pedagogy. It will do so by: (a) Supporting the development and provision of a short-term training course to the *Anganwadi* workers and the early grades teachers; and (b) Providing standardized TLM across all centers/classrooms.

[18] To subsidize the fee and ensure that teachers are provided with fair wages, private-aided schools only receive financial support for teacher salaries.


Challenges: Enabling Factors / Constraints
COVID Response
Inputs/Activities
Outputs
Outcomes
Short- and Long-Term Impact
1. Strengthened Foundational Learning
Challenges:
- Non-conducive learning environment
- Lack of TLM
- Poor teacher capacity
- Limited pedagogical connect between ECE and early grade learning
Enabling Factors:
- Strategic Convergence between DoSE and DoWCDSC
- Recognition of foundational learning in NEP 2020
Constraints:
- Availability of low-cost TLM piloted at scale
- Staffing and vacancy rate in state institutions
- Limited availability of certificate courses for ECE educators
Ensuring availability of basic Water, Sanitation and Hygiene (WASH) facilities in schools to facilitate safe school reopening
Training of teacher on remote learning strategies for 3- to 8-year-old children; including strategies for parental engagement on guided learning in a home environment, and socio-emotional support for children.
A. Improvements in basic infrastructure, facilities and Teaching Learning Material (TLM) in foundational learning centers
B. Capacity building support to SCERT, DIETs, and SAC on Foundational Learning
C. Provision of an in-service certificate course for early and preparatory grade teachers, and Anganwadi workers.
School learning environment enhanced with minor repairs, essential facilities, furniture, and electrical fixtures
Improved teacher and Anganwadi workers capacity to support early grade education, preparatory schooling, and Early Childhood Education
Improved Foundation Learning
2. Improved Quality of Teacher-Student Interactions
Challenges:
- Lack of opportunities for need-based quality professional development for teachers
- Limited capacity of SCERT and DIETs
- Lack of data/insights from student learning assessment and classroom-based teacher observations
- Limited system-wide capacity to support CwSN's learning and development needs
- Limited teacher capacity and lack of support mechanisms (digital or non-digital) to support classroom-based assessment and remediation
- Latent institutional capacity to design, manage, analyze, and utilize SLSAs
- Limited high-tech and low-tech channels, and content to support home-based learning
Enabling Factors:
- School Complex ecosystem as envisioned under NEP 2020
- Evidence on interventions such as Personalized Adaptive Learning (PAL)
- Availability of National Infrastructure 'DIKSHA'
- Dedicated SAC and periodic delivery of SLAS
Constraints:
- Lack of competency driven learning standards available
- Lack of institutional capacity and digital infrastructure for creation of e-content
Expedient activation of high-tech and low-tech channels for facilitating home based learning
Enhancement of digital and print content being used to support home-based learning.
Training of teachers on planning and managing remote learning.
Strengthening of systems of ICT-enable training of teachers (including on LMS), to ensure professional development when in-person training is not possible; facilitate an overall shift from one-size-fits all to needs-based training.
Development of a model of remedial education which allows tailored support for each student and can make up for the loss of learning from school closure in the short run and address general learning deficits.
A. Capacity building support to SCERT and DIETs on pedagogical practices for competency-based teaching, subject and competency specific teacher training, and need based teacher training support
B. Identification of teacher competency needs and development of a Learning Management System
C. Establishment of inclusive education cell in SCERT
D. Refurbishment of block level CwSN resource centers
E. Capacity building support to SAC for improved SLASs and standardized, tech supported school-based assessments with corresponding remedial education resources for teachers
F. Provision of artificial intelligence backed PAL in select schools
Provision of need-based teacher training and school-based coaching
Improved academic support for CwSN
Increased use of diagnostic assessment tools for provision of remedial support; and use of PAL in select schools
Improved teaching practices measured according to a standardized tool with a focus on gender equity
3. Strengthened Institutional Capacity and Community Engagement for Service Delivery
Challenges:
- Weak institutional mechanisms and accountability measures to support decentralized planning and budgeting by SCERT, SIEMAT and DIETs
- Lack of professional development programs for school leaders
- Limited capacity of SIEMAT.
- Limited involvement of PCs in school level monitoring leading to weak accountability of schools to the community.
Enabling Factors:
- Invested Community in Andhra Pradesh
- Strong political buy-in for using technology in monitoring
Constraints:
- Limited time for parents to engage in monitoring
- Excess of administrative responsibilities for school leaders
Capacity building of decentralized education functionaries and school leaders to include disaster response and management (including public health emergencies) to allow for localized response to various types of disaster risks.
School performance evaluation tools to be expanded to include aspects related to school safety and disaster readiness.
A. Training of front-line administrators and development of decentralized management systems
B. Development of state's EMIS
C. Capacity building support to State Institute of Education Management and Training (SIEMAT) on training of education functionaries on key leadership competencies and disaster risk management
D. Development and provision of a digitized tool to support social audit by SMCs, and corresponding training
Improved planning, management and implementation of AWP&B in decentralized educational institutions
Increased number of school leaders demonstrating key leadership competencies and trained on DRM
Increased accountability through evaluation of school performance via the SMC social audit
Improved school management measured according to a standardized tool with a focus on gender equity
Decrease in the percentage of Grade 4 students below grade-level proficiency in Mathematics
To improve learning outcomes, quality of teaching practices and school management in basic education
Reduction in learning poverty and enhancement of human capital in Andhra Pradesh

27. **To address the issue of poor learning levels amongst students from the ST community, the Program will introduce a one-year preparatory grade in 3,500 schools in the 66 Integrated Tribal Agency Blocks (ITDA)/tribal blocks.** The focus of this one year of preschool education would be to improve student readiness for formal schooling. The SALT Program will extend teacher training and TLM support to these schools. An area of focus in the preparatory class will be the setting up of peer groups (one on one or groups) that will be leveraged for group activities under the play-based model of learning. They will also facilitate greater attachment to the learning process, make classroom-based learning more enjoyable for students, and as a result potentially improve school attendance while reducing dropouts. The latter is an issue in schools in ITDA blocks. Additionally, the SALT Program will support the state in the design and roll-out of a behavior change and communication strategy targeting stakeholders in ITDA blocks – parents, community representatives, teachers, *panchayat* members, students – to ensure effective and continuous engagement. The communication strategy will prioritize information dissemination required to mobilize the community to enroll children in the one-year preparatory grade, and the behavior change required to ensure that they remain in school.

28. **Addressing the early formation of gender stereotypes will be an area of focus.** Recognizing that children are most impressionable during this stage, principles of gender equity and practical methods to negate personal biases will be integrated into the training provided to *Anganwadi* workers, and preparatory and early grade teachers.

29. **To address the existing gaps in school-level infrastructure and facilities and to create a conducive learning environment, the SALT Program will support the GoAP's *Nadu Nedu* initiative.** Most government-managed schools in the state only offer primary education and therefore *Nadu Nedu* is expected to have a significant impact on enrolment in and quality of early grade education. PCs will be provided with funds to carry out infrastructure repairs and ensure that the school has: (a) functional toilets (with separate functional toilets for girls, and CwSN), (b) drinking water facilities, (c) lights and fans, (d) classroom furniture, (e) chalkboards, (f) compound walls, and (g) a smart television. These essential facilities are noted to have a direct impact on student learning levels[19]. Under this initiative, the Program will focus on re-establishing the structural integrity of buildings in cyclone and flood-prone areas, facilitate climate-resilient adaptations to facility design/specifications, and facilitate a switch to energy and water-efficient fixtures.

30. **To strengthen the state's response to the COVID-19 pandemic and improves the system's overall resilience to future shocks, the Program will support the enhancement of the home-based learning opportunities being provided to three to eight-year-old students.** Given the low availability of digital devices amongst students, the state has distributed physical workbooks and has been broadcasting supporting lessons on television and radio. The Program will support the further enhancement of this endeavor through the development of physical learning kits (storybooks, puzzles, and play material) that can be distributed to facilitate parent-guided learning in a home environment. To control the spread of the COVID-19 pandemic and other water-borne diseases, the *Nadu Nedu initiative* will help ensure the availability of safe drinking water, handwashing points, and functional and maintained toilets. Additionally, the Smart TVs provided under the *Nadu Nedu* initiative will be leveraged to provide access to online lessons or television broadcasts for students who lack access to relevant devices. Under the supervision of the PCs, small groups of students will use the Smart TVs to continue their learning.

31. **Climate Adaptation and Mitigation Measures Under RA-1:** The teacher professional development support under the SALT Program will cover learning competencies related to climate change adaptation and mitigation. Special efforts will be made to integrate these learnings in the play and activity-based pedagogy to be prioritized for the foundational years. In doing so, it will help strengthen classroom transactions and enhance students' knowledge and understanding of these aspects/topics. The Program will also facilitate the repair of school infrastructure to re-establish structural integrity and ensure structural safety especially in flood, cyclone, and storm surge affected areas. The Program will enable PCs to purchase and install energy-efficient light fixtures, fans, and Smart TVs in the schools. It will also enable schools to shift from firewood to Liquid Petroleum Gas (LPG) for preparing mi-day meals for students. Tree plantation on campus will be

[19] Barrett, P. S., F. Davies, Y. Zhang, and L. Barrett. 2015. "The Impact of Classroom Design on Pupils' Learning: Final Results of a Holistic, Multi-Level Analysis." Building and Environment 89: 118–33

encouraged and waste water from drinking water facilities and toilets will be reused.

32. **Results Area 2 (RA-2) – Improved Quality of Teaching-Learning Interactions:** (a) Development and implementation of a model of need-based teacher professional development, school-based learning and peer-to-peer learning for teachers; (b) Support to SCERT and DIETs for providing in-service teacher training opportunities; (c) Support for courses on planning and management of remote learning, technology and digital pedagogical skills for teachers; (d) Repair and refurbishment of CWSN resource centers and provision of aids, appliances and kits to support center, home and school-based education for children with special needs; (e) Establishment of a specialized cell for inclusive education at the SCERT to promote provision of need-based teacher training and guidebooks to address educational requirements of children with special needs; (f) Strengthening of the use of classroom assessments as tools for ongoing student remediation and competency-based learning; (g) Strengthening system-level assessments as tools for informing education policy and practice across the state; (h) Piloting of a technology-enabled personalized adaptive learning system in residential schools to provide customized remedial learning to children; and (i) Sensitization and training of teachers to support them in identification of gender stereotypes in classroom interactions, and addressing learning gaps experienced by girls due to the COVID-19 pandemic.

33. **The Program will operationalize a model of need-based teacher professional development,[20] providing school-based coaching and facilitating peer-to-peer learning for teachers.** The Program will support a shift from curriculum-based to competency-based teaching-learning. SALT will determine teacher professional development needs at a school complex level, based on inputs from self-assessments, academic results from school-based assessments, and classroom-based observation of teaching practices. The 'TEACH – Primary' and 'TEACH – Secondary' tools[21] will be leveraged for classroom-based observation and coaching. Teachers will receive frequent observation visits from school leaders and senior teachers who will also provide them with coaching. This ongoing support will help teachers improve their understanding and application of pedagogical practices, which will be reinforced through need-based in-service training.

34. **The Program will support the SCERT and DIETs in providing opportunities for in-service training that respond to teachers' professional development needs.** Given the general absence of teacher training materials and guidebooks, the Program will leverage open-source materials. If required, it will also leverage open market competition to source the same. This will be achieved through a competitive 'Challenge Fund' where an amount will be specified for each topic, standard guidelines will be developed and specified for the content to be sourced, and not for profit organizations will be mobilized to submit their content which will be competitively selected based on feedback from teachers.

35. **To better respond to COVID-19 and facilitate remote learning during the pandemic, courses on the planning and management of remote learning, technology, and digital pedagogical skills will be made available to teachers.** The Program will leverage digital platforms for teacher training and the dissemination of teacher guidebooks. Modules for online teacher training and teacher guidebooks will be hosted on a Learning Management System (LMS). In the context of the pandemic, the Program will also support the strengthening of the content and materials being used to facilitate home-based learning through online platforms, television, radio, and physical learning kits. For each of these mediums, the state will develop content to engage parents in the process of supporting their children's home-based learning.

36. **Children with Special Needs (CwSN) will be a priority for the support provided under this results area.** The Program will support the repair and refurbishment of the CwSN resource centers in the state, and provide necessary aids and appliances, and kits to support center, home, and school-based support. The Program will also support the establishment of a specialized cell for inclusive education at the SCERT. This cell will focus on the provision of need-based teacher training and guidebooks that will enable teachers to better address the educational needs of CwSN.

37. **In the area of student assessment, the Program will support actions at two levels: (i) strengthening the use of classroom assessments as tools for ongoing student remediation and competency-based learning, and (ii) strengthening system-level assessments as tools for informing education policy and practice across the state.** The

[20] On-site teacher training, on-site and remote individual coaching, and an online repository of materials
[21] Data from the TEACH tools will not be utilized for any administrative decisions related to teacher retrenchment, regularization, promotion, or transfer.

Program will support the state in defining clear, competency-based learning/academic standards that will underpin all assessment activities, and in developing an assessment dashboard that will collect and report on data from all kinds of assessments. In the area of classroom assessment, the focus will be on training teachers, and those who work with them at the district, block, and cluster levels in how to use assessments to diagnose learning issues at the classroom level. The Program will also support the development of centrally designed, school-based diagnostic assessments with complementary remedial education resources for use by teachers. It will invest in the gradual digital enablement of the process of sharing centrally designed assessments with teachers; marking/scoring of students' responses to these assessments; and collation, analysis, and communication of the results. This digital system will be designed to allow teachers to easily access student, subject, class, and school-level scores; remedial plans; and teaching resources.

38. **SALT will also support the state in developing, implementing, and analyzing periodic SLAS, and other large-scale assessments of the GoI.** Improving the quality and relevance of test items, test administration practices, and depth of analysis will be key areas of focus.

39. **The close linkages between assessments and remedial education will be furthered through the piloting of a technology-enabled PAL system in about 700 residential schools with more than 140,000 students.** This system will provide highly customized remedial learning to children, with partial teacher supervision, by leveraging artificial intelligence to provide personalized content suiting each child's learning needs. The pilot will be rolled out across residential schools for tribal students and girls from marginalized communities and/or economically weaker sections. This will help in ensuring that students most in need of academic support are the first to access this system.

40. **Improving education outcomes for girl students and negating the ongoing impacts of COVID-19 on adolescent girls will be a priority.** The Program will support sensitization and intensive training of teachers to support them a) in the identification of inherent gender stereotypes in classroom interactions, and b) addressing the learning gaps experienced by adolescent girls due to the ongoing COVID-19 pandemic. The training will include imparting techniques/pedagogical tools to help teachers identify unconscious biases towards girls in classroom transactions. It will also include short modules to enable effective communication with parents and panchayats, especially from aspirational districts/ITDA blocks, encouraging them to enable girls to remain in schools and complete their secondary education.

41. **Climate Adaptation and Mitigation Measures Under RA-2:** The need-based teacher professional development support under the SALT Program will cover learning competencies related to climate change adaptation and mitigation. In doing so, it will help strengthen classroom transactions and enhance students' knowledge and understanding of these topics. The Program will also support strengthening of channels and materials for remote learning and help in improving the delivery of remedial education support for academically weak students. These measures will continue to become more important as schools witness a gradual increase in the number of unplanned days of school closure due to climate-related and extreme weather incidents. Schools tend to lose about 10-20 days of instruction due to these incidents.

42. **Results Area 3 (RA-3) – Strengthened Institutional Capacity and Community Engagement for Service Delivery:** (a) Support for state and district level educational institutions to develop results-oriented annual work plans and budgets; (b) Development and implementation of a social audit tool to enable greater community engagement in school operations and performance. (c) Training and capacity building of school leaders and education functionaries in leadership skills and disaster risk management; (d) Establishment of village-level inter-departmental committees in select blocks to monitor instances of early marriages, drop-outs, and physical and/or sexual harassment of girls; and (e) Support for mitigating school-related gender-based violence, including through training of teachers, administrate officials and Parent Committees; creation of web portal for reporting of grievances; and creation of a holistic identification, response, and redressal system.

43. **Nodal state and district-level educational institutions will be empowered to develop results-oriented AWPBs.** While doing so, the Program will put in place a system of annual budget appraisal based on the efficient use of funds, feedback from beneficiaries, and performance on key matrices and indicators. The IPF component complementing the Program will support the development of the state's EMIS to facilitate the digital transformation of management and monitoring functions. By bringing together the various modules and use cases for data collection, collation, analysis, and

reporting; and facilitating direct recording/reporting of data, the EMIS will reduce the time stakeholders are investing in physical data management. Along with this information, the newly built EMIS will track the key Program results at decentralized levels, and bring greater results orientation and accountability to AWPB preparation and appraisal.

44. **To foster greater accountability to beneficiaries and facilitate greater citizen engagement for improved school-level planning and budgeting, SALT will support the development and roll-out of a social audit tool.** The *Nadu Nedu* initiative is playing a key role in placing school management back in the hands of the community. The Program will put in place a school performance evaluation or social audit tool that the community can use to monitor school operations and report on its performance to the administration. These evaluations will provide greater information symmetry and enable the PCs to observe the performance of other schools, making the system more accountable and more results-orientated and help build confidence in government-managed schools.

45. **The success of the SALT Program would to a large extent depend on the grassroots-level behavior changes that would be led by decentralized education functionaries and school leaders.** School leaders will be key to ensuring the functionality of the communities of practitioners set up under the school complex model. This will be critical for the success of the Program's investments towards the provision of need-based professional development support to teachers. SALT will provide school leaders with access to relevant opportunities for professional development to improve their competency in key leadership skills. They will be provided with training on Disaster Risk Management (DRM) to improve school-level readiness to face climate-induced disasters and public health emergencies.

46. **The program will facilitate greater involvement of students in school management to ensure greater respect towards school-level facilities and greater participation in school-level initiatives.** For this, in the schools operating in ITDA blocks, SALT will initiate a pilot on the establishment of '*Bal Sabhas*' (children's parliament). The student community will be encouraged to take on responsibilities ranging from care of trees and plants on the school campus; community mobilization for school enrolment and prevention of school dropouts; responsible use of school facilities; assemblies, discussions, or debates on topics of general interest, etc. This will also help soft skills amongst students.

47. **The Program will further develop existing social audit monitoring practices to monitor instances of early marriages, drop-outs amongst girls, and physical and/or sexual harassment experienced by adolescent girls on school campuses.** The current training on social audit monitoring will be expanded to include modules on bystander interventions to prevent school-related gender-based violence (SRGBV) and cases of early marriages amongst girls. This initiative will be rolled out in select blocks for PCs, teachers (especially from *Kasturba Gandhi Balika Vidyalayas*), and administrative officials based on a rapid assessment. Further, the Program will strengthen the existing ICT portal for anonymous reporting of grievances related to on-campus harassment. The DoSE will identify service providers (community representatives, self-help groups, and NGOs) to create a holistic identification, response, and redressal system to promote prevention and monitoring of SRGBV related instances.

48. **Climate Adaptation and Mitigation Measures Under RA-3:** The SALT Program will provide DRM and climate change-related training to all school leaders and decentralized education functionaries. With complementary support from the IPF component, the Program will help shift data collection, collation, and analysis onto an EMIS that will help the loss of data/records to climate-induced incidents. The school performance evaluation tool to be developed and initiated under the Program will ensure the implementation of key school-level measures on waste water reuse, tree plantation on school premises, use of cleaner fuels for preparation of mid-day meals, continued use of energy-efficient fixtures etc.

49. **Summary of COVID-19 response under the three results areas:** The learning disruption due to the COVID-19 pandemic is expected to have led to significant learning losses across countries. The Program will focus on providing immediate access to the remedial education support required to reverse this. The state has reopened all schools while ensuring safety through the provision of sanitizers and masks, and by carrying out emergency maintenance and repair of toilets, hand washing points, and drinking water facilities. However, given the prevailing uncertainty around the impact that the COVID-19 pandemic will continue to have on the school calendar (including prolonged school closure due to an increase in caseload), the Program will invest in the strengthening of channels for home-based learning. The state has

initiated the first level of response by activating multiple high-tech, low-tech, and no-tech channels of remote learning. The Program will prioritize the further enhancement of the content and materials being used to facilitate home-based learning, and roll out innovative models for improving access to digital and/or television/radio broadcasted lessons.

50. Physical learning kits being distributed to children without access to devices will also be strengthened. The focus will be on ensuring complementarity of channels so that parents have access to guidance for better supporting their child's learning. This will include home visits by teachers, and television and radio broadcasts linked to physical learning kits distributed by the state. To improve these children's access to high-tech (asynchronous) and low-tech remote learning, under the *Nadu Nedu* initiative, all schools will be provided with a Smart Television. PCs will be allowed to manage this resource and enable students to use the Smart Television in small groups while ensuring physical distancing.

51. The SALT Program will focus on 'Resilient Recovery'. The COVID-19 pandemic has provided an opportunity to reassess service delivery and nudged the adoption of measures that can lead to long term gains, and help in creating a system that is more resilient to future shocks:

a. Technology to empower teachers (Linked to RA-2): SALT aims to reach all teachers with a robust online LMS built on GoI's DIKSHA platform. The system will be designed to cater to the varied professional development needs of teachers including courses on remote-learning pedagogy, safety measures, and using ICT in education.

b. Technology to Personalize Learning (Linked to RA-2): SALT will facilitate technology-assisted periodic assessments with corresponding remedial resources to allow for teaching-learning that caters to each student's learning needs. This will help address the learning poverty further accentuated by the COVID-19 pandemic. PAL, a more advanced, artificial intelligence-backed form of this approach will be rolled out across select schools. Finally, the Program will support the development of an online application to host video lessons to allow for self-paced learning.

c. Technology to connect learners anywhere, anytime (Linked to RA-1): SALT will identify prioritized learning objectives across grades and subjects, curate content, and use multiple modes of communication (online, television, radio, and physical kits) to deliver it to students. Under the *Nadu Nedu* initiative, it will support the provision of smart televisions to schools to improve access to online learning.

d. Technology as a gamechanger in management (Linked to Result Area 3): The Program will facilitate better management and monitoring of service delivery by developing channels to record, analyze and report beneficiary voice. The resulting information symmetry will help facilitate greater results orientation and accountability.

52. **Alignment between the overall government program and the PforR Program**

	Government Program	PforR Program	Reasons for non-alignment
Objective	To transform government schools into vibrant and competitive institutions	To improve learning outcomes, quality of teaching practices and school management in basic education	The objective of the PforR Program provides greater outcome orientation and facilitates measurability of results
Duration	Ongoing	Sep 2021 to Sep 2026	The PforR Program is directed at making strategic changes in key Ras; to be sustained by the government program.
Coverage	All government-managed and private-aided schools in AP	All government-managed schools in AP	The PforR Program will only support the government-managed schools.
Results areas	**RA-1:** Foundational learning (including ECE and school facilities); **RA-2:** Improved quality of teaching-learning interactions (teacher professional development, capacity building of teacher education institutions, remedial education, and learning assessment); **RA-3:**	**RA-1:** Foundational learning (including ECE and school facilities); **RA-2:** Improved quality of teaching-learning interactions (teacher professional development, capacity building of teacher education institutions, remedial	The PforR Program will cover RA-1 to 3, as they directly impact the quality of education being imparted in schools; are underfinanced, and are supported by institutions with weak capacity. The PforR Program excludes RA-4, as there is currently enough provision of

	Strengthened institutional capacity for service delivery (school leadership development, community-led management of schools, institutional capacity); **RA-4:** Universal access to elementary and secondary education (school construction, mid-day meal, student entitlements, and salaries); and **RA-5:** Vocational education	education, and learning assessment); and **RA-3:** Strengthened institutional capacity and Community Engagement for service delivery (school leadership development, community-led management of schools, institutional capacity)	school buildings and teachers. Multiple initiatives in the area of mid-day meals, student entitlements (textbooks and uniforms), scholarships/stipends etc. are already in place. The PforR Program excludes RA-5 as students' demand for vocational education is low. It is not a priority area for the state. Pilot initiatives would be required to develop a scalable model.
Overall Financing	US$12.8 billion	US$1 billion	

53. **Program expenditure framework and Program financing:** The SALT Program accounts for about 7.8 percent of the overall government program, and 77 percent of it will be financed through counterpart funding, a high share that will help ensure the sustainability of initiatives. The overall sustainability will be further enhanced by the growth of the state's school education budget, noted to be about 7 percent per annum over the past three years. Additionally, at least 34 percent of funds under the SALT Program are expected to be utilized for school-level facility upgradation. This non-recurring expenditure is expected to conclude in the first two years. This would free up enough funds for sustaining other interventions, and for maintaining the facilities provided through the *Nadu Nedu* initiative. The expenditure efficiency under the Program will be enhanced by three aspects (a) the structure that the initiation of a results-oriented AWPB process would bring to the way nodal institutions plan and budget for interventions; (b) significant use of technology to enhance coverage under teacher training, school leadership development and remedial education initiatives, and for data collection and monitoring; and (c) increase in enrolment due to the *Nadu Nedu* initiative leading to a reduction in per-pupil expenditure. These aspects will also positively impact the efficiency of the larger government program.

54. To ensure that the facilities provided across schools through the *Nadu Nedu* initiative are properly maintained, the GoAP has decided to appoint at least one dedicated staff (depending on school size) per school for infrastructure and facility maintenance and upkeep. The state is also including indicators on school level maintenance and upkeep in the school performance evaluation tool to be developed and operationalized under the Program. This will allow the state to receive direct feedback from PCs on the state of school-level facilities.

55. Efforts to further improve overall expenditure efficiency under the government program can help free up more funding to sustain the activities initiated under the SALT Program. For this, the Program will leverage a comprehensive system-level analysis using the 'FinEd' toll developed by the Governance Global Practice of the World Bank and a Public Expenditure Review that covers the various decentralized levels of service delivery (state, district, block, and schools).

Source	Amount (US$Million)	Percentage
Overall government program (Including SALT Program)	**12,824**	
Of which, state budget (Including *Nadu Nedu* initiative)	11,478	89.5 percent
Of which, *Samagra Shiksha*	1,346	10.5 percent
SALT Program	**1,000**	
Counterpart Funding	770	77 percent
Of which, state budget (*Nadu Nedu* initiative only)	340	
Of which, Samagra Shiksha[22]	430	
International Bank for Reconstruction and Development (IBRD)	230	23 percent
IPF component/project supporting SALT Program	**20**	

56. **A line item-wise Program expenditure mapped onto the three results areas is given below.**

#	Budget Head	Result Area	Five Year Expenditure Projection (US$ Million)					
			Y 1	Y 2	Y 3	Y 4	Y 5	Total
1	Teacher Salaries		2,064	2,064	2,064	2,064	2,064	10,320

[22] Excluding teacher salaries, student entitlements, mid-day meals, greenfield infrastructure and vocational education

2	School Infrastructure and Facilities							
	2a. Opening of New/Upgraded Schools		6	6	6	6	6	30
	2b. Strengthening of Existing Schools (*Nadu Nedu*)	RA - 1	170	170	-	-	-	340
	2c. School Maintenance and Operation Cost		8	8	8	8	8	40
3	Scholarships, Transport Allowance, Mid-day Meal, Textbooks, and Uniform		194.4	194.4	194.4	194.4	194.4	972
4	Assistance to Private-Aided Schools		54	54	54	54	54	270
5	Funds for Quality (Including remedial and bridge education)	RA - 2	92.5	92.5	60	60	60	365
6	Teacher Education Institutions and Teacher Training							
	6a.TEI Salaries		3	3	3	3	3	15
	6b.TEI Infrastructure, Maintenance & Operational Expenses	RA - 2	1	1	1	1	1	5
	6c. Teacher Educators Professional Development	RA - 2	4	4	4	4	4	20
	6d. In-service Teacher Training and Head Teacher Training	RA – 2/3	11	11	6	6	6	40
7	Management Cost							
	7a. Salaries and Office Operation		27.8	27.8	27.8	27.8	27.8	139
	7b. EMIS and Education Technology	RA - 3	1	1	1	1	1	5
8	Academic Support through BRCs and CRCs	RA - 3	29	29	29	29	29	145
9	Vocational Education		7.8	7.8	7.8	7.8	7.8	39
10	Support at Pre-Primary Level	RA - 1	5	5	5	3	2	20
11	Assessment at National and State Level	RA - 2	5	3	5	2	5	20
12	Provision for Children with Special Needs	RA - 2	5	5	10	10	10	40
Total (Government Program)			**2,688.5**	**2,686.5**	**2,486.0**	**2,481.0**	**2,483.0**	**12,824**
Total (SALT Program)			**323.5**	**321.5**	**121.0**	**116.0**	**118.0**	**~1,000**
IBRD Share[23]			**73.175**	**60.5**	**43.2**	**11.5**	**41**	**229.375**

57. **The PforR Program will be complemented by an IPF component/project** that will support (a) Provision of capacity building support to state nodal education institutions, including through the engagement of technical experts to provide support for designing teacher professional development materials, designing resource materials for remedial education, and developing student learning assessments; (b) Development of state EMIS; and (c) Support operation management and monitoring through the engagement of Project Management Consultant (PMC) and an IVA.

B. Program Development Objective(s) (PDO) and PDO Level Results Indicators

58. **The PDO is 'To improve learning outcomes, quality of teaching practices and school management in basic education.'** SALT will use three key results indicators to track the achievement of the PDO.

a. The first will track efforts towards strengthening foundational learning to achieve a 3-percentage point 'Decrease in the percentage of Grade 4[24] students below grade-level proficiency in Mathematics[25]'. The indicator will track results for boys, girls, SC, and ST students.

b. The second indicator will track efforts towards improving the quality of teacher-student interactions to realize 'Improved teaching practices measured according to a standardized tool[26] with a focus on gender equity'. Herein, the aim would be to reduce the performance gap[27] in average teacher performance by 10 percent.

c. The third indicator will track efforts towards strengthening institutional capacity and community engagement for

[23] Excludes expenditure under IPF component and 'other costs' as reflected in the PAD data sheet

[24] An assessment at the Grade 3 level will be preferred as it measures learning levels immediately post completion of foundational learning. However, Grade 3 is covered under the NAS carried out by the MoE, GoI. The frequency of this national level student assessment does not align with the program baseline, mid-line and end-line. Therefore, the program proposes to use the Grade 4 assessment carried out by the state.

[25] Based on a demand from parents (recorded through a state level census), the GoAP is contemplating on changing the language of instruction from Telugu to English, while offering students the choice to opt for and access education in the language of instruction that they prefer (the one not chosen being a second language). This however contradicts certain national legislations and is a topic being discussed at the judicial and legislative level. If the switch was to happen, the baseline would underestimate students learning levels in language (especially comprehension). Therefore, to maintain comparability over time, the Program will use students' mathematics scores to track improvements in learning levels.

[26] The program proposes to use the TEACH classroom observation tool developed by the World Bank.

[27] Performance gap refers to the difference between the maximum possible score attainable on the standardized tool and the baseline score

service delivery to realize 'Improved school management according to a standardized tool[28] with a focus on gender equity'. The evaluation will be carried out by the PCs, facilitating citizen engagement, and creating greater institutional accountability to the community. Herein, the aim would be to reduce the performance gap in average school management/performance by 20 percent.

59. These targets are challenging, yet achievable in the AP context and within the parameters of the SALT operation's design. The interventions that are expected to impact these targets will be implemented over three of the five years of the operation period. The first year will focus on the gradual rollout of interventions. In the fifth year, the end-line data collection will be spread across the year. As a result, the operation will not be able to fully capture the impact of the interventions in that year. International evidence on high-performing education systems indicates that it should be possible to move students from below to above grade-level proficiency at the rate of about one percentage point per year, for a total three percentage points decrease in the percentage of Grade 4 students performing below grade-level proficiency in Mathematics. In the case of improved teaching practices, international evidence on the TEACH tool that will be used to evaluate teacher performance indicates that 14 percent is the maximum reduction in the gap between baseline and target teacher performance that could be expected within this specified timeframe and that this could be expected only in optimal conditions. Given that the tool will be a completely new experience for teachers in AP, based on discussion with international experts, it was ascertained that a 10 percent reduction is a more realistic, yet still challenging target for AP. In terms of improved school management, the nature of the indicators that constitute the evaluation tool allows for a rapid reduction in the gap between baseline and target performance if schools properly engage. Hence, the target for the reduction in this gap is set at 20 percent.

C. Disbursement Linked Indicators and Verification Protocols

60. The SALT operation uses the Program for Results (PforR) instrument with a supporting IPF component/project. Under the PforR instrument, funds will be disbursed on the achievement of specific results, measured by DLIs summarized below. The IPF component/project will disburse against expenditure. The results to be delivered under the same have not been included in the DLIs. Apart from the three PDO indicators, results from nine intermediate outcome indicators have been included as DLI indicators. These have been selected based on the extent to which they signal the implementation of critical actions or realization of key output, and the perceived need to introduce a strong financial incentive to deliver the same.

#	Disbursement Linked Indicator	Allocation (US$ Million)						
		Prior Results	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1	Decrease in the percentage of Grade 4 students below grade-level proficiency in Mathematics	NA	7.5	0	4	0	8	19.5
2	Improved teaching practices measured according to a standardized tool	NA	2.75	0	9	0	9	20.75
3	Improved school management as measured by a standardized tool	NA	2.75	0	9	0	9	20.75
4	Schools and CWSN resource centers provided with standardized package of essential facilities, furniture, electrical fixtures, and repairs	51	0	51	0	5.5	0	107.5
5	Improved teacher capacity to support early grade education and preparatory schooling	NA	3	3	3	3	3	15
6	Improved coverage under need based in-service training	NA	2.5	0	10.5	0	7	20
7	Increased use of diagnostic assessment tools for the provision of remedial support	NA	3	4	5	3	0	15
8	Increased number of school leaders demonstrating key leadership competencies	NA	0.675	2.5	2.7	0	5	10.875
Total			**73.175**	**60.5**	**43.2**	**11.5**	**41**	**229.375**

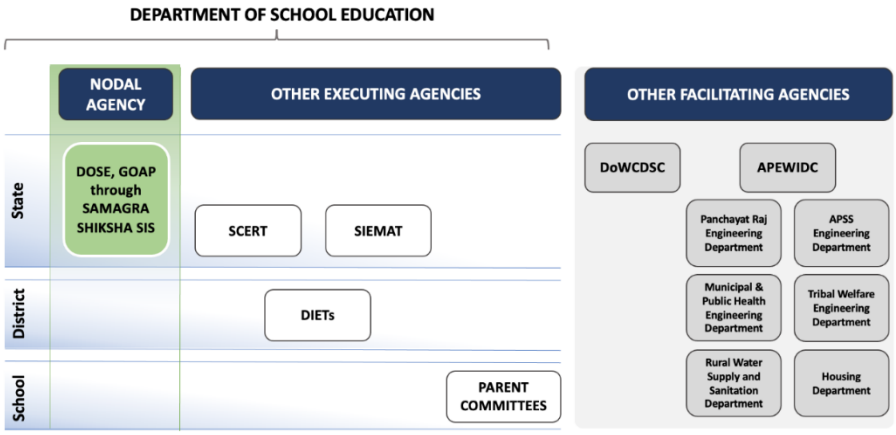
[28] The program proposes to use a School Performance Evaluation Tool (Social Audit Tool) developed by the DoSE, GoAP. Amongst key school level output indicators, the tool includes E&S considerations as suggested by the ESSA of the World Bank, and measures for improving school level operational efficiency.

61. Unless specified otherwise, the DLIs will be annually reviewed and verified by an Independent Verification Agency (IVA) to be contracted by the GoAP under the IPF 'Capacity Building Component'. The DLIs will be verified through pre-identified data sources, documents, and reports. The means of verification will vary from field-based sample surveys (GIS and time stamped), telephonic and/or online surveys, field-based observation, desk-based triangulation of data/information, and validation of timely release of official government orders/notifications. With the development of a state Education MIS by Year 3 of operation implementation, it will emerge as the source that collates all the required data/information for independent verification. IVA reports will serve as the basis for assessing progress towards the achievement of the DLI targets, and for disbursement authorization by the World Bank.

III. PROGRAM IMPLEMENTATION

A. Institutional and Implementation Arrangements

62. **The Operation will be implemented by the Department of School Education (DoSE), GoAP through its agencies**. The State Implementation Society (SIS) for *Samagra Shiksha* will be the nodal implementation agency for the operation. It will be responsible for the overall management and coordination of the operation and all its expenditures. In particular, the *Nadu Nedu* scheme will be implemented by the SIS through PCs with the A.P. Education & Welfare Infrastructure Development Corporation (APEWIDC) acting as a procurement agent. It will be supported by several other 'Facilitating Agencies' (FA) that will not directly be involved in procurement activities under SALT and no funds will flow through these. These FAs are providing advisory and administrative support to PCs for fulfilling various requirements for improvement of school facilities envisaged through *Nadu Nedu*. On the other hand, interventions aimed at improving the quality of teaching and learning will be directly implemented by implementation agencies such as the SCERT, the SIEMAT, and the DIETs. At the sub-district level, activities will be coordinated by education functionaries (MEOs and CRCCs). These entities are departments or wings of the DoSE and/or the Samagra Shiksha SIS.



63. **The *Nadu Nedu* scheme, aimed at improving school facilities, will be implemented through a hybrid Community-Driven Procurement model that comprises a decentralized component along with centralized procurement at the state level.** At the decentralized level, PCs will be involved in the planning, and implementation of community procurement including contract management to ensure high-quality service. Centralized procurement for items such as furniture, cupboards, green chalkboards, white writing boards, sanitary ware, fans and tube lights, and painting work will be aggregated and procured centrally by the SIS and APEWIDC. While the parent committees and APEWIDC will be the implementation agencies of the *Nadu Nedu* scheme, seven additional government departments including the APSS Engineering Department (wing of Samagra Shiksha SIS), Panchayat Raj Engineering Department, APEWIDC, Municipal & Public Health Engineering Department, Tribal welfare Engineering Department, Rural Water Supply and Sanitation, Housing Department will be engaged as FAs. Each of these has been allocated to *Mandals based on the presence and staff strength in the project districts* to facilitate and monitor the overall implementation of the works in their jurisdiction. Samagra Shiksha SIS (APSS Engineering Department) and the APEWIDC have the roles of both, IA as well as FA. Fiduciary arrangements under the IPF Component are described in Annex 9.

64. **Complementing the facility upgradation work, all activities aimed at directly improving the quality of teaching and learning will be implemented through the SCERT, SIEMAT, and the DIETs.** The SCERT, along with its network of

DIETs in each district, will execute all activities related to RA-2 including teacher professional development, and activities on assessment reforms. The SIEMAT will execute all activities related to RA-3 including the school leadership development programs, lead the development of the state's EMIS, facilitate school performance evaluations, and train front-line administrators. The RA-1 on foundational learning will be implemented by the DoSE in a strategic convergence with the DoWCDSC. While the development of an integrated package of ECE services including the curriculum, teaching and learning materials, and teacher training modules and guidebooks will be executed by the SCERT, the DoWCDSC will act as a FA, providing access to the *Anganwadis,* their workers, and the supervisors for the roll-out of all activities. The IPF component will be leveraged to engage technical experts to support the SCERT, SIEMAT, and SAC.

B. Results Monitoring and Evaluation

65. **The concurrent monitoring of results will be based on government data, records, documents, and notifications, and third-party verification will be prioritized.** By year 3, the state's EMIS will be developed under the IPF 'Capacity Building' component. It will become the single source of data and information for results tracking. A PMC will be engaged to support the implementing agencies in concurrently collating and monitoring results. Indicator-wise details on the source of data, methodology of data collection, responsibility for the same, are available in Annexure 1. Most indicators/results that will be utilized to track project progress have also been included as DLIs. This will allow for a third-party verification/validation. In the case of results/actions supported by the IPF 'Capacity Building' component, evaluation or impact assessment studies will be leveraged to determine the value of results delivered.

66. **Periodic Implementation Support Missions (ISMs).** Annually, at least one field-based mission and one virtual review will be carried out. The ISMs will provide the World Bank team with an opportunity to monitor progress and share with the GoAP, information, and ideas for necessary course correction.

C. Disbursement Arrangements

67. **SALT will use DLIs to operationalize the results-based financing implicit to a PforR Program.** Financial support from the World Bank will be disbursed based on the achievement of results under each DLI. The volume of funds associated with each DLI and each target will be predetermined. However, all DLIs will be scalable (and not time-bound). This will allow for early disbursement of funds in case targets are achieved at an earlier date. Subject to realization of results within the period of project implementation, it will also allow for disbursement of funds even if a result is delivered after the date originally envisioned. This flexibility is important as a few results depend on underlying factors such as grassroots level behavior change, and stakeholder engagement. While models and mechanisms are being put in place to realize these intangibles, it is difficult to ascertain the pace at which progress will be realized. The *Nadu Nedu* initiative is a critical part of SALT and is expected to account for about 34 percent of overall expenditure. In the financial year 2020-21, with the help of PCs, the GoAP has already initiated school development works across about 15,000 schools. The state has capitalized on the prolonged school closure due to the COVID-19 pandemic to expedite these works and expects to complete the same by July 2021. SALT will recognize this progress and finance the same as a 'Prior Result'.

D. Capacity Building

68. **Delivering the results envisioned under the Program requires a significant enhancement of the institutional capacity of nodal educational institutions.** The SCERT, SIEMAT, DIETs, and the SAC were created around 2014 after the bifurcation of the old state into Telangana and the new AP. Till recently, more than 90 percent of positions in these institutions were vacant. The state has corrected this issue by engaging teachers on deputation through a merit-based selection process. SALT will focus on providing them with access to the capacity-building support required to deliver on their roles and responsibilities. Experiential and peer-to-peer learning is key for capacity development with an emphasis on the transfer of knowledge and skills. Where necessary, GoAP will be able to leverage the IPF component/project to onboard technical experts for the capacity building of the staff at nodal education institutions. These would be long-term contracts that would involve support for the design and delivery of initiatives led by the government staff.

69. **The IPF component/project will also support the engagement of a PMC to support the nodal implementing agency in managing and monitoring the operation.** The PMC will include members with experience in supporting the

fiduciary aspects of the operation. The team members responsible for monitoring each RA will also monitor adherence to the environmental and social considerations and actions agreed upon for the operation.

70. **Where technical tools and analytical reports of the World Bank are deemed helpful, the World Bank will work with the GoAP to integrate these in the operation.** In the first 18 months, this will include support for the roll-out of the World Bank's TEACH tool, and the provision of an analytical report on how public financial management can be improved to enhance service delivery. The latter will be based on the 'FinED' toolkit being developed by the Governance Global Practice. Subsequently, support will be provided against needs or opportunities identified during the periodic ISMs.

IV. ASSESSMENT SUMMARY

A. Technical (including economic evaluation)

71. **SALT focuses on underfinanced results areas that can directly contribute towards improving the quality of teaching and learning in government-managed schools.** It leverages a complementary IPF component that exclusively targets initiatives aimed at building the capacity of nodal educational institutions that will be critical in the delivery of results. The operation's results and the underlying activities have been selected based on three considerations: (i) alignment with India's NEP (2020), (ii) international and national evidence of what works to improve student learning, with a focus on cost efficiency, and (iii) the opportunity to leverage existing materials, tools and frameworks. The Program RAs and activities are directly in agreement with the new NEP (2020). ECE, formation of school complexes, prioritization of competency-based assessments, and continuous teacher professional development are focus areas under the NEP and are integral to the Program. The priorities of the Program also align well with those identified in the recent World Bank study, "Cost-effective approaches to improve global learning". The study outlines a list of recommendations called 'Smart Buys' many of which are incorporated in the operation, as shown in the table below. Lastly, the operation leverages the World Bank's TEACH tool to facilitate classroom observation-based coaching of teachers. Also, through the IPF component, SALT provides nodal educational institutions with the opportunity to engage partner institutions for the delivery of services. In doing so it allows them to leverage the expertise of non-state actors that have existing resources, materials, tools, and frameworks which have been tested and evaluated at scale.

Smart Buy	Description	Alignment with SALT
Giving information on the benefits, costs, and quality of education	Providing information on the economic benefits of education, and the quality of local schools has improved attendance and learning levels.	Community-led social audit of schools using a standardized tool. Each school's performance report will be made accessible to parents.
Structured lesson plans with linked materials and ongoing teacher monitoring & training	Where primary school teaching focuses on rote learning, and teacher knowledge is low, step-by-step lesson guides as part of a multifaceted instructional program can help improve pedagogy.	Provision of teacher guidebooks for all grades and subjects linked to opportunities for teacher professional development, including classroom observation-based coaching.
Target teaching instruction by learning level, not grade	Providing targeted help for students who are falling behind, and grouping children based on their learning level.	Digital platform to support teachers in carrying out periodic classroom-based assessments to diagnose student learning levels and provide corresponding remedial education support.
Using software that adapts to the learning level of the child	Using adaptive or self-paced software that targets learning to the level of an individual child can be highly cost-effective.	Roll out of PAL solution across 700 residential schools
Pre-primary education	Since children tend to arrive at school with very lower levels of school readiness, improvements to preschool improve learning outcomes in school.	Short-term certificate courses for preschool educators and *Anganwadi* workers among other interventions.

72. ***Economic Analysis:*** A cost-benefit analysis yields an Economic Internal Rate of Return (EIRR) of 15 percent and Net Present Value of about US$4 billion using a discount rate of 6 percent. The calculation of the **economic benefits** is based on the anticipated achievements against the PDO indicators. Through the course of the operation, about 4.4 million students will benefit from improvement in the quality of education imparted in government-managed schools. Of these,

4.1 million are expected to complete their secondary schooling, and the rest to complete their elementary education.

a. *Improved Foundational Learning Outcomes.* SALT seeks to reduce the percentage of students below grade level proficiency in Grade 4 mathematics by 5 percent. In the absence of baseline data, an analysis based on data from the Grade 5 mathematics NAS suggests that this would translate into at least 97,500 additional students achieving grade-level proficiency. Achievement of proficiency in Grade 4 can be treated as a proxy for completion of primary schooling. In AP, an individual who has completed her/his primary schooling is expected to earn US$56.5 per annum more than her/his peers who do not complete their primary schooling[29]. These gains would need to be adjusted for labor force participation[30] (46.6 percent) and unemployment rates[31] (5.7 percent) for the state.

b. *Improved teaching-learning interactions.* A standard deviation[32] improvement in learning levels is expected to lead to an 18 percentage-point increase in wage earnings for elementary and secondary school completers upon joining the workforce.[33] The operation seeks to improve teaching practices through classroom-based mentorship support, access to need-based teacher training, and remedial education linked to standardized school-based assessments. This is expected to improve learning levels by about 8.5 percentage points[34], and in turn, after adjusting for workforce participation rate and unemployment rate, positively impact the income that students can expect to earn upon joining the workforce. This is expected to translate into US$ 70.3 per annum and US$80.7 per annum for students who complete their elementary and secondary education respectively.

c. *Improved institutional capacity for service delivery (especially at the school level).* Improvement in the learning environment, better ongoing maintenance of school level facilities, greater parent involvement in school management, improved availability of data, and enhanced school safety are all aspects that build the community's confidence. This is expected to translate into an improvement of up to 10 percent in the enrollment in government-managed schools, thereby increasing the number of those benefitting from investments.

73. The **economic costs** considered while estimating the EIRR include the US$ 1 billion that the state government will spend under SALT. It includes the financial assistance being provided by the World Bank.

B. Fiduciary

74. The Program will be implemented by the DoSE, GoAP through its agencies. The SIS for *Samagra Shiksha* will be the nodal implementation agency for the Program, responsible for its overall management and coordination. In particular, the *Nadu Nedu* scheme will be implemented by the SIS through PCs and the APEWIDC. The SIS has offices (accounting centers) at the state, district, and block (*mandal*) levels.

75. It is important to note that the SIS is a separate legal entity (as a Society) and has its own set of financial management rules and guidelines; however as per a decision of the GoAP in August 2019 all payments and fund management for the SIS (and all Societies and Boards) have been brought under the aegis of the state treasuries using the CFMS – the state's core financial management solution. Thus, the SIS follows the state government rules for budget approval and allocation, and payments and documentation.

76. Annual budgets are allotted to the DoSE and these include budget for the Program as well. The budgeting follows well-established state norms which include preparation of proposals and negotiations with the Finance Department. The budget approved is linked to a medium-term fiscal plan and includes estimates for the current and subsequent two years. The DoSE is the largest spending department in the state (FY 19-20 budget was INR 286.96 billion or 10 percent of the state budget) and the annual rate of increase in its budgetary allocations demonstrates the importance the state gives

[29] *Source:* Ministry of Statistics and Programme Implementation, National Sample Survey 68th Round; adjusted for using per capita income data for AP and India from the Annual National Income and Per Capita Income Data (2016-17) released by the Ministry of Statistics and Programme Implementation
[30] *Source:* Ministry of Statistics and Programme Implementation, Periodic Labor Force Survey (July 2017 to June 2018).
[31] *Source:* Center for Monitoring Indian Economy, Estimations for March, 2020
[32] MoE's National Achievement Survey 2017-18.
[33] Aslam, M., A. De, G. Kingdon, and R. Kumar (2010) "Economic Returns to Schooling and Skills – An analysis of India and Pakistan, Mimeo, RECOUP Project, Faculty of Education, University of Cambridge.
[34] Teaching Quality Counts: How Student Outcomes Relate to Quality of Teaching in Private and Public Schools in India, Renu Singh and Sudipa Sarker

to school education. Budget outturns in the last three years have ranged from 81 percent to 94 percent.

77. The financial management framework of the Program is based on the State Finance Rules and Financial Code; State Treasury Code; and State Budget Manual – which are all applicable to the entire state. Further, a comprehensive, national-level, financial management manual (under the *Samagra Shiksha* initiative) guides operations of the SIS. Once the budgets have been made available to the department, budget heads are operated by the SIS to make payments and to transfer (allocations) to the district/*mandal* level units as well. Since treasury systems are used, there is no physical movement of funds till the time payments are made to suppliers/ contractors or funds transferred to PCs. Units of the SIS maintain accounting records and supporting documents at the accounting locations and accounts are prepared using a popular but simple financial accounting software and consolidated using cash-based principles.

78. Internal Controls and Audit: SIS has an internal audit mechanism in place and audits are carried by a firm of Chartered Accountants (CAs), but the scope of these audits is mainly transactional and involves a review of accounting records and financial transactions, and internal control processes. This process will be strengthened by strengthening the audit ToR. Regarding Statutory Audits, the entity audits of SIS and APEWIDC are conducted annually by a firm of CAs, and reports are issued in October/November each year. There is also a provision of a supplementary audit by the CAG after the statutory audit is completed by the firm. To enhance transparency, the State has agreed to disclose the annual audit reports (for SIS and APEWIDC) and financial statements on their official websites.

79. All the procurement activities are based on the approved budget. The Procurement Entities (PEs) initiates envisaged procurement activity after obtaining formal approvals (Administrative and Technical Sanction) from officers/committee based on the Delegation of Financial Powers. The Policy documents like State Financial Rules and GO MS 94 spell out the mandatory preparation of the Annual Procurement Plan and its disclosure on the official website. For the Government of India's financed projects, the Samagra Shiksha Society will prepare the Annual Work Plan and Budget and obtains the approval through a software platform (PRABANDH). The Financial Management & Procurement (FM&P) Manual prescribed by GoI, mandates the preparation of APP for GoI's Financed projects. The FM&P Manual also allows for the application of State and Panchayati Raj rules at the state level. The GoAP is using this option for GoI's Financed projects and uses the AP Financial Rules and Government orders to articulate the procurement activities.

80. The Program includes procurement activities like school infrastructure development, TLM, and consultancy services based on the defined Eligible Expenditure Program. There is no high-value procurement envisaged under the Program. It will follow the AP State Financial Rules and subordinate Government Orders (GOs) to process the procurement activities. GoAP's GO MS 2[35], Feb 2014 stipulates the mandatory use of the e-GP platform for all procurements with an estimated cost of INR100,000 (US$1,333 equivalent) or above. The Program will use the GoAP's e-Procurement platform for all procurements from the publication of tender notice to publication of award information.

81. The Program will be subject to 'Guidelines on Preventing and Combating Fraud and Corruption in Program-for-Results Financing' dated February 1, 2012, and revised on July 10, 2015. These guidelines shall apply to all activities within the Program scope. As there is no distinction between World Bank and government-financed activities within the Program, these guidelines shall be applied in an unrestricted manner on all activities within the Program boundary.

82. The FSA reveals: (a) AP is a fiscally stressed state and periodically faces a funds crunch through the SIS is partially insulated from this due to its use of a 'Green Channel PD Account'; (b) despite the enabling framework, there are several shortcomings in 'implementation' of the framework like lack of understanding of double-entry principles/ applicability of generally accepted accounting principles; (c) several (internal/ statutory) audit findings that need to be acted upon. Based on the IFSA, the fiduciary risk of the Program is assessed as **Moderate**. To strengthen the existing systems of the implementing agencies and to mitigate fiduciary risk, various action items are recommended as part of DLIs and PAP.

C. Environmental and Social

83. **Environment and Social Risks and Impacts:** The overall E&S impacts of the Program are likely to be positive

[35] *https://www.apeprocurement.gov.in/downloads/GO-MS-No-2-Dated-03-02-2014.pdf*

through its support to improve the capacities of *Anganwadi* workers and school teachers; roll out of community-led social audits of schools; strengthening of EMIS; and provision of essential repairs, WASH facilities, lighting, fans, compound walls across schools and CwSN resource centers in all regions, including urban, rural, and areas dominated by tribal groups, following the specifications and designs formulated at the state level. The team has prepared an Environmental and Social Systems Assessment (ESSA) which confirms the overall E&S risk rating is 'moderate', given that most of the E&S effects of the Program are likely to be localized/site-specific, reversible, predictable, and can be effectively mitigated by complying with existing E&S regulations and standards, and by strengthening the systems and capacities, for which the ESSA has made specific recommendations.

84. **The key social risks and impacts of the Program include the following:** (i) low transition, completion rates and relatively lower learning outcomes for students from vulnerable communities/ITDA blocks of the state; (ii) low capacity of PCs in ITDA blocks to undertake civil works and regular social monitoring/audits; (iii) isolated instances of occupational health and safety hazards experienced by laborers on construction sites; (iv) risks of early marriage amongst adolescent girls, especially in tribal/rural areas of the state; (v) barriers to transition from elementary to secondary grades for both girls and boys due to the on-going adverse impacts of COVID-19; (vi) low awareness levels amongst parents/communities in tribal and rural blocks of the state; (vii) lack of clear two-way information flows/communication pathways for sustained beneficiary/citizen engagement; (viii) intra-state variations in capacities of last-mile delivery officials, i.e. BRPs/CRPs, particularly in ITDA blocks and (ix) risks related to on-campus harassment and instances on gender-based violence. The ESSA does not identify any risks related to Land Acquisition and Resettlement at this stage. Enhancement of learning environments proposed under the Program will be restricted to existing school facilities. Further, any new upgradation/refurbishments will be screened for informal settlers/structures or ongoing land-related disputes.

85. **The key environment risks and impacts of the Program include: (i)** ***Pollution risks*** in school campus and nearby areas due to (a) noise, dust and disposal of construction and demolition wastes and scraps (b) poor management of liquid wastes from WASH facilities and mid-day-meal kitchens solid waste from schools (including food waste, packaging wastes, plastics, sanitary napkins and masks), (c) improper management of electrical and digital hardware , (d) choice of materials and technology while upgrading facilities (such as high water or energy use fixtures, continued partial reliance on fire wood for cooking, materials used in physical learning kits, cleaning products); **(ii)** ***Occupational and Community Health and Safety (OCHS) risks*** including temporary inconvenience and disruption to school activities during minor construction and repairs, health and safety issues of workers, communities, teachers, visitors and students during works, risks due to hygiene practies post reopening of schools; **(iii) Disaster and emergency-related risks** including fire, electric safety and climate risks, exacerbated by lack of preparedness, capacties and arrangements for emergency response in different geographic/climatic conditions. These risks (described in detail in Annex 5) can be managed by developing capacities to screen, review, implement and monitor environmental and safety aspects and following regulations, permit requirements, and guidelines, and increasing the awareness and capacities on the environment and disaster response.

86. **Key findings from the assessment of borrower's capacity and systems: From a social perspective, the assessment revealed that to meet the core principles on land acquisition and involuntary resettlement, the screening will be required to identify any potential adverse social impacts.** This is currently lacking. The DoSE and the SIS for Samgra Shiksha provide the institutional mechanism for school education Program implementation along with detailed roles and responsibilities for district-level officials (DEOs, SDEOs) and sub-district-level officials (BRCCs, CRCCs). Through the *Nadu Nedu* scheme, PCs are regularly involved in the planning, management, and monitoring of civil works across the state. The DoSE regularly follows the process of social audits to create transparency, participation, and accountability of the Program implementation at the school level. It also has a clear focus on social inclusion and the differentiated needs of SC, ST, and CwSN students. To enable ease of learning, the department has made textbooks available in their mother tongue to students from tribal communities. The DoSE through *Divyang Bhavans* (centers for disabled students) attempts to provide educational opportunities in an inclusive environment free from discrimination. From a policy perspective, the Right to Education Act, 2009 further addresses gender and social equity within a framework that is holistic and systemic. Additionally, the DoSE has a special focus to improve enrolment, transition, completion rates, and

learning outcomes for the 66 tribal/ITDA blocks in the state.

87. **From the environmental perspective, the most relevant ESSA core principles for this Program (and for overall sustainability) are environmental management, and public and worker safety.** Program activities are implemented within existing school campuses or CwSN resource centers. The assessment revealed that no guidance or framework for environmental management is in use for the *Nadu Nedu* initiative which follows a community contracting format with PCs arranging the works through local masons or workers, following the specifications for materials and standard designs developed at State Level. There are no capacities or mechanisms to (i) screen and exclude activities near sensitive habitats or archeologically important areas (including chance-find procedures), or banned materials such as asbestos or insecticides, (ii) manage pollution due to materials or wastes from construction or operation of facilities created, (ii) guide and manage the work activities, health, and safety of workers, communities, and students. Also, to render the ongoing transformation sustainable it is important to enhance the overall environmental effects of the Program by focusing on 'whole-school' waste management, resource efficiency, greening, safety, and universal access following the '*Haritha Pathasala*' (Green School) concept, which will transform the schools into a nature lab where students can experience and own the sustainability concepts 'hands-on' especially on the 'no-bag day'.

88. **Recommended measures to strengthen environmental and social systems:** It is recommended to develop adequate capacities and mechanisms to strengthen E&S management, by constituting an E&S Cell named 'Sustainable Schools Unit (SSU) at SIS which is the PMU at State Level, and designating nodal officials for E&S coordination at the district/block, School, and PC levels for (i) effective integration of E&S concerns in infrastructure development through implementation of the 'Green Gift Box' (whole school environmental sustainability approach with targeted interventions to manage wastes, ensure resource efficiency, conservation, and greening), (ii) screening Program activities and monitoring of EHS, EMP, ECoP/best practices, and (iii) incorporation of E&S aspects in EMIS and 360-degree environmental and social audits under the school performance evaluation tool to be rolled out under the Program.

89. **Gender:** The Program will focus on improving education outcomes for girl students. Negating the ongoing impacts of COVID-19 on adolescent girls will be a priority. The Program will support sensitization and intensive training of teachers to support them a) in the identification of inherent gender stereotypes in classroom interactions, and b) addressing the learning gaps experienced by adolescent girls due to the ongoing COVID-19 pandemic. The training will include imparting techniques/pedagogical tools to help teachers identify unconscious biases towards girls in classroom transactions. It will also include short modules to enable effective communication with parents and panchayats, especially from aspirational districts/ITDA blocks, encouraging them to enable girls to remain in schools and complete their secondary education.

90. **Climate Co-Benefit:** The teacher professional development support under the SALT Program will cover learning competencies related to climate change adaptation and mitigation. In doing so, it will help strengthen classroom transactions and enhance students' knowledge and understanding of these aspects. The Program will also facilitate the repair of school infrastructure to re-establish structural integrity and ensure structural safety especially in flood, cyclone, and storm surge affected areas. The Program will enable PCs to purchase and install energy-efficient light fixtures, fans, and Smart TVs in the schools. It will enable schools to shift from firewood to LPG for preparing mid-day meals for students. The Program will also support the strengthening of channels and materials for remote learning and remedial education support for academically weak students. These measures will continue to become more important as schools witness a gradual increase in the number of unplanned days of school closure due to climate-related incidents. SALT will also provide DRM and climate change-related training to all decentralized education functionaries.

91. **Citizen Engagement:** To effectively mainstream a beneficiary-oriented approach across proposed interventions, the program will: a) strengthen social audit monitoring systems to include regular training for PCs on school managements; b) bridge information asymmetries amongst PC representatives, especially in ITDA blocks/aspirational districts regarding the *Nadu Nedu* Scheme, the importance of completing secondary education for girls and career counseling facilities provided by the state. In select blocks, the Program will support DoSE in a) intense capacity enhancement targeting PCs on financial, procurement, and construction-related procedures b) invest in orienting PCs towards developing proposals catering to the scholastic requirements of adolescent students, both boys and girls; d)

design a robust ICT-based stakeholder engagement and grievance redressal mechanism to receive and redress complaints and disseminate project-related information. This will be integrated into the roll-out of phases 2 and 3 of *Nadu Nedu*.

V. RISK

92. The overall risk to the achievement of the PDO is **substantial**.

93. **Macroeconomic:** this risk is rated **substantial**. The economic contraction brought about by the COVID-19 pandemic has significantly affected state finances (through a combination of reduced revenues and heightened expenditure needs). Other tax/non-tax revenue has also declined. The recovery period is uncertain. However, the residual macro-fiscal risk to the achievement of project objectives is contained because the recurring expenditure in the school education sector is well funded under the state's budget, with most of the areas of expenditure under SALT receiving funds from the central government. Shift to the use of digital platforms for teacher training, and data transmissions, collation and analysis etc. should further improve expenditure efficiency. Even during the FY 2020-21, the budget for the DoSE, GoAP has seen a year-on-year increase, with timely release of funds against the plan. Further, the state's macroeconomic management is proactive and can support the long-term sustainability of the program.

94. **Technical Design of Program***:* This risk is rated **substantial.** The proposed operation facilitates a shift in the pedagogical approaches used by teachers. It also facilitates the convergence of *Anganwadi* operation and early-grade education which requires close collaboration between two different departments of the GoAP. SALT also intends to roll out a few new and novel approaches that leverage technology for better service delivery. These elements add complexity to the operation's design and require significant behavior change at the grassroots level. However, the residual risk is contained by the NEP (2020) which provides policy backing to these approaches/initiatives. As advised by the NEP (2020), for foundational learning, the SCERT will act as a nodal agency for coordinating between the two departments of the GoAP. Further, SALT intends to leverage the school complex model proposed by the NEP to facilitate peer-to-peer support. It also focuses on building the leadership competencies of decentralized education functionaries who will be responsible for managing these changes at the grassroots level. Further, in line with parents' demand, the state had initially planned on switching to English as the medium of instruction. This may contradict certain national legislations. As a result, the matter is sub-judice and a decision is awaited. In case the switch to English is permitted by the judiciary, the shift will be gradual with teachers adopting an approach of code-switching for classroom instruction. Further, the technical support agencies to be onboarded under the IPF component have experience in teacher professional development, TLM/content development, and learning assessment with English as the medium of instruction.

95. **Institutional Capacity for Implementation and Sustainability*:*** This risk is rated **substantial**. The state has recently filled up many vacancies at nodal education institutions. The newly recruited staff lacks experience and this aggregates into weak institutional capacity. The residual risk is contained by the support that the operation will provide through the need-based engagement of technical support agencies/experts. During the initial years, the operation will face challenges related to building a collaborative culture between the staff from the nodal educational institutions and technical support agencies. To address this issue and build strong ownership, the nodal educational institutions have been given a lead role in developing the terms of reference for these services. A PMC will be engaged to support fiduciary, and E&S aspects.

96. **Other** *[COVID-19]:* This risk is rated **substantial**. After prolonged school closure, the state has recently reopened all schools. The full impact of the prolonged school closures still needs to be fully assessed. At the same time, there is the risk of a resurgence in the number of COVID-19 cases leading to school closure. The state has already initiated multiple channels to facilitate home-based learning and is leveraging online platforms for the training of teachers. SALT will support the strengthening of the content being delivered through these channels. It also attempts at improving access to online learning and/or television broadcasts. Home-based learning requires a certain degree of parental support and supervision. The design includes the provision of focused support to parents through complementary mediums/channels (television and radio) and door-to-door visits by teachers. However, continued disruptions to school operations due to the COVID-19 pandemic could impact the operation's results.

ANNEX 1. ADJUSTMENTS TO THE COUNTRY PROGRAM IN RESPONSE TO COVID-19

1. **The COVID-19 pandemic affected economic activity significantly.** In response to the pandemic, the Government of India (GoI) implemented a strict nationwide lockdown between March and May 2020 to prevent the spread of infections. As a result, supply chains and economic activity were disrupted. The lockdown was lifted gradually, from June 2020 onwards. This allowed economic activity to resume from the second quarter (July to September 2020) onwards.

2. **Real GDP growth is estimated to have contracted by 8.5 percent[36] in FY20/21**—mainly due to restrictions on economic activity and mobility leading to large contractions in private consumption and investment. However, growth is expected to rebound in FY21/22 (within a range of 7.5-12.5 percent). The financing needs of the GoI are expected to rise significantly. The sharp economic slowdown has affected revenues disproportionately with general government revenues declining by over 10 percent in FY21. At the same time, expenditure needs have risen. As a result, the general government deficit is expected to have risen to over 14 percent in FY21 and Public and Publicly Guaranteed debt to have reached 90 percent. The bulk of the required financing is expected to be sourced from domestic markets which have enough liquidity, with minor contribution from international borrowing.

3. **The COVID-19 pandemic has exacerbated the vulnerabilities for traditionally excluded groups, such as youth and women.** The lockdown, in the first quarter of FY21, appears to have had a major impact on household consumption. Mean per capita consumption is estimated to have dropped by 36 percent over April-July 2020 y-o-y. Available household survey data indicate that relative to the "traditional poor" the most affected population were relatively younger, more urban and educated. With the end of the lockdown, however, household consumption seems to have recovered to almost pre-pandemic levels. In addition, interstate migrants are at risk of increased poverty and destitution. Estimates from the Economic Survey highlight that the magnitude of inter-state labor migration in India was close to 9 million annually between 2011and 2016 and migrant remittances in lower-income states like Bihar accounted for 35.6 percent of gross state domestic product (GSDP) in 2011–12. MSMEs that account for the largest non-farm employment (30 percent) with about 20 percent female participation are considered to have been impacted the most due to lockdown.

4. **Fiscal and monetary policies aimed at managing the impact of the pandemic, together accounted for more than 10 percent of GDP in FY21[37]:**

- **Pradhan Mantri Garib Kalyan Yojana (PMGKY),** to protect the poor and vulnerable impacted by Coronavirus Containment Measures, expected to cost approximately $23 billion.
- **MSME support includes Emergency Credit Line Guarantee Scheme** for INR. 3 trillion, INR. 200 billion subordinate debt for stressed MSMEs, INR. 100 billion to provide equity funding for MSMEs with growth potential and change in the definition of MSMEs, by increasing investment limits and firm turnover, to help incentivize firms to grow.
- **Agriculture infrastructure fund** - proposed financing facility of INR. 1 trillion (to be funded by NABARD) to promote post-harvest management infrastructure and, Micro-food enterprise - INR. 100 billion for technical upgrade and promotion of clusters of local products.
- **Outlay of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)** - a universal employment guarantee program, is increased by INR. 500 billion.
- **Increased state government borrowing-limit**, from 3 percent to 5 percent of GSDP (additional INR. 4.28 trillion).
- **Long-Term Repo Operations (LTROs) and Special Liquidity window:** To alleviate cash flow pressures, the Reserve Bank of India has conducted LTROs and Targeted LTROs for a total amount of INR. 9.6 trillion (about 4.5 percent of GDP) since February 2020. Moreover, a Special Liquidity Facility for mutual funds of INR. 500

[36] World Bank staff estimates
[37] World Bank staff calculations

billion was opened on April 27, 2020, to ease liquidity pressures on mutual funds.

WBG support for responding to the crisis

5. **In alignment with its global response, the WBG has been closely supporting GoI's strategy, which consists of three phases.** In the first phase, the GoI tackled the health aspects, and partnered with the Bank for a $1 billion health project. In the second phase, GoI invested $23 billion in social protection program to support the poor and vulnerable communities during the lockdown, and the Bank provided financing of $1.15 billion. In the third phase, GoI focused on economic stabilization and reducing the costs of the lockdown. This includes support to MSMEs and their workers during lockdown by committing about 1.5 percent of GDP to MSME finance. The Bank financing of $750 million is supporting this program to provide liquidity for their balance sheets, to mitigate against potential solvency problems and job losses, and to lay the foundations for a stronger MSME financing ecosystem in the recovery phase.

6. **Additionally, the Bank activated the Contingent Emergency Response Component (CERC) in five projects to support the state governments' COVID-19 relief efforts.** Moreover, many projects made special provisions for COVID-19Assistance Packages within their project scope. Going forward, the Bank will be supporting the GoI as follows:

- **Saving lives:** Other than the ongoing health programs, the Bank is a potential partner with GoI on its flagship program of Atmanirbhar Swasth Bharat Yojna which aims at strengthening the health sector in the country by strengthening healthcare services, health emergency preparedness and response and strengthen core capacities as per the International Health Regulations. In addition, the Bank is exploring innovative ways of support to the state and central governments through upcoming operations in the education and health sector.
- **Protecting poor and vulnerable people:** The third phase of the Social Protection program is aimed at strengthening the capability of the state and national governments in India to respond to the needs of informal workers through a resilient and coordinated social protection system. Some upcoming projects have specific COVID-19 components supporting this pillar, e.g. Fisheries Sector COVID-19 Response and Recovery, and Resilient Kerala Program for Results.
- **Sustainable growth and job creation:** The Bank is preparing a project on raising and accelerating MSME productivity which will focus on strengthening institutions and markets. Job creation is a special focus under the infrastructure projects as well.
- **Strengthening policies, institutions and investments for rebuilding better:** This is an all-encompassing theme under the India CPF and is integrated in most of the projects. The upcoming engagement with the National Disaster Management Agency on Seismic Risk Mitigation Project is one such example.

7. **The IMF does not have an active lending program in India. However, it undertakes regular macroeconomic supervision and Article IV consultations twice yearly.** The Bank and IMF teams regularly exchange views and information. The partnership with other donors was brought to fruition in both the Social Protection and MSME COVID-19 response DPLs. Within the Social Protection DPL, the Bank has worked in collaboration with the Asian Development Bank (ADB), Agence Française de Développement (AFD), and Kreditanstalt Fuer Wiederaufbau (KfW). The Japanese International Cooperation Agency (JICA), Asian Infrastructure Investment Bank (AIIB), the New Development Bank (NDB) and International Fund for Agriculture (IFAD) are also exploring potential parallel financing in upcoming operations. Discussions are ongoing to expand the World Bank's TA through additional funds from the Bill and Melinda Gates Foundation (BMGF) and the United Kingdom's Foreign, Commonwealth and Development Office (FCDO).

ANNEX 2. RESULTS FRAMEWORK MATRIX

Results Framework
COUNTRY: India
Supporting Andhra's Learning Transformation

Program Development Objective(s)

The PDO is to improve learning outcomes, quality of teaching practices and school management in basic education

Program Development Objective Indicators by Objectives/Outcomes

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
To improve learning outcomes, quality of teaching practices and school management in basic education							
Decrease in the percentage of Grade 4 students below grade-level proficiency in Mathematics (Text)		Based on a SLSA, baseline to be established in Year 1	Baseline established	No Target	1 percentage point decrease each for Boys, Girls, SC, and ST	No Target	3 percentage point decrease each for Boys, Girls, SC, and ST
Improved teaching practices measured according to a standardized tool with a focus on gender equity (Text)		Baseline to be established in Year 1	Baseline establised	20 percent of teachers improve their score on the gender related indicator of the standardized tool	Performance gap for average teacher performance on the standardized tool reduced by 5 percent	50 percent of teachers improve their score on the gender related indicator of the standardized tool	Performance gap for average teacher performance on the standardized tool reduced by 10 percent
Improved school management measured according to a standardized tool with a focus on gender equity (Text)		Baseline to be established in Year 1	Baseline established	20 percent of schools improve their score on the gender related indicators of the standardized tool	Performance gap for average school performance score on the standardized tool reduced by 10 percent	50 percent of schools improve their score on the gender related indicators of the standardized tool	Performance gap for average school performance score on the standardized tool reduced by 20 percent

Intermediate Results Indicator by Results Areas

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Results Area I: Strengthened Foundational Learning							
School learning environment enhanced with minor repairs, essential facilities, furniture, and electrical fixtures (Text)		Initiative to upgrade infrastructure and facilities initiated across 15,000 schools. Likely to be completed by July 2021	15,000 schools	No Target	30,000 schools	No Target	No Target
Improved teacher capacity to support early grade education and preparatory schooling (Text)		No long-term term in-service training program available for Early Grade teachers	60 day training program created; including approaches for addressing gender biases in the foundational years	75 percent of early grade (including preparatory grades in tribal schools) teachers complete 15 days of training	75 percent of early grade (including preparatory grades in tribal schools) teachers complete 30 days of training	75 percent of early grade (including preparatory grades in tribal schools) teachers complete 45 days of training	75 percent of early grade (including preparatory grades in tribal schools) teachers complete 60 days training program
Improved capacity of Anganwadi workers to provide Early Childhood Education (Text)		No long-term in-service training program available for Anganwadi workers	120 day training program created; including approaches for addressing gender biases in the foundational years	75 percent of Anganwadi workers complete 30 days of training	75 percent of Anganwadi workers on track to complete 60 days of training	75 percent of Anganwadi workers complete 90 days of training	75 percent of Anganwadi workers complete 120 days of training
Results Area II: Improved Quality of Teacher-Student Interactions							
Improved availability of need based in-service training (Text)		System of need based teacher training yet to be operationalized	75 percent of teachers provided with orientation on school complex level planning of training needs	15 percent teachers provided with access to need based teacher training	30 percent teachers provided with access to need based teacher training	40 percent teachers provided with access to need based teacher training	50 percent teachers provided with access to need based teacher training
Improved academic support for CwSN (Text)		CWSN Resource Centers require considerable repair; and SCERT has limited experience of	Standard design package for refurbishment of CwSN Resource Centres created	Inclusive Education Development Centre established at the SCERT	250 CwSN Resource Centres refurbished and operational	500 CwSN Resource Centres refurbished and operational	No Target

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
		Inclusive Education					
Increased use of diagnostic assessment tools for provision of remedial support (Text)		SAC in process of initiating a system of periodic diagnostic assessment with standardized test items and corresponding teacher resource book for remedial support	At least one SAC managed diagnostic assessment completed during the year	At least three SAC managed diagnostic assessments completed during the year	At least three SAC managed diagnostic assessments completed with at least one involving technology enabled collation and analysis of data, and complementary remedial resources	At least three SAC managed diagnostic assessments completed with technology enabled collation and analysis of data, and complementary remedial resources	No Target
Improved access to Personalized Adaptive Learning (PAL) in residential schools catering to girls and tribal students (Text)		State government yet to test and assess at scale the possible impact of PAL on student learning levels	Students (at least 65 percent girls) from 700 residential schools provided with access to PAL platform	50 percent students (and at least 50 percent girls) from select schools record 30 unique sessions each per annum on the PAL platform	70 percent students (and at least 70 percent girls) from select schools record at least 30 unique sessions each per annum on the PAL platform	90 percent students (and at least 90 percent girls) from select schools record at least 30 unique sessions each per annum on the PAL platform	SCERT Assessment Cell led evaluation of PAL intervention completed
Results Area III: Strengthened Institutional Capacity and Community Engagement for Service Delivery							
Increased number of school leaders demonstrating key leadership competencies (Text)		State is yet to initiate a structured professional development program for school leaders	Roadmap created for a structured school leadership development program	25 percent of school leaders demonstrate at least 4 (of 12) competencies on the pre-defined framework	No Target	50 percent of school leaders demonstrate at least 4 (of 12) competencies on the pre-defined framework	75 percent of school leaders demonstrate at least 4 (of 12) competencies on the pre-defined framework
Improved planning, management and implementation capacity at state and district level educational institutions (Text)		System of AWPB, and for measuring quality of service provision to be mainstreamed; State Education MIS to be developed	75 percent of SCERT, SIEMAT and DIET staff trained on development of an AWPB	SCERT, SIEMAT and DIET AWPBs record 70 percent budget utilization against their approved AWPB	State Education MIS functional and transferred to a government entity for management and upkeep	SCERT, SIEMAT and DIET AWPBs record 90 percent budget utilization against their approved AWPB	75 percent of recipients of need-based teacher training and school leadership training report the same to be of satisfactory quality
Improved knowledge of DRM, school safety, and climate change amongst decentralized education functionaries and school leaders (Text)		State has created a cadre of master trainers but is yet to initiate a state-wide training program	30 percent of decentralized education functionaries and school leaders trained on DRM, school safety, and	60 percent of decentralized education functionaries and school leaders trained on DRM, school safety, and	90 percent of decentralized education functionaries and school leaders trained on DRM, school safety, and	No Target	No Target

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
			climate change	climate change	climate change		
Social audit monitoring mechanism expanded to to promote prevention and monitoring of on-campus harassment and early marriage amongst girl students (Text)		Limited capacity and understanding amongst Parents Committees and panchayat representatives about risks of SRGBV and/or early marriage.	Social audit monitoring tool to integrate parameters on SRGBV and early marriage.	At least 5 blocks identified for training of teachers, special officers, parent committee representatives on by-stander interventions.	Roll-out of training and revised social audit monitoring tool in 2 blocks	Roll-out of training and revised social audit monitoring tool in 3 blocks	At least 5 blocks adopt a revised social audit monitoring mechanism that integrates preventive and redressal measures on SRGBV and risks of early marriage amongst adolescent girls.
Corporate Indicators (Education Global Practice)							
Students benefiting from direct interventions to enhance learning (CRI, Number)		0.00	3,750,000.00	3,750,000.00	3,750,000.00	3,750,000.00	3,750,000.00
Students benefiting from direct interventions to enhance learning - Female (CRI, Number)		0.00	1,927,500.00	1,927,500.00	1,927,500.00	1,927,500.00	1,927,500.00
Large-scale primary/secondary learning assessments completed (Number)		0.00	1.00	1.00	2.00	2.00	3.00

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Decrease in the percentage of Grade 4 students below grade-level proficiency in Mathematics	The indicator tracks a reduction in the percentage of students below grade level proficiency in mathematics at Grade 4 level, with a focus on reducing the gap between boys, girls, SC and ST students.	Annual (Except Year 2 and 4)	Electronic records and/or Education MIS data	SLSA data collated and analyzed by the SCERT Assessment Cell	DoSE, GoAP
Improved teaching practices measured according to a standardized tool with a focus on gender equity	The indicator tracks improvement in classroom practices through periodic classroom observation of teachers. Performance gap = maximum score - baseline score.	Annual (Except Year 1)	Data from TEACH classroom observation tool	Classroom observations carried out by senior teacher and/or school leaders	DoSE, GoAP
Improved school management measured according to a standardized tool with a focus on gender equity	The indicator tracks improvement in school performance on aspects such as teacher presence, inclusion, safety, and infrastructure maintenance. Performance gap = maximum score - baseline score.	Annual (Except Year 1)	Data from GoAP's School Social Audit Tool	Annual school performance evaluations to be carried out by Parent Committees	DoSE, GoAP

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
School learning environment enhanced with minor repairs, essential facilities,	The indicator tracks provision of essential	Annual (Except	Photographs with GIS and	Photographs of school development works	DoSE, GoAP

furniture, and electrical fixtures	school level infrastructure/facilities.	Year 2, 4 and 5)	time stamps	uploaded to a central portal by the PCs	
Improved teacher capacity to support early grade education and preparatory schooling	The indicator tracks the successful completion of a short term training program on early grade teaching by teachers.	Annual	Electronic records or Education MIS data	Training progress and completion data/information uploaded by the SCERT and DIETs	DoSE. GoAP
Improved capacity of Anganwadi workers to provide Early Childhood Education	The indicator tracks the successful completion of a short term training program on ECE by Aanganwadi Workers	Annual	Electronic records or Education MIS data	Training progress and completion data/information uploaded by the SCERT and DIETs	DoSE, GoAP
Improved availability of need based in-service training	The indicator tracks the provision of need based teacher training aligned with plans created at a school complex level	Annual	Electronic records or data from Education MIS	Training progress and completion data/information uploaded by the SCERT and DIETs	DoSE, GoAP
Improved academic support for CwSN	The indicator tracks progress towards refurbishment of CwSN resource centers and establishment of an inclusive education cell at the SCERT	Annual (Except Year 5)	Government documents; and photographs with GIS and time stamps	Photographs of center development works uploaded to a centralized portal by the Mandal Education Officer	DoSE, GoAP
Increased use of diagnostic assessment tools for provision of remedial support	The indicators tracks the technical strengthening and technology enablement of school based assessments	Annual Except (Year 5)	Electronic records or Education MIS data	Data to be submitted by school teachers and collated by the SAC	DoSE, GoAP
Improved access to Personalized Adaptive Learning (PAL) in residential schools catering to girls and tribal students	The indicator tracks the roll out, use and evaluation of a PAL solution at scale	Annual	Electronic records	Data collected in the backend of the PAL software deployed	DoSE, GoAP
Increased number of school leaders demonstrating key leadership	The indicator tracks the improvement of key	Annual (Except	Electronic records or	Post training observational data	DoSE, GoAP

competencies	leadership competencies of school leaders	Year 3)	Education MIS data	collated by the SIEMAT	
Improved planning, management and implementation capacity at state and district level educational institutions	The indicator tracks improvement in data based, and results oriented planning, budgeting by nodal institutions	Annual	Official government documents, and electronic datasets	Documents shared by the government and post training feedback on trainings collated by the SCERT	DoSE, GoAP
Improved knowledge of DRM, school safety, and climate change amongst decentralized education functionaries and school leaders	The indicator tracks training of decentralized education functionaries on DRM, school safety, and climate change	Annual (Except Years 4 and 5)	Electronic records or Education MIS data	SIEMAT to provide annual data on training coverage	Dose, GoAP
Social audit monitoring mechanism expanded to to promote prevention and monitoring of on-campus harassment and early marriage amongst girl students	The indicator records progress on measures and mechanisms for identifying and addressing harassment /safety issues experienced by adolescent girls.	Annual (Except Year 3)	Government documents, notifications and records	Document and information collated and shared by the E&S Cell of the SIS for Samagra Shiksha	DoSE, GoAP
Students benefiting from direct interventions to enhance learning		Annual	Education MIS data	Data from school enrolment registers	DoSE, GoAP
Students benefiting from direct interventions to enhance learning - Female		Annual	Education MIS data	Data from school enrolment registers	DoSE, GoAP
Large-scale primary/secondary learning assessments completed		Annual	SLSA reports	Summary report/data published by the SCERT Assessment Cell	DoSE, GoAP

ANNEX 3. DISBURSEMENT LINKED INDICATORS, DISBURSEMENT ARRANGEMENTS AND VERIFICATION PROTOCOLS

Disbursement Linked Indicators Matrix

DLI 1	Decrease in the percentage of Grade 4 students below grade-level proficiency in Mathematics			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Outcome	Yes	Text	19,500,000.00	10.00
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Baseline to be established in Year 1			
Prior Results	No Prior Results		0.00	NA
July 2021 to June 2022	Baseline score established by SAC		7,500,000.00	US$7.5 M on target achievement
July 2022 to June 2023	No Target		0.00	NA
July 2023 to June 2024	One percentage point decrease over baseline		4,000,000.00	US$0.4 M per 0.1 percentage point
July 2024 to June 2025	No Target		0.00	NA
July 2025 to June 2026	An additional two percentage point decrease over baseline		8,000,000.00	US$0.4 M per 0.1 percentage point

DLI 2	Improved teaching practices measured according to a standardized tool			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Outcome	Yes	Text	20,750,000.00	9.00
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Baseline score to be established in Year 1			
Prior Results	No Prior Results		0.00	NA

July 2021 to June 2022	Baseline score established by SCERT	2,750,000.00	US$2.75 M on target achievement
July 2022 to June 2023	No Target	0.00	NA
July 2023 to June 2024	Performance gap for average teacher performance on the standardized tool reduced by 5 percent	9,000,000.00	US$1.8 M per %
July 2024 to June 2025	No Target	0.00	NA
July 2025 to June 2026	Performance gap for average teacher performance on the standardized tool reduced by up to an additional 5 percent	9,000,000.00	US$1.8 M per %

DLI 3	Improved school management as measured by a standardized tool			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Outcome	Yes	Text	20,750,000.00	9.00
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Baseline score to be established in Year 1			
Prior Results	No Prior Results		0.00	NA
July 2021 to June 2022	Baseline score to be established by SIEMAT		2,750,000.00	US$2.75 M on target achievement
July 2022 to June 2023	No Target		0.00	NA
July 2023 to June 2024	Performance gap for average school performance score on the standardized tool reduced by 10 percent		9,000,000.00	US$900 K per %
July 2024 to June 2025	No Target		0.00	NA
July 2025 to June 2026	Performance gap for average school performance		9,000,000.00	US$900 K per %

	score on the standardized tool reduced by up to an additional 10 percent			

DLI 4	Schools and CWSN resource centers provided with standardized package of essential facilities, furniture, electrical fixtures, and repairs			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Intermediate Outcome	Yes	Text	107,500,000.00	46.70
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Schools and CwSN Resource Centers in need of considerable repair; Work initiated in 15,715 schools (likely to be completed by July 2021)			
Prior Results	Standardized package delivered in up to 15,000 schools by PCs and APEWIDC		51,000,000.00	US$3.4 M per 1,000 schools
July 2021 to June 2022	No Target		0.00	NA
July 2022 to June 2023	Standardized package delivered in up to an additional 15,000 schools by PCs and APEWIDC		51,000,000.00	US$3.4 M per 1,000 schools
July 2023 to June 2024	No Target		0.00	NA
July 2024 to June 2025	Up to 500 centers refurbished with standardized package		5,500,000.00	US$1.1 M per 100 centers
July 2025 to June 2026	No Target		0.00	NA

DLI 5	Improved teacher capacity to support early grade education and preparatory schooling			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Intermediate Outcome	Yes	Text	15,000,000.00	6.50
Period	**Value**		**Allocated Amount (USD)**	**Formula**

Baseline	No long-term training program available		
Prior Results	No Prior Results	0.00	NA
July 2021 to June 2022	60-day training program created/curated by the SCERT	3,000,000.00	US$3 M on target achievement
July 2022 to June 2023	At least 75% of early and preparatory Grade teachers complete 15 days of training coordinated by SCERT	3,000,000.00	US$3 M on target achievement
July 2023 to June 2024	At least 75% of early and preparatory Grade teachers complete 30 days of training coordinated by SCERT	3,000,000.00	US$3 M on target achievement
July 2024 to June 2025	At least 75% of early and preparatory Grade teachers complete 45 days of training coordinated by SCERT	3,000,000.00	US$3 M on target achievement
July 2025 to June 2026	At least 75% of early and preparatory Grade teachers complete 60-day training program coordinated by SCERT	3,000,000.00	US$3 M on target achievement

DLI 6	Improved coverage under need based in-service training			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Intermediate Outcome	Yes	Text	20,000,000.00	8.70
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Need based teacher training not available			
Prior Results	No Prior Results		0.00	NA
July 2021 to June 2022	At least 75% of teachers oriented on school complex level planning of training needs by the		2,500,000.00	US$2.5 M on target achievement

	SCERT and DIETs		
July 2022 to June 2023	No Target	0.00	NA
July 2023 to June 2024	Up to 30% teachers receive need based teacher training from the SCERT and DIETs	10,500,000.00	US$350 K per %
July 2024 to June 2025	No Target	0.00	NA
July 2025 to June 2026	Up to an additional 20% teachers receive need based teacher training from the SCERT and DIETs	7,000,000.00	US$350 K per %

DLI 7	Increased use of diagnostic assessment tools for provision of remedial support			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Intermediate Outcome	Yes	Text	15,000,000.00	6.50
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Students have limited access to opportunities for home based learning; and SAC in process of initiating diagnostic assessments with standardized test items and corresponding teacher resource books for remedial support			
Prior Results	No Prior Result		0.00	NA
July 2021 to June 2022	One SAC managed round of diagnostic assessments completed during the year		3,000,000.00	US$3 M on target achievement
July 2022 to June 2023	Frequency of SAC managed diagnostic assessments increased by up to 2 additional rounds per year		4,000,000.00	US$2 M per additional assessment
July 2023 to June 2024	1 round of SAC managed and digitally supported (involving technology enabled collation of data,		5,000,000.00	US$5 M on target achievement

	automated analysis, and online access to remedial resources) diagnostic assessments conducted during the year		
July 2024 to June 2025	Frequency of SAC managed and digitally supported diagnostic assessments increased by up to 2 additional rounds per year	3,000,000.00	US$1.5 M per additional assessment
July 2025 to June 2026	No Target	0.00	NA

DLI 8	Increased number of school leaders demonstrating key leadership competencies			
Type of DLI	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Intermediate Outcome	Yes	Text	10,875,000.00	5.00
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	State is yet to initiate a holistic professional development program for decentralized education functionaries and school leaders			
Prior Results	No Prior Results		0.00	NA
July 2021 to June 2022	Training roadmap for professional development of school leaders created by SIEMAT		675,000.00	US$675 K on achievement of target
July 2022 to June 2023	Up to 25% of trainees demonstrate at least 4 (of 12) competencies on the pre-defined framework		2,500,000.00	US$100 K per % of trainees demonstrating 4 (of 12) competencies
July 2023 to June 2024	Up to 90% of trainees trained on DRM, school safety, and climate change		2,700,000.00	US$30 K per % of trainees
July 2024 to June 2025	No Target		0.00	NA
July 2025 to June 2026	Up to an additional 50% of trainees demonstrate		5,000,000.00	US$ 100 K per % of trainees

	at least 4 (of 12) competencies on the pre-defined framework		demonstrating 4 (of 12) competencies

Verification Protocol Table: Disbursement Linked Indicators	
DLI 1	Decrease in the percentage of Grade 4 students below grade-level proficiency in Mathematics
Description	The indicator tracks a reduction in the percentage of students below grade level proficiency in mathematics at Grade 4 level. At the baseline, the indicator will involve the clear definition of learning standards and proficiency bands/levels, revision of sampling frameworks used for the assessment, development of quality test items, standardization of test administration procedures to ensure quality of data, and a strengthened analysis framework to enhance utility of results.
Data source/ Agency	Official SLAS data and/or reports of the DoSE, GoAPline, the indicator will involve the clear definition of learning standards and proficiency bands/levels, revision of sampling frameworks used for the assessment, development of quality test items, standardization of test administration procedures to ensure quality of data, and a strengthened analysis framework to enhance utility of results.
Verification Entity	IVA
Procedure	Biennial field based observation to check that SLAS is scored appropriately, and results collated without any manipulation
DLI 2	Improved teaching practices measured according to a standardized tool
Description	The indicator tracks improvement in classroom practices through periodic classroom observation of teachers using the TEACH tool (or a contextual adaptation of it). Performance gap = maximum score - baseline score. The baseline will involve the translation of the TEACH tool, the development of modules for training of school leaders and senior teachers (classroom observers), digitization of the teach tool with a backend analytics dashboard, and training of school leaders and senior teachers. Universal coverage for periodic classroom observation will take time to achieve and this scale is only expected to be achieved in Year 2. Therefore, the baseline to be established in Year 1 will be based on the classroom observation of at least 9.500 randomly selected teachers i.e. 5 percent of total population.
Data source/ Agency	Electronic records of classroom observations carried out by senior teachers and school principals
Verification Entity	IVA
Procedure	Annual classroom based observation of teaching practices of at least 370 randomly selected school teachers with the sample being stratified by geography (districts and rural/urban), and gender.

DLI 3	Improved school management as measured by a standardized tool
Description	The indicator tracks improvement in key aspects of school level management using the School Performance Evaluation Tool of the GoAP. Performance gap = maximum score - baseline score. The baseline will require the digitization of the tool along with a backend analytics dashboard, the development of modules for training of PCs, the training of PCs on how to use the tool, and completion of one round of PC led school performance evaluation for all schools.
Data source/ Agency	Electronic records of annual school performance evaluation data submitted by PCs
Verification Entity	IVA
Procedure	Annual field-based verification of school level data for a sample of 370 randomly selected schools
DLI 4	Schools and CWSN resource centers provided with standardized package of essential facilities, furniture, electrical fixtures, and repairs
Description	The indicator tracks the provision of (i) toilets (ii) drinking water point (iii) smart TV (iv) electrification with fixtures (v) furniture (vi) chalk boards and (vii) compound walls in schools. It also tracks progress towards refurbishment of CwSN resource centers with the same facilities (except compound wall and chalk board).
Data source/ Agency	GPS and time stamped photographs submitted by the Parent Committees and/or MEOs
Verification Entity	IVA
Procedure	Annual field based verification across a sample of 370 randomly selected schools and 60 randomly selected CwSN resource centers to check for the provision of the entire set of facilities and inputs to be provide to each school/center.
DLI 5	Improved teacher capacity to support early grade education and preparatory schooling
Description	The indicator tracks the completion of a training program by early and preparatory (tribal schools only) grade teachers
Data source/ Agency	Training progress and completion data uploaded by the SCERT and DIETs, and shared by the DoSE, GoAP
Verification Entity	IVA
Procedure	Annual phone based verification surveys with a sample of randomly selected 370 teachers to check if they are able to on an average correctly respond to three of five questions on checks for understanding related to the training received in the year.
DLI 6	Improved coverage under need based in-service training
Description	The indicator tracks the provision of need based training aligned with plans created by teachers at a school complex level

Data source/ Agency	Training progress and completion data maintained by the SCERT and DIETs, and shared by the DoSE, GoAP
Verification Entity	IVA
Procedure	Sample check of training materials against predefined quality standards and guidelines; and annual phone based verification surveys with a sample of 370 randomly selected Grade 3 to 10 teachers to verify completion of annual training(s) in line with trainings needs expressed by them, with the sample of teachers being able to on an average correctly respond to three of five multiple choice questions on checks for understanding.
DLI 7	Increased use of diagnostic assessment tools for provision of remedial support
Description	The indicators tracks the technical strengthening and technology enablement of school based diagnostic assessments for identification and correction of learning deficiencies. Each round would cover all grades and subjects.
Data source/ Agency	Data submitted by school teachers and analyzed by the SAC, and shared by the DoSE, GoAP
Verification Entity	IVA
Procedure	Phone based verification surveys with school principal, head teacher or teacher(s) from a randomly selected sample of 370 schools to verify that diagnostic assessments are being carried out as per required frequency, and that corresponding remedial resources are being made available to them in a timely manner.
DLI 8	Increased number of school leaders demonstrating key leadership competencies
Description	The indicator tracks the improvement of key leadership competencies (as collated in the School Leadership Competency Framework of the GoAP) of school leaders and their training on DRM. The 12 leadership competencies in the framework are: (1) self-awareness, (2) self-management (3) communication, (4) influence, (5) conflict management, (6) collaboration, (7) managing curriculum and instruction, (8) promoting a learning culture, (9) coaching and feedback, (10) data driven instructions, (11) managing school resources and systems, and (12) managing financial resources.
Data source/ Agency	Post training observational data collated by the SIEMAT, and shared by the DoSE, GoAP
Verification Entity	IVA
Procedure	Annual field based observation of competency mapping exercise for at least 60 randomly selected school leaders; and phone based verification survey with 170 randomly selected school leaders to verify completion of DRM training

ANNEX 4. FIDUCIARY SYSTEMS ASSESSMENT (SUMMARY)

1. **Based on the FSA, the fiduciary risk of the Program is assessed as Moderate. To strengthen the existing systems of the implementing agencies and to mitigate this risk, various actions are recommended as part of the PAP.** As part of Program preparation, the World Bank carried out an FSA of the Program. The FSA concludes that the capacity and performance of the fiduciary systems of all implementing agencies are adequate to provide reasonable assurance that the Program funds will be used for the intended purposes with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability.

2. **Procurement Exclusions:** The Program is not expected to procure any high-value contracts[38] valued at or above Operational Procurement Review Committee thresholds (US$115 million for works, US$75 million for goods and non-consulting services, and US$30 million for consultant services). High-value contracts shall be monitored during supervision missions to ensure that the Program conforms with the Bank's policy on high-value contracts in PforR financing.

3. **Brief Description of the Scope of the FSA:** The FSA of the arrangements under the Program concludes that the systems for financial management, procurement, and mitigating risk of fraud and corruption meet the requirements of the Bank's PforR Policy & Directive and are adequate for achievement of the Program objectives. The FSA has been conducted per the principles governing PforR Programs as set out in the PforR Policy and other World Bank's internal guidelines. The FSA focused on determining whether the Program systems provide reasonable assurance that financing proceeds will be used for the intended purpose with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability. The salient features of the Program are: the Program uses the GoAP's procurement and financial management systems (in addition to systems as laid down for GoI's SS Program); the Program seeks to strengthen some of these systems, and the number of contracts and the value of expenditure under the Program is relatively small when compared to the scale of operations of the GoAP's department/agencies involved. Program financial management systems have been assessed for the effectiveness of planning, budgeting, accounting, internal controls, funds flow, financial reporting, and auditing procedures. The Program procurement systems have been assessed for effectiveness of the planning, bidding, evaluation, contract award, and contract administration procedures. The FSA has also assessed how Program systems address the risks of fraud and corruption and have mechanisms to redress complaints. The FSA reviewed the existence and adequacy of existing rules, policies, and procedures and the extent of their implementation in gaining assurance that the Program objectives shall be met. The FSA has identified certain risks and mitigation actions have been included in the PAP as appropriate. The performance of the systems was carried out based on virtual discussions with the operational staff, review of documents, and experience on several ongoing and recently closed projects in the state.

4. **Program Institutional Arrangements:** The DoSE is the largest among some 200 departments in the state. The department focuses on primary and secondary education, provides mid-day meals, and arranges to train teachers. SS is a Centrally Sponsored Scheme implemented through the State Implementation Society (SIS) at the State level which focuses on initiatives associated with quality improvement/enhancement. The SIS also implements the *Nadu Nedu* Program for transformation of Government schools to upgrade facilities and amenities in schools to reach desired standards, based on the actual needs. The SCERT is a directorate in the DoE that prepares the curriculum, instructions materials for teachers, and provides professional development support to teachers and teachers-educators. SIEMAT is a new institution formed by the GoAP for acquisition, dissemination, and capacity creation to absorb knowledge and use it for developmental purposes. APEWIDC is a society under the DoSE which acts as the procurement agency for various departments and schemes of GoAP including *Nadu Nedu*. Specific activities under the Program are undertaken by PCs as well.

5. **Use of Country Systems:** Program financial management arrangements will use GoAP's systems for budgeting, funds flow, and payments. It will use Samagra Shiksha systems for planning, accounting, and auditing. These are based on the State Finance Rules Financial Code (first issued in 1966), State Treasury Code, State Budget Manuals, and Samagra Shiksha Manual on Financial Management and Procurement. Similarly, the state's systems for procurement will be used. SIS and APEWIDC are registered societies under the Societies Registration Act and APEWIDC follows the AP Financial Code

[38] Contracts with estimated values exceeding the monetary amounts that require mandatory review by the Bank's Operations Procurement Review Committee

for their financial management functions. The financial management arrangements at these societies have been assessed and found adequate for handling Program-related expenditure. Certain risks have been identified for which mitigation measures are being proposed. SIEMAT is a newly formed institution and the requisite official and systems are being put in place. The program governance framework will be as described below.

Step in PFM Cycle	Samagra Shiksha	GoAP Guidelines	Remarks
Planning	Yes		Follows the 'AWPB' of SS, which is a Centrally Sponsored Scheme. The program costs are shared in the ratio of 60:40 between center and state.
Budgeting		Yes	Funds for SS and *Nadu Nedu* are provided in the annual budget of the DoSE by the GoAP
Budget Execution – Procurement	Yes		SIS follows the Manual on Financial Management and Procurement issued by GoI. Whilst the APEWIDC will act as a procurement agency, payments will be released by SIS.
Budget Execution	Yes	Yes	Payments are approved through the AP Treasuries using the CFMS i.e. the State's IFMIS solution.
Accounting and Reporting	Yes		Double entry, cash-based accounting system using 'Tally' software
External Scrutiny and Audit	Yes		Annual Statutory Audit is conducted by Chartered Accountants as per SS Manual.

6. **Review of PFM Cycle:** PFM and accountability systems, processes, and practices in AP have improved over the last decade; these changes have been brought about by consistent application of improved budget and financial management practices. These include implementing a CFMS i.e. the state's Integrated Financial Management Information System (IFMIS) on the SAP S4 HANA platform. CFMS includes budget formulation, budget execution, payments and account preparation, Debt and Investment management, Ways and Means management.

7. **Planning and Budgeting: Adequacy of Budgets:** The GoAP has an established budget preparation process, that is guided by a Budget Manual. It follows a six-tier budget classification system; and budget instructions are issued by the Finance Department (generally in August) each year to all administrative departments; in turn, the departments prepare budget estimate (BE) for the current year and advance estimate for the next two years; which are examined by the Finance Department and negotiations ensure that budget allocations are adequate and expenditure commitments are within the fiscal targets set in the AP Fiscal Responsibility Act.

8. Overall budget to the Department of School Education in GoAP has shown an increase from INR 165.4 billion (US$ 2.5 billion) for FY 2016–17 to INR 286.96 billion (US $ 4.20 billion) for FY 2019–20. This is equivalent to an annual increase of over 20 percent on average in nominal terms, showing GoAP's commitment; further budget outturns have ranged from 81 percent to 94 percent in the past three years as presented below.

Year	Budget (INR Billion)	Actuals	Budget Outturn
2016-2017	165.4	141.5	85.5 percent
2017-2018	169.6	159.4	94.0 percent
2018-2019	204.1	165.7	81.2 percent

9. **Procurement Planning:** Procuring entities initiate procurement activities after obtaining formal approvals (Administrative and Technical Sanction) from officers/ committee based on the Delegation of Financial Powers. The Policy documents like State Financial Rules and GO MS 94 spell out the mandatory preparation of the Annual Procurement Plan (APP) and its disclosure on the official website. The FM&P Manual prescribed by GoI mandates the preparation of APP for GoI's Financed projects. The FM&P Manual also allows for the application of state and *Panchayati Raj* rules at the state level. The GoAP is using this option for GoI financed projects and uses the AP Financial Rules and Government orders to articulate the procurement activities.

10. **Program Procurement Profile:** The Program includes procurement activities like school infrastructure development, TLM, and consultancy services based on the defined EEP. Many of the envisaged activities in the EEP are a subset of GoAP's and/or GoI's education sector developmental Programs (*Nadu Nedu* of GoAP; SS of GoI). *Nadu Nedu*

mainly focuses on basic infrastructure works with nine components.

11. **Budget Execution – Treasury Management and Fund Flow:** The treasury systems of the GoAP are robust, well established, and have been used under several World Bank operations. The Reserve Bank of India is the banker to the GoAP and receipts and expenditures transacted at various treasuries are routed to a single treasury account. The treasuries have a budget release system and there is no physical movement of funds and all the DDOs draw their bills through the CFMS which has an online Bill submission system. The GoAP has periodically faced a shortfall of funds due to the fiscal crisis and impact of COVID 19. Other Bank projects have faced payment delays. The SIS operates through a 'Green Channel Public Deposit Account' which partially insulates it from daily funds management; however, it too has faced delays in allocation of funds in the past. This will have to be watched by the Bank team/ SIS staff on the regular basis.

12. **Accounting and Reporting:** The SIS follows a double-entry cash-based accounting system and uses the very popular 'Tally' software. While payments are made by Treasuries, various offices maintain accounting records and vouchers. The SIS operates through state/ district/ mandal offices. The following weaknesses will have to be addressed during project implementation; (a) tracking of advances to Parent Committees; (b) tracking of unutilized advances of previous years; (c) reconciliation with suppliers like APEWIDC; (d) recording of assets created over the past years.

13. **Procurement Process and Framework:** In the absence of the state Procurement/Tender Transparency Act or Procurement Regulations, the AP State Financial Rules and subordinate Government Orders [GOs] are the policy documents for Procurement Framework in AP state. GO MS 9439 dated 1 Jul 2003 is an important GO and it provides overall procurement guidelines. The Delegation of Financial Powers defines various threshold/limits of sanctioning the estimate and according approving the tender award based on the hierarchy in the department.

14. **Available procurement methods:** Open Tendering is the preferred method of procurement. Open, limited tendering, nomination/direct contracting procurement methods are available for procurement of goods and works including the reverse auction. GoAP recently introduced the Judicial review Act 2019 for review of all Tenders above INR 100 Crore and above. These tenders will be published on the website for soliciting feedback from the interested public.

15. **Standard procurement documents:** GoAP is not having a universal suite of Procurement documents/templates and these were not disclosed on the website. The Tender documents are customized by PEs.

16. **eGovernment Procurement Platform:** GoAP's GO MS 240 dated February 3, 2014, stipulates the mandatory use of eGP Platform for all procurements with an estimated cost of INR100,000 and above. The evaluation is offline. The contract award details are disclosed in the eGP Platform. PEs may also use the Government e-Marketplace Portal (GeM) for the procurement of common-use goods and services. The publication period is 21 days for open Tenders (first call). Evaluation is manual and uploaded to the eGP Portal. Contract Award are disclosed on the eGP website[41].

17. **Contract Management:** For the centralized procurements, the contracts were managed and monitored by the Samagra Shiksha and APEWIDC societies. The PCs validates and accepts the distributed goods and takes them to the asset register. The payment will be processed centrally. These PEs will take decisions related to contractual amendments inter alia scope, extension of time, and levying of liquidated damages. For the decentralized procurement, the work is measured and recorded in the Measurement Book by the site engineer in charge of the school. The STMS software provides various dashboards at various levels to monitor the physical and financial progress.

18. **Internal Controls/ Internal Audit:** formal internal controls include records keeping, and use of the accounting software and payments through the state Treasuries. However, government staff man key positions and sometimes lack in-depth knowledge of double-entry accounting systems, account finalization, and treatment of advances. Also, the large number of accounting locations (around 700) puts the system under stress. SIS has an internal-audit mechanism in place. Coverage of IA is extensive and extends to Parent Committees as well. The fee payable for FY 19 – 20 was approximately Rs 1.44 crores. IA reports have provided in-depth findings of internal control weaknesses at district levels. The Internal

[39] Hyperlink [*https://www.apeprocurement.gov.in/downloads/GO-Ms-No-94.pdf]*
[40] *https://www.apeprocurement.gov.in/downloads/GO-MS-No-2-Dated-03-02-2014.pdf*
[41] Hyperlink: *https://tender.apeprocurement.gov.in/tenderAwardedDetails.html#*

audit function can be made more effective by strengthening its terms of reference in line with good industry practices, such as the increase in the scope through risk-based audits, specialized review in the functional areas of asset procurement, and an effective compliance and follow-up mechanism.

19. **Program governance and anti-corruption arrangements:** The Program will be subject to 'Guidelines on Preventing and Combating Fraud and Corruption in Program-for-Results Financing' dated February 1, 2012 and revised on July 10, 2015. These guidelines shall apply to all activities within the Program scope. As there is no distinction between World Bank-financed activities and government-financed activities within the Program, these guidelines shall be applied in an unrestricted manner on all activities within the Program boundary. In line with these Guidelines, the DoSE, GoAP will provide the Bank with unrestricted access to books, records, and people during any follow-up the Bank conducts concerning complaints reported or issues observed. The tender documents include the Fraud and Corruption Clauses. These definitions need to be aligned with the Bank's Anti-corruption Guidelines.

20. **Complaint Handling Mechanism:** Procurement-related complaints, if any, will be processed by following the administrative procedure. The bidder not satisfied, may approach the Court of Law for seeking redress. Currently, there is no dedicated mechanism in place to treat procurement-related complaints promptly. It is recommended that a procurement-related complaint handling mechanism, with pre-defined roles, responsibilities, and timelines, should be developed to deal with complaints arising from the envisaged procurement activities through the Program.

21. **Vigilance Commission (Anti-Corruption Bureau):** Corruption and other integrity-related complaints are processed by the state Vigilance Commission, and the documentation received from the state suggests that the Commission processes these complaints while adhering to the Whistle-blowers Protection Act (2014) of the GoI. The Act sets out guideline to protect the identity of complainant(s). Over the last 5 years enquiry of one case pertaining to the results area covered under the Program has been conducted by this Commission. To facilitate appropriate monitoring of activities under the Program, the DoSE, GoAP will ensure that the World Bank has access to the Vigilance Commission in a timely manner, as needed, or as part of any follow up the Bank conducts concerning complaints reported or issues observed.

22. **Debarment Process:** GO MS 94 2003 Annexure II: Rules for Registration of Contractors prescribes the rules of registration, suspension, blacklisting, and restoration of contractors.

23. **Auditing:** The audit of the state accounts is conducted annually by the Supreme Audit Institution—CAG of India—and reports are issued in February. The reports are tabled before the State Assembly in the ensuing budget session of February/March each year and are made publicly available on the website of the CAG. The audit paras are reviewed by the Public Accounts Committee and recommendations are made to the GoAP. The CAG of India also carries outperformance and compliance audits of the 'General and Social Sector' each year, that include operations of the DoSE and such reports are issued together with the state accounts. A review of the audit report for FY 2017—18 has not reported any serious accountability issues on budget execution, misappropriation of funds, and fraud- and corruption-related areas.

24. The entity audit of *Samagra Shiksha* is conducted annually by a firm of CAs and reports are issued by November each year. There is also a provision of a supplementary audit by the CAG after the statutory audit is completed by an external audit firm. The audit reports of CA firm are shared with MHRD, GoI. The audit report, entity financial statements, and forming schedules are exhaustive and provide detailed financial information on the use of funds. To enhance transparency, SIS has agreed to disclose the annual audit reports and financial statements in the official websites. For the Program Audit, which includes a slice of the *Samagra Shiksha* and *Nadu Nedu* the Bank will rely on a specific Program Audit Report to be issued by an auditor hired on a competitive basis. The auditors will use a Terms of Reference acceptable to the Bank, and this report will be submitted to the Bank within 9 months of end of each financial year.

Fiduciary Risk/ Weaknesses and Mitigation Measures:

Risk	Mitigation action	Timing
Multiple Government Orders [GOs] related to Program and Procurement Cycle including contract management make it difficult to retrieve necessary procurement provisions	Prepare a Program Operation Manual (POM) which consolidates all procurement orders/procedures applicable for the program	Before the project effectiveness [as the Phase I of *Nadu Nedu* is about to be completed and next

Risk	Mitigation action	Timing
		phase will be in progress before Program effectiveness]
Standard procurement documents do not have contract conditions and adequate fraud and corruption clauses	Update the standard procurement documents including appropriate contract conditions and fraud and corruption provisions	Before project effectiveness
No dedicated staff deployed at PIU [proposed] for managing the procurement cycle including contract management	Deploy dedicate Procurement Specialist at PIU • To manage and coordinate entire procurement cycle as the multiple agencies implements multitude of activities at multiple locations spread across 13 districts. • To articulate procurement process & manage awarded contracts [Centralized Procurement], Selection of consultancy services envisaged through Technical Assistance [TA – IPF Component]	Before the project effectiveness For IPF component, need to meet the readiness criteria prescribed by GoI, Department of Expenditure (DoE)
Absence of upfront disclosure of Annual Procurement activities in the official website	Adequate disclosure of procurement information: (a) Publish annual procurement plan at the beginning of each financial year on the program's website and update it periodically; and (b) publish contract award information within 2 weeks from signing of the contract through the e-procurement platform and program's website	(a) Commencement of each Financial Year and update periodically. (b) Continuous PAP
Key Performance Indicators (KPI)s on procurement and contract management are not measured and monitored	Measure Fiduciary Key Performance Indicators (KPI)s: For procurement and contract management such as (a) procurement lead time (tender invitation to award of contract), (b) competition (average number of bidders), (c) percentage of contract award publication, (d) percentage of re-tender, (e) percentage of contracts having cost and time overrun etc. other key parameters throughout the procurement cycle for FM: (a) audit with no material deviations (b) timeliness of audit (c) timeliness of fund release	Continuous Share monitoring report with the Bank semi-annually PAP
Scope of Audit covering Procurement cycle	Within the existing layers of Audit, TOR of Auditor would have scope to validate that under Program Expenditure there are (i) no contract awards made to debarred firms (ii) no High Value contract is present. (iii) all procurement is in accordance with the State Financial Rules and applicable GOs Internal Audit may be stipulated for all IAs/EAs as limited say with Comptroller and Auditor General (CAG) of India.	As per Audit frequency
Inadequate procurement related complaint handling mechanism	A functioning complaint handling system that comprises an interface, a business process, documentation procedures, and a unit responsible for receiving and monitoring complaints until resolution and communicating such resolution with the complainants is in place. This will be based on the issuance of a Government Notification/Order specifying an interface to accept complaints and detailed provisions on complaint resolution include appeal.	31 December 2021 - PAP
Compliance of Anti-Corruption Guidelines	Share Report with World Bank on any allegation of fraud and corruption related allegation and investigations on six monthly basis.	Semi-annual report shared with the World Bank - PAP
Audit of APSSS is guided by rules of Samagra Shiksha	Hiring of Auditors for Audit of SALT Program on a competitive basis	31 December 2021 - Legal Agreement
Internal Audit of APSSS is weak	Internal Audit ToR strengthened to include (i) broader scope; (ii) include qualitative aspects and (iii) to include coverage of procurement aspects	PAP
The state is prone to Fiscal Stress and cash shortages on a temporary basis	APSSS operates a 'Green Channel Public Deposit Account' as per GO # 99 (August 2019) and is better insulated from cash shortages as compared to rest of the GoAP	
High level of vacancies in Accounts Section (State/ Mandal level) could lead to control weakness	To fill in adequate finance and accounts personnel	PAP

ANNEX 5. ENVIRONMENTAL AND SOCIAL SYSTEMS ASSESSMENT (SUMMARY)

1. **E&S Risk Rating:** The Environmental and Social (E&S) Risk Rating of the proposed operation is '**Moderate**'. The Program would support overall institutional development, capacity building, and limited up-gradation of infrastructure facilities and repairs in existing campuses of schools and CwSN resource centers. The Program's focus on (i) strengthening the quality of foundational learning being offered to students; (ii) improving the quality of student-teacher interactions to reduce learning losses; and (iii) strengthening school management and nodal education institutions' capacity for enhanced service delivery; are likely to have positive E&S outcomes. Institutional strengthening of DoSE and SIS for Samagra Shiksha will result in overall E&S benefits. E&S risks of the Program are likely to be localized or site-specific mostly during the construction (of toilets, and minor repairs), reversible, and can be effectively mitigated by following existing environmental regulations, guidelines, good practices, and by developing E&S management systems and capacities.

2. **Environmental and Social Systems Assessment:** As required by PforR financing, an Environmental and Social Systems Assessment (ESSA) has been conducted by the Bank with support of GoAP and constituent agencies such as SIS for Samgra Shiksha, SCERT, SIEMAT, APEWIDC, and other facilitating agencies following the Bank Guidance (Policy, Directive, and Guidance for ESSA), during project preparation. ESSA assessed the potential adverse risks and impacts associated with the Program, and adequacy of the E&S systems of its implementing and operating agencies, to identify specific measures to strengthen systems and capacities and to outline the steps to be followed by the borrower to mitigate potential adverse impacts. The ESSA emphasizes strengthening institutional capacity at the state, district, and sub-district levels for the overall management of E&S risks and social inclusion aspects under the Program. Activities that are likely to have significant adverse impacts, and are sensitive, diverse, or unprecedented on the environment and/or affected people are ineligible for the PforR financing. Such interventions including (i) purchase and use of Asbestos and banned insecticides (for sanitation), (ii) construction of buildings more than two stories in height, and (iii) construction in environmentally sensitive zones and heritage areas; are excluded from the Program.

3. **ESSA Methodology:** The ESSA was prepared through analysis of available data and documents, virtual interactions, and consultations, due to COVID 19 related travel restrictions. It included a review of the ongoing *Nadu Nedu* Program guidelines and ongoing works, borrower's systems including policies, national/state regulations, standards, procedures, national MIS datasets, a representative sample of social audit reports from 5 districts, in-depth interviews and focus group discussions with about 51 officials across constituent agencies. The systems and capacities for E&S management were compared against the core principles and key planning elements to identify gaps that could affect Program performance. To ensure sufficient spread of sample; all 13 districts of AP (spread along its Rayalaseema and Coastal Andhra regions) were covered utilizing the possibility of virtual platforms (video conferencing, telephonic discussions, review of site videos, photographs). The consultations were evenly spread across a diverse group of stakeholders including school leadership teams, PC members (parents), communities, engineers (at various levels) of program agencies and facilitating agencies, and government departments including Pollution Control Board and Local Bodies. The Bank team reviewed the capacity and existing systems at the state, district, sub-district, and school levels to plan effective measures for E&S management of the Program by managing the risks and enhancing the benefits.

4. The ESSA delved into systems and institutional capacities (planning, implementation, monitoring) for a) E&S due-diligence of the proposed interventions across the state; b) regulations and monitoring; and incorporation of screening for potential risks, alternative analysis, through multi-party virtual stakeholder consultations at the state and district level, in-depth interactions with PC representatives; c) interactions with Principals and special officers from *Kasturba Gandhi Balika Vidyalayas* to understand and document the specific barriers experienced by adolescent girls in completing secondary education and d) interactions with last-mile delivery officers to understand specific challenges experienced by students from tribal communities and in ITDA blocks of the state.

5. **Key Environmental Issues and Impacts: (i)** ***Pollution risks*** in school campus and nearby areas due to (a) noise, dust and disposal of construction and demolition wastes and scraps (b) poor management of liquid / other wastes from WASH facilities and solid waste from mid-day-meal kitchens' (food and packaging wastes, plastics, sanitary napkins and masks), (c) mixing up of hazardous and e-wastes from electrical and digital hardware (also expected from development

and use of digital EMIS proposed under IPF component) with general waste; and resultant health concerns, (d) choice of materials and technology while upgrading facilities (such as high water or energy use fixtures, reliance on fire wood for cooking (in addition to LPG use), universal access, materials used in physical learning kits, masks, sanitizers and cleaning products); **(ii)** ***Occupational and Community Health and Safety risks*** including temporary inconvenience and disruption to school activities during minor construction and repairs, probable hazardous materials (like asbestos), health and safety issues of workers, communities, teachers, visitors and students due to poor site housekeeping, work management and worker/workspace - student interactions, and risks due to hygiene practices (including COVID 19 and menstrual hygiene); **(iii) Disaster and emergency-related risks** including fire, electric safety and climate risks, lack of preparedness, capacities and arrangements for emergency response; and worker/work safety in different geographic/climatic conditions (heat wave, cyclone and flooding during specific seasons). These risks can be managed by excluding hazardous activities, developing capacities to screen, review, implement and monitor environmental and safety aspects, by following regulations/permit requirements, guidelines, management plans, and by increasing the system-wide awareness and capacities on the environment and disaster response.

6. **Key Social Issues and Impacts:** The key social risks and impacts of the Program include the following (i) low transition and completion rates for students from vulnerable communities/ITDA blocks of the state; (ii) low capacity of PCs in ITDA blocks to undertake civil works and regular social audits; (iii) occupational health and safety hazards experienced by laborers on construction sites; (iv) risks of early marriage amongst adolescent girls, especially in tribal/rural areas of the state; (v) barriers to transition from elementary to secondary grades for both girls and boys due to the on-going adverse impacts of COVID-19; (vi) low awareness levels amongst parents/communities in tribal and rural blocks of the state; (vii) lack of clear two-way information flows/communication pathways for sustained beneficiary/citizen engagement; (viii) intra-state variations in capacities of last-mile delivery officials, i.e. BRPs/CRPs, particularly in ITDA blocks and (ix) risks related to on-campus harassment and isolated instances on gender-based violence.

7. **Key Findings from Assessment of Borrowers Capacity and Systems:** The ESSA has identified key gaps and opportunities for strengthening the existing systems for managing E&S risks and enhancing the Program benefits.

8. From the environmental perspective, the most relevant ESSA core principles for the Program (and for overall sustainability) are Environmental Management and Public and Worker Safety. The Program supports essential repairs, construction of toilets, compound walls, furniture, painting, electrification, deployment of energy-efficient appliances/fixtures, drinking water supply, and provision of green chalkboards in existing government-owned schools across AP irrespective of urban/ rural differentials. All works follow the same standard specifications and design finalized at the state level with flexibility for adopting additional structural safety in coastal areas with high climate risks. Plans for works are finalized by PC, school leadership, and site engineer considering the requirements of each school campus. In each area, existing government departments with a strong presence and local implementation experience are appointed as facilitating agencies (Eg: Tribal Welfare Department with strong experience working in and understanding the needs of Tribal areas). The ongoing initiative has specifications and guidelines incorporating the principles of universal design, and procurement of materials without hazardous contents (Eg: specifications on Lead and VOC free paints). The gaps in EHS aspects can be addressed through better E&S capacities at the state, district / mandal, and school level. The focus shall be on the '*Haritha Pathasala*' (Green School) and 'safe school' principle with improvements in key interventions to ensure long-term environmental performance. Capacity building of PCs, Students, and teachers; involvement of National Green Corp (school-based eco-clubs) in continual improvement, operations, and management; developing guidance for screening and exclusion of high-risk activities, ECOPs / EMP for safe works management is important. Including environmental aspects in the Social Audit mechanism and EMIS will help in effective monitoring and identifying the real-time O&M needs.

9. From a social perspective, the assessment revealed that to meet the core principles on land acquisition and involuntary resettlement, screening will be required to identify any potential adverse social impacts, which is currently lacking. The DoSE and the SIS for Samgra Shiksha provide the institutional mechanism for school education Program implementation along with detailed roles and responsibilities for district-level officials (DEOs, SDEOs) and sub-district level officials (BRPs, CRCCs, CRPs). Through the *Nadu Nedu* scheme, PCs are regularly involved in the planning, management,

and monitoring of civil works across the state. The DoSE regularly follows the process of social audits to create transparency, participation, and accountability of the Program implementation at the school level. The DoSE also has a clear focus on social inclusion and the differentiated needs of SC, ST, and CwSN students. To enable ease in learning, the department has made textbooks available in their mother tongue to students from tribal communities. The DoSE through *Divyang Bhavans* (centers for disabled students) attempts to provide educational opportunities in an inclusive environment free from discrimination. From a policy perspective, the Right to Education Act, 2009 further addresses gender and social equity within a framework that is holistic and systemic. Additionally, the DoSE has a special focus to improve enrolment, transition, completion rates, and learning outcomes for the 66 tribal/ITDA blocks in the state.

10. **Key Program Action:** To strengthen borrowers systems to manage E&S risks and enhance benefits, ESSA recommends constituting an E&S Cell named 'Sustainable Schools Unit (SSU) at SIS which is the PMU at the state level and designating nodal E&S officials at the district, block, and PC levels for (i) effective integration of E&S concerns and best practices through implementation of the 'Green Gift Box', (ii) screening Program activities and monitoring of OCHS using EMP/ ECoP, and (iii) incorporation of E&S aspects in EMIS and social audits. To ensure overall sustainability, the following are proposed to be made part of Nadu Nedu interventions - as a 'Green Gift Box' for schools and CwSN resource centers. Green Gift Box integrates 1) Safe, hygienic and climate efficient MDM facilities: upgradation of kitchen sheds, ensuring good quality water, large burner stoves and solar cookers for cooking at scale, training on hygiene practices, facilities for menstrual hygiene management, fire, electric and fuel safety; 2) Conservation through greening the campus: 'seed banks' of indigenous tree varieties, plantation, bio fencing and kitchen/nutrition gardens through students collective action; 3) Resource-efficient and accessible facilities: universal access and BaLA, energy efficiency, material recovery, recycling water from the backwash of water filters and kitchens, 4) Resource efficiency through 'whole school' waste management: segregated storage, treatment, disposal of various wastes and resource recovery, training on upscaling/ reuse and management. These will also turn the school campus into a sustainability learning lab.

11. **Grievance Redress Mechanism:** The SALT Program will leverage the existing online GRM portal – Spandana – used by GoAP. The project will establish an ICT-based GRM that would function at three levels: block, district, and state. However, project stakeholders and beneficiaries can submit complaints/queries through various modes – in-person complaints, written complaints, e-mails, phone calls, and text messages. All grievances received from affected parties will be registered in an online document and/or a logbook (ensuring restricted access) available at all three levels, tracked, and assessed for progress on resolutions. At the final stage, each complainant shall be informed about the results of investigations and the actions taken. As a complementary intervention, the project will develop a robust communication strategy designed to digitally reach out to direct project beneficiaries and stakeholders with information and project-related updates regularly. Through the school performance evaluation tool, the Program will support annual parents' satisfaction surveys (using stratified sampling) on a sample basis to directly inform the engagement mechanism during implementation. Further, the project will also establish a complementary mechanism to strengthen the architecture on detecting, registering, and addressing SRGBV related issues through the engagement of relevant service providers and coordination with Health, and Social Welfare Departments.

12. **Consultations on ESSA:** Consultations were held (during October – November 2020 and February – March 2021) at the state, and district, school levels, with school leadership, PCs, relevant stakeholders, communities, civil society organizations, and government institutions. The draft ESSA and its executive summary translated to local language: Telugu were disclosed on DoSE website (see: https://schooledu.ap.gov.in/Doc21/Draft_ESSA_SALT.pdf) on February 18, 2021, and in Bank's external website (in March 2021) to enable its wider reading before consultations on the draft ESSA. Final ESSA was cleared and disclosed in-country in DoSE website and on the World Bank's external website during appraisal in April 2021, after incorporating comments and suggestions. .

ANNEX 6. PROGRAM ACTION PLAN

Action Description	Source	DLI#	Responsibility	Timing		Completion Measurement
Establishment of Sustainable Schools Unit (SSU) at the SIS for Samagra Shiksha for E&S Management	Environmental and Social Systems		DoSE, GoAP	Due Date	31-Mar-2022	Establishment of SSU with qualified staff, scope of work including preparation of E&S guidance and monitoring the implementation of E&S actions (with Nodal E&S persons at District and School level) and reporting protocols, as in Annex 3 of ESSA
Grade and subject wise, competency based learning standards defined	Technical		DoSE, GoAP	Due Date	31-Dec-2021	Official document published/notified by the DoSE, GoAP
Provision of a standardized package of TLM across early grade classrooms, and Anganwadis	Technical		DoSE, GoAP	Due Date	29-Jul-2022	To be verified by IVA based on field based verification across 170 randomly selected primary schools and 170 randomly selected Aanganwadis.
State EMIS developed and operationalized	Technical		DoSE, GoAP	Due Date	29-Dec-2023	MIS made accessible to IVA for verification
School based E&S recommendations included in School Performance Evaluation tool	Environmental and Social Systems		DoSE, GoAP	Due Date	31-Mar-2022	Official notification from GoAP
Establishment of a web-based Grievance Redressal/ Beneficiary Feedback Mechanism for continuous stakeholder engagement.	Environmental and Social Systems		DoSE, GoAP	Recurrent	Semi-Annually	Functional online portal to receive feedback, queries and complaints from parents, students, teachers and administration. Functionality of the GRM will be monitored as per the Stakeholder Engagement Plan.
Measure Fiduciary Key Performance Indicators (KPIs)	Fiduciary Systems		DoSE, GoAP	Recurrent	Semi-Annually	Share monitoring report with the Bank semi-annually
Establishment of a procurement related complaint handling mechanism	Fiduciary Systems		DoSE, GoAP	Due Date	31-Dec-2021	Based on a government notification, a complaint and appeal handling system setup with: interface; business process; documentation

						procedures; and a unit for receiving & monitoring complaints until resolution, & communicating resolution to complainant
Semi-annual reports collating allegation of fraud and corruption, complaints received, and investigations on the program activities.	Fiduciary Systems		DoSE, GoAP	Recurrent	Semi-Annually	Semi-annual report shared with the World Bank
Adequate disclosure of procurement information	Fiduciary Systems		DoSE, GoAP	Recurrent	Continuous	Publish annual procurement plan at the beginning of each FY on the program's website and update it periodically; and (b) publish contract award information within 2 weeks from signing of contract through the e-procurement platform and Program website
Adequate disclosure of financial information	Fiduciary Systems		DoSE, GoAP	Recurrent	Yearly	Program AWPB, and annual audited financial statement published on the program website
Strengthened internal audit and audit framework	Fiduciary Systems		DoSE, GoAP	Recurrent	Yearly	Terms of Reference and/or scope for internal audit and audit strengthened to cover procurement cycle and include risk based audits
Development of a strategy to monitor and improve learning outcomes in the 66 ITDA blocks of AP. This will be developed and rolled-out in collaboration with the Tribal Welfare Department of GoAP.	Environmental and Social Systems		DoSE, GoAP	Due Date	31-Mar-2022	Development of a strategy that outlines a) M&E mechanism to regularly monitor attendance and transition rates and learning outcomes of ST students and b) specific measures to improve parental engagement and capacity of PCs in ST Blocks.
Augment and maintain adequate financial management staff	Fiduciary Systems		DoSE, GoAP	Recurrent	Yearly	Reduce vacancies to less than 10% at each level and share with the World Bank an annual report on financial management staff at state/ district/ mandal levels

ANNEX 7. TECHNICAL ASSESSMENT (SUMMARY)

1. **Strengthened Foundational Learning (RA-1): Under the SALT Program the GoAP is committed to providing a high-quality foundational learning Program through its primary schools and the vast network of *Anganwadis*. The GoAP has wholly aligned with the model/approach for foundational learning proposed by the NEP (2020).** The DoSE and the DoWCSSC have established a partnership under which the SCERT will support the DoWCSSC in delivering the ECE Program in about 55,000 *Anganwadis*. For school readiness to improve, there needs to be a clear pedagogical continuum between the ECE delivered through *Anganwadis*, and the early grades in primary schools. The state is introducing a one-year preparatory class across 3,530 schools located in *Mandals* with a high percentage of ST students to promote equity. Learning outcomes for ST students are relatively lower and poor foundational learning has been identified as a key reason. Special attention is needed to help them transition from their mother tongue to the medium of instruction in schools.

2. **Young children's school readiness will improve through a comprehensive and integrated package of developmentally appropriate interventions.** The state would need to plan for a developmentally appropriate curriculum, TLM, monitoring systems, parental engagement strategies, and institutional linkages at the decentralized level. Existing preschool and early grades curriculum and pedagogical practices need to be reviewed to align them with the curriculum or grade-level competencies as suggested by the NCERT. Complementarily, *Anganwadi* workers and teachers will also be provided with guidebooks to help them transition from a curriculum-based to a competency-focused and play-based model of teaching-learning. Support provided in these areas should include all developmental domains: cognitive development and pre-numeracy skills, language development and emergent literacy, creative expression and aesthetic appreciation, socio-emotional development, and fine and gross motor skills. Further, the curriculum should include clear age-appropriate milestones to facilitate developmentally appropriate teaching. Finally, the TLM should consist of a set of rich, stimulating, and developmentally appropriate tools that are also high-impact, low-cost, and relevant.

3. **Capacity building of the *Anganwadi* workers and preparatory and early-grade teachers is the most critical lever for change.** Provision of practical and high-quality teacher training is essential for realizing the shift from curriculum-based teaching-learning to play-based, developmentally appropriate teaching-learning across ECE and early grades. As per the NEP (2020), *Anganwadi* workers should go through a six-month certificate training Program. SALT would provide the same and extend the recommendation to cover early grade teachers through a similar, albeit shorter, training Program of three-months. The state intends to provide these trainings through a blended learning model. This is made possible by the fact that all *Anganwadi* workers and school teachers have access to digital devices with data connections. SALT will support the planning, delivery, and monitoring of these training programs that are based on play-based curriculum. Ideally, it should spread across multiple years and be scaffolded to ensure teachers get the time to implement learnings from the trainings and provide feedback that can be integrated into subsequent modules.

4. **The synergy between the DoSE and the DoWCDSC will be crucial for the delivery of the ECE Program**. The DoSE and the DoWCSSC have already established a strategic convergence under which the SCERT supports the DoWCSSC on all aspects related to ECE, including curriculum design, training of *Anganwadi* workers, and TLM development. The departments will jointly implement the activities under the SALT Program and hence, coordinate at several levels, including the district and sub-district levels. Given that the SCERT itself has limited capacity in the area of ECE, it would be advisable to engage a partner organization that can help build its capacity whilst supporting the roll-out of the activities envisioned under the Program. Herein, the agency could emerge as a further medium of convergence that establishes a unit each at the SCERT and the DoWCSSC, and also deploys resources who work with decentralized functionaries from both the departments.

5. **The *Nadu Nedu* initiative is expected to complement these initiatives and significantly impact early-grade education by creating a stimulating learning environment for the young.** The state has more than 30,000 primary schools where early-grade learning is delivered and it will improve safety, classroom learning environment, and the provision of basic facilities such as toilets and drinking water. This infrastructure upgradation will provide the necessary foundation for more advanced academic reforms aimed at improving students learning experience. Community involvement in the planning, management, and monitoring of works will play a pivotal role in ensuring quality, and build parent confidence

in the school's ability to provide a safe learning environment. Physical parameters such as natural light, temperature, and air quality contribute significantly to the space and ability to function for young children. These should be considered during the planning and implementation of works. Lastly, the works undertaken should aid in delivering developmentally appropriate pedagogy, including the integration of play-based methods and outdoor play.

6. **Improved Quality of Teacher-Student Interactions (RA-2) – Teacher Professional Development (Part A) - Under the SALT Program, the GoAP is committed to providing high-quality professional development opportunities to teachers**. The GoAP recognizes that teachers are the most important school-based factor for student learning and that they can make decisive changes in the lives of their students they (Beteille and Evans, 2019; Hanushek and Rivkin, 2010; Chetty, Friedman, and Rockoff, 2014). For students to learn, teachers need to be present, motivated, knowledgeable, and be able to instruct effectively. However, currently in AP, access to opportunities for continuous professional development needs to increase to unlock the full potential of teachers. Although the state has taken major steps to address issues related to insufficient human resources and created communities of practitioners through the school complex/cluster model, AP has yet to establish a demand-driven continuous professional development apparatus.

7. **The GoAP is proposing a series of actions to strengthen in-service teacher professional development, ensuring teachers are provided with need-based support.** It will be important for the GoAP to provide individually targeted and repeated teacher training, identified as among the most effective characteristics of effective TPD Programs. Moreover, Programs that link participation to career incentives, have a specific subject focus, incorporate lesson enactment in the training, and include initial face-to-face training tend to show higher student learning gains (Popova et al., 2019). To provide such training meaningfully, the project will: (i) build the technical and operational capacity of school complex leaders to provide evidence- and needs-based training to teachers; (ii) facilitate a shift towards needs based in-service training; (iii) build the technical and operational capacity of SCERT and DIETs to provide evidence- and needs-based support to teachers through an LMS; and iv) strengthen the technical and operational capacity of SCERT and DIETs to provide remedial support to students.

8. **Improvement of school complex leaders' technical capacity will ensure they are better positioned to provide evidence- and needs-based support to teachers.** Continuous professional development programs are most likely to be effective when teachers are provided with the materials, ongoing training, and monitoring to change their practice, and where it is politically feasible to target teachers for training based on pedagogical gaps. To ensure these trainings are relevant, teachers' professional development needs will be determined at a school complex/cluster level (40-50 teachers). This training plan will be designed based on data/information from state and school-level assessments, findings from the classroom observations, and teacher self-assessments. This information will be used to create a training curriculum that is firmly based on the areas teachers require the most support in. In addition, teachers will receive coaching on pedagogical skills that will, when possible, leverage technology for follow-up. The use of technology is a promising avenue in AP, given high rates of digital literacy (as indicated by teachers' high course completion rates on DIKSHA) and widespread access to digital devices. The state should leverage this to provide teachers with a digital guidebook aligned to the training curriculum, which will include short modules (e.g., 'quick tips' and/or videos of exemplary instruction) to complement peer-to-peer learning and classroom-based coaching. School complex leaders should be trained to provide pedagogical support to teachers that are i) tailored, or targeted to the areas in which teachers need the most support, ii) practical, or involve active learning strategies, iii) focused, or targeted to a select set of skills, iv) ongoing, or incorporate the need for continuous support. As part of this training, school complex leaders and senior teachers will learn how to conduct classroom observations using a digitized version of the Teach tool, provide feedback, and facilitate coaching sessions.

9. **In addition to traditional training, teachers will be provided with evidence- and needs-based support through an LMS, building off the success of DIKSHA.** The DIKSHA platform offers a host of online training courses where more than 1.5 million teachers have been registered. This LMS will build upon the success of DIKSHA to support the enhancement of needs-based continuous professional development and teacher performance management to improve classroom performance. Given the large number of teachers that will need to be trained in a relatively short period and limitations of group sizes associated with COVID-19, an LMS will be developed to complement other trainings.

10. **In parallel, students will have access to remedial support through online learning materials, which will be designed to complement classroom learning.** The state has already used the DIKSHA platform to offer a host of online training courses for students. The GoAP will utilize formative and summative assessment data to identify hard-spots or prioritized learning objectives across grades and subjects to curate or create content. These findings will be utilized to create multi-modal content with synchronous/asynchronous capability that is aligned to the curriculum and linked to the current 'energized textbooks initiative.' Complementary guidebooks and reference material will be developed for teachers to further reinforce the use of these materials across all grades. Lastly, teachers will be provided with the necessary technological and digital pedagogical training to utilize these materials as part of their instruction.

11. **Improved Quality of Teacher-Student Interactions (RA-2) – Assessment and Remediation (Part B):** The GoAP is proposing two sets of actions to strengthen assessment and remediation in government schools: (i) improving teachers' capacity to design and use assessments to support learning and remediation in individual classrooms, and (ii) strengthening system-level assessments as an evidence source for policymaking and reform. These classroom and system-level assessments will be underpinned by a common set of competency-oriented academic standards. There will be a focus on using technology to enhance the design, delivery, analysis, and reporting of classroom and system-level assessments, and on using the data from these assessments to close learning gaps. These priorities are highly appropriate given current teaching practices and learning levels in the state. However, to achieve them, the state will require assistance from technical experts who can provide high-quality inputs and help build institutional capacity.

12. **In the area of classroom assessment and remediation, the emphasis will need to be on:**

a. training teachers, and those who work with them, in how to develop competency-based assessments for diagnosing learning issues at the classroom level and using the results to plan instruction and remediation;

b. creating and rolling out a holistic student report card that provides competency-oriented data on a student's progress in a variety of cognitive and non-cognitive areas; and

c. piloting a technology-enabled Personalized Adaptive Learning (PAL) system to demonstrate its potential to deliver remediation and learning support to students.

13. **At the state level, the emphasis will need to be on:**

a. building the capacity of the State Assessment Cell (SAC) (and its district-level equivalents) to develop, implement, analyze, and report on data from multiple cycles of the National Achievement Survey (NAS), the State Learning Achievement Survey (SLAS), and other large-scale assessments;

b. capacity building of SAC staff in how to design and carry out periodic benchmark/check-in assessments that provide standardized data to teachers to support remediation and competency-based learning; and

c. enhancing SAC staff capacities in the areas of formative and diagnostic assessments so that they can provide support to teacher training in this area.

14. **SCERT has already developed competency-oriented academic standards for all subjects and grade levels.** It will be important to conduct an independent expert review of these standards to ensure they are optimally designed to promote competency-oriented teaching, learning, and assessment. Support also will be required to enhance the state's assessment dashboard so that it covers all grades and subject areas and allows for more flexibility at the classroom level in terms of the kinds of evidence that can be uploaded and the kinds of devices that can be used to do this uploading.

15. **Strengthened Institutional Capacity and Community Engagement for Service Delivery (RA-3): The GoAP recognizes that the effective implementation of the Program will depend on the capacity of its institutions and decentralized education functionaries.** The state has undertaken several reforms in areas of school leadership and management. Despite such progress, the delivery of the SALT Program will also require the development of processes and systems that aid officials in planning, delivering, and monitoring the planned activities. The state is now proposing several reforms to address the persisting challenges on school leadership and management. Some of the key activities that will be covered under SALT are; (i) improving community oversight on school operation; (ii) supporting school leaders with the

professional development Programs required to make them more proficient on key leadership competencies; (iii) developing an EMIS for improved data management and decision making; (iv) encouraging a system of AWPB for the SCERT, SIEMAT and DIET staff so that they have greater flexibility to deliver results (v) improving disaster risk management capacity of school leaders through the provision of adequate training.

16. **PCs can play a significant role beyond the implementation of *Nadu Nedu* by facilitating transparent and holistic social audits of schools.** The state has already activated PCs for the large-scale roll-out of the *Nadu Nedu* initiative. This has increased the community's confidence in government-managed schools, is re-enforcing the idea that the schools belong to the community, and is helping in maintaining a high level of transparency and accountability. The PCs provide a unique opportunity for citizen engagement, given their status as unbiased stakeholders. Building on these positive developments, the SALT Program will facilitate the roll-out of a system of periodic, PC led social audits of government-managed schools.

17. **Community involvement in school management is a promising intervention recognized in the 'Smart Buys' report and is a very cost-effective strategy for gathering data on schools.** However, for community involvement to have a real impact on schools' improvement, a few guiding principles are necessary preconditions. Firstly, the school performance evaluation rubric needs to be clearly defined and representative of the various aspects of school operation. The parameters should comprise of critical success factors for the stable and high performance of a school and be based on existing national and international school transformation frameworks and the local context of the state. There should be a focus on learning, equity, and sustainability, including the education of CWSN. Secondly, competencies that are crucial for undertaking such an audit should be identified, and PCs should be trained on the same. Lastly, the tool should be digitized for easy collection of data. Data should only be compiled at the aggregate level to ensure candid feedback.

18. **School leadership development has the potential to elevate the performance of government-managed schools in AP**. Under the SALT Program, the GoAP intends to focus on the development and provision of sufficient opportunities for professional development for school leaders. Given the state's prioritization of school complex (cluster) based professional development of teachers, the government intends to focus on both academic and administrative functions. Their academic role includes monitoring, coaching, and developing teachers, ensuring the fair administration of state assessments and delivery of curricular and co-curricular activities. On the other hand, their administrative role includes running the school budget and operations, liaising with stakeholders including parents, frontline administrators, and contractors, distribution of entitlements, and facilitating data collection for the state. While the state continues to deliver training and skill-building Programs, these endeavors should be based on achieving improvements on clearly defined leadership competencies. Training provision should then be rooted in periodic skill gap analyses. The SALT Program aims to plug in this gap by developing a school leadership competency framework that identifies the skills and mindsets needed to discharge a school leader's academic and administrative duties. This school leadership competency framework should be holistic and include multiple facets of leadership including skills such as school management, communication and interpersonal skills, coaching, active listening, project management, and analytical thinking.

19. **Robust state systems, decentralized planning, and tech-enabled monitoring systems can support PCs and School Leaders in the reform of schools.** The state is implementing a three-pronged strategy to develop state systems, including capacity building of frontline administrators, supporting the development and execution of Annual Workplan Plan & Budgets (AWPB), and creation of an EMIS. Under the capacity-building efforts, the state is training MEOs and CRCCs on the nuances of school management, administration, and governance. Under the development and execution of AWPBs, the state will focus on effective planning, funds flow, and funds utilization to achieve predefined goals/outcomes. It would be useful to align the AWPB process with the results envisioned under the Program and ensure that the process is bottom-up to provide district-level institutions the contextual flexibility to deliver better services. The process should ideally be made more accountable by instilling a system to solicit end-user or beneficiary feedback. Lastly, the state plans to develop a robust EMIS, which will be the anchor for all data collection, analysis, and visualization needs in the state. For the successful implementation of an EMIS, it must be ensured that while the EMIS collects both administrative and academic data, it doesn't lead to monitoring fatigue, prioritizes relevant information, and doesn't duplicate the work of ground-level functionaries.

ANNEX 8. IMPLEMENTATION SUPPORT PLAN

1. **During implementation, the World Bank team's support will evolve from technical inputs towards activity initiation, to project management and need-based course correction, and conclude with a focus on ensuring suitability of gains.** In the first 12 months, the team will focus on operationalizing the TEACH tool required to better inform teachers' professional development needs, facilitate school-based mentorship and peer to peer learning, and measurement of progress towards the achievement of the PDO. The World Bank will also support the GoAP in using the FinED tool for carrying out a self-assessment of public financial management systems and identifying actions that can better align budgeting, fund flow, expenditure etc. to achieve better service delivery. Colleagues from the World Bank's Education Global Practice and Governance Global Practice will support these efforts.

2. **The team will leverage two annual ISMs to review the implementation progress, identify issues that need to be addressed, monitor changes in risks, check compliance with legal agreements, and assess adequacy of fiduciary, environmental, and social systems.** The legal agreement (including the PAP and DLIs) and the Project Appraisal Document (including the results framework) will provide the basis for the bi-annual review. More importantly, one of these review missions will be field-based and allow the team to hold more in-depth discussions with a diverse set of stakeholders. The skills needed and the staff time required for these missions is summarized in the table below. Where necessary, the World Bank team and the GoAP will invite technical experts to join these missions. This could include World Bank staff working on operations in other states and countries. This will facilitate the exchange of ideas that can help the state overcome bottlenecks.

Skills Needed	Staff Weeks	Trips
Project Management (Task Team Leader and Co-TTL)	20 per annum	6 per annum
Assessment Systems Development (Team Member)	4 per annum	1 per annum
Foundational Learning (Team Member)	4 per annum	1 per annum
Teacher Professional Development (Team Member)	6 per annum	1 per annum
Systems Strengthening and School Leadership Development (Team Member)	4 per annum	1 per annum
Financial Management (Team Member)	2 per annum	1 per annum
Procurement (Team Member)	2 per annum	1 per annum
Environmental Systems and Safeguards	2 per annum	1 per annum
Social Systems and Safeguards	2 per annum	1 per annum

3. **The PMC engaged by the GoAP to assist with the concurrent monitoring and management of the operation will prepare and share with all implementation agencies a quarterly progress review report.** This report will be prepared against the PAP, DLIs and RF contained in the Project Appraisal Document. It will also be made available to the team from the World Bank and will be used to prepare for the bi-annual ISMs. It will include any challenges being faced in the delivery of key results and any initiatives or activities on which the implementing agencies would want the World Bank to support with technical inputs by convening relevant experts(internal and/or external). It will also include Key Performance Indicators (KPIs) to measure procurement and contract management performance (e.g., procurement timing, participation, disclosure of contract award data, rate of successful tender, cost over-run, time overrun, payment delay) of the Program. The report will provide details on actions taken to address any observations and findings from the internal and statutory audit. It will also carry the most up to date contact details that the World Bank can use to connect with the state Vigilance Commission as part of any follow up the Bank conducts concerning complaints reported or issues observed.

4. **Status of flow of funds from state treasury to the State Implementation Society for Samagra Shiksha, expenditure by economic category (as specified in the Program expenditure framework), and timely payment to service providers on delivery of service (IPF Component) will be key areas for concurrent monitoring.** The PMC engaged by the GoAP will prepare and submit quarterly status reports on these aspects. This will help ensure early identification, discussion, and escalation (to state Finance Department) of bottlenecks.

ANNEX 9. INVESTMENT PROJECT FINANCING COMPONENT

1. The focus of the IPF component will be to facilitate the provision of capacity building support to the state's nodal educational institutions. This will be managed through need-based engagement of technical experts and service providers. The IPF component will also support the development of an EMIS, the engagement of a PMC, and for hiring an IVA.

Key Expenditure/Contract	Tentative Cost	Type
Hiring of a PMC	US$1,50,000	Consulting service
Hiring of an IVA	US$750,000	Consulting service
Hiring of a technical support agency to support SCERT and DIETs with professional development of teachers	US$5,000,000	Consulting service
Hiring of technical support agency to support SCERT and DIETs with professional development of *Anganwadi* workers and early grade teachers	US$2,000,000	Consulting service
Hiring of a technical support agency to support the SAC with the development of SLSAs, school-based assessments, and remedial education materials	US$2,000,000	Consulting service
Hiring of an agency to develop the EMIS	US$4,750,000	Consulting service
Hiring of a vendor to provide access to PAL services in 700 schools	US$4,000,000	Non-consulting service
Total	**US$20,000,000**	

2. **Financial Management for the IPF Component:** The Financial Management unit at the PMU will be responsible for the fiduciary responsibilities for the IPF component; these will include: (a) ensuring compliance with all financial covenants in the IPF legal agreements; (b) budgeting, and overall management of payments and accounting function; (c) furnishing interim financial reports (IFRs) and obtaining funds from the IBRD loan on a regular basis; and (d) preparation of annual financial statements and managing the internal/ external audit process; including submission of the AFS to the World Bank within nine months of close of each Financial Year. Key aspect of the FM arrangements are:

- The PMU will project the required resources to be budgeted for the IPF component on an annual basis; these projections will be included in DoSE budget, which is then submitted to the Finance Department for incorporation into the state annual budget. A separate budget code (line item) will be set up in a manner that will allow for all project-related expenditures to be separately identified, accounted, and reported.
- The FM unit will be headed by a qualified and experienced accountant in the PMU who will be responsible for managing day-to-day FM activities for the IPF component.
- All payments will be made by the AP Treasuries (i.e. the CFMS) and are expected to be made centrally i.e. at the PMU. The state Financial Rules provides the required control framework for transaction control over individual items of expenditure.
- The PMU will submit semi-annual IFRs to the World Bank within 45 days of the end of each semester; based on which the loan will finance 100 percent of eligible expenditures for consulting, non-consulting services and incremental operating costs including taxes.
- A CA firm will be the statutory auditor for the IPF component. The CA firm will conduct an annual audit of the Project (as per a ToR agreed with the Bank) and the audit report (alongwith the audit of the PforR Program) will be submitted to the World Bank within nine months of the close of each financial year.

3. **Procurement for the IPF Component:** All procurements under the IPF component of the project will be conducted following the Bank's Procurement Regulations, July 2016 (Revised November 2020). The PMU under the State Implementation Society (SIS) for Samagra Shiksha will be responsible for the procurements under the IPF component. Procurement risks related to the IPF component includes inexperience of the SIS PMU to process consultancy services following World Bank Procurement Regulations which may lead to delay in getting the necessary consulting firms on board. Procurement risks under the IPF component will be mitigated by: (i) using procurement skilled officials/specialists; (ii) prior- and post-procurement reviews by the Bank; (iii) providing extensive trainings and handholding support to the PMU during the initial phase of the project so that they are able to follow the procedures for a Bank-financed IPF project;

(iv) using the Bank's online procurement planning and management portal, Systematic Tracking of Exchanges in Procurement (STEP), to manage and track timeliness of the procurement activities; (v) following the Bank's Standard Procurement Documents or where not available using model documents agreed with the Bank; and (vi) using electronic procurement portal of AP for doing all procurements under the IPF component.

4. The project has already prepared a simplified Project Procurement Strategy for Development (PPSD) for the IPF component. The PPSD spelled out the detailed procurement arrangements (e.g., procurement packaging strategy, method, bid evaluation methodology of the major packages, timeline for the procurement activities, contracting arrangement etc.) including the risk mitigation measures. PPSD is a live document and it is to be updated at least annually. As an output of the PPSD exercise, Procurement Plan for the IPF component has been developed by the PMU which the Bank accepted through STEP. Procurement Plan contains the procurement activities to be financed under the IPF Component, the selection methods for procurement, market approach, contracting arrangement, estimated costs, Bank's prior review requirements, timeline of the procurement activities, and other conditions related to procurement. The PMU has already advanced the 5 consultancy procurement packages including IVA. The technical and financial evaluation of the Proposals received for these 5 packages has already been completed.

5. **The social and environmental risk rating of the IPF component/project is Low.** Activities under the proposed IPF-TA component are not expected to have any adverse social or environmental risks or impacts and will be restricted to capacity building of state nodal implementing agencies, consultancy/advisory services and preparation of EMIS. The ESSA document (aligned to the PforR component) has identified existing good practices towards improving enrolment, transition and completion rates of female students and students from SC/ST communities. The ESSA also provides an assessment of capacity of existing intuitions to respond to the needs of students and teachers from vulnerable communities and identify capacity building measures to address these gaps. The ESSA discusses the gaps in facilities and capacities for management of wastes including general solid waste and packaging wastes (including plastics) from training programs, and e-waste from development and use of digital EMIS. ESSA suggests mechanisms to better recycle/upscale, treat, dispose wastes as per existing regulations and follow 'Green Protocol' in all training and capacity building activities. Sustainable Schools Unit (SSU) – the E&S Cell at SIS -- will support, supervise and monitor environmental and social management associated with implementing the activities supported by the IPF as well.

6. Risks relating to labor involved in consultancy/advisory services of preparation of EMIS are expected to be minimal. Contracted workers, through third-party consulting/advisory service providers, have well-defined employment terms and/or formal contracts in accordance with national labor laws. Further, Occupational Health and Safety (OHS) provisions including Prevention of Sexual Harassment at the Workplace (POSH) have been integrated in the firm qualification criteria in procurement packages in relation to the implementation of the project. Stakeholder-related risks too are low. The DoSE has developed a Stakeholder Engagement Plan (SEP) that includes the list of all potential stakeholders including officials of the DoSE at the state level, administrators and facilitating agencies at the district and sub-district levels, PCs, students and teachers with adequate details on modes and frequency of engaging with them.

7. **ESS2 Labor and Working Conditions:** All requirements relevant to ESS2 will apply to the IPF component/project. Under the IPF component, the operation will involve both Direct Workers (of the DoSE) and Contracted Workers of the Project Management Consultant (PMC), PCs, and other consulting agencies. Relevant clauses related to adherence to the Prevention of Sexual Harassment at Workplace Act (2013) and the Internal Complaints Committee have been integrated in the ToRs of technical consultancies. The ESCP includes relevant actions to address labor-related risks, compliance requirements of ESS 2, along with provisions for COVID-19 safety and worker-related GRM provisions. The Program-level GRM will be made accessible to stakeholders/workers related to the IPF component/project.

8. **ESS3: Resource Efficiency and Pollution Prevention and Management:** Though the development of an EMIS will increase resource efficiency, it can directly or indirectly result in an increase in e-waste and solid waste (including plastics). Currently there is no management of wastes or institutional mechanism to oversee this. The state has e-waste recyclers authorized by Pollution Control Board and many Urban Local Bodies have solid waste collection, transport, treatment, and disposal facilities such as compost facilities and a landfill at Guntur. However, the e-waste from schools ends up getting

disposed along with general solid waste or getting burned; resulting in release of harmful substances. The project shall ensure institutional responsibility to guide, develop and oversee management of e-waste and packaging waste. The ToR for consulting agencies has included the requirement that the agencies shall ensure proper segregated and safe storage, collection, and management (through authorized agencies) of E-wastes and solid wastes (including packaging wastes and plastic wastes) which will be generated due to their activities in accordance with the applicable National Regulations. It suggests all capacity building and monitoring activities as part of the project to follow 'Green Protocol' aiming at minimal waste generation, avoidance of plastics, and proper management of all types of wastes. This will be included in the ToR for EMIS as well. In addition, E&S Unit of the PMU will oversee and report on the implementation of these through their quarterly progress reports. These have been detailed out in the A-ESRS prepared for the project.

9. **ESS10: Stakeholder Engagement and Information Disclosure:** A Stakeholder Engagement Plan (SEP) has been prepared and will be disclosed by the project prior to appraisal. The project will establish an ICT-based grievance redress mechanism which would function at three levels: block, district and state. However, project stakeholders and beneficiaries can submit complaints/queries through various modes – in-person complaints, written complaints, e-mails, phone calls and text messages. All grievances received from affected parties will be registered in an online document and/or a logbook (ensuring restricted access) available at all three levels, tracked, and assessed for progress on resolutions. At the final stage, each complainant shall be informed about the results of investigations and the actions taken. As a complementary intervention, the project will develop a robust communication strategy designed to digitally reach out to direct project beneficiaries and stakeholders with information and project-related updated regularly. The SSU under the DoSE, GoAP at state level will be overall responsible for implementation of the SEP. At the district level, the DEO and the sub-district education officer will engage with community through community consultations. The MEOs/Block Resource Centre Coordinator/Tribal Welfare Officers will be responsible for in-depth interviews/consultations at the block level.

10. **Consultations and disclosure:** The DoSE organized a state-level virtual consultation workshop to discuss the project design, findings of the draft ESSA, SEP and key agreements included as a part of the ESCP. Stakeholders invited included direct project beneficiaries, district and sub-district level officials, NGOs and government representatives from other relevant departments such as Women & Child, Tribal Welfare, Public Works Department, etc. Relevant documents pertaining to the ESF, i.e. SEP, ESCP, will be disclosed on DoSE's website prior to close of appraisal.

11. **Key ESCP Measures Agreed with the Client:** The DoSE, GoAP will (i) ensure that an organizational structure (PMU) with qualified staff and resources to support management of ESHS risks/impacts is established and maintained through the project implementation period; (ii) ensure establishment of a Sustainable Schools Unit (SSU) with designated E&S officers; (iii) disclose, adopt and implement the ESCP and SEP. **For ESS2,** (i) integrate OHS, Code of Conduct and GBV risk mitigation measures in the *Nadu Nedu* Scheme guidelines including on-site GRM for workers (ii) ensure adherence to all relevant SOPs issued by the GoI/GoAP to mitigate the risk of COVID-19. **On ESS 3:** include (i) the need to manage solid wastes, follow Green Protocol and e-wastes in all ToRs for consultancies/advisory support including the ToR for EMIS; and (ii) E&S Unit of the PMU will oversee and report on the implementation of these through their Quarterly Progress Reports. **On ESS-10,** (i) prepare and disclose a SEP including notification of a project specific GRM and a budget provision to implement the SEP. (ii) prepare annual SEP implementation report and reporting back to stakeholders.

ANNEX 10. CLIMATE CO-BENEFIT ACTIONS

1. **Adaptation - Vulnerability Context:** AP has a varied climate and frequently deals with various climate-induced disasters. Humid to semi-humid conditions prevail in its coastal areas, and arid to semi-arid situations are prevalent in the interior parts (particularly *Rayalaseema*). While coastal districts experience mild summers and winters, temperatures in the interior districts can vary from 10 degrees to 47 degrees Celsius. The severity of the extreme weather incidents is observed to be increasing due to climate change. Inter-district variation for annual rainfall ranges from 300 mm in the *Rayalseema* region to 1,000 mm in the coastal areas. The *Rayalseema* region is especially susceptible to heatwaves and droughts. Districts like *Visakhapatnam*, East *Godavari*, West *Godavari*, and *Krishna* have high exposure to floods and cyclones. There are years when the state has experienced simultaneous occurrence of droughts in interior districts and floods in coastal districts. In the past century, the state has experienced more than 103 cyclones, of which 31 were severe. Scientific predictions suggest that both the frequency and severity of cyclones will go up due to climate change.

2. About 90 percent of schools fall in districts prone to floods and cyclones which can trigger outbreaks of waterborne diseases, destroy sanitation facilities and compromise safe water supplies, compounding health issues. These disasters pose a risk to water, sanitation, and hygiene interventions in schools that the project supports. These climate-induced disasters also pose a threat to the school building/classrooms with about 20 percent of classroom in the state needing repairs to re-establish structural integrity. Further, droughts affect schools falling in about 10 percent of the districts, where rainwater harvesting and wastewater reusage can help reduce the brunt of these incidents.

3. During the previous few years, across districts, extreme weather and temperature incidents have led to up to 10 to 20 days (4 to 8 percent of planned days of instruction) of unplanned school closure. The decrease in the number of days of instruction directly impacts the activities planned under the Program and leads to learning losses resulting in a drop in students' learning levels, thereby directly impacting the Program's ability to achieve the PDO.

4. **Adaptation – Intent to Address Vulnerability:** The project aims to raise awareness of climate change issues, reduce climate change risks to school infrastructure and facilities, and reduce the learning losses caused by unplanned school closure due to extreme weather and temperature incidents.

5. **Adaptation – Link to Program Activities:**

Disbursement Linked Indicator	Intent to Address Vulnerability	Program Activity
DLI 3: Improved school management as measured by a standardized tool (US$20.75 million)	Raise awareness of climate change issues, and mitigate climate change risks to school infrastructure and facilities	The standardized tool being developed for monitoring school management includes aspects related to (a) regular operational maintenance and upkeep of school level facilities (especially WASH facilities); (b) ensuring structural integrity of the building through regular maintenance and timely repairs; (c) school safety which would include disaster preparedness/readiness (availability of first aid kits and fire retardants, regular evacuation drills, adherence to DRM guidelines in school operation etc.). The Program will also develop an EMIS for digital collection, collation and processing of school level data (through IPF component). This data will be used for school level planning and administrative decision making. The development of an EMIS will help prevent loss of data to climate induced incidents. The tool will inform the annual school development plans and budgets that the community uses to seek funds from the government. This will help ensure continuous reporting on infrastructure and maintenance requirements to mitigate and adapt to climate change and availability of funds for these aspects. *The training module that will be used to train the community on using the standardized tool will also cover these aspects. This would raise community awareness on these issues*
DLI 4: Schools and CWSN resource centers provided	Reduce climate change risks to school	The Program finances school level infrastructure and facility repair, upgradation, or provision based on school/site specific needs. Most importantly, it will finance repairs of existing infrastructure to ensure structural integrity of schools and CwSN resource

with standardized package of essential facilities, furniture, electrical fixtures, and repairs (US$107.5 million)	infrastructure and facilities	centers in cyclone and flood prone areas. Analysis from across a sample of schools suggests that between 15-20 percent of funds will be used to undertake these repairs. It will provide context specific improved specifications for special structural safety and climate resilience in coastal areas, thus Integrating climate change scenarios into disaster risk plans and preparedness. Examples of such context specific improved specifications include (a) raised toilets in areas prone to flooding and storm surge; (b) plinth, sill, lintel and roof bands, (b) double bolting of windows, reinforced closing function, removal of glass windows and replacement with mesh windows (to reduce greenhouse effect and chances of glass breakage in high winds leading to physical injuries); (c) roof correction to hip roofing with less than 22 degree pitch; (d) non-electricity based water filtration systems that can provide safe drinking water even in times of power outage due to climate induced incidents etc. The escalation in cost due to such adaptation measures (to be covered under the Program) is expected to be between 3 to 5 percent.
DLI 5: Improved teacher capacity to support early grade education and preparatory schooling (US$15 million) DLI 6: Improved coverage under need based in-service training (US$ 20 million)	Raise awareness of climate change issues; and reduce the learning losses caused by unplanned school closure due to extreme weather and temperature incidents	Sustainability curricula in Schools: Learning competencies for Kindergarten to Grade 10[42] (including early grades) cover adaptation (local impacts of climate change, water conservation etc.) measures. Under both the DLIs (first focused on foundational learning and the second on Grades 3 to 10), the Program will support the transmission of knowledge on these aspects by supporting the development of teaching learning materials, and content (including inputs for curriculum/textbooks). It will provide training to teachers on how to leverage play/activity-based learning and variety of pedagogical practices to help students develop a better understanding of these aspects. On average, these topics account for about 2.5 percent of the overall learning competencies for each grade. It would be reasonable to assume that that the percentage of funds committed to these aspects would be proportionate. The Program will support the development of e-learning modules, digital content, and television/radio broadcasts to facilitate home based learning. This will limit the learning losses caused by unplanned school closure caused by climate induced incidents. The DLIs also involve the development of an online LMS (through IPF component) which will maintain teacher records and maintain a digital repository of teacher training materials/modules. This will help prevent loss of materials to climate induced incidents.
DLI 7: Increased use of diagnostic assessment tools for provision of remedial support (US$ 15 million)	Reduce the learning losses caused by unplanned school closure due to extreme weather and temperature incidents	The Program will support the development of a technology enabled system for remedial education. The current system diagnoses and provides remedial support at a state level and therefore cannot accommodate for learning losses caused by unplanned school closure due to a localized incident (flood, heatwave or cyclone affecting one or few districts). The use of technology that would account for about 33 percent of overall expenditure will correct for this. The Program will also develop an EMIS for digital collection, collation, and processing of learning data; and prevent loss of data to climate induced incidents.
DLI 8: Increased number of school leaders demonstrating key leadership competencies (US$10.875 million)	Raise awareness of climate change issues, and mitigate climate change risks to school infrastructure and facilities	The program will support the training and capacity development of school leaders, decentralized education functionaries, and teachers on climate change and DRM. The training provided will cover disaster readiness/preparedness and first response in terms of preventing loss of life and damage to infrastructure in case of a climate induced incident (cyclone, storm surge, and/or floods).

[42] *https://ncert.nic.in/dee/pdf/tilops101.pdf*

6. **Mitigation:** The Program will also focus on the adoption of measures to reduce Green House Gas (GHG) emissions by facilitating a switch to cleaner fuels for cooking of mid-day meals, use of energy and water efficient fixtures, reduction in paper usage to prevent deforestation, and better solid waste management.

Disbursement Linked Indicator	Mitigation Category [43]	Mitigation Activity
DLI 3: Improved school management as measured by a standardized tool (US$20.75 million)	Energy Efficiency (Energy efficiency improvements in the utility sector and public services; and Energy Audits); Agriculture, Aquaculture, Forestry and Land-Use (Afforestation and reforestation and biosphere conservation); Waste and Wastewater (Solid Waste Management); and miscellaneous (reduction in GHG emissions from use of firewood)	The standardized tool being developed for monitoring school management will enable the community to (a) carry out an energy audit of the schools whilst ensuring that energy efficient fixtures are used, lights and fans are switched off when facility is not in use, and Liquid Petroleum Gas (LPG) is used instead of firewood for preparing mid-day meals; (b) that the school and students invest time in planting and maintaining kitchen / nutrition gardens (to ensure food supply) and trees on school premises; and (c) that instead of the current common practice of being burnt, solid waste is segregated whilst ensuring upcycling/recycle, reused for various school activities and storage and composting which will be reused in premises for green sinks developed under the program. The tool will inform the annual school development plans and budgets that the community uses to seek funds from the government. This will help ensure continuous availability of funds for these aspects. *The training module that will be used to train the community on using the standardized tool will also cover these aspects. This would raise community awareness on these issues*
DLI 4: Schools and CWSN resource centers provided with standardized package of essential facilities, furniture, electrical fixtures, and repairs (US$107.5 million)		The Program will enable schools to access large burners to use LPG cylinders and/or solar cookers to replace the firewood they currently use for preparing mid-day meals. This cost of this shift will be about 1.5 percent[44] of the funds committed under the DLI. The Program will also facilitate the provision of energy efficient fixtures (lights, fans and smart television) and an increase in the area of classroom walls with windows to reduce energy consumption from artificial lighting. This will help reduce energy consumption across schools. The incremental cost that the Program will bear to facilitate this would be close to 6 percent[45] of the funds committed under the DLI.
DLI 5: Improved teacher capacity to support early grade education and preparatory schooling (US$15 million)	Crosscutting Issues (Support for national, regional or local policy, through technical assistance or policy lending)	Learning competencies for Kindergarten to Grade 10[46] (including early grades) already cover mitigation (causes and impacts of climate change and activities that reduce, capture, or sequester GHG emissions) measures. Under both the DLIs (first focused on foundational learning and the second on Grades 3 to 10), the Program will support the transmission of knowledge on these aspects by supporting the development of teaching learning materials, and content (including inputs for curriculum/textbooks). It will provide training to teachers on how to leverage play/activity-based learning and variety of pedagogical practices to help students develop a better understanding of these aspects. On average, these topics account for about 2.5 percent of the overall learning competencies for each grade. It would be reasonable to assume that that the percentage of funds committed to these aspects would be proportionate.
DLI 6: Improved coverage under need based in-service training (US$ 20 million)		

[43] https://reliefweb.int/sites/reliefweb.int/files/resources/2018_Joint_Report_on_Multilateral_Development_Banks_Climate_Finance_en_en.pdf
[44] The cost per large burner is estimated at about US$ 50 per unit
[45] The cost of five-star energy efficiency rated electrical fixtures (fans, LED lights, and television) over regular fixtures (incandescent bulb, one star rated fans and television) is about US$ 200 per school
[46] *https://ncert.nic.in/dee/pdf/tilops101.pdf*

7. **GHG emission prevention from Program activities:** An ex-ante estimation of GHG prevented due to implementation of Program activities is presented below along with the key assumptions used for arriving at the estimates.

8. **Key assumptions:**

- Each of the 30,000 schools covered/supported under infrastructure and facilities upgradation work to be undertaken has on an average six rooms/classrooms each with a fan and two lights. Further each school is to be provided with a smart television.
- Assuming an eight-hour school schedule, each year, a fan with a five-star energy rating consumes 120-kWh per year of electricity compared to 180 kWh per year consumed by a lower cost fan without an energy rating. Similarly, a 37-inch LED television with a base star rating consumes 115-kWh per year compared to the 74-kWh consumed by a five-star rated television[47]. A 60-watt incandescent bulb consumes about 175-kWh per year, and in comparison, a 10-watt LED bulb consumes about 30-kWh per year.
- Weighted average emission factor for India based on the combination of renewable and non-renewable sources of energy used for electricity generation is 0.82 tCO2/MWh[48].
- On an average a school uses about 3,300 Kg of firewood per year (15 Kg per day) to prepare mid-day meals. If replaced by LPG, the school would use about 350 Kg of the fuel to meet the same energy requirement. Each Kg of firewood provides produces about 1.8 Kg of CO2. In comparison, a Kg of LPG produces 1.7 Kg of CO2.

9. **Estimation of GHG emissions prevented by the Program:** Based on the set of assumptions listed above, a rough and conservative computation of GHG emissions prevented by the Program (over a five-year period) is presented below.

Measure	Without Measures	With Measures	Difference
Provision of energy efficient fixtures	494,250 MWh (~ 400,000 tCO2)	173,100 MWh (~ 140,000 tCO2)	64,230 MWh (~ 260,000 tCO2)
Use of LPG instead of firewood for preparing mid-day meals	~890,000 tCO2	~90,000 tCO2	~800,000 tCO2
Total	13,090,000 tCO2	230,000 tCO2	10,060,000 tCO2

10. In addition, the school campus-based plantation of trees to be facilitated under the Program will support GHG removal by sinks to the tune of about 24,000 tCO2e. The calculation is based on increase tree cover of an average of 15m * 30m for at least 80% schools i.e. 1,602.432 Ha. Net anthropogenic has been assumed at 15 to 20 tCO2 per annum per Ha. It is expected that waste composting would lead to a net reduction of around 1,456 tCO2 per year. In addition, avoiding plastic by green protocol & reuse within campus will lead to a reduction in GHG emissions to the tune of about 10,900 tCO2e. This estimation assumes 54 TPA and packaging being recycled per year for alternate use (not sent to landfill; no electricity consumption for recycling plastic as it will be upcycled manually & reused).

[47] Bureau of Energy Efficiency, Ministry of Power, Government of India
[48] https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver14.pdf