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PROGRAM APPRAISAL DOCUMENT
ON A
PROPOSED CREDIT
IN THE AMOUNT OF US\$ 250 MILLION

TO THE
REPUBLIC OF INDIA
FOR AN

ENHANCING TEACHER EFFECTIVENESS IN BIHAR OPERATION

April 23, 2015

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CURRENCY EQUIVALENTS
(Exchange Rate Effective March 31, 2015)
US\$1 = INR 62.58

FISCAL YEAR
APRIL 1 – MARCH 31

ABBREVIATIONS AND ACRONYMS

AMC	Annual Maintenance Contract
BFR	Bihar Financial Rule
BHPC	Bihar State Hydroelectric Power Corporation
BITE	Block Institute of Teacher Education
BoD	Board of Directors
BRC	Block Resource Centre
BREDA	Bihar Renewable Energy Development Agency
BSEIDC	Bihar State Education Infrastructure Development Corporation
CAAA	Controller Aid Accounts & Audit
CPD	Continuous Professional Development
CPS	Country Partnership Strategy
CQS	Consultants Qualification Selection
CRC	Cluster Resource Centre
CTE	College of Teacher Education
CTMIS	Computerized Treasury Management & Information Systems
CVO	Chief Vigilance Officers
D.El.Ed.	Diploma in Elementary Education
DDO	Drawing & Disbursement Officer
DFID	The Department for International Development
DIET	District Institute of Education & Training
DLI	Disbursement Linked Indicator
DOE	Department of Expenditure
DR&T	Directorate of Research and Training
DRT	Directorate of Research and Training
ERP	Enterprise Resource Planning
ESSA	Environmental and Social Systems Assessment
FBS	Fixed Budget Selection
FRBM	Bihar Fiscal Responsibility & Budget Management Act
FY	Financial Year
GDP	Gross Domestic Product
GM	General Manager
GOB	Government of Bihar

IC	Individual Consultants
ICDS	Integrated Child Development Services
ICT	Information and Communications Technology
IGNOU	Indira Gandhi National Open University
INR	Indian Rupees
IPF	Investment Project Financing
ISDS	Integrated Safeguards Data Sheet
IT	Information Technology
JRM	Joint Review Missions
LCS	Least-Cost Selection
MD	Managing Director
MDB	Multilateral Development Bank
MDG	Millennium Development Goal
MHRD	Ministry of Human Resource Development
MIS	Management Information System
NAS	National Achievement Survey
NCTE	National Council of Teacher Education
ODL	Open and Distance Learning
PMA	Project Management Agency
PMU	Program Management Unit
PRI	Panchayati Raj Institution
PTEC	Primary Teacher Education Centres
PTR	Pupil Teacher Ratio
PV/PVC	Photovoltaic Cells
PWD	Public Works Department
QBS	Quality Based Selection
QCBS	Quality and Cost-Based Selection
RCD	Road Construction Department
RET	Renewable Energy Technology
RtE Act	Right to Education Act
SC	Scheduled Castes
SCERT	State Council for Educational Research and Training
SCR	Student Classroom Ratio
SEEL	School and Elementary Education
SIL	Specific Investment Loan
SMC	School Management Committee
SMF	Social Management Framework
SOR	Schedule of Rates
SPV	Solar Photovoltaic
SSA	Sarva Shiksha Abhiyan
ST	Scheduled Tribes
TA	Technical Assistance
TE	Teacher Education
TEIDI	Teacher Education Institution Development Index
TEMIS	Teacher Management Information System

TET Teacher Eligibility Test
TOR Terms of Reference
UNDB United Nations Development Business
UNICEF The United Nations Children's Fund

Regional Vice President	Annette Dixon
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Task Team Leader:	Shabnam Sinha

REPUBLIC OF INDIA
Enhancing Teacher Effectiveness in Bihar Operation

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PAD DATA SHEET

REPUBLIC OF INDIA

Enhancing Teacher Effectiveness in Bihar Operation

PROGRAM APPRAISAL DOCUMENT

South Asia Region
GEDDR

Basic Information					
Date:	April 29, 2015		Sectors:	General Education (100%)	
Country Director:	Onno Ruhl		Themes:	Human Development (100%)	
Environmental Category (IPF/ TA Component): B					
Acting Practice Manager/ Senior Global Practice Director:	Halil Dundar / Claudia Maria Costin				
Program ID:	P132665				
Team Leader:	Shabnam Sinha				
Program Implementation Period:	Start Date:	01/16/2015	End Date:	06/30/2020	
Expected Financing Effectiveness Date:		07/01/2015			
Expected Financing Closing Date:		12/31/2020			
Program Financing Data					
<input type="checkbox"/>	Loan	<input type="checkbox"/>	Grant	<input type="checkbox"/>	Other
<input checked="" type="checkbox"/>	Credit				
For Loans/Credits/Others (US\$M):					
Total Program Cost :	US\$ 357 million		Total Bank Financing :	US\$ 250 million (including US\$ 25 million Technical Assistance Component)	
Total Co-financing :			Financing Gap :	0	

Financing Source	Amount US\$ Million
BORROWER	US\$ 107 million
IDA - PforR (Program) - IPF (Technical Assistance Project Component)	US\$ 250 million US\$ 225million US\$ 25 million
Total	US\$ 357 million

Borrower: Republic of India

Responsible Agency: Department of Education, Government of Bihar

Contact:	R.K. Mahajan	Title:	Principal Secretary
Telephone No.:	+91-612-2217016	Email:	secy-edn-bih@nic.in

Expected Disbursements (Bank FY / in US\$ Million) – PforR (Program)

Fiscal Year	2015	2016	2017	2018	2019	2020			
Annual	0	27	65	42	30	61			
Cumulative	0	27	92	134	164	225			

Expected Disbursements (Bank FY / in US\$ Million) – IPF (Technical Assistance Project Component)

Fiscal Year	2015	2016	2017	2018	2019	2020			
Annual	0	2	5	7	6	5			
Cumulative	0	2	7	14	20	25			

Operation Development Objective(s): The objective of the Operation is to improve the effectiveness of elementary school teachers in Bihar.

Compliance

Policy

Does the program depart from the CAS in content or in other significant respects?	Yes	[]	No	[X]
Does the program require any waivers of Bank policies applicable to Program-for-Results operations?	Yes	[]	No	[X]
Have these been approved by Bank management?	Yes	[]	No	[]
Is approval for any policy waiver sought from the Board?	Yes	[]	No	[X]

Does the program meet the Regional criteria for readiness for implementation?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Does the IPF Component trigger any Safeguard Policy?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
If so, which one (s)? -Environment Assessment OPBP 4.01 -Indigenous Peoples OP/BP 4.10				
Overall Risk Rating: Substantial				
Legal Covenants				
Conditions				
Name:		Type:		
Additional Events		Suspension		
Description: GoB has either: (i) amended, suspended, abrogated, repealed or waived the BSEIDCs' Legal Framework so as to affect materially and/or adversely the ability of BSEIDC to implement the Operation; or (ii) taken any action or adopted any policy which has resulted in: (A) a material and substantial impossibility for GoB to carry out the Operation; or (B) a reversal of the program (PforR) component activities, or the activities implemented pursuant to the Program Action Plan.				
Legal Covenants				
Name:	Recurrent	Due Date	Frequency	
Management Unit	Yes	N/A	N/A	
Description of Covenant GoB to maintain a Management Unit within DoE's DR&T with adequate staff and resources acceptable to the Association, for the carrying out, and providing guidance to other stakeholders agencies on the implementation of, the Operation's activities,.				
Name:	Recurrent	Due Date	Frequency	
BSEIDC Legal Framework	Yes	N/A	N/A	
Description of Covenant GoB to maintain throughout the Operation's implementation period, the legal framework of BSEIDC, so that it serves as DoE's special purpose vehicle for the carrying out of the Operation, including procurement and financial management activities, implementation of/compliance with the Program Action Plan, verification/certification of fulfilment of DLIs/DLRs, and preparation of FM and Project reports.				
Name:	Recurrent	Due Date	Frequency	
Program Action Plan	Yes	As per agreed deadline in the Program Action Plan	N/A	

Description of Covenant				
GoB to implement the Program Action Plan agreed with the Association, in a manner and substance satisfactory to the Association.				
Name:	Recurrent	Due Date	Frequency	
Tribal Development Framework	Yes	N/A	N/A	
Description of Covenant				
GoB to implement the activities under the TA component of the Operation in accordance with the Tribal Development Framework.				
Name:	Recurrent	Due Date	Frequency	
Safeguard Policies imbedded in ToRs for TA Component	Yes	N/A	N/A	
Description of Covenant				
GoB to comply with the Association's safeguard policies in all ToRs for technical assistance services under the Operation's Technical Assistance (IPF) component.				
Name:	Recurrent	Due Date	Frequency	
Mid-Term Review	No	March 31/ April 15, 2018	N/A	
Description of Covenant				
GoB to prepare a mid-term review report integrating the results of monitoring and evaluation activities performed up to the date of such report (including progress achieved in the carrying out of the Program Action Plan); and to review such report with the Association and take all measure required to ensure the efficient completion of the Operation as recommended by the Association.				
Team Composition				
Bank Staff				
Name	Title	Specialization	Unit	UPI
Shabnam Sinha	Senior Education Specialist	Task Team Leader	GEDDR	368641
Toby Linden	Lead Education Specialist	Education Specialist	GEDDR	150784
Muna Salih Meko	Senior Education Specialist	Education Specialist	GEDDR	319589
Arun Kumar Kolsur	Senior Procurement Specialist	Procurement Specialist	GGODR	328788
Mohan Gopalakrishnan	Senior Financial Management Specialist	Financial Management Specialist	GGODR	246401

Neha Dhoundiyal	Financial Management Specialist	Financial Management Specialist	GGODR	346388
Neha Pravash Kumar Mishra	Senior Environmental Specialist	Environment Specialist	GENDR	272769
Susrutha Pradeep Goonesekera	ETC	Social Development Specialist	GURDR	329127
Martin Serrano	Senior Counsel	Counsel	LEGES	
Junxue Chu	Senior Finance Officer	Finance and Disbursement	CTRLN	
Tanusree Talukdar	Program Assistant	Administrative Support	SACIN	305729
Non Bank Staff				
Sangeeta Dey	Consultant	Education Specialist	GEDDR	384741
Kanv Garg	Consultant	Energy Specialist	GEEDR	418967
Neil Butcher	Consultant	ICT Specialist	GEDDR	194255
Mohan Das	Consultant	Curriculum and Content Development Specialist	GEDDR	212299
Fabian Toegel	Consultant	Education	GEDDR	468889

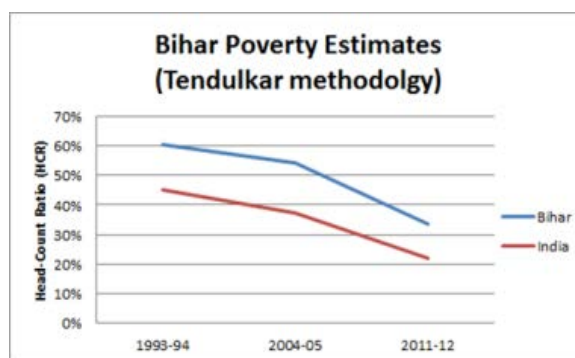
I. STRATEGIC CONTEXT

A. Country and State Context

1. India is uniquely placed to help reduce global poverty and boost shared prosperity. India's per capita income of US\$1,410 (2011) means that it is a low middle-income country, but its development challenges are deep and complex despite significant achievements made over the past decades. Between 2005 and 2010, India's share of global GDP increased from 1.8 percent to 2.7 percent, and 53 million people were lifted out of poverty. Progress on human development has been remarkable; life expectancy more than doubled from 31 years in 1947 to 65 years in 2012 and adult literacy more than quadrupled, from 18 percent in 1951 to 74 percent in 2011. India has already achieved the first Millennium Development Goal (MDG 1) by halving the proportion of people living on less than US\$1.25 a day: rural poverty has decreased by 14 percentage points. However, despite positive developments, challenges persist. About 50 percent of India's population lives in low-income and special category states¹ where poverty rates are close to 40 percent. Over 200 million of India's poor people (over 60 percent) reside in low-income states. In the state of Bihar, over half its population of 100.3 million are poor. The state has large populations in rural areas: only 11.3 percent of Bihar's population lives in urban areas.

2. Bihar's economic growth averaged 13 percent between 2005-06 and 2009-10; higher than the national growth rate of 8.2 percent. Since 2010, Bihar has witnessed improved governance climate and has put services on the ground, increased serviceable roads to 24,000 kilometers (km) (from 385 km in 2005) and improved functioning of the public healthcare and schooling systems. Bihar is mostly rural with 16 percent of the state's GDP coming from agriculture. Bihar's 2009-10 rural poverty rates of 55.3 percent compared poorly with India's 33.8 percent. Although 70 percent of the rural population earns its livelihood from agriculture and related work, nearly half of all households are landless or near landless. Bihar faces acute energy shortages. The annual energy deficit from FY08 to FY13 was in the range of 13 percent and 21 percent. On human development indicators, Bihar lags significantly. The state remains crucial to India's overall progress on making growth more inclusive. Only 61.8 percent of Bihar population is literate (male rate is 71.2 percent and female 51.5 percent). As per the 2014 figures released by the Integrated Child Development Services (ICDS), 50 percent of Bihar's children are still malnourished. Bihar's maternal mortality ratio remains low, with 261 women per 100,000 live births dying.

Figure 1: Bihar Poverty Estimates
Source: Poverty headcount ratio: Tendulkar Methodology



¹ Low-income states are defined as those below US\$494 GSDP per capita and Special Category States are mostly northern mountainous states, sparsely populated, and those with high transport costs leading to high delivery costs of public services. World Bank Group Country Partnership Strategy for India, :2013-17

B. Sectoral and Institutional Context

3. In 2009, the Government of India (GOI) set an ambitious goal to improve access to and quality of education through the Right of Children to Free and Compulsory Education (RTE) Act. The RTE Act prescribed strict standards and norms that all schools were required to meet. Standards include: (i) free elementary education to all children aged six to fourteen years; (ii) provision of appropriate infrastructure and learning material for all schools; and (iii) all states are required to ensure that schools maintain a pupil-teacher ratio (PTR) of 30:1 at primary level and 35:1 at upper primary level by 2015, with all teachers having minimum professional qualifications.

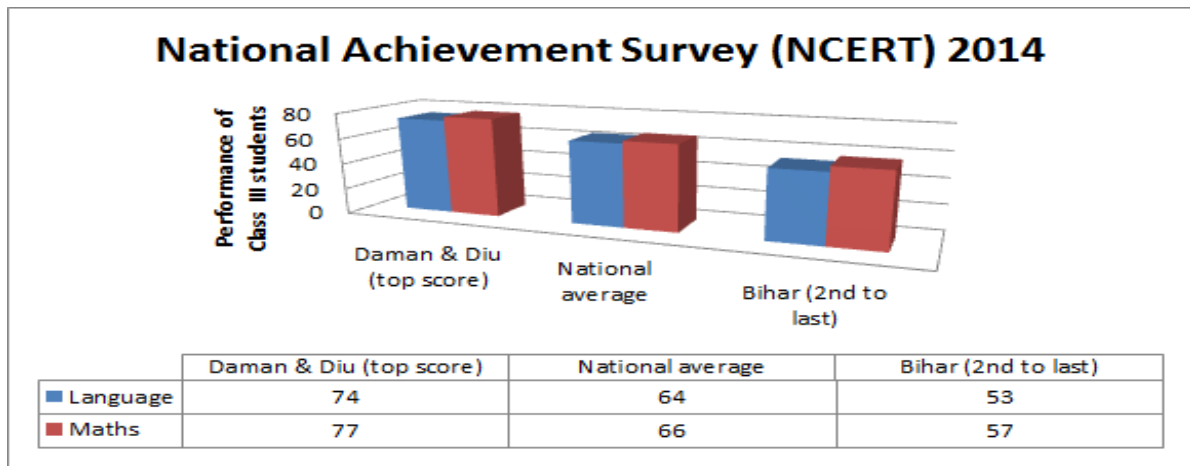
4. These reforms saw success in improving education inputs in Bihar. Previously Bihar was characterized by a severe lack of pedagogical resources and infrastructure in primary education, as evidenced by low attendance rates (77.8 percent), substantial numbers of out of school children (181,086), and a very high pupil teacher ratio (PTR) (76:1), one of the highest in India. Under the Sarva Shiksha Abhiyan (SSA) program, the main vehicle for RTE's implementation, Bihar has seen an increase in access rates, a significant increase in comprehensive classroom infrastructure, and reduced PTRs (Table 1).

Table 1: Comparison of Statistics in Elementary (Class 1 – 8) Government Schools in Bihar: 2005-06 and 2013-14

Indicator	2005-06	2013-14
Total Enrolment	13,397,041	21,238,957
Pupil Teacher ratio (PTR)	76	51
% Single Teacher Schools	8.3	7.0
Gender parity Index (Primary)	0.80	0.99
Student Classroom Ratio	92	55
% Scheduled Castes (SC) to total enrolment	16.2 (Primary), 11.6 (Upper Primary)	19.88 (Primary) and 19.41 (upper primary)
No. of Elementary Schools	53,271	69,963

5. Bihar is still grappling with significant challenges in improving the quality of education. The 2014 National Achievement Survey shows that Bihar stands second from the bottom in the list of states in students' learning achievement both in Languages and Mathematics (Figure 1). Independent surveys like the Annual Status of Education Report (ASER)² undertaken by the NGO *Pratham* show a deeper learning deficit. ASER (2014) reports that the proportion of children who master expected competencies at primary level remains very low, as evident from the 2013 ASER survey. The survey found that 38 percent of children in grades 3 to 5 in government schools could not read a class 1 text and only 30 percent could do subtraction.

Figure 2: Students’ Learning Achievement both in Language and Mathematics



6. International evidence suggests that once children enter school, the single most important determinant of learning is teacher performance, and its benefits are expected to translate into national economic gains. Estimating the economic value of higher teacher quality in the United States, Hanushek (2011) found that a teacher who is 1 standard deviation above mean teacher effectiveness would generate annual marginal gains of US\$400,000 in terms of the present value of future student earnings—and potentially more when other conditions change. He also suggests that replacing the bottom 5–8 percent of teachers with “average-quality” teachers could move the United States to near the top in international rankings in mathematics and science achievement.³ While no such calculations exist for India, a recent regional study on education quality in South Asia reported that the economic value of better teacher quality is bound to be large because the role of teachers is magnified when children are first-generation school goers and home inputs are limited.⁴

7. With a doubling in the number of teachers in elementary schools from 2006 to 2013, Bihar has improved the classroom environment by reducing the pupil teacher ratio (PTR). For reduced PTRs to translate into improved learning outcomes, it is critical that robust systems for developing high quality teachers are in place. However, the recent expansion in the number of teachers, compounded by years of underinvestment since the 1990s in teacher programs, has led to a teaching workforce characterized by low academic content, ineffectual teaching practices, high levels of absenteeism, and outdated and weak monitoring and governance arrangements. Below is a summary of key issues affecting teacher effectiveness in Bihar.

8. *Accountability:* There is lack of adequate accountability and incentive mechanisms in the state. Entry level teacher pay and working conditions are not very appealing for talented candidates and there are policy gaps in terms of teacher motivation. Bihar has slowly begun strengthening capacity at the district, block and school levels. According to a recent study, Bihar experienced a 10 percent reduction in absenteeism rates between 2003 and 2010 as a result of improved inspection and monitoring.⁵ However, low rates of teacher time-on-task are still major problems in education service delivery, and teacher absenteeism is as high as 20 percent. Teachers

³ Hanushek, EA. 2011. The economic value of higher teacher quality. *Economics of Education Review* 30 (2011) 466–479.

⁴ Dunder, H., T. Beteille, M. Riboud, and A. Deoolikar. 2014. *Students Learning in South Asia: Challenges, Opportunities, and Policy Priorities*. Directions in Development. Washington DC: World Bank.

⁵ Muralidharan et al 2014. "The Fiscal Cost of Weak Governance: Evidence from Teacher Absence in India". Working Paper

and school administrators are not incentivized to improve delivery. Community organizations (School Management Committees) that are the mandated social audit bodies in Bihar are insufficiently informed and empowered to monitor teacher performance or attendance. Professional development of teachers is not systematic and there are no clear intrinsic or extrinsic rewards linked to good performance. Lack of teacher performance benchmarks makes it virtually impossible for the state teacher education system to be able to track the impact of teacher development and management efforts on teacher performance and link teacher evaluations to career development.

9. *Institutional oversight:* Institutional linkages from the state to district and sub-district levels for planning, monitoring and management of teachers are deficient. Strong administrative and governance mechanisms are required for effective management of teachers. Teacher management and monitoring systems that can link data on teachers with their training and professional development needs are lacking. Policy makers and teacher educators therefore are unable to use information to track and plan their teacher development/training strategy. The Directorate of Research and Training, the nodal agency for teacher education, is understaffed with capacity constraints.

10. *Sustainable innovative cost-effective system to increase the supply of quality teachers:* The number of certified teachers in Bihar is still lower than what is required for an effective learning environment. Bihar has very few training institutions. The state's combined current training capacity of all such institutions is less than 5,000 newly trained teachers per year. Bihar needs to train at least ten times more teachers annually and by 2020, the number of teachers is expected to exceed 600,000. Through a very intensive process, practicing teachers with adequate qualifications have been selected to become teacher educators and assigned to teacher training institutions. However, meeting the training needs of an increasing teacher workforce cannot be achieved through traditional modes of teacher training. While the increased use of Information and Communication Technology (ICT) is starting to address constraints to teacher training in a more cost efficient manner, a system of quality assurance for the open and distance learning (ODL) programs is also required in order for these programs to expand without sacrificing quality.

11. *Support mechanisms to improve classroom effectiveness/pedagogy:* To devise an immediate solution to the critical issue of teacher shortages in the education sector, Bihar implemented an emergency hiring and training program. The huge influx of teachers during this time period happened through teacher appointments made by the local self-government at the village level. Most of these teachers were unqualified and are in service now. The teachers hired were *nijojit* teachers who are contract teachers with a consolidated salary. Studies in Uttar Pradesh, Andhra Pradesh, Madhya Pradesh and in Kenya have found that locally hired teachers may be more effective in improving learning outcomes than regular teachers who are much more costly.⁶ However, due to their flattened salary trajectory and education background, these teachers, plus others already in the system, require continuous support to improve their effectiveness in the classroom. Many teachers lack the capacity to teach the subjects required owing to the lowering

⁶ Atheron, Paul and Geeta Kingdom. 2010. The relative effectiveness and costs of contract and regular teachers in India. Institute of Education, University of London.

Goyal, Sangeeta and Priyanka Pandey. 2011. Contract teacher in India. Education Economics.

Duflo, Esther, Pascaline Dupas, and Michael Kremer. 2011. Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a randomized Evaluation in Kenya." American Economic Review no. 101

Muralidharan 2013 2013. Priorities for Education Policies in India's 12th Five Year plan 2012-2017. NCAER. Brookings India Policy Forum 2013.

of qualification thresholds for teachers. This leaves a large portion of the teacher work force with inadequate knowledge content and ineffective teaching practices.

12. *School Leadership:* In order to guide the process of enlisting and guiding the talents and energies of teachers, pupils, and parents toward achieving common educational aims, school leadership programs can play a vital role. A school principal has many tasks, including finances, managing teachers, and engaging communities/parents in the education system.⁷ Heads of schools in Bihar lack the skills necessary to manage schools better, interact with the parents/community for the necessary stakeholder consultations and help teachers improve student learning. School leadership programs have been undertaken to effectively link head teachers to the school development and teacher empowerment processes.

13. *Government Response:* The Department of Education (DOE) of the Government of Bihar (GOB) launched Mission *Manav Vikas*, which includes (a) enabling a dramatic improvement in learning outcomes for primary learners, (b) assisting teacher educators to make a real difference to the classroom process, (c) effectively supporting teachers in schools, and (d) strengthening teacher training institutions. GOB has taken steps to make the State Council of Educational Research and Training (SCERT), District Institute of Education and Training (DIETs,) Primary Teacher Education Centres (PTECs) Block Resource Centres (BRCs), and Cluster Resource Centres (CRCs) more effective through institutional strengthening and deepened capacity building efforts. Bihar has obtained permission from the statutory body for teacher education (TE), the National Council on Teacher Education (NCTE), to start a Diploma in Elementary Education (D.El.Ed.). Teachers with adequate qualifications have been selected through a rigorous process to become teacher educators. The State is committed to preparing 10,000 teacher educators and has formally approved a teacher educators' cadre. The State aims to develop at least 50 outstanding teachers training campuses with the best possible teacher educators, as well as developing infrastructure and resources teams at BRCs and CRCs to meet teacher development needs. Strong monitoring systems for assessing the progress of children, teachers, and schools will also be put in place. The state effort in strengthening its procurement arm, the Bihar State Educational Infrastructure Development Corporation (BSEIDC), has helped in consolidating all procurement for educational institutions and schools under one umbrella.

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

14. The proposed Bihar Teacher Effectiveness Operation is aligned with the World Bank Group India Country Partnership Strategy (CPS, Report No. 76176 dated April 11, 2013) for 2013-17, and its overarching goals of achieving rapid economic growth, accelerated poverty reduction, and increasing shared prosperity. The Operation will contribute to the CPS engagement area of "Inclusion" and to the CPS outcome of "improved access and quality of education." It focuses on teacher training, performance, and accountability— primary determinants of education quality. Using new ICT technologies, the Operation will help pilot innovative approaches to teacher

⁷ World Bank (2014). *Great Teachers: How to raise Student Learning in Latin America and the Caribbean*. Washington, DC. Barbara Bruns and Javier Luque.

education and professional development. The Operation will support the CPS investment principle of increased engagement in India's seven low-income states of which Bihar is one.

15. The Operation is part of the Department of Education (DOE) of the GOB's newly launched Mission *Manav Vikas* program which includes a wide-ranging set of reforms with the goal of providing quality education, especially to all elementary level children. Among other objectives, the Mission *Manav Vikas* is intended to enable a dramatic improvement in learning outcomes for elementary learners. The Operation will help the system of teacher education equip teachers with the skill and knowledge they need to be more effective in the classroom. Rather than just focusing on providing teacher education and training, the Operation innovatively supports better governance and teacher accountability as key factors impacting overall teacher performance. The new Operation is a unique opportunity to enhance teacher effectiveness by creating robust system-wide improvements focused on instructional excellence.

II. OPERATION DESCRIPTION

A. Structure of Operation

16. The proposed Operation comprises of a US\$225 million Program using the Program for Results (PforR) instrument (referred to as the "Program") and a US\$ 25 million Technical Assistance (TA) Project using the Investment Project Financing (IPF) instrument (also referred to as the "Project"). The Program consists of government expenditures under the Enhancing Teacher Effectiveness in Bihar Program. The TA Project consists exclusively of firm and individual consulting services under two main categories: (i) program implementation; and (ii) policy development and impact evaluation. Implementation under the Program will be managed in accordance with OP/BP 9.00 (Program for Results Financing) and the implementation under the Project (TA) will be managed in accordance with OP/BP 10.00 (see Annex 9).

B. Rationale for Use of Instruments

17. GOB has a well-defined, clearly developed Government program, which will be supported through the use of the government's system and procedures. A hybrid operation, involving a large PforR instrument (US\$225 million) plus a small IPF instrument (US\$25 million) to support technical assistance, has been chosen for several reasons:

18. ***Rationale for use of a Program for Results.*** The PforR is considered an appropriate financial lending instrument to support Bihar's Enhancing Teacher Effectiveness Program and to achieve the objectives of the Operation for several reasons. First and foremost, GOB has developed a well-defined, comprehensive program for improving teacher quality. This program is effectively aligned with research evidence. International research shows that effective teachers are able to make a significant difference in the learning outcomes of the children they teach. The challenge is that traditional measures of teacher quality – such as the amount of education they have – are not well-correlated with teacher effectiveness. Second, in the context, it is important that there is a focus on outputs and outcomes (for example, teacher behavior and performance) rather than inputs. This is true for the whole of GOB's education reform program, of which this Program supports a slice. Developing a culture of efficiency in service delivery through rewarding achievement of measurable results is especially important in Bihar. The funding from the World Bank will be driven by the achievement of outcomes; and this approach will be institutionalized by the

implementing agencies in other areas of their work (such as setting priorities for funding of teacher training institutions). All these considerations argue in favor of a PforR instrument.

19. ***Rationale for use of a Technical Assistance Component following IPF policies.*** This outcome-orientation will require considerable capacity building of the agencies implementing the Program. This is especially the case in technical areas related to improving the quality and impact of teacher behavior and needs to be built around a strong evidence base of what is actually happening in classrooms in Bihar. There is limited in-country capacity to carry out this time bound outcome oriented technical work, and to support the development of such capacities in Bihar. These inputs will also be time-sensitive, at different phases of the Program. There is limited capacity and experience in Bihar for using their government systems to secure high quality technical assistance. For these reasons, GOB has requested a small TA component following IPF policies so that these needed services can be secured in an efficient and relevant manner.

C. Operation Scope

20. The proposed Operation aims to *improve the effectiveness of elementary school teachers in Bihar* by supporting the state to develop robust teacher education architecture to produce teachers who are effective, qualified, accountable and responsive.

21. **Boundaries of the Program to be supported by the Operation:** The Mission *Manav Vikas* program aims at improving the quality of elementary education in Bihar. The proposed PforR supports a portion of the Mission *Manav Vikas* and aims at improving teacher effectiveness as reflected in Table 2 below.

Table 2: Program Boundaries

Item	GOB program	Program supported by PforR
<i>Title</i>	Mission <i>Manav Vikas</i>	Enhancing Teacher Effectiveness in Bihar Operation
<i>Objective</i>	<i>Education sector reform with special reference to improving the quality of school education (elementary and secondary) in government schools in Bihar</i>	<i>Improve the effectiveness of elementary school teachers in Bihar</i>
<i>Interventions</i>	<ul style="list-style-type: none"> a. To make use of improved school infrastructure to support learning b. Improving learning outcomes at the elementary level c. Enabling all language and mathematics learning in early primary grades d. Empowering teacher educators to improve classroom process e. Supporting practicing teachers in effective teaching f. Making teacher training institutions functional and effective g. Assessing elementary schools and teachers' performance systematically h. Providing access to secondary and senior secondary schools especially to girls i. Providing uniforms and monthly scholarships to girls and boys from the SC, ST, EBC and OBC communities j. Hiring secondary school teachers to meet pupil teacher norm k. Improving secondary school education at the systemic level 	<ul style="list-style-type: none"> a. Ensuring requisite infrastructure of TE Institutions b. Capacity enhancement of TE institutions for effective TE delivery c. Ensuring certification of unqualified teachers and continuous professional development (CPD) of teachers in service d. Ensuring effective teacher management and performance e. Improving teacher accountability at school level Strengthening fiduciary and governance frameworks <p><i>The Operation will not support activities funded under the centrally sponsored scheme of the Sarva Shiksha Abhiyan and Rashtriya Madhyamik Shiksha Abhiyan.</i></p>
<i>Geographical Scope</i>	The State of Bihar	The State of Bihar

22. The GOB Teacher Education Program includes the following five results areas:

23. **Results Area 1: Developing high quality teacher education institutions for improved program delivery:** The immediate priority of the state is to strengthen institutional capacity to deliver both pre-service teacher education and continuing professional development, with an explicit focus on improving pedagogy. Academic/educational support structures like the State Council of Educational Research and Training (SCERT) at the state level, District Institutes of Education and Training (DIETs) and Primary Teacher Education Centers (PTECs) at the district level and Block Resource Centers (BRCs) and Cluster Resource Centers (CRCs) at the sub-district level will be strengthened to function as local learning centers. The Program will harness the potential of ICT in teacher education, including its use in teacher resource management and

administration and the dissemination of a digital pool of learning resources. It will cover teacher capacity building, ongoing teacher support, establishment of a common platform or forum for Teacher Groups, and the deployment of tools for evaluation and assessment, lesson plans, and teaching. The SCERT, DIETs, and PTECs will coordinate and manage the activities of the 10,000 teacher educators expected to be operating at different levels across the state. BRCs and CRCs, the local learning centers, offer a full range of teacher education activities, including local group discussions, tutorials, remote teaching sessions and other contact sessions for collaboration between teachers and peer support.

24. Results Area 2: Certification of unqualified elementary school teachers and their continuous professional development: This results area includes two sub-areas:

25. Pre-service teacher education: The GOB has embarked on a large scale certification program (Diploma in Elementary Education- D. El. Ed.)⁸ that will be delivered through open and distance learning (ODL) to certify approximately 65,000 newly recruited teachers who are unqualified. The design of the curriculum for the D.El.Ed (ODL) is coordinated by the SCERT. This design focuses on implementation of an ICT-supported distance learning program based on the Bihar Curriculum Framework. The Contact sessions will take place in refurbished study centers (DIETs, PTECs, BRCs, and CRCs), that will be equipped with ICT facilities. Two key activities of the Government program are: (a) the establishment of high quality learning resources; and (b) the implementation of a robust, pre-emptive support strategy geared towards maximizing improved classroom practice.

26. Considering acute energy shortages in Bihar, the program has an organic convergence with the energy sector. The annual energy deficit in Bihar during the six-year period from FY08 to FY13 has been in the range of 13 percent and 21 percent, with 83 percent of households in the state without electricity. To address the possibility that this may adversely impact implementation of the GOB teacher education program, the Program will tap into the significant renewable energy sources available in Bihar through close multi-sectoral coordination with the energy sector. The district level institutions will be provided with solar panels for alternative energy sources to supplement for electricity shortages.

27. Continuous Professional Development (CPD) and Leadership Training: The state has 533 BRCs and more than 5,500 CRCs to provide on-site support for enhanced academic leadership and school management. The Program will support teachers and BRC and selected CRC coordinators with opportunities for upgrading knowledge, research opportunities and subject specific resources. The state encourages opportunities to offer teachers and teacher educators internship opportunities with other states. This has been designed to include school based assessments to judge the quality of teaching and learning through classroom observation and lesson planning. The overarching goal of the state in using ICT for teaching and learning is to align pre-service teacher education and CPD in Bihar with an agreed set of teaching standards and an agreed performance management system.

⁸Detailed information on the D.El.Ed. ODL program is available at <http://oasis.mkcl.org/SCERTBihar/StaticPages/HomePage.aspx>

28. **Results Area 3: Developing an effective teacher management system with a robust monitoring and evaluation mechanism:** One of the key focuses of the Government program is to develop an effective teacher management system with a rigorous monitoring and evaluation mechanism. The mechanism will have the following: (a) school report cards; (b) measurement of institutional effectiveness; and (c) and monitoring teacher performance.

29. *School Report Cards for monitoring school performance:* There is an existing structure set up by the state administration for monitoring the implementation of education interventions from state to school level where functionaries are responsible for periodic visits to schools using monitoring checklists and for data collection. The state government is in the process of developing school report cards to be posted in schools to monitor the functioning of schools and teacher performance.

30. *Teacher Education Management Information System (TEMIS):* In order to strengthen this monitoring mechanism, a TEMIS for enhanced teacher management and administration has been developed through technical assistance from the World Bank. TEMIS contains data on each teacher's personal history, educational and professional qualifications, current school posting, time of joining service, training status and expected retirement dates. The database includes records of all the 320,000 elementary teachers in the state and will later be expanded to include all teachers as they are recruited. The state is in the process of converting the TEMIS into a master data record to eventually serve as a teacher-focused human resource management information system (HRMIS) platform.

31. *Measuring institutional effectiveness through the Teacher Education Institutional Development Index (TEIDI):* The state has developed a TEIDI framework with technical assistance from the World Bank as a tool to assess the readiness of teacher education institutions to deliver quality teacher education programs and monitor accountability. The TEIDI will have a quantified and weighted checklist of indicators to measure institutional performance. The TEIDI aims to inform planning for effective decision-making at the state and institutional levels. It is expected to be operational by the end of the calendar year.

32. *Monitoring teacher performance through teacher performance indicators:* A lack of information on teachers and teacher education institutions limits decision makers' ability to plan and project future school needs. Efforts to improve teacher management are also constrained by a lack of clear standards for benchmarking teacher performance. The Program will support development of a set of teacher standards and competencies to establish base-, mid- and end-line databases for teacher performance. Indicators will measure teacher performance in three key domains: (i) subject knowledge, (ii) teacher practices, (iii) and time-on-task. These will be used to inform pre- service and in-service professional development programs.

33. **Results Area 4: Improving accountability mechanisms at school level.** Community participation and oversight through School Management Committees (SMCs) are critical for improving school quality. SMCs comprise parents, members of the community, elected representatives of local bodies and school staff. They are mandated with ensuring the regularity of parent teacher meetings, monitoring student and teacher attendance, overseeing the use of school grants and completing minor civil works. GOB will support training and capacity building of SMCs to help them move beyond mere civil works monitoring to social audit and monitoring of teacher presence and, eventually leading to improved school performance through more effective school management. SMCs are also gradually being trained and empowered to monitor academic

and quality aspects of education. Third party surveys will be conducted to better understand the functioning of SMCs. Survey findings will be used to strengthen monitoring mechanisms at the school level.

34. **Results Area 5: Improved financial and governance mechanisms.** The Program includes efforts to enhance the accountability and governance frameworks of state implementing agencies, such as the Directorate of Research and Training, SCERT and BSEIDC. Given the BSEIDC's large mandate for construction and longer term maintenance of infrastructure assets in the education sector, the Program will support the strengthening of its operational, corporate and fiduciary systems. Since BSEIDC is a corporate entity in need of improved capacity to fulfill its mandate, the state will support its adoption of corporate governance mechanisms for more robust and transparent functioning overall.

35. **The proposed World Bank (IDA) financed Program:** The proposed Program will support all results areas of Bihar's teacher reform program, except those elements which the state can access under the centrally-sponsored *Sarva Shiksha Abhiyan* and *Rashtriya Madhyamik Abhiyan* schemes. The World Bank-financed Program will be implemented over five years from FY 2015-2020. The Program is expected to provide financial support as well as the transfer of knowledge, best practices and innovative solutions to achieve targeted outcomes and improve the quality of teacher education in Bihar.

D. Technical Assistance Project Component

36. The TA Component will finance activities for complementing the Program activities and supporting the achievement of its objectives. It will follow the World Bank procedures in accordance with OP/BP 10.00. It will finance a specific set of TA activities. The objective of this support will be to strengthen the capacities of BSEIDC, the Directorate of Training and Research and SCERT for improved program implementation, policy development and monitoring and evaluation. Capacity building and technical assistance activities will be financed under three main categories: (i) program implementation support through creation of a PMU; (ii) policy development, capacity building and impact evaluation activities; and (iii) hiring individuals/firms for third party verification of the DLIs. (*Details in Annex 9*)

E. Costs, Financing and Beneficiaries

37. **Costs and financing:** The estimated funding envelope for the Operation is US\$ 357 million (Table 3 below). This includes a commitment from GoB of US\$ 107 million (30% of the total cost) and the proposed World Bank support of US\$ 250 million. All funding, regardless of its source, will flow through a distinct budget line item for the Operation within the demand for grant (Budget) of the Education Department. There will be no distinction between GoB funding and Bank support at the level of implementation of the Operation.

Table 3: Costs and Financing

Expenditure Items	Amount (US\$ million)	% of Total
Estimated Program Expenditures		
Institutional strengthening (repairs and renovation of SCERT, DIETs, PTECs and BRCs)	275	83
ICT infrastructure	17	5
Education Course preparation (incl. ICT based modules) and implementation of professional development activities for teachers	8	3
Training & Capacity Building	33	10
Total Program Expenditure	333	100
Project Management and TA related activities	25	
Total Operation Expenditures	357	
IDA *	250	70
GoB	107	30
TOTAL sources	357	100

**This includes TA support of US\$ 25 million which will disburse as an IPF.*

38. The two financing instruments of the Operation (i.e., the PforR and the IPF for the TA Component) will be governed by one financing agreement. The World Bank will provide flexibility to the State through the Government of India to ask for reallocation of funds between the TA component and the PforR if the state experiences a need for this adjustment.

39. **Beneficiaries:** The primary beneficiaries of the Operation will be approximately 450,000 teachers in government elementary schools in Bihar who will benefit from a strengthened teacher education system, particularly the 65,000 new unqualified entrants who will be certified with the D.El Ed. Diploma through the ODL program. Among the current number of teachers in service, 41 percent are female teachers and out of the newly recruited teachers 50 percent are women in line with Bihar's policy to reserve 50 percent of all positions for women. Approximately 10,000 teacher educators who are already appointed or will be appointed as part of a wider GOB program will benefit directly. The Operation will also benefit elementary school students (approximately 21.2 million) who will gain access to improved classroom teaching and learning. Lastly, the Operation will support SMCs to better implement their tasks of improving the learning environment, teacher presence in schools, and overall school functioning.

F. Operation⁹ Development Objective (PDO)

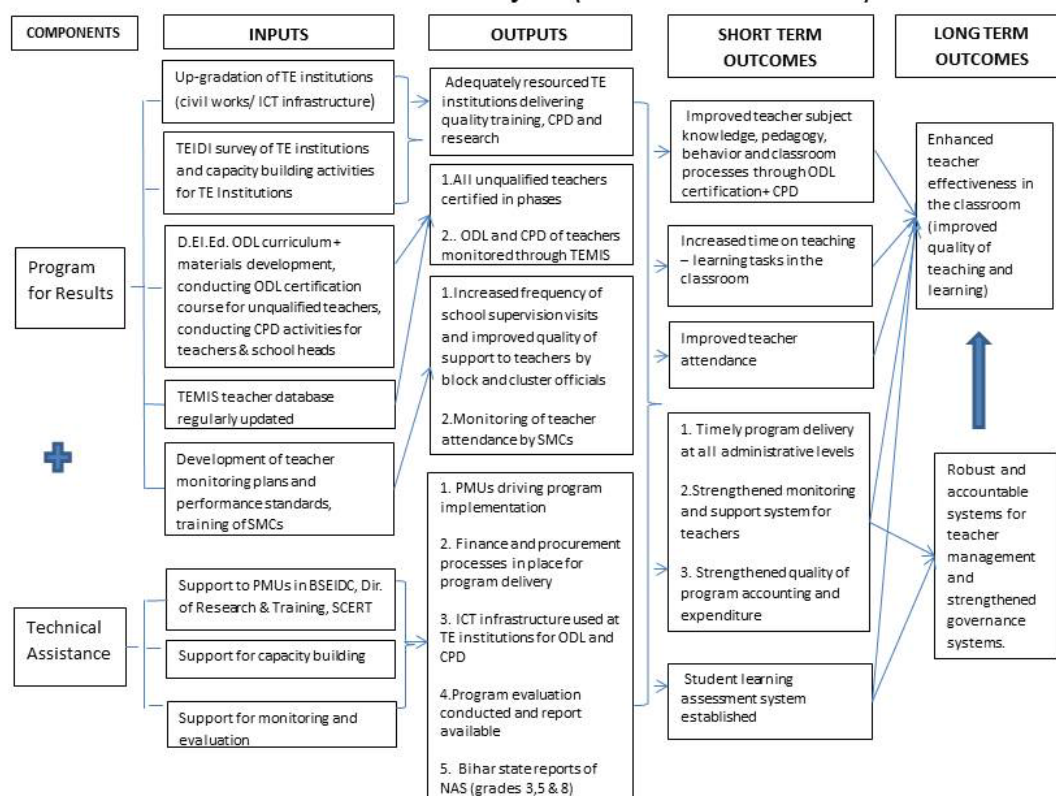
40. The development objective of the Operation is to improve the effectiveness of elementary school teachers in Bihar.

41. The Operation Results Chain below represents a plausible relationship describing how the inputs and activities will lead or contribute to the expected outcomes. The Operation outcomes are outlined and present the benefits that are expected as a result of its implementation. The Operation has some long term outcomes that are expected to be achieved by 2019-20, that is: (i)

⁹ Including "TA component"

enhanced teacher effectiveness; and (ii) accountable teacher management with strengthened governance systems. The Operation is expected to achieve some shorter term objectives of improving teacher performance and attendance; robust program management and strong fiduciary systems; and student learning assessment tracking made more regular. The outputs of the Program will be monitored annually through the Results Framework and are therefore synchronized with the DLI matrix. The TA component will contribute to the achievement of short and long term Operation outcomes through: (i) strengthening program implementation capacities in the three implementing agencies (DRT, BSEIDC and SCERT); and (ii) supporting monitoring and evaluation systems.

Figure 3: Results Chain for Enhancing Teacher Effectiveness in Bihar Operation



G. Program Key Results and Disbursement Linked Indicators

42. *PDO level indicators:* It has been agreed to use the PforR lending instrument to concentrate Bank financing on five key results indicators that will contribute to the achievement of the PDO. These are as follows:

- 475,000 beneficiaries (elementary school teachers) covered through the program including an increase in percentage of female teachers
- Improved teacher performance effectively monitored through index based on scores
- Teacher attendance enhanced by 5 percentage points
- 75 percentage of positions in teacher education institutions filled
- 90,000 additional qualified elementary teachers resulting from program interventions

43. *Disbursement linked Indicators (DLIs)*. There are six DLIs specific to the program interventions that will be used for disbursement. The allocations for the DLIs have been structured to ensure that the requisite efforts are made to achieve more challenging qualitative DLIs to bring about qualitative systemic improvement in teacher effectiveness in Bihar. The DLIs focus on:

- a) Ensuring requisite infrastructure of TE Institutions;
- b) Ensuring capacity enhancement of TE institutions for effective TE delivery;
- c) Ensuring certification of unqualified teachers and continuous professional development (CPD) of teachers in service;
- d) Ensuring teacher management and performance is effectively monitored and evaluated;
- e) Enhancing teacher accountability at school level;
- f) Strengthening procurement, financial systems and corporate governance framework in BSEIDC; and incentivizing compliance with State Treasury Rules by DR&T.

H. Key Capacity Building and Systems Strengthening Activities

44. The following areas have been jointly identified with the GOB for capacity building and system strengthening:

Table 4: Key Capacity Building Areas
Continued support to SCERT, DIETs and other institutions in accessing international best practices in use of ODL and ICT: training design, multi-media content development, contact program structuring, assessment techniques for effective curriculum supplementation
Support to SCERT in the implementation of TEIDI for the grading of institutions based on their functional efficiency
Support to SCERT, DIETs, BRCs and CRCs in monitoring, reporting and impact evaluation studies on teacher performance
Capacity building of SCERT on improved continuous professional development (CPD) and school leadership programs
Orientation to key stakeholders such as the TE Directorate, BCEIDC and TE institutions, among others, on results-based monitoring
Support in developing an SMC training framework and a training strategy with potential innovative use of mobile technology for monitoring quality improvement and teacher attendance in particular
Capacity building of TE Directorate/SCERT staff on program management and fiduciary aspects.

III. OPERATION (PROGRAM AND PROJECT) IMPLEMENTATION

A. Institutional and Implementation Arrangements

45. The Operation is designed to utilize and strengthen GOB’s institutional structures for teacher education:

- a) The DOE of GOB will be the key implementing agency with the Directorate of Research and Training (DRT) under the department as the nodal agency for routing all implementation and fund flow mechanisms under the Operation. The Operation will be implemented by the Directorate through BSEIDC, SCERT, DIET, and PTECs as the major executing and fund handling agencies.
- b) The BSEIDC will be the main procurement agency for all procurement activities under the Operation. Procurement components are expected to include civil works for infrastructure up-gradation, multi-media content development, ICT hardware

procurement and consulting services. BSEIDC will receive substantial TA support to carry out these procurement activities.

- c) The SCERT will oversee the academic architecture of the Operation covering curriculum and syllabus development; content and materials production; the development of teacher educators; capacity building of all major teacher training institutions like DIETS, BRCs and CRCs and managing the ICT and ODL architecture for teacher training.
- d) A PMU will be established to support BSEIDC, SCERT and the Directorate of Research and Training. With the support of TA, the PMU will be established as an interim arrangement for the Operation period to facilitate the integration of technical interventions into the operation design and the TA system overall. The PMU will cease to exist once the operation closes.

B. Results Monitoring and Evaluation

46. Monitoring and evaluation of the operation indicators will be carried out using the state government's own systems for annual reporting. Teacher management reports will be generated from the TEMIS. Monitoring of institutional functioning will be done through the TEIDI system for assessing the institutional functioning of DIETs, PTECs and BRCs as key entities for training delivery. Teacher performance tracking systems will be institutionalized through tools developed under the operation. On-site monitoring support and trainee assessment systems will be put in place with ICT-based tracking of trainees' time spent on training tasks under the ODL program. School Management Committees will be tasked with the function of monitoring and reporting on teacher absence. Third party independent results verification procedures will be put in place to track DLIs and operation outputs and outcomes. Operation effectiveness will be evaluated through a series of prospective experimental evaluations. The evaluations will provide timely feedback for improving the design of the new and innovative interventions. They will capture the impact of alternative interventions aimed at improving teacher performance, including: (i) time-on-task and other teacher assessment tools; (ii) the use of ODL and ICT; and (iii) school based community monitoring and social audit.

47. *Joint Review Missions (JRMs)*: As part of the review of the Operation, two JRMs will be carried out each year consisting of representatives of the World Bank and the GOB. The JRMs will track Operation implementation, achievement of key performance indicators and progress on agreed DLIs. These reviews will help in the early identification of potential problems in the achievement of DLIs, possible revision of the DLIs and/or the need for restructuring some of the DLIs or the Operation (if needed to achieve the expected results).

C. Disbursement Arrangements and Verification Protocols

48. *Disbursement arrangements and Financing allocation to each DLI*: The Program will use DLIs for program management and disbursement. There are six DLIs that will govern the Program. The achievement of annual targets in DLI 1 is to ensure capacity enhancement of TE institutions for effective service delivery (US\$ 50 m) that focuses on creation of quality modern teacher education infrastructure. This DLI is critical for achieving DLI 2 (US\$ 35m) and DLI 3 (US\$40 m) that will together lead to capacity enhancement of TE institutions for effective training delivery and ensuring certification of unqualified teachers and continuous professional development. DLI

4 (US\$ 36 m) and DLI 5 (US\$ 44 m) focus on social audit, community monitoring and evaluation of teacher performance for improved effectiveness. These DLIs form critical aspects of the Program that would facilitate meeting the PDO indicators. DLI 6 (US\$ 20 m) has the crucial overarching objective of strengthening the fiduciary and governance systems of the implementing agencies for the Program. The DLI matrix and verification protocol table are attached in Annex 3.

49. *Disbursement modalities for each DLI:* Details of agreed disbursement modalities for each DLI are provided in Annex 3. DLIs 1, 3 and 5 will be scalable DLIs, with funds being disbursed in proportion to achievement of the DLI. The other DLIs are non-scalable DLIs. Where actions are not achieved in any particular year/period, the allocated amount will be carried over to the subsequent year. Conversely, if the achievement consistently outperforms the targets, the corresponding Credit amount may be fully disbursed before the end of the operation.

50. *Advances:* The Program will provide an advance, as an enabling provision, of up to a ceiling of 25 percent of the credit amount. The advance will be adjusted against disbursements due when the DLIs are achieved or in the later years of the Program. The drawdown of the advance, including quantum will be based on GoB's needs and cash flow mismatches if any.

51. *DLI verification protocols.* Verification protocols for each DLI are detailed in Annex 3. DLIs will be verified by an independent third party (contracted by GOB) or a jointly agreed independent government agency identified by the DOE, GOB and agreed upon by the World Bank. The report of the agencies will be independently verified by the World Bank for fund disbursement *authorization*. The World Bank will further review the evidence base for all DLIs during implementation. GOB's existing management information systems (MIS) and regular sector-related reporting arrangements will provide the basis for verifying most Program results. For Program results that are not part of the regular sector-related reporting, specific reporting and verification protocols have been developed, as detailed in Annex 3.

52. Disbursements under the technical assistance component will be made primarily as Reimbursements on the basis of quarterly IUFRRs, which will be submitted to the World Bank through the office of Controller Aid Accounts & Audit (CAAA). The IUFRRs will be submitted within 45 days of the end of each quarter.

IV. ASSESSMENT SUMMARY

A. Technical (including Operation Economic Evaluation)

53. *Strategic Relevance:* The proposed Operation is strategically relevant as it addresses Bihar's challenges in providing quality elementary education through upgrading teacher quality and accountability for greater teacher effectiveness. The Operation is set in the context of a broader reform agenda of the state to improve the quality of education. The Operation focuses on developing teachers with the right skills and knowledge to perform well in the classroom. It addresses these issues through a comprehensive results-based approach. While the issues which the program addresses are necessary for improving teacher effectiveness, they are not sufficient

and must be complemented by the work of the State in other aspects of teacher education, in particular through the SSA program.

54. **Technical soundness:** In order for teachers to be effective in the classroom and support student learning, four main steps are needed: (a) people with the right aptitudes need to be recruited as teachers; (b) they should be deployed in a transparent manner to schools which are in need; (c) teachers must have or acquire the appropriate skills and knowledge, and (d) teachers need incentives to use their skills and knowledge in the classroom. Bihar has already instituted a teacher reform process through ensuring provisioning of appropriate numbers of trained teachers to meet the pupil teacher norms requirement under RTE through intensive teacher recruitment. The TEMIS system created to support the Program will further support more transparent selection of practicing teachers for in-service training and CPD programs. To support the acquisition of the right skills and knowledge, the Operation will address a sizeable deficit created by the past recruitment of large numbers of unqualified teachers with insufficient skills to perform effectively in the classroom. Finally, with respect to incentives, the program will track teachers' career development, and collaboration with SMCs will provide stronger teacher accountability at the local level. School leadership and CPD programs will help teachers improve their professional practice and upgrade their knowledge base and skills.

55. **Governance Structure and Institutional Arrangements:** The governance structure and institutional arrangements are designed to strengthen existing institutions to perform their roles more effectively within a regulatory framework deemed already to be sound. Pedagogical leadership will be provided by the SCERT, which already has this responsibility but needs enhanced capacity to carry this out more effectively. The BSEIDC will continue its work on procurement, which it already does effectively for the DOE; the Operation will strengthen its capacity to manage consultancies and higher value, more complicated civil works and ICT procurements. While the network of DIETs, BRCs and CRCs carry out relevant functions, the Operation will build their capacity to do so more effectively. The Principal Secretary of DOE will be responsible for overall operation management and coordination, given his/her role as line manager for the Directorate of Research and Training, SCERT and BSEIDC.

56. **Expenditure framework:** The Operation will support the Government program in enhancing teacher's training; the activities to be supported correspond to specific sub-programs and activities which are not financed under centrally sponsored programs, i.e., Teacher's Training Scheme or specific activities related to in service and pre-service training covered under SSA. The Program's total cost is estimated at INR. 2,000 crores (approximately US\$ 333 million) over the period of the Credit. The Program consists of the following selected activities: (a) construction, expansion and refurbishing of teacher training institutes, including the acquisition of ICT equipment and its operation & maintenance; (b) the development of learning modules and printing of teaching materials; and (c) imparting training through a combination of distance and class room training; training of school management committees etc. The Program expenditure excludes (i) expenditure of programs or initiatives that are the financed by other sources, i.e. federally financed programs, some of which are supported by the World Bank and (ii) the salaries of new teacher educators (approximately 1000) expected to be recruited by GoB in FY 2015-16 since this will be part of the recurring cost and will be financed by GoB under its Non Plan Budget. There is

negligible risk of double dipping, since the implementing entities for the federally funded programs are distinct and there are separate budget lines for each source of financing.

57. GOB has sufficient fiscal space to meet the needs of the education, research, and training sub-sector over the medium term. In the past, this sub-sector has received about 0.27 percent of the annual budget of the state, including funding from GoI. With the recent thrust on teacher training, budget outlays are expected to increase to over US\$ 100 million per annum for a few years, before stabilizing at about 0.35 percent of the state annual budget. The proposed Program of US\$ 333 million over five years will constitute about 55 percent of GOB's investment in the teacher training sub-sector over the period.

58. *Monitoring and Evaluation Capacity:* The state has limited capacity for M&E. Since the Program is based on the DLI-based funding and has a strong results bias, there may be risks related to the State's ability to adhere to the timely monitoring of activities and measurement of outcomes. The Operation will, therefore, provide TA support to address capacity constraints in state institutions and among functionaries. Considerable efforts will go toward developing systems to monitor teacher recruitment, management and performance, as well as institutional functioning. Impact evaluations will be undertaken to track gains emerging from Program interventions.

59. *Energy Convergence Strategy:* The proposed technical design is based on convergence with the energy sector to ensure uninterrupted power for institutional functionality. The design is based on solar grid hybrid with storage and manual switchover facility for DG set option. It also addresses and mitigates certain critical issues unique to local conditions in the state. This includes the threat of theft and vandalism, and the lack of training and knowledge about Solar PV for the field-based Education Department staff. Training needs will be addressed through the involvement of the selected entity Program Developer in the annual maintenance contract (AMC).

60. *Economic analysis.* To measure economic impact, private returns to elementary education in terms of expected improvement in schooling completion and transition rates and learning outcomes are examined. The principal outcomes expected from Operation interventions are higher completion rates at the primary and the upper primary levels and higher transition rates between primary and upper primary schooling. Operation interventions are also expected to have a positive impact on learning outcomes for children who complete schooling under the supervision of the teachers trained and supported by the Program's interventions. Improvements in these rates are expected to impact the income that students can expect to derive upon the completion of various milestones of formal schooling. According to the results chain, these rates are expected to respond to improvements in enhanced teacher quality due to pedagogical training and increased teacher effort resulting from robust concurrent monitoring by BRCs and CRCs.

61. A cost-benefit (CB) analysis using the present discounted value (PDV) method suggests that the Operation is justifiable on economic grounds with a Net Present Value (NPV) of US\$ 484 million, a Benefits-to-Cost Ratio of 1.29 and an estimated internal rate of return (IRR) of 19.3 percent. This return is considered to be a lower bound, given that: (i) only (private) outcomes for the students are considered as part of the benefits of the Operation, and (ii) an attempt has been made in this analysis to be conservative for all assumptions where discretion could be exercised.

62. The NPV and IRR remain positive and economically justifiable under a sensitivity analysis. Sensitivity of calculated NPVs, IRRs and benefits-to-cost ratio to the analysis's initial assumptions is determined on the basis of revisions to the correlation coefficient between learning outcomes and levels of income. The Operation is also expected to benefit community- hired unqualified teachers, a factor which has not been monetized in the analysis. As of 2010-11, only 49.2 percent of the teaching staff in the state held the required teacher qualifications. Under the directives of the RTE, all states are required to reduce the percentage of unqualified teachers by either finding suitable replacement or by training them toward the required qualifications. The Operation will provide training to these teachers to allow them to retain their jobs and join the cadre of teachers hired on fixed-term renewable contracts. Untrained teachers will benefit from continuous professional development (CPD) and in-service training programs which will provide them with the content and pedagogical knowledge they require to give students a high quality teaching learning environment.

B. Fiduciary Assessment

63. An integrated fiduciary assessment has been carried out to evaluate the arrangements relevant to the Enhancing Teacher Effectiveness in Bihar Operation to determine whether they provide reasonable assurance that Program funds will be used for their intended purpose. Based on the assessment and agreement on actions required to strengthen the system, as reflected in the DLI's and PAP, the overall fiduciary framework for the Program is considered adequate to support its effective management and reach the desired results.

64. Similar to other states in India, the GoB has a well-developed budgetary framework that ensures the allocation of adequate resources to departments and program. GoB has not faced significant fund constraint and there is sufficient predictability in the availability of resources, even though fund releases tend to be significantly higher in the last quarter of each fiscal year. As per standard practice and to maintain transparency in GoB's financing, two exclusive budget lines have been allocated to this program delineating between revenue and capital expenditures. A significant proportion of activities (i.e., civil works, ICT procurement and key consultancies) under the Program will be undertaken by BSEIDC, which operates outside the treasury system¹⁰ and uses commercial banking channels for financial flows and payments. The fiduciary framework in the state and the Program will be guided by several rules and legislation including the Bihar Financial Rules, Treasury Code and Budget Manual, PWD Manual and the Companies Act (2013) in the case of BSEIDC.

65. Under the Program, BSEIDC plays a critical role as it will be responsible for nearly 85 percent of the total Program expenditures. The procurement profile of the program primarily focusses on infrastructure namely renovation and new civil works, as well as IT goods and equipment. Civil works, which constitute a large part of the procurement agenda, consists of the construction of new buildings and the renovation and repair of existing ones. The estimated cost of such works range from US\$150,000 to a maximum of US\$5 million. IT infrastructure consists

¹⁰ The scope of work of external auditors of BSEIDC include a long form audit report which covers aspects relating to corporate governance, system of accounts and financial control, risk of fraud an existence of vigilance wings, control over assets & liabilities and internal audit systems and environment management.

of content development and computer hardware, with an estimated cost per procurement package of procurement of under US\$1 million.

66. The Agency follows the state's procurement regulations [Bihar Finance (Amendment) Rules 2005] which are well established for works procurement and follow the Road Construction Department (RCD) codes using standard bidding documents. Bidding documents are found to meet the requirements of standard conditions and evaluation criteria. Strengths of the procurement system include well-developed evaluation processes and an acceptable performance average of 45 days for processing contracts. Shortcomings in the procurement system are found in the areas of goods / IT equipment and consultancy services procurement which are used rarely and lack standard bidding documents.

67. Assessment of the existing procurement management system and arrangements has identified that: (a) rules and guidelines are spread across multiple documents and frequently issued circulars leading to a lack of comprehensive instructions for all steps of the procurement process; (b) inadequate standard bidding documents for procurement of goods / IT equipment and consultancy services; (c) there is mandatory registration of contractors, a common practice across all states of India; (d) negotiations are resorted to whenever bids are received at a cost higher than the estimated cost; and (e) while individual complaints received in a specific case are attended promptly¹¹, there is no well-defined mechanism for compliant redressal or alternative dispute resolution mechanism. In terms of performance, the system of procurement planning and contract administration needs strengthening and improvement; (f) standards for disclosure/ transparency are inadequate; (g) an IT based system for procurement monitoring (or MIS) does not exist; and (h) there is no independent oversight over procurement processes. The agency has taken the World Bank's observations and developed a basic contract monitoring system which it is in the process of strengthening.

68. *Financial management performance* As a relative new program, budget utilization has been relatively low (US\$8~ 10 million in FY 2012-13 and 2013-14 representing an average budget utilization rate of about 20 percent) of which a significant portion represents budget transfers to BSEIDC, which utilizes funds with a lag. Basic accounting records and internal controls in BSEIDC are considered adequate, but there are opportunities for strengthening their financial management systems and enhancing corporate governance practices in line with enhanced scale of operations. The financial management capacity and performance in the DR&T, SCERT, DIET which will have responsibility for implementing soft activities (i.e., 15 percent of program expenditures) are weak, and lack adequate human resources for fiduciary functions, non-compliance with treasury and finance rules relating to budgeting, fund withdrawal, control over advances and non- reconciliation of expenditures with the AG (A&E). Given multiple agencies with different legal structures, there is no inherent requirement to prepare either program progress reports or program financial statements. The annual financial statement of BSEIDC, which is prepared on accrual basis, is audited by a firm of chartered accountants appointed by the C&AG, which ensures independence of the firm¹². The C&AG audit guidelines of public sector

¹¹ The present set up is prompt and effective largely due to the initiative taken by the present officials of BSEIDC

¹² While the audit firm is appointed by the CAG, the fee is determined by the Board of the Corporation.

corporations require auditors to review the internal controls framework and compliance and submit to a completed questionnaire. The C&AG have the mandate for the audit of DR&T and SCERT¹³.

69. **Technical Assistance Component:** The expenditures under the TA Component will be carried out in accordance with OP/BP 10.00 (see Annex 9 for details). Procurement of services will be carried out as per Bank procurement guidelines of January 2011 revised May 2014. This component will be managed by BSEIDC, which will be responsible for all contract payments, accounting and reporting of quarterly expenditures under the TA Component. In order to facilitate this, the DR&T will draw funds from the specific budget head created for the program- (revenue head), which will be deposited by BSEIDC in its bank account. BSEIDC will open separate account codes in its financial accounting system to account for expenditures under the TA Component and will submit quarterly IUFRR for the purpose of claiming reimbursement. No advance is required by GoB for financing the TA Component. Audit of the expenditures under the TA Component will be carried out by the external auditor of BSEIDC who is also responsible for carrying the program audit, as per Terms of Reference (ToR) acceptable to the World Bank. Any capacity building related travel may be limited to 10 percent of the total TA amount of USD\$ 25 million.

70. **Program and project Audit Arrangements:** Given the varying legal structures of agencies involved in the Program’s implementation and their respective audit jurisdictions, audited program financial statements will be received from the following entities.

Table 5: Program Audit Arrangements

Scope of Audit	Responsibility	Due Date
External entity audit of BSEIDC with additional disclosure of program financial statements.	Private CA firm	Audit of Program Financial Statements (related to BSEIDC) within 9 months of the close of the financial year
External audit of project financial statements (TA Component)	Private CA firm	Audit of project financial statements within 9 months of close of the financial year.
Audit of program expenditures incurred by DR&T, SCERT & DIET’s.	C&AG	Audit of Program Financial Statements (related to DR&T) within 9 months of the close of the financial year

71. **Governance and Accountability Systems:** There is a Lokayukta who takes cognizance of complaints of frauds and corruption. The Vigilance Department of GOB is responsible for enquiry, investigation and prosecution of major cases of fraud, corruption and misappropriation of government funds. The Department has three investigation agencies, namely, the Vigilance Investigation Bureau, the Technical Examiner Cell and the Electricity Vigilance Cell. Bihar has enacted the Bihar Special Courts Act of 2009 to establish Special Courts for trying cases where GOB has sufficient cause to believe that persons holding public offices and public servants have accumulated wealth, disproportionate to their known sources of income.

72. Each line department is responsible for conducting preliminary enquiries into alleged misconduct by its employees. GOB has created five posts of CVO, with each CVO being

¹³ This will be carried out as per the standard ToR agreed to between the GoI and C&AG for externally aided programs

responsible for a cluster of departments. At present, however, all such posts are vacant. Although the anti-corruption framework can be construed as potentially effective, the Education Department's preventive function needs to be strengthened through designating an officer not below the rank of a Joint Secretary in the State government as the CVO in the department.

73. Other governance and accountability mechanisms include: (a) C&AG Audit – The C&AG is a constitutional authority whose independence and level of expertise is acknowledged worldwide (including through a recent international peer review exercise). - Both the prevention and detection of fraud and corruption as part of the audit process fall within the CAG's jurisdiction; (b) Under the Right to Information Act, 2005, any public entity is bound to proactively disclose information of general interest and to respond to requests for information within a specified time. The DR&T and other agencies under the program are committed to suo-moto disclosure of information and must respond to requests for information.

74. *Applicability of Anti-corruption Guidelines of the World Bank for the Operation:* GOB is fully committed to ensuring that the Program's results are not impacted by fraud or corruption. Through the Program's legal documents, India (as the recipient of IDA financing) and Bihar are formally committed to the obligations under the Anti-Corruption Guidelines for PforR operations. In particular, in the context of this Program, Bihar has agreed to report to the World Bank any credible and material allegations of fraud and/or corruption regarding the program as part of the Program's reporting requirements. The World Bank will inform the recipient and Bihar about any allegations it receives. Bihar has also agreed to ensure that persons and/or entities debarred or suspended by the World Bank will not be awarded a contract by verifying the same prior to the award of contracts under the Program during the debarment or suspension period.

75. The World Bank's right to investigate allegations regarding the Program's activities and expenditures and related access to persons, information and documents will be observed in accordance with standard arrangements for this purpose between GOI and the Institutional Integrity (INT) unit of the World Bank.

76. The 'Guidelines for Preventing and Combating Fraud and Corruption in Projects Financed by IBRD loans and IDA Credits and Grants' October 2006, and revised in January 2011, will apply to the project (TA) part of the operation.

C. Environmental and Social Effects

77. An Environmental and Social Systems Assessment (ESSA) was undertaken by the Bank team for the Program as per the requirement set forth under Operational Policy 9.00. The aim of the ESSA was to review the capacity of existing government systems to plan and implement effective measures for environmental and social impact management of the program, including determining if any measures would be required to strengthen them.

78. The ESSA has been undertaken to ensure consistency with six "core principles" outlined in the World Bank's Operational Policy in order to effectively manage program risks and promote sustainable development.

79. The ESSA has benefited from various inputs, including a legal and regulatory analysis; field visit to Teacher Education Institutes - at various levels – State (SCERT), District (DIETs/PTECs), Block (BRCs) and Community (CRCs), to assess environmental and social

conditions and institutional capacity; and meetings with government agencies, and other stakeholders. The World Bank Specialists have worked closely with Department of Education, Govt. of Bihar and the BSEIDC to prepare the Action Plan as a guide to identify and mitigate impacts and strengthen the management system.

80. The ESSA report considers consultation, stakeholder involvement and disclosure of information from two perspectives. First, the report describes the requirements of the Government and concerned Department/Implementation Agencies with respect to individual sub-projects and evaluates the extent to which the existing practices are effective and consistent with Bank policy expectations. These practices are described in the ESSA and its specific recommendations and support for improved performance by the Govt. of Bihar is provided for in the ESSA. Second, the ESSA itself has been the subject of state level public consultations held at Patna in July and October 2013. The consultations held provided more detailed information on the PforR process, the proposed Program, and key findings and recommendations of the ESSA. The ESSA was revised incorporating comments obtained from these consultation meetings. Over-all the participants showed support for the Program.

81. The ESSA report has been published on the website of the Department of Education, Government of Bihar.

Assessment against Core Principles laid out in OP 9.00

Core Principle 1: General Principle of Environmental and Social Management

82. OP 9.00: Environmental and social management procedures and processes are designed to (a) promote environmental and social sustainability in Program design; (b) avoid, minimize or mitigate against adverse impacts; and (c) promote informed decision-making relating to a program's environmental and social effects.

Applicability/Summary

83. Core Principle 1 is considered in terms of environmental and social management for the education sector, as a key component of good service delivery. Specifically, since the program includes civil works related to construction/extension of new buildings/blocks within existing campuses, this becomes all the more relevant.

84. There is an adequate national regulatory framework and technical guidelines exist for environmental due diligence with respect to the potential impacts of the program. The assessed weaknesses are systemic and are related to insufficient staffing, weak coordination among the various implementers and inadequate attention to environmental concerns, particularly for the previously developed/old buildings and associated services. This can be overcome by the regulatory framework that already exists.

85. The Government of Bihar's legal and policy framework is deemed adequate to promote social sustainability. The reservation system in recruitment seeks to address long-standing inequality of access to teacher employment opportunities. This reservation system enjoys widespread political support. The TEMIS database enables the Department of Education to monitor the representation of disadvantaged groups in the teacher force, and the extent to which these groups have access to professional development opportunities and are promoted

appropriately. The bottom up training needs analysis for teachers gives disadvantaged groups equal opportunities to express their preferences regarding their individual training needs; BRCs and CRCs are responsible for ensuring teachers attend planned training programs.

Core Principle 2: Natural Habitats and Physical Cultural Resources

86. OP 9.00: Environmental and social management procedures and processes are designed to avoid, minimize and mitigate against adverse effects on natural habitats and physical cultural resources resulting from program.

Applicability/Summary

87. The provisions in Core Principle 2 are considered as part of the ESIA process analyzed under Core Principle 1. The analysis confirmed that Program investments would neither impact nor convert critical natural habitats. This Core Principle will not be applicable to the Bihar TE program and the PforR as long as no new TE institutes are constructed in hitherto unidentified sites. To ensure that this remains the case, appropriate clause/s will be introduced in the program's legal documents.

Core Principle 3: Public and Worker Safety

88. OP 9.00: Environmental and social management procedures and processes are designed to protect public and worker safety against the potential risks associated with (a) construction and/or operations of facilities or other operational practices developed or promoted under the program; (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials; and (c) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.

Applicability/Summary

89. The provisions in Core Principle 3 are considered as part of the ESIA process analyzed under Core Principle 1. Review found that Core Principle 3 is applicable to the Program, as there is physical infrastructure development involved in the Program. However, the issues pertaining to this Core Principle are considered low risk of appearing in the Program.

90. Program documentation specifies the environmental expectations involved in the proposed civil works activities to protect public and worker safety, no procurement of dangerous materials or pesticides is envisaged, and teacher education institutional infrastructure will not be carried out in areas prone to nature hazards.

Core Principle 4: Land Acquisition

91. OP 9.00: Land acquisition and loss of access to natural resources are managed in a way that avoids or minimizes displacement, and affected people are assisted in improving, or at least restoring, their livelihoods and living standards.

Applicability/Summary

92. Civil works will be carried out within existing campuses of institutions/available government land. In the absence of any land acquisition for construction, the risk of impacts on

loss of land/asset/ formal and informal livelihood etc. from civil works are not likely. Based on experience in similar education projects there has been no relocation or other related impacts. Loss of access to natural resources is also a low risk, nor is there any risk of impacts on crops because involuntary land acquisition is not eligible for financing under this program (as specified in the legal agreements between the World Bank and the Governments of India and Bihar). The agreements between the Bank and the Government of Bihar also ensure that, where land is not free of encumbrances, it will not be used for program purposes. Hence, this principle does not apply to the program.

Core Principle 5: Indigenous Peoples and Vulnerable Groups

93. OP 9.00: Due consideration is given to cultural appropriateness of, and equitable access to, program benefits giving special attention to rights and interests of Indigenous Peoples and to the needs or concerns of vulnerable groups.

Applicability/Summary

94. Resettlement and environmental degradation tend to disproportionately impact the poor and vulnerable groups, documented in operational documents for other Bank projects/programs. While the Program seeks to improve the conditions of the poor and vulnerable groups, if impacts are not well-managed it is possible that vulnerable groups could be negatively impacted.

95. With respect to other marginalized and vulnerable groups, the investments under this program targets all teachers as direct beneficiaries. Thus while considering the applicability of this Core Principle, the analysis found that it was relevant in terms of ensuring that vulnerable groups are included in the planning process and program prioritization; that vulnerable groups have access to program benefits; and that the needs of vulnerable groups are considered with respect to the Programs impacts.

96. The approach of the Government is to ensure that all vulnerable groups are consulted and benefit from Government programs and there are policies/programs to this effect.

97. The ESSA found that the Government of Bihar has recently introduced a comprehensive set of legislation to ensure social inclusion across SC, ST, minority and vulnerable populations. Though this specifically relates to reservation policies, it gives a sense of GoB's intentions of wanting to share the benefits of Government programs across all segments of the state population. The program design will ensure that all teachers from disadvantaged groups will have access to training to enable them to become qualified (and therefore, permanent) teachers.

98. The teacher professional development programs are designed to build the capacity of teachers to develop their own teaching and learning materials to respond to the specific needs of their children, including through the use of indigenous knowledge as developed by Indigenous peoples. Capacity building is required at the SCERT especially to more effectively monitor the impact of the teacher programs on disadvantaged groups.

Core Principle 6: Social Conflict

99. OP 9.00: Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

Applicability/Summary

100. The Bihar TE program will not entail social conflict in fragile states, post-conflict areas or areas subject to territorial disputes, nor will the Program cause social conflict or impact distributional equity or associated cultural sensitivities.

101. As such, the ESSA did not consider the Program with regards to Core Principle 6 as this Core principle and key element are not applicable to the operation. It is important to note that distributional equity and cultural sensitivities are covered under the analysis of system with respect to the main considerations of Core Principle 5.

D. Integrated Risk Assessment Summary

102. The following table shows summary risk ratings. The overall risk rating of the Operation is **Substantial** because Bihar is a low income state in India with immense deficiencies in the education sector. Teacher recruitment and training has traditionally been a major problem for the state. This is the first engagement of the World Bank in the education sector of the state and there is a lack of adequate institutional capacity and governance systems across all institutions, especially in academic bodies such as SCERT, DIETs and BRCs. A detailed risk assessment and proposed mitigation measures are provided in Annex 7.

Table 6: Risk Rating Summary

Risk	Rating
Country and Stakeholder	Moderate
Technical	Substantial
Fiduciary	Substantial
Environmental and Social	Moderate
DLI	Substantial
Overall Risk	Substantial

E. Program Action Plan

103. The most critical steps required for the Program to achieve its objectives, and which in the World Bank's assessment need specific external reinforcement, have been made the subject of a Program Action Plan (see Annex 8) that will be complemented by the TA Component of the Operation.

Annex 1: Detailed Operation Description

A. Structure of the Operation

1. The proposed Operation will be a hybrid operation, combining a PforR (US\$ 225 million) and an IPF instrument project (US\$ 25 million- details in Annex 9).

B. Description of the Program

2. The Department of Education of the GOB launched Mission *Manav Vikas*, which aims to achieve a dramatic improvement in the education sector. It will improve learning outcomes for school education, enable teacher educators to make a real difference to the classroom process, support teachers in schools for effective teaching, and strengthen teacher training institutions. The State Council for Educational Research and Training (SCERT), District Institute of Education and Training (DIETs) Primary Teacher Education Centres (PTECs) Block Resource Centres (BRCs), and Cluster Resource Centres (CRCs) will be made more vibrant and effective in their efforts to fulfill their respective mandates. Bihar has obtained permission from the statutory body for teacher education, the National Council on Teacher Education (NCTE) to start a Diploma in Elementary Education in 52 government institutions. Bachelor of Education programs have been allowed by NCTE in four government institutions. Teachers with adequate qualifications have been selected to become teacher educators through a rigorous process and are being put through a mandatory direct trainer skills training program (with some doing an advanced training program). The state is committed to preparing 10,000 teacher educators through formally approving a teacher educators' cadre. Bihar aims to develop at least 50 outstanding teacher training campuses with the best possible teacher educators, and develop infrastructure and resource teams at BRCs and CRCs to meet teacher development needs across the state. Strong monitoring systems for assessing children's progress, teachers, and schools will also be established.

3. The state has been grappling with inadequate resources and capacity to address this task of immense magnitude. SCERT, the academic authority for all teacher education programs, and the DIETs, which are the nodal agencies for pre-service and in-service training delivery, are in a deplorable state of disrepair. Many DIETs do not have buildings and are run in ramshackle makeshift structures. Institutions are burdened with lack of capacity, including inadequate modern facilities, technology, or computers. Bihar requires TE institutions with strong service delivery mechanisms and governance to reverse years of neglect in the sub-sector. Within this context, GOB requested the World Bank to provide support for improving its teacher education system with the introduction of effective delivery mechanisms, institutional reform and a robust training strategy. Innovative and efficient use of ICT for pre-service training and CPD are major pillars of the program, which will create a cadre of trained teacher educators, monitor quality teacher performance and provide continuous professional development opportunities for teacher educators and teachers.

4. The proposed World Bank-financed Operation will support a portion of Bihar's school education reform program over a five-year period from FY 2015-2020 through the following key activities: (i) enhancing the infrastructure of TE institutions with institutional strengthening and capacity building for TE delivery; (ii) supporting implementation of quality pre-service teacher training and continued professional development; (iii) effective monitoring and evaluation of teacher management systems;(iv) the monitoring of teacher performance for improving teacher accountability at the school level; and (v) improved fiduciary and governance mechanisms. The

proposed Operation is expected to go beyond mere financial support towards providing transfer of knowledge, best practices and innovative solutions to meet the exigent needs of providing quality teacher education in Bihar. This will be done through a TA support for program implementation and M&E. The Operation is expected to lead to the creation of state-of-the-art institutions; professional teacher management; robust monitoring and evaluation systems; as well as effective fiduciary and governance mechanisms.

5. The Program results areas are as follows:

6. **Results Area 1: Developing high quality teacher education institutions for improved program delivery:** The immediate priority is to strengthen institutional capacity within the state to deliver and support effective teacher education, both pre-service and in-service. Strong emphasis is needed on institutional strengthening to deliver both pre-service teacher education and continuing professional development, with an explicit focus on improving pedagogy. Of particular importance is strengthening academic and educational support capacity at both the DIET/PTEC and CRC/BRC levels. This requires the development of both capacity and infrastructure for BRCs and CRCs in order for them to be effective as local learning centres. The program will harness the potential of ICT in teacher education including its use in teacher resource management and administration, and in the sharing and dissemination of a digital pool of learning resources. It will cover teacher capacity building, ongoing teacher support, the establishment of a common platform or forum for Teacher Groups, and the deployment of tools for evaluation and assessment, lesson plans, and teaching. Support at the institutional level, especially at SCERT and in DIETs aims to strengthen their capacity to carry out the following key functions:

- SCERT as the nodal academic agency for teacher education is responsible for coordinating and managing the activities of approximately 10,000 teacher educators working at different levels across the state.
- PTECs and DIETs are responsible for managing teacher education across districts and will serve as model ICT centres; and
- CRCs and BRCs will function as local learning centres, ideally within easy walking distance of every school in the state, offering a full range of teacher education activities. They will function as sites for local group discussions, tutorials, remote teaching sessions, and other contact sessions for collaboration between teachers and peer support.

7. All content and interactive facilities will be made accessible online from the centre via online, cloud-based applications and systems, managed by SCERT. The PTECs, DIETs, BRCs, and CRCs will all be equipped with; (i) thin-client networks, (ii) enough workstations to meet the needs of teachers who access these facilities; (iii) data programmers to enable group engagement with materials, watching videos, lecture presentations, and (iv) remote teaching sessions and alternative energy solutions (solar, bio-mass, generator, and so on) to ensure a reliable energy supply where there is no electricity.

8. **Results Area 2: Certification of unqualified elementary school teachers and their continuous professional development:** This results area contains two sub-results areas: one that will certify the unqualified teachers in the government elementary schools of Bihar and the other that will also ensure that all teachers (including new entrants, head teachers, etc.) have access to

effective professional development courses. Efforts will be made to support in-service programs with CPD components.

9. ***Pre-service teacher education:*** The GOB has embarked on a large scale certification program (Diploma in Elementary Education- D. El. Ed.)¹⁴ that will be delivered through open and distance learning (ODL) to certify approximately 65,000 newly-recruited teachers who are unqualified. The main emphasis of the D.El.Ed (ODL) is on improving the quality of teaching practice. The design of the ODL curriculum will allow for the large-scale upgrading of knowledge and classroom competences of unqualified, in-service elementary school teachers. Design of the curriculum for the D.El.Ed (ODL) will be coordinated by SCERT. This design focuses on implementation of an ICT-supported distance learning program. The design is based on the Bihar Curriculum Framework, with three elements: (i) Foundation/Fundamental/Theory; (ii) Methods/Pedagogy; and (iii) Practical/ Internship

10. The D.El.Ed (ODL) will be comprised of 70 percent self and classroom-based learning from printed materials especially designed for this purpose and 30 percent contact-based support in the form of orientation workshops at the start of each semester, plus contact sessions on Sundays. The contact sessions will take place at the study centres (SCERT, DIETs, PTECs, BRCs, and CRCs) that have been equipped with ICT facilities. These will allow trainees (teacher students) to progressively develop knowledge and skills to integrate appropriate technology into their teaching-learning interactions with students. Two key components of the program are (i) high quality learning resources; and (ii) a robust, pre-emptive support strategy geared toward maximizing changes in classroom practices. A variety of media will be used to support this process, including the viewing of short videos of classroom practice at a contact session, followed by discussions about good practice and possibilities for improvement. This will also model a collaborative learning approach and hopefully lead to the formation of a professional community of practice that continues even after students have graduated from the program. In-course activities, formative and summative assessment, and the feedback will be focused toward improving classroom practices and student learning.

11. The assessment strategy is integral to the design of the curriculum. It aims to provide evidence of and highlight shortcomings for improved classroom practices. It is also designed to be manageable for students (trainees) who are already full-time employment as teachers. The assessment strategy in the Program should reinforce improved practice in an integrated way through: (i) self-assessment; (ii) formative assessment; (iii) summative assessment; and (iv) improved classroom practice. Constructive and timely formative feedback on assignments will be provided to help students pace themselves and confirm their self-assessment.

12. ***Continuous Professional Development (CPD) and Leadership Training:*** The state has 526 BRCs and more than 5000 CRCs at the school levels, which provide on-site support for academic leadership and school management. World Bank TA provided school leadership training in collaboration with the College of School Leadership (UK) and OFSTED. A needs assessment showed the need for a strategic approach to school leadership and CPD programs across the state. The Program will help define key leadership roles for sub-district institutions, and school principals to support school improvement and improve teaching quality. The Program will fund CPD to provide teachers and BRC/CRC coordinators with academic opportunities through access

¹⁴Detailed information on the D.El.Ed. ODL program is available at <http://oasis.mkcl.org/SCERTBihar/StaticPages/HomePage.aspx>

to improved knowledge products, research opportunities and subject-specific resources. The state will be encouraged to offer teachers and teacher educators' internship opportunities with inter-state and intra-state organizations. For BRC and CRC coordinators, the leadership program will include school-based assessments, judging the quality of teaching and learning through classroom observations and lesson planning. Special emphasis will be on using ICT for teaching and learning. Topics identified by the state government will be covered under the CPD, including like strengthening the skill of teachers in early grade classroom management, and teaching reading and numeracy. Teachers will be encouraged to use ICT and ODL resources in DIETs, PTECs, and BRCs to access on-line courses in subject areas and join subject networks and associations. The CPD network will be used to encourage teachers and BRC and CRC coordinators to contribute to online networks (e.g., Facebook, LinkedIn, open educational resources, communities of practices of teachers/teacher educators, etc.). CPD and leadership training will include the training of headmasters and principals to enhance their coaching and mentoring skills and for helping teachers improve their practice. The Colleges of Teacher Education (CTEs) are being strengthened as lead centres for CPD programs.

13. Results Area 3: Developing an effective teacher management system with robust monitoring and evaluation mechanisms: One of the key outcomes of this Program will be to have an effective teacher management system with rigorous monitoring and evaluation mechanisms in place. Teacher management and M&E includes robust monitoring frameworks like school level monitoring frameworks, online management tools, institutional effectiveness measurement tools and teacher performance monitoring instruments.

14. School Report Cards: There is an existing structure set up by the state administration for monitoring the implementation of education interventions down to the school level where functionaries are responsible for periodic visits to schools using monitoring checklists and carry out data collection. The state government is in the process of developing school report cards which will be posted in schools and will be used to monitor the functioning of schools and teacher performance. In addition, the state has engaged external third party assessment agencies to conduct student learning assessments across the state. Findings from these assessments will be used to design training modules for teachers and for monitoring their performance.

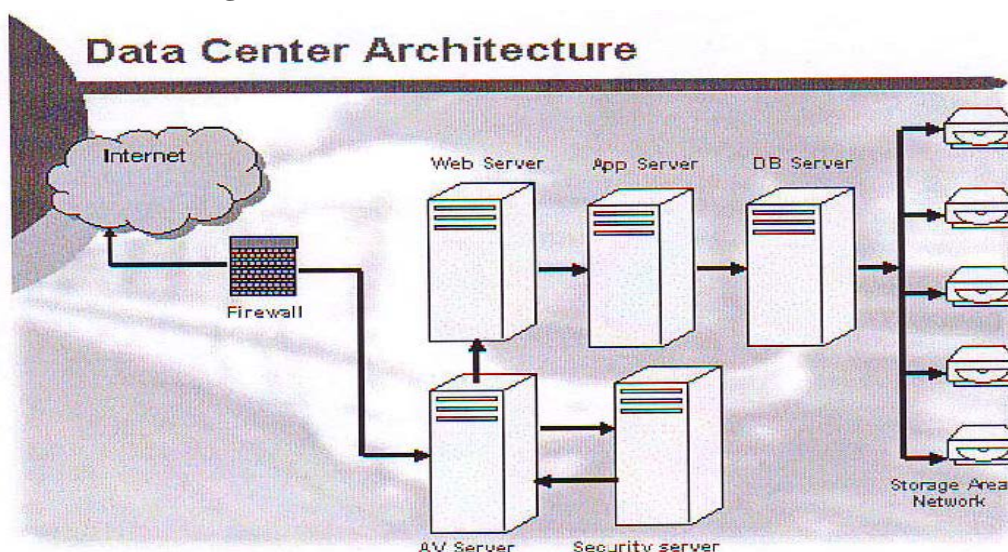
15. Teacher Education Management Information System (TEMIS): In order to strengthen this monitoring mechanism the program has been linked to a TEMIS, for enhanced teacher management and administration. The TEMIS was created by the state under a previously executed Bank TA as a means to of addressing a lack of service records and unsatisfactory data on the 242,000 newly-recruited teachers. TEMIS was prepared for streamlining the induction, training, performance monitoring and overall management of teachers throughout the state. TEMIS will provide timely data on availability of teachers across all the schools in the state. The TEMIS is now being expanded to be made more responsive to the HR and training needs of all teachers and will be maintained, monitored and updated in the DIETs. This will provide much needed data as well as state ownership of the entire architecture and data, particularly through locating the TEMIS in the institution which can make the best use of its data. TEMIS includes:

- A web-enabled system for enhanced transparency in all aspect of teacher management;
- Easy accessibility to the system for all the stake holders;
- A centralized database of teachers, regularly updated through a web interface;
- The identification of all teachers through the allocation of a unique ID and Photo ID for teachers in the database;

- Provision of a database in Hindi language for use by GOB; and
- Possible linkages to the State Treasury and payment system.

16. TEMIS is a teacher human resource management tool with has broadband connectivity. The system has been customized to meet GoB's requirements and is hosted on the application server as shown in Figure 4 below:

Figure 4: Indicative diagram



17. Recurrent capacity building exercises will be supported with training in the application areas of the TEMIS software, facility management and day-to-day maintenance of the system as well as management of personnel change within the department. This will ensure that TEMIS roll out across the state happens seamlessly. The state has taken over the management of TEMIS and will update the teacher numbers and use it moving forward as an HRMIS.

18. **Teacher Education Institutional Development Index (TEIDI):** The Program will support improvements in accountability of the teacher education system for preparing good quality teachers. This will be done through the provision tools to assess the readiness of the teacher education institutions to deliver quality TE programs. The TEIDI will have a quantified and weighted indicators' checklist, which will measure institutional performance. This will inform planning and effective decision-making at the state levels for strengthening the system of teacher education overall. It is expected to be operational by the end of the calendar year.

TEIDI will undertake the following process flow:

- Map the readiness of teacher education institutions in terms of access, location and jurisdiction to meet the demands of RTE-2010, especially in educationally backward districts, minority dominant districts and SC/ST dominant regions;
- Assess quality infrastructural facilities, learning resources, and human resources as per prescribed standards and state-specific requirements;

- Evaluate curricular shifts and innovative approaches of teacher education curriculum and pedagogic practices reflected in the Bihar Curriculum Framework; and
- Develop a successful indicator system at the state level to assess the performance of DIETs and PTECs and suggest strategic and time-bound solutions

19. **Monitoring teacher performance through teacher Performance Indicators:** As the transformation of teacher education gets underway, contextually relevant teacher performance benchmarks are being created. This has a twofold objective of creating:

20. (a) A set of teacher standards and competencies to serve as benchmarks against which teachers can be assessed. The teacher performance standards created will form the baseline that will track (i) teacher subject knowledge; (ii) classroom teaching; and (iii) time on task. (b) inputs which will feed into and inform the development of training strategy. The Program will support the state in the ensuring that the teacher performance standards lead to usable data and information that can further inform and improve pre-service/in-service teacher professional development programs.

21. **Evaluation Processes:** Program effectiveness will be measured through a series of prospective experimental evaluation designs. Evaluations that provide timely for improving evaluation design will provide valuable information to the state as it implements several innovative interventions. Interventions to be evaluated include the use alternative mechanisms for improving teacher performance including empowering SMC with technology to capture and report on teacher performance and the use of video recordings and time-on-task studies.

22. **Results Area 4: Improving accountability mechanisms at the school level.** Community participation and oversight through School Management Committees (SMCs) are critical for improving school quality. SMCs comprise members from the community, parents, elected representatives of local bodies and school staff. There are a total of 17 members with 50 percent reservation for women. The SMC constitution is initiated by the Head Teacher and endorsed by the CRC Coordinator. SMCs are mandated, among other responsibilities, to oversee school management, enrolment and retention of children along with ensuring that their rights are respected as specified under the RTE Act. SMCs are also mandated to monitor and ensure that teachers are not made to undertake non-academic work and monitor their attendance. They also monitor expenditure of school grants, completion of minor civil works and ensure regularity of parent teacher meetings. A school bank account is operated by the SMC Head along with the Head Teacher for expenditure of school related funds.

23. It has been found that often SMCs are not aware of their rights and duties. The program will support orientation, training and capacity building of these SMCs to undertake social audit and evaluation of teacher attendance along with academic issues in schools for more effective school management. A third party survey will be conducted to understand their functioning and the findings will be used to strengthen monitoring mechanisms at the school level.

24. **Results Area 5: Improved financial and governance mechanisms:** The Education Department, GoB is the nodal department for providing education and setting up the related framework and infrastructure across the state. The Department operates through five Directorates, namely (1) Primary Education; (2) Secondary Education; (3) Mass Education; (4) Higher Education; and (5) Research & Training. Within the Education Department, the Directorate of Research & Training (DR&T) has the administrative control and responsibility for research and

training related to teacher education in Bihar. The Department currently manages the centrally sponsored Teacher Education Scheme, with the program activities being executed by BSEIDC, SCERT & DIETs/PTECs. Annual budget proposals of DR&T, including the budget requirements of SCERT and DIETs, are submitted to the Budget and Planning Section of the Education Department which consolidate the budget proposal for the Department as a whole. While the budget is prepared and approved in a timely manner, there is no practice of key implementing agencies preparing 'Annual Work Plans' supported by a procurement plan, which would feed into the budgetary process. This contributes to delays in budget allocation by the Department, after approval by the state legislature, affecting budget execution.

25. The Program will support accountability and governance frameworks in the state implementing agencies such as the Directorate of Research and Training, SCERT and BSEIDC. BSEIDC will receive support for strengthening its financial management and corporate governance systems. Since BSEIDC is a corporate entity in need of enhanced capacity to fulfill its mandate, the Program will support BSEIDC's adoption of corporate governance mechanisms for more robust and transparent functioning.

C. Institutional and Implementation Arrangements

26. The Operation is designed to utilize and strengthen GOB's institutional structures for teacher education.
- a) The DOE of GOB will be the key implementing agency with the Directorate of Research and Training (DRT) under the Department as the nodal agency for routing all implementation and fund flow mechanisms under the Program. The Program will be implemented by the Directorate through BSEIDC, SCERT, DIET, and PTECs as the major executing and fund handling agencies.
 - b) The BSEIDC will be the main procurement agency for all procurement activities under the program. Procurement components are expected to include civil works for infrastructure up-gradation, multi-media content development, ICT hardware procurement and consulting services. BSEIDC will receive substantive TA support to carry out these procurement activities.
 - c) The SCERT will oversee the academic architecture of the program covering curriculum and syllabus development; content and materials production; the development of teacher educators; capacity building of all major teacher training institutions like DIETS, BRCs and CRCs under the program and managing the ICT and ODL architecture for teacher training under the Program.
 - d) A PMU will be established to support BSEIDC, SCERT and the Directorate of Research and Training. With the support of TA, the PMU will be established as an interim arrangement for the operation period to facilitate the integration of technical interventions into the operation design and the TA system overall. The PMU will cease to exist once the operation closes.

Annex 2: Results Framework

Program Development Objective: *To improve effectiveness of elementary school teachers in Bihar*

PDO Level Results Indicators	Core	DLI	Unit of Measure	Baseline 2013-14	Cumulative Target Values						Frequency	Data Source/Methodology	Responsibility for Data Collection
					Yr 0 2014-15	Yr. 1 2015-16	Yr. 2 2016-17	Yr. 3 2017-18	Yr. 4 2018-19	Yr. 5 2019-20			
PDO Indicator 1: <i>Beneficiaries (elementary school teachers covered through the program including % of female teachers)</i>	√		Number	400,000 (Female teachers: 41%)	400,000 (Female teachers: 41%)	435,000 (Female teachers: 42%)	445,000 (Female teachers: 43%)	455,000 (Female teachers: 44%)	465,000 (Female teachers: 44%)	475,000 (Female teachers: 45%)	Annual	TEMIS annual report ; UDISE annual report	SCERT + BSEIDC
PDO Indicator 2: <i>Improved teacher performance effectively monitored through index based on scores</i>		√ <input type="checkbox"/>	%	Baseline: Average language score 45%, average math score 58%				Teacher performance scored increased by 2%age points over measured baselines		Teacher performance scored increased by 5%age points over measured baselines	3 times during operation period-baseline, midline and end line	Third party survey report	Third party
PDO Indicator 3: <i>Percentage of teacher attendance</i>	<input type="checkbox"/>	√ <input type="checkbox"/>	%	(i)Teacher attendance at primary 81% (ii)Teacher attendance				(i) Teacher attendance at primary 84% Teacher attendance		(i) Teacher attendance at primary 86% (ii) Teacher	Three times during operation time period	Third party sample survey report	SCERT and Directorate of Research and Training

PDO Results Indicators	Level	Core	DLI	Unit of Measure	Baseline 2013-14	Cumulative Target Values					Frequency	Data Source/Methodology	Responsibility for Data Collection	
						Yr 0 2014-15	Yr. 1 2015-16	Yr. 2 2016-17	Yr. 3 2017-18	Yr. 4 2018-19				Yr. 5 2019-20
					at upper primary 78% ¹⁵ (does not include excused absence)				ce: 84% (ii) Teacher attendance at upper primary 81%		attendance at upper primary 83%			
PDO Indicator 4: <i>Percentage of teacher positions in TE institutions filled</i>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	%	35% filled posts		TEIDI baseline survey completed and score index generated	60%	65%	70%	75%	Annual	Annual reports from SCERT and TEIDI survey reports SCERT	SCERT
PDO Indicator 5: <i>Additional qualified elementary teachers resulting from program interventions (cumulative)¹⁶</i>		<input checked="" type="checkbox"/>		Number	3500	3500	7000	13,000	19,000	49,000	90,000	Annual	SCERT ODL teacher database	SCERT
Intermediate Results Area 1: Physical infrastructure and use of ICT facilities in teacher education institutions														

¹⁵ Source: Independent Study by Ed CIL, MHRD GOI: 2013

¹⁶ Cumulative numbers include (i) 25,000 teachers certified through face-to-face regular D.El.Ed. course delivered at DIETs and PTECs and (ii) 65,000 teachers trained through D.El.Ed. Open Distance Learning program

PDO Level Results Indicators	Core	DLI	Unit of Measure	Baseline 2013-14	Cumulative Target Values						Frequency	Data Source/Methodology	Responsibility for Data Collection
					Yr 0 2014-15	Yr. 1 2015-16	Yr. 2 2016-17	Yr. 3 2017-18	Yr. 4 2018-19	Yr. 5 2019-20			
Intermediate Results Indicator 1.1: <i>Number of institutions with improved physical and ICT infrastructure</i>		√ <input type="checkbox"/>	Number	0	0	0	250	300	350	400	Annual	BSEIDC annual reports	BSEIDC
Intermediate Results Indicator 1.2: <i>ICT system for D.El.Ed. elementary teacher certification program developed and used</i>	<input type="checkbox"/>	√ <input type="checkbox"/>	%	0				Online teacher assignment and assessment system developed and piloted	30% of trainees using online system for uploading assignments and receiving feedback from instructors	50% of trainees using online system for uploading assignments and receiving feedback from instructors	Annual	SCERT ODL teacher database	SCERT
Intermediate Results Area 2: Monitoring and evaluation system for teachers													
Intermediate Results Indicator 2.1.: <i>Teacher management and attendance effectively monitored and evaluated</i>	<input type="checkbox"/>	√ <input type="checkbox"/>	Yes/No	0			(i)Disclosure of revised and completed TEMIS teacher's	School support visits by BEOs and BRCCs (quarterly) and by and	Teacher performance benchmarks translated into updated teacher	Policy framework for providing incentive to better performing	Annual	BSEIDC Annual reports+ Dept. Of Education annual reports	BSEIDC and Dept. of Education

PDO Results Indicators	Level	Core	DLI	Unit of Measure	Baseline 2013-14	Cumulative Target Values					Frequency	Data Source/Methodology	Responsibility for Data Collection
						Yr 0 2014-15	Yr. 1 2015-16	Yr. 2 2016-17	Yr. 3 2017-18	Yr. 4 2018-19			
							database on DRT website (ii)SMCs trained on monitoring teacher attendance in 10 districts	CRCCs (monthly) in at least 20 districts	training curricula	teachers developed and approved by GOB for implementation			
Indicator 2.2: <i>Improvement in Teacher Education Institutional Development Index scores</i>				%			TEIDI baseline survey completed and score index generated			(ii)TEIDI end line survey shows an improvement of 10% in TE index score over baseline			

PDO Level Results Indicators	Core	DLI	Unit of Measure	Baseline 2013-14	Cumulative Target Values						Frequency	Data Source/Methodology	Responsibility for Data Collection
					Yr 0 2014-15	Yr. 1 2015-16	Yr. 2 2016-17	Yr. 3 2017-18	Yr. 4 2018-19	Yr. 5 2019-20			
Intermediate Results Indicator 2.3: <i>Student learning outcomes monitored</i>				0		0	State of Education Bihar Report on grades 3,5 and 8 NAS survey/ State level assessments	0	State of Education Bihar Report on grades 3, 5 and 8 NAS survey including trend data/ State level assessments	0	Twice during operation period	SCERT	SCERT
Intermediate Results Area 3: Fiduciary and Governance systems													

PDO Level Results Indicators	Core	DLI	Unit of Measure	Baseline 2013-14	Cumulative Target Values						Frequency	Data Source/Methodology	Responsibility for Data Collection
					Yr 0 2014-15	Yr. 1 2015-16	Yr. 2 2016-17	Yr. 3 2017-18	Yr. 4 2018-19	Yr. 5 2019-20			
Intermediate Results Indicator 3.1: <i>% of procurement complaints handled satisfactorily in a timely manner.</i> <i>Strengthened internal audit framework established</i>		6	%	No formal System exists		60%	70%	75%	80%	90%	Annually	BSEIDC complaint handling data	BSEIDC
				Annual internal audit focused on support to financial audit.		Framework and ToR approved by audit committee	Two six monthly internal audit carried out and reported submitted to audit committee	Quarterly audit carried out and reported submitted to audit committee	Audit Committee meets at-least 4 times in a financial year	Annually	BSEIDC Audit committee minutes	BSEIDC	

Annex 3: Disbursement Linked Indicators, Disbursement Arrangements and Verification Protocols

Disbursement-Linked Indicators, Disbursement-Linked Results and Allocated Amounts

	<i>Total Financing Allocated to DLI</i>	<i>As % of Total Financing Amount</i>	<i>DLI Baseline 2014-15</i>	<i>Indicative timeline for DLI achievement</i>					
				<i>2014-15 Period 0</i>	<i>2015-16 Period 1</i>	<i>2016-17 Period 2</i>	<i>2017-18 Period 3</i>	<i>2018-19 Period 4</i>	<i>2019-20 Period 5</i>
DLI 1: Infrastructure Ensuring requisite infrastructure of TE Institutions			Inadequate infrastructure of TE institutions and no dedicated ICT facilities in to support teacher training	(i) BSEIDC has established the minimum standards for the improvement of TE Institutions; and (ii) BSEIDC has prepared a priority list of at least 250 TE Institutions needing improved facilities and ICT infrastructure.	(iii) BSEIDC has completed the upgrade of at least 40 TE Institutions since Year 0 in accordance with established minimum standards.	BSEIDC has completed the upgrade of: (i) at least 110 TE Institutions in FY2016/17; and (ii) a minimum of 150 TE Institutions since Year 0, all in accordance with established minimum standards	BSEIDC has completed the upgrade of: (i) at least 50 TE Institutions in FY2017/18; and (ii) a minimum of 250 TE Institutions since Year 0, all in accordance with established minimum standards.	BSEIDC has completed the upgrade of: (i) at least 50 TE Institutions in FY2018/19; and (ii) a minimum of 300 TE Institutions since Year 0, all in accordance with established minimum standards.	BSEIDC has completed the upgrade of: (i) at least 50 TE Institutions in FY2019/20 ; and (ii) a minimum of 350 TE Institutions since Year 0, all in accordance with established minimum standards.
Allocated amount:	\$50m	22%		\$10m	\$100,000 per TE Institution upgraded	\$100,000 per TE Institution upgraded in Year 2	\$100,000 per TE Institution upgraded in Year 3	\$100,000 per TE Institution upgraded in Year 4	\$100,000 per TE Institution upgraded in Year 5

	<i>Total Financing Allocated to DLI</i>	<i>As % of Total Financing Amount</i>	<i>DLI Baseline 2014-15</i>	<i>Indicative timeline for DLI achievement</i>					
				<i>2014-15 Period 0</i>	<i>2015-16 Period 1</i>	<i>2016-17 Period 2</i>	<i>2017-18 Period 3</i>	<i>2018-19 Period 4</i>	<i>2019-20 Period 5</i>
DLI 2: Institutional Capacity Ensuring Capacity Enhancement of TE institutions for effective TE delivery			~35% filled positions in DIETs, PTECs, and BRCs (and mostly on ad hoc basis); and inadequate capacity of TE institutions DRT to fill in 1,008 of the 1,672 total teacher education cadre sanctioned positions	[No DLI in this Period]	SCERT has carried out a TEIDI baseline survey of TE Institutions and established their respective aggregate index score to determine priorities for investment.	PSC has filled in at least 60% of the sanctioned staff positions for DIETs and PTECs on regular basis.	PSC has filled in at least 65% of the sanctioned staff positions for DIETs and PTECs in on regular basis.	PSC has filled in at least 75% of the sanctioned staff positions for DIETs and PTECs on regular basis.	SCERT has carried out a TEIDI end-line survey of TE Institutions surveyed in Year 1, evidencing improvements in their respective aggregate index score in at least 10% of them.
Allocated amount:	\$35m	16%			\$5m	\$10m	\$5m	\$5m	\$10m
DLI 3: Quality Improvement Training of unqualified teachers and professional development of all teachers through ICT solutions.			(i) 65,000 unqualified teachers in service (ii) No CPD undertaken for in-service teachers	NCTE has approved the package for print-based materials prepared by SCERT for the curricula of the D.El.Ed.	SCERT has commissioned a needs assessment study for the design of on-line programs for teachers' professional development.	SCERT has rolled out the D.El.Ed. open and distance learning program in at least 100 TE Institutions using ICT-based materials.	At least 60% of teachers enrolled in continuous professional development programs in FY2015/16 in 20 Districts, have completed said programs	(i) At least 14,000 teachers who enrolled the D.El.Ed. open and distance learning program in Fiscal Year 2016/17 have successfully passed the	(i) At least 14,000 teachers who enrolled the D.El.Ed. open and distance learning program in Fiscal Year

	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline 2014-15	Indicative timeline for DLI achievement					
				2014-15 Period 0	2015-16 Period 1	2016-17 Period 2	2017-18 Period 3	2018-19 Period 4	2019-20 Period 5
								program's final examination ; and (ii) At least 70% of teacher enrolled in continuous professional development programs in FY2017/18 in 20 Districts, have completed said programs.	2017/18 have successfully passed the program's final examination; and (ii) At least 75% of teacher enrolled in continuous professional development programs in FY2018/19 in 20 Districts, have completed said programs.
Allocated amount:	\$40m	18%		\$4m	\$4m	\$8m	\$8m	\$30,000 per batch of 100 teachers that	\$30,000 per batch of 100

	<i>Total Financing Allocated to DLI</i>	<i>As % of Total Financing Amount</i>	<i>DLI Baseline 2014-15</i>	<i>Indicative timeline for DLI achievement</i>					
				<i>2014-15 Period 0</i>	<i>2015-16 Period 1</i>	<i>2016-17 Period 2</i>	<i>2017-18 Period 3</i>	<i>2018-19 Period 4</i>	<i>2019-20 Period 5</i>
								passed the examination (target (i) above); and \$3.5m for target (ii) above.	teachers that passed the examination (target (i) above); and \$ 2.75m for target (ii) above.
<p>DLI 4: Accountability and Monitoring System</p> <p>Ensuring Teachers' management and performance is effectively monitored and evaluated.</p>			No system in place for planning and management of teachers and their performance	[No DLI in this Period]	DR&T and SCERT has: (i) developed teacher performance indicators (benchmarks); and (ii) carried out a baseline survey thereof, on the basis of terms of reference agreed with the World Bank.	(i) DR&T has publicly disclosed in its website the revised and updated TEMIS teacher training database; and (ii) SCERT has updated the D.El.Ed. teacher training curricula (content and pedagogy) taking into consideration the results of the teachers	DR&T has updated and upgraded the TEMIS' teachers training database in at least 20 Districts.	DoE has approved a policy framework providing incentives to better performing teachers and teachers' educators.	The average teacher performance score has improved by 10%age points from baseline survey of Year 1, as evidence by end-line survey in Year 5.

	<i>Total Financing Allocated to DLI</i>	<i>As % of Total Financing Amount</i>	<i>DLI Baseline 2014-15</i>	<i>Indicative timeline for DLI achievement</i>					
				<i>2014-15 Period 0</i>	<i>2015-16 Period 1</i>	<i>2016-17 Period 2</i>	<i>2017-18 Period 3</i>	<i>2018-19 Period 4</i>	<i>2019-20 Period 5</i>
						performance benchmarks surveyed in Year 1.			
Allocated amount:	\$36m	16%			\$2m	\$4m for target (i) above; and \$2m for target (ii) above	\$8m	\$8m	\$12m
DLI 5: Teacher Accountability Teachers' accountability at school level			Limited role of SMCs in monitoring school functioning and teacher attendance Teacher attendance in primary schools: 81%; Teacher attendance in upper primary schools :78%	[No DLI in this Period]	[No DLI in this Period]	SCERT has completed the training of SMCs (including training on a newly-developed module on teacher accountability) in at least 10% of elementary schools.	BEOs' and BRCCs' visits reports are available for at least 50% of elementary schools.	[No DLI in this Period]	(i) Teachers' attendance in primary school has improved by 3% in Year 5 compared with baseline; and (ii) Teachers' attendance in upper primary school has improved by 3% in Year 5 compared with baseline
Allocated amount:	\$44m	20%			0	\$12m	\$12m	\$0	\$20m

	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline 2014-15	Indicative timeline for DLI achievement					
				2014-15 Period 0	2015-16 Period 1	2016-17 Period 2	2017-18 Period 3	2018-19 Period 4	2019-20 Period 5
<p>DLI 6: Strengthened Corporate Governance</p> <p>Program Fiduciary Systems & Performance</p>			<p>(i) Inadequate Corporate Governance mechanisms in BSEIDC including procurement practices, mechanisms for compliant handling and ; absence of a robust procurement MIS; and</p> <p>(ii)DR&T not in timely compliance with the Bihar Treasury and Finance Rules</p>	[No DLI in this Period]	BSEIDC has adopted a framework for strengthening its corporate governance including disclosure practices and a grievance redressal mechanism for the handling of procurement complaints.	<p>(i) BSEIDC has publicly disclosed in its website all contracts awarded under the Program,</p> <p>(ii) BSEIDC has publicly disclosed in its website monthly physical and financial progress reports for at least 80% of the contracts disclosed; and</p> <p>(iii)The Program's expenditures for Fiscal Year 2016-17, as recorded by DR&T and computerized in CTMIS have been reconciled</p>	<p>(i) BSEIDC has implemented an enterprise resource planning system with modules for procurement, contract and financial management activities under the Program</p> <p>(ii) The Program's expenditures for Fiscal Year 2017-18, as recorded by DR&T and computerized in CTMIS</p>	<p>(i)BSEIDC has satisfactorily handled, as per approved framework, at least 80% of the grievance complaints received since the approval of the corporate governance framework ; and</p> <p>(ii) The Program's expenditures for Fiscal Year 2018-19, as recorded by DR&T and computerized in CTMIS have been reconciled with AG (A&E)</p>	BSEIDC has publicly disclosed in its website monthly physical and financial progress reports for all the contracts disclosed under the Program.

	<i>Total Financing Allocated to DLI</i>	<i>As % of Total Financing Amount</i>	<i>DLI Baseline 2014-15</i>	<i>Indicative timeline for DLI achievement</i>					
				<i>2014-15 Period 0</i>	<i>2015-16 Period 1</i>	<i>2016-17 Period 2</i>	<i>2017-18 Period 3</i>	<i>2018-19 Period 4</i>	<i>2019-20 Period 5</i>
						with AG (A&E) with respect to the budget heads for the Program.	have been reconciled with AG (A&E) with respect to the budget heads for the Program.	with respect to the budget heads for the Program.	
Allocated amount:	\$20m	9%			\$2m	\$2m for target (i) above; \$2m for target (ii) above; and \$2m for target (iii) above.	\$4m for target (i) above; and \$2m for target (ii) above	\$2m for target (i) above; and \$2m for target (ii) above.	\$2m
Total Financing Allocated:	\$225m	100%		\$14m	\$17m	\$61m	\$42m	\$30m	\$61m

DLI Verification Protocol

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
1	DLI 1: Infrastructure Ensuring requisite infrastructure of TE Institutions	<u>2014-15 (Period 0):</u> (i) BSEIDC has established the minimum standards for the improvement of TE Institutions; and (ii) BSEIDC has prepared a priority list of at least 250 TE Institutions needing improved facilities and ICT infrastructure.	No	<ul style="list-style-type: none"> Priority list duly of identified institutions (DIETS, PTECs, CTEs and BRCs) 	Review of source documents by Secretary, Department of Education subject	<p>The verification process will involve review of source documents provided by BSEIDC</p> <p>Infrastructure to be defined per type of institution: [DIET/PTEC/CTE: academic/administrative building, boys and girls hostels, with appropriate environment and energy requirements</p> <p>BRC: two rooms, including toilets/sanitation and appropriate environment requirements]</p> <p>ICT infrastructure means: 2 laptops, table, link to power source, printer, projector with screen, secure storage facility</p>
		<u>2015-16 (Period 1):</u> BSEIDC has completed the upgrade of at least 40 TE Institutions since Year 0 in accordance with established minimum standards.	Yes. \$100,000 per TE Institution upgraded. The threshold for the consideration of this DLI as complete would be a minimum of 40 institutions for the State to avail of the per institution cost. In case the State completes more than 40 institutions a year, they receive \$100,000 per institution. In case less	<p>(1) Report on the completion of the agreed list of facilities (in accordance with the RFPs) by BSEIDC for repairs/renovation, etc. required for ICT infrastructure and furnishing with requisite environment requirements in place</p> <p>(2) Site plans, Quality Inspection Reports/ BSEIDC engineers</p> <p>(3) Environment guidelines</p>	<ul style="list-style-type: none"> Govt. agency: Dept. of Education Third party 	<p>BSEIDC will provide a list of all institutions completed with civil works and ICT infrastructure in Period 1, with documentation that installation has been completed. The verification process will commence once this list is provided:</p> <p>Installation certificates for at least 40 institutions received Site visits</p>

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
			than 150 institutions are completed in a year no funds will be available.	(4) Social Assessment recommendations		<p>The verification process will review completion status against site plans based on data source documents for all institutions.</p> <p>Minimum of 2 completed DIETs +1 randomly sampled other institution in nearby district (minimum of 3 institutions) will be visited for physical verification by third parties following the agreed verification template</p>
		<p><u>2016-17 (Period 2):</u> BSEIDC has completed the upgrade of: (i) at least 110 TE Institutions in FY2016/17; and (ii) a minimum of 150 TE Institutions since Year 0, all in accordance with established minimum standards</p>	<p>Yes. \$100,000 per TE Institution upgraded in Year 2. The threshold for the consideration of this DLI as complete would be a minimum of 110 institutions for the State to avail of the per institution cost. In case the State completes more than 150 institutions a year, they receive \$100,000 per institution. In case less than 150 institutions are completed in a year no funds will be available.</p>	<p>(1) Report on the completion of the agreed list of facilities (in accordance with the RFPs) by BSEIDC for repairs/renovation, etc. required for ICT infrastructure and furnishing with requisite environment requirements in place</p> <p>(2) Site plans, Quality Inspection Reports/ BSEIDC engineers</p> <p>(3) Environment guidelines</p> <p>(4) Social Assessment recommendations</p>	<ul style="list-style-type: none"> • Govt. agency: Dept. of Education • Third party 	<p>BSEIDC will provide a list of all institutions completed with civil works and ICT infrastructure in Period 2, with documentation that installation has been completed. The verification process will commence once this list is provided:</p> <p>Installation certificates for at least 150 institutions received Site visits</p> <p>The verification process will review completion status against site plans based on data source documents for all institutions.</p> <p>Minimum of 4 completed DIETs or PTECs +1 randomly sampled other institution in that district (minimum of 8 institutions)</p>

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
						will be visited for physical verification by third parties following the agreed verification template
		<p><u>2017-18 (Period 3):</u></p> <p>BSEIDC has completed the upgrade of: (i) at least 50 TE Institutions in FY2017/18; and (ii) a minimum of 250 TE Institutions since Year 0, all in accordance with established minimum standards.</p>	<p>Yes</p> <p>\$100,000 per TE</p> <p>Institution upgraded in Year 3 upon certification of upgrade completion of at least 250 of them since Year 0.</p> <p>Minimum threshold 250</p>	<p>1) Report by BSEIDC on the completion of civil works/repairs/renovation,/ICT infrastructure and furnishing with requisite environment requirements in place</p> <p>2)Site plans, Quality Inspection Reports/ BSEIDC engineers</p>	<ul style="list-style-type: none"> • Govt. agency: BSEIDC • Third party 	<p>Completion of core infrastructure in 300 teacher education institutions</p> <p>BSEIDC will provide a list of all institutions which have been completed in the Period 3, with documentation that work has been completed. The verification process will commence once this list is provided.</p> <p>The verification process will review completion status against site plans based on data source documents for the institutions refurbished in Period 3.</p> <p>The review will be of core infrastructure and campus development.</p> <p>Minimum 4 DIETs or PTECs and 1 randomly sampled other institution in that district (minimum 8 institutions) refurbished in Period 3 will be visited for physical verification by third parties.</p>

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		<p><u>2018-19 (Period 4):</u></p> <p>BSEIDC has completed the upgrade of: (i) at least 50 TE Institutions in FY2018/19; and (ii) a minimum of 300 TE Institutions since Year 0, all in accordance with established minimum standards.</p>	<p>Yes</p> <p>\$100,000 per TE Institution upgraded upon certification of upgrade completion of at least 300 of them since Year 0. Minimum threshold 300</p>	<p>1) Report by BSEIDC on the completion of civil works/repairs/renovation,/ICT infrastructure and furnishing with requisite environment requirements in place</p> <p>2) Site plans, Quality Inspection Reports/ BSEIDC engineers</p>	<ul style="list-style-type: none"> • Govt. agency: BSEIDC • Third party: 	<p>Completion of core infrastructure and campus development at DIET/PTEC/CTE. Campus development means: boundary wall, landscaping, faculty quarters, principal quarters, internal road, non-conventional energy</p> <p>BRC completion means: ICT infrastructure, two rooms, toilet, power generation</p> <p>BSEIDC will provide a list of all institutions completed in Period 4, with documentation that work has been completed. The verification process will commence once this list is provided.</p> <p>The verification process will review completion status against site plans based on data source documents for all institutions, with no duplication from 1st and 2nd periods.</p> <p>Minimum 4 DIETs or PTECs and 1 other randomly sampled institution from that district (minimum 8 institutions) refurbished in Period 4 will be visited for physical verification by third parties</p>

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		<u>2019-20 (Period 5):</u> BSEIDC has completed the upgrade of: (i) at least 50 TE Institutions in FY2019/20; and (ii) a minimum of 350 TE Institutions since Year 0, all in accordance with established minimum standards.	Yes \$100,000 per TE Institution upgraded upon certification of upgrade completion of at least 350 of them since Year 0. Minimum threshold 350	1) Report by BSEIDC on the completion of civil works/repairs/renovation,/ICT infrastructure and furnishing with requisite environment requirements in place 2)Site plans, Quality Inspection Reports/ BSEIDC engineers	<ul style="list-style-type: none"> • Govt. agency: BSEIDC • Third party 	BSEIDC will provide a list of all institutions completed in Period 5, with documentation that work has been completed. The verification process will commence once this list is provided. The verification process review completion status against site plans based on data source documents of 100 institutions. Minimum 4 DIETs or PTECs and 1 other randomly sampled institution in that district(minimum 8 institutions) refurbished in Period 5 will be visited for physical verification by third parties

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
2	DLI 2: Institutional Capacity Ensuring Capacity Enhancement of TE institutions for effective TE delivery	<u>2015-16 (Period 1):</u> SCERT has carried out a TEIDI baseline survey of TE Institutions and established their respective aggregate index score to determine priorities for investment. Teacher education Institutional Development Index (TEIDI) is a reporting format that is aimed at assessing institutional functioning for their eventual grading. Institutions are assessed based on 4 key parameters: Access, Equity, Quality and Governance.	No	Field trialed report of TEIDI instruments Baseline report for institutes of TEIDI SCERT	Department of Education	The verification process will involve review of source documents, interactions with SCERT.
		<u>2016-17 (Period 2):</u> PSC has filled in at least 60% of the sanctioned staff positions for DIETs and PTECs on regular basis.	No	Report from Department of Education	Verification by Department of Finance	The Department of Education will provide a list of the number of sanctioned posts in each grade and number of people in positions in each institution, with date of appointment to Department of Finance. The verification process will begin once this list is received.

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
						The verification process will involve review of source documents.
		<u>2017-18 (Period 3):</u> PSC has filled in at least 65% of the sanctioned staff positions for DIETs and PTECs on regular basis.	No	Report from Department of Education	Verification by Department of Finance	The Department of Education will provide a list of the number of sanctioned posts in each grade and number of people in positions in each institution, with date of appointment to Department of Finance. The verification process will begin once this list is received. The verification process will involve review of source documents.
		<u>2018-19 (Period 4):</u> PSC has filled in at least 75% of the sanctioned staff positions for DIETs and PTECs on regular basis.	No	Report from Department of Education	Verification by Department of Finance	The Department of Education will provide a list of the number of sanctioned posts in each grade and number of people in positions in each institution, with date of appointment to Department of Finance. The verification process will begin once this list is received. The verification process will involve review of source documents
		<u>2019-20 (Period 5):</u> SCERT has carried out a TEIDI end-line survey of TE Institutions surveyed in Year 1,	No	<ul style="list-style-type: none"> • TEIDI baseline and end line reports • Third party verification report 	<ul style="list-style-type: none"> • Third party 	The verification process will involve review of source documents and interactions. 5% sample site verification report of TEIDI survey/ Third party

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		evidencing improvements in their respective aggregate index score in at least 10% of them.				
3	DLI 3: Quality Improvement Training of unqualified teachers and professional development of all teachers through ICT solutions.	<u>2014-15 (Period 0):</u> NCTE has approved the package for print-based materials prepared by SCERT for the curricula of the D.El.Ed.	No	Material package and NCTE approval letter of print materials of D.El.Ed	<ul style="list-style-type: none"> • Review of Approval documents by Secretary DOE 	The verification will involve review of source documents (set of materials) provided by SCERT
		<u>2015-16 (Period 1):</u> SCERT has commissioned a needs assessment study for the design of on-line program for teachers professional development	No	Teacher Needs Assessment (TNA) report submitted by SCERT	<ul style="list-style-type: none"> • Third party assessment of TNA report 	The verification will involve review of source documents (report on needs assessment) provided by SCERT
		<u>2016-17 (Period 2):</u> SCERT has rolled out the D.El.Ed. open and distance learning program in at least 100 TE Institutions using ICT based materials	No	At least 100 TE institutions are using online tracking of registration, attendance, assignments, assessments, and completion of D.El.Ed course with EMIS managed by multimedia content provider/ firm	Third party	<p>The verification process will involve review of source documents (online ODL management system).</p> <p>Verification of sample of online records for attendance and assignments at least 4 DIETs and 1 other center in each of the 4 districts(at least 8 centers) by third party</p> <p>List of centres using ICT based materials provided by SCERT.</p>

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		<u>2017-18 (Period 3):</u> At least 60% of teachers enrolled in continuous professional development program in FY2015/16 in 20 Districts have completed said programs	No	Data base of CPD program completion tracked through TEMIS	Third Party:	(i)The verification process will look updation of CPD teacher numbers on the TEMIS and the extent of use of the online forums from the sources Teacher ID number common between SCERT and BSEB
		<u>2018-19 (Period 4):</u> (i) At least 14,000 teachers who enrolled the D.El.Ed. open and distance learning program in Fiscal Year 2016/17 have successfully passed the program final examination; and (ii) At least 70% of teacher enrolled in continuous professional development programs in FY2017/18 in 20 Districts, have completed said programs.	(i)Yes. Fund disbursement for this DLI will be in proportion to % of DLI achieved. If the state does not achieve 14000 teachers completing D.El.Ed, no disbursement can be made. For every 100 teachers above the threshold of 14,000 teachers completing the D.El.Ed. Program, the State will receive \$ 15,000. If the threshold of 14,000 is reached the state receives \$ 2.1 m. (ii)No \$3.5 million for the 70% completion rate of the teachers continued professional	1.Results of the candidates from the Bihar State Examination Board 2. Data base of CPD program completion tracked through TEMIS	<ul style="list-style-type: none"> • Govt. agency: Bihar State Examination Board • Third Party 	(i)Teacher ID number common between SCERT and BSEB (ii) The verification process will look updation of CPD teacher numbers on the TEMIS and the extent of use of the online forums from the sources

#	DLI	Definition/Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
			development program in 20 Districts			
		<p><u>2019-20 (Period 5):</u> (i) At least 14,000 teachers who enrolled the D.El.Ed. open and distance learning program in Fiscal Year 2017/18 have successfully passed the program final examination; and (ii) At least 75% of teacher enrolled in continuous professional development program in FY2018/19 in 20 Districts, have completed said program</p>	<p>(i) Yes Fund disbursement for this DLI will be in proportion to % of DLI achieved. If the state does not achieve 14000 teachers completing D.El.Ed, no disbursement can be made. For every 100 teachers above the threshold of 14,000 teachers completing the D.El.Ed. Program, the State will receive \$ 15,000. If the threshold of 14,000 is reached the state receives \$ 2.1 m. (ii) No \$2.75 million for the 75% completion rate of the teachers continued professional development program in 20 Districts</p>	<p>1. Results of the successful candidates from the Bihar State Examination Board 2. Data base of CPD program completion tracked through TEMIS</p>	<ul style="list-style-type: none"> Govt. agency: Bihar State Examination Board Third party 	<p>(i) The verification process will look at the extent of use of the online forums from the sources. Teacher ID number common between SCERT and BSEB (ii) The verification process will look updation of CPD teacher numbers on the TEMIS and the extent of use of the online forums from the sources</p>
4	DLI 4: Accountability and Monitoring System Ensuring Teachers' management and performance is effectively monitored and evaluated	<p><u>2015-16 Period (1):</u> DR&T and SCERT has: (i) developed teacher performance indicators (benchmarks); and (ii) carried out a</p>	No	Submission of the teacher performance indicator report by the SCERT along with the baselines	DOE	Baseline data disclosed on the DOE website

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		baseline survey thereof, on the basis of terms of reference agreed with the World Bank.				
		<u>2016-17 (Period 2):</u> (i) DR&T has publicly disclosed in its website the revised and updated TEMIS teacher training database; and (ii) SCERT has updated the D. El Ed teacher training curricula (content and pedagogy) taking into consideration the results of the teachers' performance benchmarks surveyed in Year 1	No. \$4 million for target (i); \$2 million for target (ii).	DRT SCERT	<ul style="list-style-type: none"> • Third party verification • Third party verification 	(i)The verification process will assess the DRT website showing data base of 435,000 teachers under TEMIS (ii) Updated curriculum will be verified through assessment of the updated training curriculum submitted by SCERT. The curriculum will show evidence of being updated in response to the issues identified in the teacher performance evaluation.
		<u>2017-18 (Period 3):</u> DR&T has updated and upgraded the TEMIS' teachers training database in at least 20 Districts.	No	TEMIS Database	<ul style="list-style-type: none"> • Third party: 	The verification process will involve review of up gradation of the teacher training database (to include the data of all elementary teachers in the state) and updated records (records to provide teacher training information) since disclosure of TEMIS data in 2015-16. The verification will also include a cross-check of at least 20 teacher records

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
						through their physical verification in 1 randomly selected block each in 2 districts
		<u>2018-19 (Period 4):</u> DoE has approved a policy framework providing incentives to better performing teachers and teachers' educators.	No	Department of Education	Review of source documents	(i)Approved Government Order available.
		<u>2019-20 (Period 5):</u> The average teacher performance score has improved by 10 %age points from baseline survey of Year 1, as evidence by end-line survey in Year 5	No	Third party end line report	• Third party	End line survey report published on Department of Education's website
5	DLI 5: Teacher Accountability Teachers accountability at school level	<u>2015-16 (Period 1):</u> [No DLI for this Period]				
		<u>2016-17 (Period 2):</u> SCERT has completed the training of SMCs (including training on a newly-developed module on teacher accountability) in at least 10% of elementary schools.	No	List of trained SMCs provided by SCERT	• Third party:	The verification will involve review of source documents. The verification will also include a site visit to SMCs in a random sample of at least 50 schools (out of list of trained SMCs) across 5 randomly sampled districts. Training of an SMC will be considered completed if at least 10 members are trained.
		<u>2017-18 (Period 3):</u>	No		• Third party:	The verification will involve review of Quality

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		BEOs' and BRCCs' visits reports are available for at least 50% of elementary schools.		BEO and BRCCs school visit reports (Quality Monitoring Tool) to be analyzed to assess the teacher attendance and teacher performance ¹⁷		Monitoring Tool; and a site visit to a random sample of at least 50 schools across 5 randomly sampled districts covered in this year.
		<u>2018-19 (Period 4):</u> No DLI in this period				
		<u>2019-20 (Period 5):</u> (i) Teachers' attendance in primary school has improved by 3% in Year 5 compared with baseline. The baseline is 81% in 2014. (ii) Teachers' attendance in upper primary school has improved by 3% in year 5 compared with baseline. The baseline is 78% in 2014.	Yes If there is less than 3% increase in teacher attendance at the primary level, no funds will be provided. For increase in attendance rate by 3% at primary levels \$ 7.2 million will be disbursed. (Both Reports have the same methodology for assessment). For every 0.1% increase over 3%, there will be disbursement of \$240,000 up to a total of \$12 million.	Third party report	<ul style="list-style-type: none"> Report of Ministry of Human Resource Development (GOI) on RTE 	The verification process will involve review of source documents of the Ministry of Human Resource Development (GOI) that tracks teacher attendance.

¹⁷ . BEO and BRCCs school visit will include a review and report on teacher performance and attendance records

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		computerized in CTMIS have been reconciled with AG (A&E) with respect to the budget heads for the Program.	No.			DR&T will obtain and share the certification issued by AG (A&E). In case there are differences, a note of error /transfer entry proposed to the AG by DR&T should be additionally provided.
		<u>2017-18 (Period 3):</u> (i) BSEIDC has implemented an enterprise resource planning system with modules for procurement, contract and financial management activities under the Operation;	No	Data and financial reports from ERP to be provided by BSEIDC	Third party	Go Live certification issued by BSEIDC; The verification process will involve review of source documents from ERP system and a comparison with publically disclosed data; Annual entity audited financial statements of FY 2016-17 prepared based on ERP data.
		(ii) The Program's expenditures for Fiscal Year 2017-18, as recorded by DR&T and computerized in CTMIS have been reconciled with AG (A&E) with respect to the budget heads for the Program.	No	Reconciliation certificate issued by AG (A&E)	Third Party	DR&T will obtain and share the certification issued by AG (A&E). In case there are differences, a note of error /transfer entry proposed to the AG by DR&T should be additionally provided.
		<u>2018-19 (Period 4):</u> (i) BSEIDC has satisfactorily handled, as per	No	Report by BSEIDC; BSEIDC website	Third party	Functioning procurement complaint handling system to be available. All the

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		approved framework, at least 80% of the grievance complaints received since the approval of the corporate governance framework.				information will be available on BSEIDC website with time and date stamp. This will be validated by the third party with source documents in BSEIDC.
		(ii) The Program's expenditures for Fiscal Year 2018/19, as recorded by DR&T and computerized in CTMIS have been reconciled with AG (A&E) with respect to the budget heads for the Program	No	Reconciliation certificate issued by AG (A&E)	Third party	DR&T will obtain and share the certification issued by AG (A&E). In case there are differences, a note of error /transfer entry proposed to the AG by DR&T should be additionally provided.
		<u>2019-20 (Period 5):</u> BSEIDC has publicly disclosed in its website monthly physical and financial progress reports for all the contracts disclosed under the Program.	No	BSEIDC website	Third party	All the information will be available on BSEIDC website with time and date stamp. This will be validated by the third party with source documents in BSEIDC including the ERP system.

Annex 4: Summary Technical Assessment

1. The Technical Assessment looked at the teacher education sector performance in Bihar, institutional issues and key challenges. Specific issues reviewed were the strategic relevance of the Operation in the context of Bihar's overall Mission *Manav Vikas* that targets improvement the education sector (school education, teacher education and higher education) with special emphasis on quality school and teacher education. The current status of institutional capacities in delivering the teacher education Operation has been traced including capacities and operational constraints. On sector performance, the current status of service levels, policy environment and strategic directions of the sector, and the results framework were assessed.

2. **Strategic Relevance:** The Program is strategically relevant as it addresses Bihar's challenges in providing quality elementary education through upgrading teacher quality and accountability for greater effectiveness. There were ambitious national goals of RTE to improve access and quality to education through strict standards and norms that all schools were required to meet. Standards included (i) free elementary education to all children aged six to fourteen years, (ii) provision of appropriate infrastructure and learning material for all schools, and (iii) the requirement that all States ensure that their schools maintained a pupil-teacher ratio (PTR) of 30:1 at primary level and 35:1 at upper primary level by 2015, with all teachers having at least minimum academic qualifications.

3. Considering the acute teacher shortages to meet the PTR of 1:40, Bihar hired 242,000 additional teachers in 2006 and is continuing to recruit to meet the requisite RTE norms for PTR. The huge influx of teachers during this time period came about through teacher appointments made by the local self-governments at the village level. Most of these teachers were unqualified and are currently in service. However, due to their flattened salary trajectory and education background, these teachers, plus others already in the system, require continuous support for improving their effectiveness in the classroom. Many teachers lack the capacity to teach the subjects required owing to the lowering of qualification thresholds for teachers. This leaves a large portion of the teacher work force with inadequate knowledge content and effective teaching practices. The program addresses the issue of promoting quick accreditation for locally hired teachers with use of Open and Distance Learning (ODL) to train them while they are on the job. Due to their abbreviated training period, flattened salary trajectory and education background these teachers as well as the other teachers in the system, require continuous support to allow them to effectively teach the required material in the classroom. CPD programs are being designed for the same purposes. However, considering the lack of quality teacher education institutions, the state is considering large scale creation/strengthening of TEIs. The TEIDI that was created with the support of World Bank TA will evaluate institutional effectiveness of the TEIs. TEIDI has a quantified and weighted checklist of indicators. These will measure institutional performance that will inform planning for effective decision-making at the state and institutional levels. The state will roll out the TEIDI in the by the end of the calendar year. Teacher performance will be monitored through a contextually relevant set of teacher standards or competencies that will be established. These standards will be used to create a baseline (and subsequently a midline and end-line data base) for teacher performance and inform pre-service/in-service professional development under the Operation. Lack of information on teachers and teacher education institutions limits decision makers' ability to plan and project future school

needs. The indicators will measure teacher performance in three domains: (i) subject knowledge, (ii) teacher practices, and (iii) time on task. Finally, with respect to incentives, the program will track teacher professional career development and the work with SMCs will provide stronger accountability at the local level.

4. The Operation therefore is strategically relevant. It addresses the entire gamut of teachers' issues faced by the state; namely, infrastructure deficit, training capacity constraints, ineffective monitoring mechanisms for quality teacher performance and deficient fiduciary and governance mechanisms.

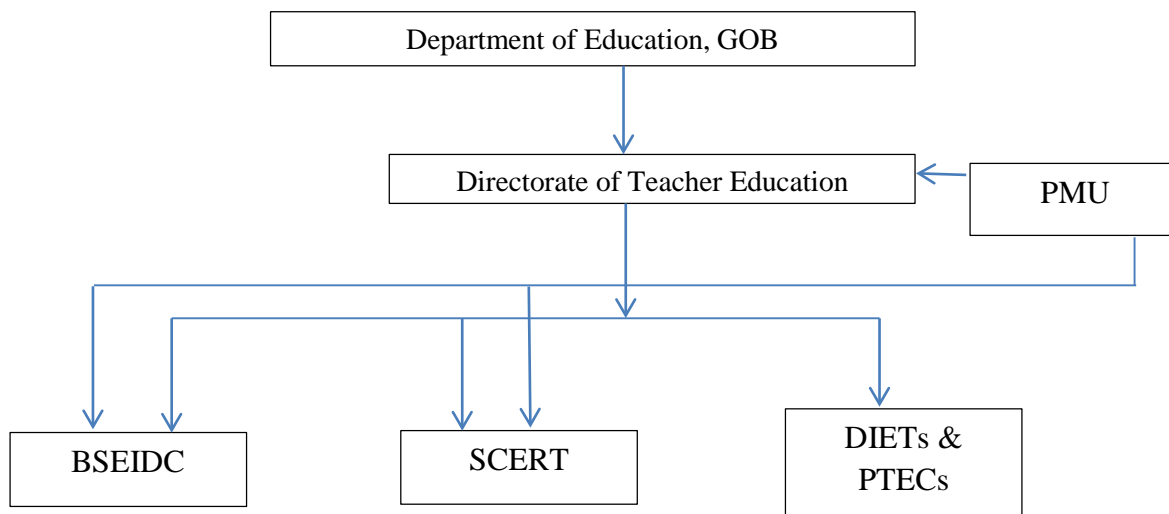
5. **Technical soundness:** In order for teachers to be effective in the classroom and support student learning, four main steps are needed: (a) people with the right aptitudes need to be recruited as teachers; (b) they should be deployed in a transparent manner to schools in need; (c) teachers must have or acquire the right skills and knowledge and; (d) they need incentives to use their skills and knowledge in the classroom. Bihar has already instituted a teacher reform process through ensuring provision of appropriate numbers of trained teachers to meet the pupil teacher norms requirement under RTE through intensive teacher recruitment. The TEMIS system created to support the program will further support more transparent selection of practicing teachers for in-service training. To support the acquisition of the right skills and knowledge, the program will address a sizeable deficit created by the past recruitment of large numbers of unqualified teachers with insufficient skills to perform effectively in the classroom. Finally, with respect to incentives, the program will track teachers' career development and collaboration with SMCs will provide stronger teacher accountability at the local level. School leadership and CPD programs for teachers to improve their professional practice and upgrade their knowledge base and skills.

6. **Governance Structure and Institutional Arrangements:** The Department of Education of the GOB will be the key implementing agency with the Directorate of Research and Training (DRT) under the Department as the nodal agency for routing all implementation and fund flow mechanisms under the Operation. The Operation will be implemented by the Directorate through the BSEIDC, SCERT, DIET and PTECs as the major executing and fund handling agencies. The Bihar State Educational Infrastructure Development Corporation (BSEIDC) will be the main procurement agency for all procurement activities under the Operation. Procurement activities are expected to include civil works for infrastructure up-gradation, multi-media content development, ICT hardware procurement and consulting services. The BSEIDC will be the procurement agency for the above for which substantive TA support will be provided. The SCERT will oversee the academic architecture of the Program covering curriculum and syllabus development; content and materials production; creation of teacher educators; capacity building of all major teacher training institutions like DIETS, BRCs and CRCs under the Program and managing the ICT and ODL architecture for teacher training under the Program. A Project Monitoring Unit (PMU) will be established to support the BSEIDC, the SCERT and the Directorate of Research and Training. The PMU will be created as an interim arrangement through the TA for the Operation period so that technical interventions can be integrated into the Operation design as well as into the system for its gradual withdrawal as the Operation closes.

7. The governance structure and institutional arrangements are designed to strengthen existing institutions to perform their roles more effectively within the regulatory framework

which is already sound. Pedagogical leadership will be provided by the SCERT, which has this responsibility but needs strong capacity enhancement to carry out its functions. The BSEIDC will continue its work on procurement, which it already does effectively for the Education Department; the TA will extend its capacity to handle consultancies and higher value, more complicated civil works and ICT procurements. The network of DIETs, BRCs and CRCs already are assigned appropriate functions, but the Operation will build their capacity to meet their responsibilities more effectively. With respect to overall program management, coordination as necessary across the Directorate of Research and Training, the SCERT and the BSEIDC will be done by the Principal Secretary, who is the line manager for both the agencies. The institutional arrangements are as follows:

Figure 5: Institutional Arrangements



8. **Expenditure framework:** The Education Department, GoB is the nodal department for providing education and setting up related framework and infrastructure across the State of Bihar. The Department operates through five Directorates, namely, (1) Primary Education; (2) Secondary Education; (3) Mass Education; (4) Higher Education; and (5) Research & Training. The Education Department has consistently received an allocation of 21 percent of the state’s annual budget over the last 3 years, the highest share across all departments reflecting the importance and allocative priorities of the GoB. The annual budget estimates (Plan and Non-plan) of the Education Department during FY 2012-13 and FY 2013-14 aggregated around INR 14,195 crores (US\$ 2.36 billion) and INR 19,459 crores (US\$ 3.24 billion) with the outlay for Plan schemes (State Plan funds and the State share of the various centrally sponsored schemes) being INR 5,962 crores (US\$ 0.994 billion) INR 6,319 crores (US\$ 1.053 billion) respectively. The annual budget estimates of the Department for FY 2014-15 are INR 24,715 crores¹⁸ (US\$ 4.12 billion) i.e. an increase of approximately 27 percent from FY 2013-14. The Education Department is responsible for implementing certain large centrally sponsored programs i.e., the Sarva Shiksha Abhiyan (SSA) and the Rashtriya Madhyamik Shiksha Abhiyan (RMSA), both of which are

¹⁸ The significant increase in 2014-15 is due to decision by GoI to route funds under centrally sponsored schemes through the state budget and treasury as against the off budget route adopted till Y 2013-14.

supported by the World Bank. These are implemented by Bihar State Education Society (a special purpose vehicle under the administrative control of the Education Department) with units at the state, district and block levels.

9. Within the Education Department of the Directorate of Research & Training (DR&T) has the administrative control and responsibility for research and training related to teacher's education in the State of Bihar. The department currently manages the centrally sponsored Teacher Education Scheme, with the program activities being executed by BSEIDC, SCERT & DIETs/PTECs. The budget outlay (schemes) related to teacher's training programs in FY 2012-13 and FY 2013-14 was INR 78.00 crores (US\$ 13 million) and INR 215.00 crores (US\$ 35 million) respectively and the actual release/expenditure was 59 percent and 23 percent respectively, indicating a low absorptive capacity. The share of the budget of the teacher's training has been only 0.21 percent of GoB budget and 1.03 percent of the Education Department's budget. After an expected increase in 2015-16 to 2016-17, due to the high level of infrastructure expenditure, this is expected to stabilize at around 0.38 percent GoB outlay and 1.8 percent of the Education Department's budget from the year 2018-19. There is therefore a low risk to sustainability of the program.

10. *Budget structure and classification:* Bihar follows a six tier budget classification system that allows expenditure tracking by function, sub-function, Program, Scheme, Sub-scheme and economic classification (natural heads of expenditure). This is based on a common framework/structure followed by the federal and all state governments¹⁹. The functional classification is derived from national guidelines issued by the federal government. The budget is further classified under Plan (Development Expenditure) and Non Plan (Maintenance Expenditure).

11. *Financing sustainability and funding predictability:* The State Legislature passed the Bihar Fiscal Responsibility and Budget Management (FRBM) Act in February 2006, committing itself to (a) eliminate the revenue deficit by 2008-09 and build up adequate revenue surpluses thereafter, to bring down fiscal deficit to a level of less than 3 percent of GSDP by 2008-09 and maintain it thereafter; (b) pursue policies to raise non tax revenue; and (c) lay down norms for prioritization of capital expenditure and pursue expenditure policies that would provide impetus for economic growth, poverty reduction and human development. These resolutions have largely been adhered to. However in addition to raising the resources, creating the institutional capacities for spending productively on assets and programs is also necessary, an area where Bihar is facing challenges. Bihar's fiscal position is sound and it has contained fiscal deficit within 3 percent of GSDP since 2006-07 except in 2009-10. Revenues grew steadily between 2011-12 and 2013-14. State revenues have grown at the rate of approx. 21 percent over the last 3 years, buoyed by a strong economic activity with GSDP growth of 11 percent over the last 3 years and increase flow of share of taxes, finance commission grants and federal funded scheme transfers. Bihar is however is significantly dependent (60 percent) on central transfers. Growth in spending has accelerated

¹⁹ There is a common budget & account code structure upto the 3rd tier (program) at the federal & state level, with states having flexibility to open heads below the 3rd tier based on their needs. A new seven dimensional account code structure is under discussion the federal level, which when implemented will address some of the limitations in the existing budget and account code structure.

reflecting a deliberate policy of accelerating capital investments, particularly in Plan expenditure, which have expanded at 26 percent over the last 3 years.

12. The Government's primary financial planning and control tool is the Annual Budget. No expenditure can be incurred until it's reflected in the budget and approved by the legislature; however use of supplementary budgets (2-3 times a year and draw down of Bihar Contingency Fund to meet regular program expenditures has tended to dilute the annual planning and budget process). Line departments also lack adequate capacity to prepare and manage their budgets, often resulting in inadequately planned budgeting and consequently delays in fund releases and lower budget execution rate. This also weakens financial planning in that, with a few exceptions, investment project budgets do not properly account for recurrent or maintenance expenditures.

13. *Results Framework and M&E:* The Operation has a jointly agreed Results Framework Document between the GOB and the World Bank to monitor milestones for achieving the development objective of the Program. The program will be monitored through key performance indicators with a detailed Results Framework. It has been agreed to use the PforR lending instrument to concentrate Bank financing in five key results indicators that will contribute to the achievement of the PDO. These are as follows:

- 475,000 beneficiaries (elementary school teachers covered through the program including an increase in percentage of female teachers)
- Improved teacher performance effectively monitored through index based on scores
- Teacher attendance enhanced by 5 percentage points
- 75 percentage of teacher positions in TE institutions filled; and
- 90,000 additional qualified elementary teachers resulting from program interventions

14. The state has limited capacity for M&E. Since the Program is based on the DLI based funding and has a strong results bias, there may be risk in the state being able to adhere to timely monitoring of activities for measured outcomes. The operation will therefore provide simultaneous TA support to address this capacity constraint in the state institutions and functionaries. Considerable efforts under the program will go to developing a system to monitor teacher recruitment, teacher management, institutional functioning and teacher performance. Impact evaluations will be undertaken to track gains emerging from program interventions.

15. *Program Action Plan (PAP)* A PAP has been created that will cover key action to be undertaken by the state related to program related areas, cross cutting areas, and fiduciary and safeguards (social and environment related) aspects. These actions have been provided in details in Annex 8.

16. *Economic and Financial Assessment.* A spatial analysis of the various education indicators reveals that the landscape is not really developed in a uniform manner and some states are doing much better than others. The dearth of qualified teachers in many states has led to a scenario where the educational machinery has on-boarded unqualified staff so as to ensure that increase in enrollment at the elementary schooling level is met with an increase in the teaching staff available to impart education to them. As a result, it is observed that the variation in the percentage of qualified Government teaching staff between states is very high. Bihar is one of the

states that is not performing well on this matrix and reported that only 49.2 percent of Government teachers held relevant qualifications.

17. The GOB has made heavy investments into creating the infrastructure required to cater to these children's schooling needs. In 2013-14, the State's budget allocation to Sarva Shiksha Abhiyan was about US\$ 0.56 billion. However, 80 to 90 percent of the non-capital expenditure budget was utilized to pay out salaries and the remainder was used for a variety of schemes such as free text books, uniforms, special schemes for disadvantaged groups etc. Despite having a sizeable budget for managing elementary education, the State still finds itself grappling with a paucity of free cash flow for designing, planning and executing a program that would work towards improving teacher effectiveness. Therefore, it is quite obvious that investments in the domains of teacher training for unqualified teaching staff, teacher education institutions and capacity building support for the monitoring & support setup should provide a higher social return on investment than the investments in infrastructure or subsidization of the private cost of education.

18. It is against this fiscal backdrop, that the Government has sought financial and technical assistance from the World Bank for 'enhancing teacher effectiveness in Bihar'. The Operation seeks to provide strategic financial and technical support to the Government through the following broad areas:

- The Operation seeks to develop and deploy an ICT based pre-service elementary teacher certification program to provide suitable training and certification to unqualified elementary school teachers. The ICT format is expected to be of great significance as it will train teachers whilst they continue to manage their respective classrooms. It would allow them to access curriculum and content from remote locations and at their own convenience. As a result it would help in overcoming any physical or time related barriers that teachers could face while pursuing such training/qualification. The ICT format would also overcome any barriers related to the limited availability of training facilities and master trainers and in this sense allows the system to maintain minimum quality standards for teacher training. Finally, this ICT platform/format can easily be expanded, modified and upgraded. As a result the Government can utilize it for continuous professional development of teacher educators, school principals and teachers. Therefore, the use of ICT in the technical assistance is expected to provide benefits and returns over a long time horizon that naturally stretches beyond the time period for which the assistance has been planned.
- The Program will also seek to strengthen the monitoring and evaluation system that will support and supervise teacher performance across schools in Bihar. It will specifically focus on ensuring that enough oversight mechanisms exist to ensure that teachers deliver the quality of education the aforementioned TA component seek to train them towards.
- The Program will support accountability and governance frameworks in the state implementing agencies such as the Directorate of Research and Training, the SCERT and the BSEIDC. The Operation will provide training support to BSEIDC and the staff

of the TE Directorate in financial management and procurement systems. Therefore the program contains within itself elements that ensure its sustainability post completion of technical assistance from the World Bank.

19. As per the Financial and Economic analysis that internalizes the social benefit arising from the aforementioned program concept, the Net Present Value (NPV) of the 'Enhancing Teacher Effectiveness in Bihar' Program is expected to be US\$ 484 million; the benefit/cost ratio is 1.29 and the Internal Rate of Return (IRR) is expected to be 19.3 percent.

20. *Social Benefits (Impact)*: The Operation seeks to address the immediate (short term) and the long term requirements for trained and qualified teaching staff at elementary schools in the state. It also seeks to create elaborate ICT machinery that can be used for continued professional development for the teachers teaching at government schools. As a result the program is expected to ensure that the state education machinery has qualified and trained teaching staff which will teach the children joining the elementary education system over the next 20 years.

21. It also seeks to build a support and supervisory system that would monitor teacher performance. As a result, the program also builds into its construct the elements required to ensure that the training and grooming that the teachers receive through the teacher training components actually make their way to the classroom. Therefore the Program clearly work across the value chain wherein teacher training gets effectively translated into quality education in the classrooms.

- a) The first benefit stream arising from the program is attributable to the improvement in the wage which students can expect to derive after completing their formal schooling. Students joining the primary schooling system today (age six) are expected to join the work force ten years from now (age sixteen). They are expected to work till the age of sixty and therefore reap the benefits from the Operation for a time period of approximately forty four years. The improvements in quality of education that are expected to be a function of teacher training and improved monitoring, supervision and support are expected to improve learning outcomes (NAS scores) by 0.5 percent²⁰ and 0.3 percent²¹, respectively. The model assumes the conversion rate for the expected benefits to be 62.8 percent²². Assuming a correlation of 0.5 between learning outcomes and future income of students; the improvement in quality of education is expected to lead to 0.3 percent increase in income at all levels of schooling. Therefore, the income of primary school completers is expected to increase by US\$1.5 per annum (over those

²⁰ As per the paper, 'Teacher Characteristics and Student Performance in India: A Pupil Fixed Effects Approach; Geeta Gandhi Kingdon' every additional year of teacher training is expected to impact learning outcomes by factor weight of 0.09 timed the standard deviation of learning outcomes. The factor loading has been assumed as two years i.e. the duration of the teacher training component of the program.

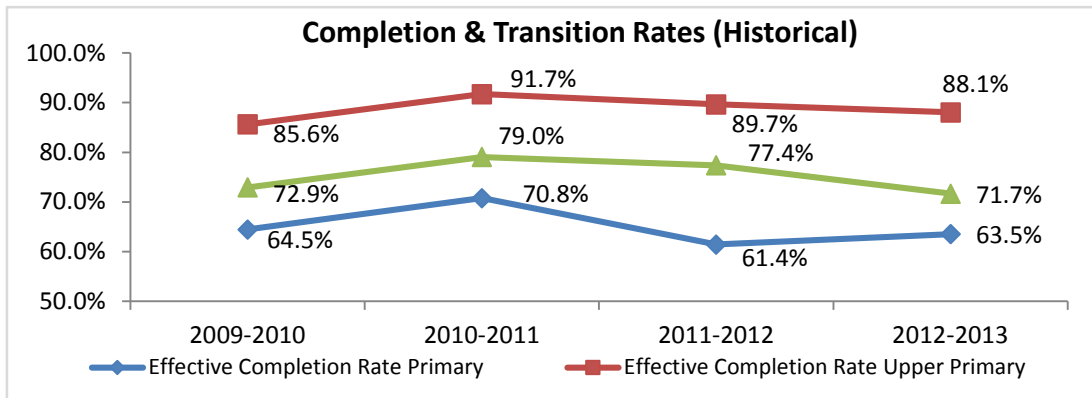
²¹ As per a report by Ed. CIL, the average number of leaves taken by a teacher in Bihar is 57 per year. Assuming that this was to reduce to 15 CLs, 33% Els, 10 Days of Sick Leaves & 10 Days of Non-Teaching Duties; the number of leaves should ideally reduce to 40 per year. Therefore the factor loading has been computed while assuming that the number of leaves would decrease by 17 days per year. The factor weight has been adapted from 'Teacher Characteristics and Student Performance in India: A Pupil Fixed Effects Approach; Geeta Gandhi Kingdon'. The factor weight has been taken to be 0.005 timed the standard deviation in learning outcomes.

²² Ernesto Schiefelbein, Laurence Wolff, Paulina Schiefelbein,(1998)

who have not completed primary schooling) and the income of upper primary school completers is expected to increase by US\$ 1.9 per annum²³.

- b) The second benefit stream arising from the Operation is attributable to the improvement in the completion rates (primary and upper primary) as well as transition rates that are expected to originate as a result of improvements in quality of education. An analysis of ASER scores from various states in the country and the corresponding dropout rates and transition rates in different states reveal that a one percent improvement in learning outcomes leads to a 43 percent decrease in the dropout rate. Similarly, a one percent improvement in learning outcomes leads to a 0.42 percent increase in transition from primary to upper primary schooling. As a result, the Operation is expected to increase the number of primary school completers by approximately 40,000 (2014-15) and the number of upper primary school completers by approximately 19,000 (2014-15).

Figure 6: Completion & Transition Rates (Historical)



22. The increase in primary school and upper primary school completers is expected to have its own set of monetized benefits. These additional graduates from the formal schooling system will be able to enter the workforce as more educated human capital and will be able to earn the difference that exists in the income level of an individual with their qualification vis-à-vis an individual with lower qualifications. Primary school completers are expected to benefit by US\$ 8.6 per annum compared to those who have not completed primary schooling and upper primary school completers are expected to benefit by US\$ 30.4 per annum over those have completed primary schooling.

23. *Internalizing the Implicit Benefits of the Operation:* The state government has already invested a lot into the unqualified teachers in terms of costs related to search and recruitment, on-boarding and basic training and finally in terms of salaries paid to sustain them within the system. Given the norms set in place by the RTE, the absence of a quality teacher training and certification Operation is expected to lead to a situation wherein these unqualified teachers will be retrenched. This will naturally lead to a situation where the government will have to once again invest time

²³ Level of income at various levels of formal schooling has been determined using a mincer regression that uses NSSO 67th round data. The level of income has then been adjusted from National aggregate to State aggregate by using a deflationary factor (36.5 %) that is a ratio of state per capita income to national per capita income.

and energy into searching for and recruiting the required teaching staff. Further, given that there is a paucity of trained teachers in the state, there is a possibility that a number of classrooms would go unattended or have classes under a very high pupil-teacher ratio.

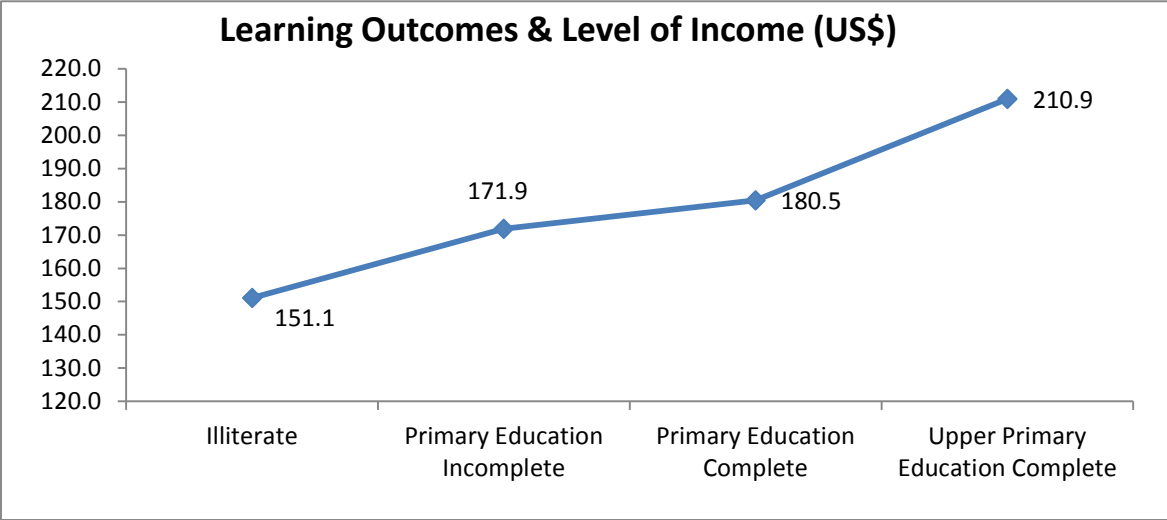


Figure 7: Learning Outcomes & Level of Income (US\$)

24. Economic Costs:

- a) The program investment in the financial year 2014-15 is expected to be US\$ 27 million. This amount is expected to increase to US\$ 65 million in 2015-16. Subsequently, this amount is expected to be US\$ 42 million in 2016-17 and US\$ 30 million in 2017-18 and again the amount is expected to increase to US\$ 61 million in 2018-19.
- b) Post the completion of World Bank assistance, the program is expected to be maintained and managed under the State Government budget for teacher education programs. Given that the subsequent cost will essentially be towards maintaining the assets, infrastructure and platforms created under the proposed Operation; the cost for the year after the Operation closes is expected to be 40 percent of the cost of the final year of assistance.

25. *Internalizing the Impact of ICT:* The use of ICT is expected to make its own contribution to the social return on investment from the program. If the ‘pre-service elementary teacher certification’ results area and the ‘teacher education’ results area of the program was to be organized at physical centers and under the guidance of Master Trainers, the Net Present Value (NPV) of the ‘Enhancing Teacher Effectiveness in Bihar’ Operation would be US\$ 281 million and the Internal Rate of Return (IRR) would be 15.5 percent.

26. Key Assumptions:

- a) All financial stream forecasts have been made after duly accounting for and adjusting for the expected rate of inflation and the long term inflation is calculated to be roughly 5.7 percent on the basis of historical data.
- b) The unemployment rate has been assumed at 2.7 percent for primary school completers (NSSO 66th Round) and 6.2 percent (NSSO 66th Round) for upper primary school completers. This unemployment rate has been factored out of the economic benefits before computing net cash flow from the Operation.
- c) The work force participation rate for primary school completers has been assumed to be 57.1 percent (NSSO 66th Round) and 36.8 percent for upper primary school completers. The work force participation rate has been factored in to adjust the economic benefits before computing net cash flow from the Operation.
- d) The model assumes the correlation between learning outcomes and level of income to be 0.5. The table below provides an indication of how the NPV and IRR are expected to move when this coefficient is adjusted in an upward or a downward direction.

Table 7: Net Present Value and Internal Rate of Return

Correlation	NPV (US\$ Million)	IRR
0.4	310	17.1 %
0.5	484	19.3 %
0.6	657	21.4 %

Annex 5: Summary Fiduciary Systems Assessment

I. Introduction

1. As part of the Program preparation, in accordance with OP/BP 9.00, the World Bank carried out a Fiduciary Systems Assessment (FSA) of the program, to determine whether the fiduciary systems provide reasonable assurance that the Program expenditures will be used appropriately to achieve the intended purposes. The FSA is broadly based on work done by a consulting firm and the World Bank staff working on procurement, financial management and governance.

II. Sectoral Overview

2. The **Education Department, GoB** is the nodal department for providing education and setting up related framework and infrastructure across the State of Bihar. The Department operates through five Directorates, namely: (1) Primary Education, (2) Secondary Education, (3) Mass Education, (4) Higher Education and (5) Research & Training. The Education Department is responsible for implementing certain large centrally sponsored programs i.e. the *Sarva Shiksha Abhiyan* (SSA) and the *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA), both of which are supported by the World Bank. These are implemented by Bihar State Education Society (a special purpose vehicle under the administrative control of the Education Department) with units at the state, district and block level.

3. Within the Education Department, the Directorate of Research & Training (DR&T) has the administrative control and responsibility for research and training related to teacher's education in the State of Bihar. The department currently manages the centrally sponsored Teacher Education Scheme, with the program activities being executed by BSEIDC, SCERT & DIETs/PTECs. The budget outlay (schemes) related to teacher's training programs in FY 2012-13 and FY 2013-14 was INR 78.00 crores (US\$ 13 million) and INR 215.00 crores (US\$ 35 million) respectively and the actual release/expenditure was 59 percent and 23 percent respectively, indicating a low absorptive and implementation capacity.

III. Public Financial Accountability Framework in Bihar

4. As part of the DPL operations in Bihar, the World Bank had carried out a Public Financial Management & Accountability Study in 2008²⁴ which concluded that the Public Financial Management and Accountability (PFMA) in the state are weak and need considerable modernization. Public expenditure in Bihar was characterized by low spending and low budget utilization. This was a consequence of (i) delayed approval of budget; (ii) centralization of decision making i.e. approval for spending and (iii) opaque and outdated finance and procurement rules which acted as a barrier to decision making by the executive even after approval for spending. Over the past 5-6 years, GoB has made notable strides in revitalizing the foundations for an effective public financial management system. The passage of the Bihar Fiscal Responsibility & Budget Management Act (FRBM) (2006), Bihar Panchayati Raj Act (2006) and the Bihar Treasury

²⁴ Report dated June 2008

Code (2011) introduced improvements in overall fiscal governance and at the same time provided a policy framework for public financial management reforms.

5. Legal enactments were complemented by new practices designed to improve the effectiveness of spending and transparency. These included the passage of the state budget on time²⁵ and higher level of approving authorities identified for approval of spending. In addition, the Treasury Code has rationalized the number of codes used in the budget²⁶, aligning budget codes with accounting codes and reducing the number of officers authorized to draw money (now reduced to 10,000 from 50,000). The Computerized Treasury Management & Information Systems (CTMIS) which involved upgrading and net- working of the treasuries (59 treasuries and sub treasuries) has been completed resulting in ‘real time’ information being available to department heads on budgets and their utilization. Revised procedures and controls, including IT based controls in CTMIS, on withdrawal of advances and their utilization/reporting , have significantly controlled both the ‘stock’ and ‘flow’ of advances. The reports of the C&AG, however, continue to highlight the lack of adequate planning/ budgeting resulting in savings, low burn rate of budget execution with significant spikes in the last quarter and internal control weaknesses.

6. DR&T, SCERT and DIETs, as offices/institutions of the GoB are governed by the extant rules and regulation of the GoB including the Bihar Financial Rules, Bihar Budget Manual and the Bihar Treasury Code, 2011. Similarly, as BSEIDC is a Government Company, the internal control environment is provided by the AoA read with the provisions of the Companies Act, 1956 (now Companies Act, 2013) including the BSEIDC (Financial & Technical) Regulations, 2011, Service (Staffing) Regulations & Procedures and the applicable circulars/notifications of the GoB.

IV. Fiduciary Assessment

A. Budget & Fund Flows

7. Funding for the program will be provided in GoB budget under two separate budget lines – one for capital expenditure and one for revenue expenditure, in line with the standard practice of GoB, wherein it creates separate budget lines for external financing. Bank funds will flow to GoI and then flow to GoB; the program (DR&T) will draw funds based on the annual budget for the program and disburse funds/allotted budget to the various agencies. Planning and budgeting at DR&T is governed by the Bihar Budget Manual which also has mechanisms for in year revisions and re-appropriations in the budget estimates. Normally the state budget is approved by the state legislature before the commencement of the financial year on April 1 of each year.

²⁵ In February/March of previous financial year

²⁶ The number of object heads (including sub-object heads) has been reduced from over 600 to 68. This will not only make the budget process more efficient, but also the execution, accounting and financial reporting. In 2009-10 all budget lines in the plan budget have assigned object heads as against only 67% in the 2007-08 plan budget. The number of operational budget sub-heads has been reduced by half in the 2009-10 Budget. This impacts the efficiency by significantly reducing the need for re-appropriations, more accurate and timely accounting and financial reporting.

8. Annual budget proposals of DR&T which include the budget requirements of SCERT and DIET's are submitted to the Budget/Planning Section of the Education Department which consolidates the budget proposal for the Department as a whole. While the budget is prepared and approved in a timely manner, there is no practice of key implementing agencies/ programs preparing 'Annual Work Plans' supported by a procurement plan, which would feed into the budgetary process. This contributes to the delay in the process of allotment of the budget by the department, after approval by the state legislature and also impacts budget execution. The C&AG audit report (State Finances) for the year ended March 31, 2012 also reports of deficiencies in the management of budgets by the Education Department leading to substantial savings, as expenditures were substantially lower than the budget estimates. *The low spending in previous years, coupled with low capacity and the rapid scale up in investment, poses a significant absorptive capacity risk to the program.*

9. Funds flow from DR&T to BSEIDC, SCERT, DIETs/CTEs/PTECs etc. in accordance with the approved annual budgets and the existing practice is for BSEIDC, SCERT and DIET's currently drawing and depositing program funds in commercial bank accounts. Frequency of allocation of funds by DR&T is approximately 2-3 times a year and there are delays in the release of funds by DR&T with budget allocations/releases being initiated after 4-6 months from the commencement of the financial year. This risk of delays in fund transfer is mitigated in the case of BSEIDC, which operates outside the treasury systems and draws funds on a non-lapsable basis and carries the funds to the subsequent financial years²⁷. Since November 2013, however, the Finance Department has required all agencies operating outside the treasury to conduct operations through a combination of Public Ledger Account (opened in the public account) and commercial bank account, with the objective of better cash management and at the same time providing agencies with operational flexibility to address the issue of annual lapse of budgets. In respect of SCERT and DIET, the Education Department has proposed that they operate through mainstream treasury systems, with advances (Advance Contingency Bills) being drawn for specific activities and control being exercised by the treasury/ CTMIS. This will improve both the internal controls and the reliability of the financial reports.

V. Procurement & Contract Management

A. Framework

10. Procurement under the program expected to be approximately 85 percent of the total Program cost consists mainly of civil works, ICT goods and services. BSEIDC will play a lead role in procurement under the program and SCERT is expected to carry out activities pertaining to material development and trainings, which may not require any procurement. In the last 3 years SCERT has not carried out any major procurement activities.

²⁷ As of March 31, 2013, BSEIDC had approx. Rs 1200 crores (US\$ 200 million approximately) of un-utilized Infrastructure Development Funds funds drawn from GoB. This practice of withdrawal of funds results in overstatement of expenditure in GoB annual financial statements and accentuate the problem of unsettled advances, which is adversely commented upon by the C&AG.

11. All the procurement in BSEIDC is governed by Bihar Finance (Amendment) Rules, 2005. The procurement procedures are also governed by BSEIDC Financial & Technical Rules (Niyamavali), 2011. As per the rules, BSEIDC has the option to follow for civil works the Schedule of rates (SOR) and procedures of State PWD, CPWD and NHAI. In practice, BSEIDC follow the procedures of State PWD.

12. Rules and guidelines are spread across multiple documents (BFR, PWD Code etc.) and frequently issued circulars leading to a lack of comprehensive instructions for all steps of the procurement process. There is no Procurement Manual which consolidates all the rules and procedures in one place and acts as a ready guide for carrying out the procurement activities. The Road Construction Department (RCD) has been instrumental in the development of the SBDs for civil works which are now applicable across the state and are to be used by all the agencies. In the case of bidding for services and goods it was observed that the Financial Rules of GoB provide for the procedures; however, there are no standard bidding documents for procurement of goods and services.

13. The GOB introduced the use of the e-Procurement system in September 2009 and made it mandatory for all procurements whose estimate is more than INR 2.5 Million (approximately US\$ 40,000). The state follows two envelope systems for procurement with the first envelope having the technical information and the second envelope having the financial quotes. The second envelope of only those bidders which meet the technical parameters is opened. The introduction of the e-procurement system has brought in much needed efficiency and transparency in procurement in the state. An assessment of the e-procurement system has been carried out by the World Bank against the MDB requirements and has found the system to be acceptable, subject to the state obtaining and submitting a satisfactory security audit report.

14. **Organization Staffing:** Operations at BSEIDC are conducted under the overall supervision and control of the Managing Director (MD). The MD is assisted by a team of technical (engineers, architects etc.), and financial and management experts at the Head/State office. Each division is headed by an Executive Engineer who implements the activities with the assistance of the Assistant Engineers and Junior Engineers. The existing staffs at BSEIDC have generally been hired on a contractual basis except for some officers at the senior management level, e.g., General Manager (GM) Administration, GM Program Implementation, Chief Consultant Technical etc. who are either on deputation or ex-officers of GoB. Considering the expanding work and increasing number of sites, BSEIDC is recruiting sufficient manpower for both the technical and financial segments. GoB has informed the World Bank that the process of selection has been completed. The existing staff members managing procurements are available in sufficient numbers to carry out the procurement activities smoothly. The staff members are well aware of the procurement procedures to be followed as per the existing system and within a short time span of two years. BSEIDC has developed sufficient infrastructure to carry out procurement on a large scale. In the field Executive, Assistant and Junior Engineers have been posted to carry out supervision activities

15. The assessment of the existing procurement management systems and arrangements have the following gaps: (a) rules and guidelines are spread across multiple documents and frequently issued circulars leading to a lack of comprehensive instructions for all steps of the procurement

process; (b) inadequate standard documents for procurement of goods/IT equipment and consultancy services; (c) mandatory registration of contractors, which is a common practice across all the states in India. Contractors are to be registered as per the standards used by the GoB Road Construction Division (RCD). The registration of contractors with other GOB agencies, national agencies, and public sector undertakings and other state governments is also accepted but contractors have to get themselves registered with BSEIDC, if awarded a contract; (d) negotiations are resorted to whenever the bids are received at a cost higher than the estimated cost; (e) while individual complaints received in a specific case are attended promptly, there is no well-defined mechanism to deal with such complaints. The present set up is prompt and effective largely due to the initiative taken by the current officials of BSEIDC rather than any well-defined mechanism for complaint redressal/alternative dispute resolution mechanisms; and (f) The MD of BSEIDC has been entrusted with full powers by the Board and hence all approvals are concentrated with the MD only, including all passing of bills and payments.

VI. Procurement Performance & Contract Management Practices

16. As 85 percent of the program cost and all major procurement under the Program are the responsibility of BSEIDC, the assessment primarily focused on BSEIDC’s capacity, procurement systems and its performance during the last few years.

17. **Procurement thresholds:** The following methods of procurements are followed based on the estimated cost of the packages.

Table 8: Method of Procurement

Estimated Cost	Method of Procurement
Value above Rs 2.5 million (US\$ 41,000)	Open Competitive and use of e-procurement mandatory
Value between Rs 0.10 million and Rs 2.50 million	Limited tenders
Value between Rs 15,000 and Rs 0.10 million	Three Quotations

18. BSEIDC has set up three committees, namely, the Technical Committee, Tender Committee and Executive Committee to handle procurements and the MD is the final approving authority for all procurements. GoB has stated that delegation of certain powers presently vested in the MD is desirable. However, such a delegation has to be implemented with due caution at the appropriate time. BSEIDC has recently made fresh recruitments on a large scale and is also in the process of making all the nine decentralized Divisions, to be headed by an Executive Engineer level officer, fully operational. Powers can be gainfully delegated to these decentralized Divisional Heads. GoB has informed that this can be done once all the nine Divisional Offices have been established and become operational with the desired level of stability. However until then payments will continue to be made by the Head/State Office.

19. The practice of preparing a detailed Procurement Plan at BSEIDC is initiated only after the receipt of technical sanctions for the works from the Chief Engineer, PWD. However, BSEIDC is in the process of developing a system of procurement planning starting from the date on which sanction of activity is received by BSEIDC.

20. **Value of Procurements:** The average value of works procured: INR 25 Million. - (Remark - One program was of INR 860 Million, two programs were of INR 290 Million each and the rest were of lesser value numbering around 800 programs amounting to INR 18500 Million). Recently, the agency tendered out procurements of buildings costing an average INR 100 million. The average value of goods and services procured was INR 178.50 Million.

21. **Advertisement and Bidding:** The notice inviting bids is published in newspapers and uploaded to a website but the award details are not published. Financial Rules provide that the name of the winner should be put on notice board/bulletin /website. Bids are invited through the e-procurement process. Tenders for works contract are invited on percentage basis and the contracts awarded are mostly on a Lump Sum basis, as the works are of standard nature. Negotiations are routine in cases where the quoted price is higher than estimated cost. In most cases the contractors were allowed an increase of up to 2 percent over the estimated cost. Contracts were placed in most cases within 2 percent escalation over the estimated cost. During all negotiations meetings, the contractors were persuaded to keep the increase up to a maximum of 2 percent only. The practice followed by BSEIDC in the matter of negotiation is that where the L1 is at par or below the SoR there is no negotiation. If the L1 rate is more than the SoR, negotiation with L1 is done by the Executive Committee to bring down the rate at a par with or near to the SoR. Further, in those cases where there is no SoR and the L1 rate is in accordance with the estimated cost, no negotiations are under taken.

22. **Competition:** As the works are of small values and in remote locations, in most cases competition was noted to be limited with only one or two bids being received. However, in a few cases where the works were in the vicinity of towns good competition was observed. The reasons given for poor response was the locations in remote places and strict qualifying criteria. All bids of one scheme are invited simultaneously and due to financial constraints, contractors quote for limited work resulting in a few bids for the different groups. In a few areas no bids were received due to security reasons and rebidding was resorted to after examining the reasons and rescheduling the groups. On average, 2.4 bids were received for all Open tender procurements. The average is skewed as there were nearly 800 packages of small works which were tendered out at the same time and in these procurements the participation was one to two bidders. In the recent tenders of new buildings, 4-5 bidders on average are noted to have participated.

23. The bidders are generally given two weeks to quote and technical bids are opened a day after the due date of receipt of bids. Financial bid opening date is also indicated which is usually after a gap of two weeks after the technical bid opening date. The decision to award is generally taken within a week if negotiations are not involved. In case of negotiations, one additional week is taken. The contractor is given two weeks from the date of issue of letter of acceptance to submit performance security. The agreement is signed as soon as performance security is received. This time period of six to eight weeks from the date of issue of NIT to award of contract is considered to be very good. The offers are valid for three months. The bid evaluation is done at the committee level and can be regarded as confidential.

Table 9: Procurement Procedures

Method of procurement	No of days taken (Average)	Remarks
Open tender	13 days	Number of days taken for bid evaluation has been considered from the last date of bid submission to the actual date of financial bid opening.
	15 days	From the date of Financial opening till letter of Award
	21 days	Delay is mostly attributed to the submission and subsequent verification of the performance security from the issuing bank and only after such confirmation, contract is signed and letter to proceed with work is issued.
	Total – 49 days	

24. **Contract Administration:** The engineering staff members posted in the zones are responsible for contract administration. They send periodic reports to Headquarters, and these are entered into the progress report. Any extension in completion period is referred to the Chief Technical Advisor who takes the approval of MD before granting extension. For monitoring the progress of the work BSEIDC also has a system of surprise inspection whereby Senior Officials of BSEIDC undertake surprise visits to construction sites. BSEIDC has also developed a mobile based monitoring system based on android software whereby details of schemes are made available on a web portal along with landmarks of the site. Each Monday, the Executive Engineer updates the construction work which is updated directly on to the web-portal. The images of the construction site and self-posting of global positioning (latitude and longitude based) and date and time are also uploaded, enabling the management to verify that engineers have actually visited the site and also the current stage of the work.

25. **Contract Completion and Cost Overruns:** Most of the civil works are noted to be completed within the original competition period. In a few cases, delays were observed due to delays of handing over land for construction. GoB has submitted that more than sufficient land is available for the different buildings proposed under the Program except in case of BRCs for which site wise surveys will be carried out. In nearly 15 percent of the contracts there was time overruns on an average of 66 days. (i.e. 18 percent of the original completion period)

Table 10: Methods of Procurement – contract completion and cost overruns

Method of procurement	No of days of delay against the original time in contract (Average)	Remarks
Open tender	185 school buildings were completed within time. In 33 buildings the average number of days of delay beyond the original date of completion as per the contract was 66 days (for this period time extension was granted by BSEIDC based on valid reasons).	Construction of upgraded secondary school was the first major civil construction program for which 218 school buildings have been completed. Average has been calculated based on these completions.

26. **There were no cases of Cost over runs as the works awarded were mostly lump sum.**

27. **Supervision & Quality Assurance:** Based on the data received from the field officers, progress report of the contracts are prepared and updated periodically. However the delay in execution of contract was not being indicated in such reports, this issue is now being addressed by BSEIDC, after the World Bank team’s advice. Quality control is the responsibility of field staff with help from the consultants wherever available. Within BSEIDC the supervision of works is carried out either by individual supervision consultants appointed for verification of construction work in selected program or by site engineers of BSEIDC. As there are small value sites at remote locations, supervision consultants sometimes do not implement effective monitoring.

28. **Complaint Redressal Mechanism:** While individual complaints received in a specific case are attended promptly, there is no well-defined mechanism to deal with such complaints. The present set up is prompt and effective largely due to the initiative taken by the current officials of BSEIDC rather than any well-defined mechanism for complaint redressal. BSEIDC is in the process of creating an internal Vigilance and Grievance Redressal Cell. The same will be headed by a senior officer of the rank of Superintendent Engineer who will report directly to the Managing Director of BSEIDC. Besides quality assurance the Cell will also look into various issues concerning fraud and corruption and grievance redressal and complaints.

Table 11: Method of Procurement – Complaint redressal mechanism

Method of procurement	No of complaints	Time taken for resolution
Open tender	22	Average time taken for resolving the issue was 60 days (complaints are generally regarding credentials and registration of the bidders. Since these require verification from the certificate issuing organization, the resolution was noted to be taking time).

29. **Oversight and Control:** Procurement monitoring and oversight rests within the organization. A separation of functions for independently assessing and ensuring the process and its integrity does not exist.

30. **Actions for Improvements in Procurement Management:** The following actions will be taken by the GoB/ BSEIDC for improvements in the existing procurement arrangements from the Program perspective:

- a. A Procurement Manual which collates all the rules, regulations and circulars issued will be prepared. The Standard Bidding Documents for procurement of goods/IT equipment and selection of services of Services will be developed, approved and adopted for use by BSEIDC.
- b. Implement a system of procurement planning from the date on which the sanction of a Program/activity is received by BSEIDC.
- c. BSEIDC has submitted that to streamline the process of negotiations with the lowest bidder before the award of contract, as is currently being followed by BSEIDC, the policy be approved by the Board of Directors of BSEIDC and no change in the policy should be made without the prior approval of the Board of Directors of BSEIDC.

- d. BSEIDC has submitted that it will initiate a process of decentralization and when all the nine decentralized divisions are fully operational some of the powers of the Managing Director will be delegated to the decentralized Divisional Heads.
- e. Procurement post review will be conducted on a regular basis, covering at least 15 percent of contracts issued in each year under the program and the report will be shared by September 30 of each year, this would be planned to be included as a part of the internal auditor's TOR.
- f. Develop a procurement MIS module including contract management which if possible can be integrated with the e-procurement system.
- g. The complaint handling and redress system / mechanism will be developed.

VII. Internal controls

31. Activities in DR&T are limited to allocation of plan budget, making transfer of resources to BSEIDC and expenditure against non-plan budget. All expenditures are against approved annual budgets and made with the approval of Director (DR&T) through treasury cheques/bank drafts. In SCERT/DIET's payments are with the approval of the Director/ Principal respectively. The existing gaps in the internal control framework in the case of SCERT/DIET's include (i) the practice of drawing funds in advance (as AC Bills) into bank accounts, making subsequent payments to vendors, and meeting training costs, but not submitting the detailed contingency bills (DC Bills) to the treasury for settlement of such advances. Changes in the Treasury Code (2011) and modifications in the CTMIS system, however, have brought in process and system based controls, which prevent additional withdrawal of funds without settlement of previous advances. This coupled with the department's decision requiring DR&T, SCERT and DIETs to operate through the treasury systems with advances being limited to specific activities e.g. TA/DA etc. will strengthen the control framework for the program. Adherence to this procedure is being incentivized through the DLI no 6.

32. The consultants and the site engineers of BSEIDC prepare the bill of quantities for the work done, based on which running bills are prepared and approved by the executive engineers at the divisions and sent to the head office, where payments are centralized. All payments to vendors/ contractors are made electronically based on approval by the Managing Director. The time taken for the release of payments to the contractors and supervision consultants is around 3-4 weeks, with the review of bills at the division taking 20-25 days and payment processing at head office taking on average 10 days.

33. There is a centralized internal audit wing under the administrative control of the Finance Department. However, due to depleted staff strength and antiquated methods the function has not kept pace with the growing public sector spending in GoB. While GoB has taken an in principle decision to strengthen the internal audit wing, this reform will take a few years to make a perceptible impact. BSEIDC has a system of contracting private firms of chartered accountants as internal auditors, but their appointment is often delayed and the terms of reference focus more on basic compliance and facilitating compilation of accounts and financial statements.

VIII. Accounting & Financial Reporting

34. The DR&T, SCERT and DIETs which are administrative units of the department of education are governed by the treasury and finance rules of GoB. These follow cash basis of accounting and require the Drawing & Disbursement Officer's (DDO's) to maintain a cash book along-with a treasury bill book and disbursement registers, periodically reconcile their expenditure with the affiliated treasury office and submit the same to the controlling DDO in the department, for overall reconciliation of expenditure with the AG – Accounts & Entitlement (AG-A&E), who is responsible for accounting & preparation of the state's financial statement. This procedure, however, has not been adhered to by most departments in Bihar and routinely figures in the audit observations of the AG (Audit). Non reconciliation of expenditures with the AG, can result in a mismatch of expenditure, i.e., between those reported by the department and those recorded by the AG (A&E). With the department's decision to require SCERT/DIET's to operate using the mainstream treasury system, reliable financial reports can be generated from the CTMIS, which also facilitates tracking of advances (AC bills).

35. BSEIDC, as a company is governed by the provisions of the Companies Act, 1956 (now Companies Act, 2013), as applicable, read with the AoA for maintenance of accounts, preparation of annual financial statements, accounting policies to be followed etc. BSEIDC follows accrual basis of accounting and uses an off the shelf computerized accounting system maintained in the head office. Besides maintaining accounts in TALLY, manual subsidiary registers, e.g., Measurement Book (MB) Register, MB Movement Register, Cheque Issue Register etc. are also maintained. There is however no financial management manual in BSEIDC which governs and lays down a comprehensive framework for accounting, internal control and financial reporting. The accounting system, currently only facilitates program wise utilization of funds and not contract wise, which are tracked through informal systems and processes. BSEIDC prepares progress reports of some programs containing both physical and financial progress and such reports are hosted on the website of BSEIDC for public access. BSEIDC also prepares annual financial statements complying with the standards and disclosure requirements mandated under the Companies Act. The entity financial statements, however, do not have a detailed disclosure of the use of funds from the Infrastructure Development Fund (IDF) under various programs. Given the scale up of operations, no. of contracts and staff and a long term viable investment and maintenance plan, there are opportunities for BSEIDC to strengthen its corporate governance practices and operations by making the audit committee functional with a risk based internal audit, developing a financial management manual and investing in an Enterprise Resource Planning (ERP) solution to strengthen financial and contract management practices, proactively disclose procurement, financial and physical progress on contracts in the public domain and improve disclosure practices in the annual financial statements, thereby improving transparency.

36. While financial management capacity is adequate in BSEIDC, there are severe capacity limitations in the financial management capacity in the DR&T and SCERT. Accounting responsibilities are delegated to technical staff and there is a need to contract and build accounting capacity in these units. The program does not have a natural requirement for various agencies to provide periodic financial reports which can then be used for preparing a consolidated financial report for the program.

IX. Auditing Arrangements

37. Audit of DR&T, SCERT and DIETs, is within the mandate of C&AG, while audit of BSEIDC is conducted by a firm of Chartered Accountants appointed by C&AG and a supplementary audit of BSEIDC is done by the C&AG. In the case of BSEIDC the scope of external audit²⁸ is provided by the C&AG as per the contractual obligations of the audit firm with the C&AG, with the fees being determined by the Board of BSEIDC²⁹. While this ensures independence in appointment, given that BSEIDC operations and turnover in the initial years were low, the auditors assigned for external audit of BSEIDC by C&AG have tended to be relatively small audit firms. BSEIDC has proposed that it will send a request to C&AG informing them of the increase in their operations/ expenditure and requesting C&AG to factor this while allocation of audit from 2014-15 onwards. This coupled with delays in appointment has resulted in delaying the audit of annual financial statements³⁰. As part of the PAP, efforts will be made to bring down the time cycle of external audit of BSEIDC to six months to comply with the timelines prescribed in Companies Act 2013.

X. Fraud and Corruption Risk Mitigation Measures under the Program

A. The State Anti- corruption Framework

38. In India, law and order is the responsibility of the states. Neither GoI nor central nodal anti-corruption agencies, such as the Central Vigilance Commission, have jurisdiction on the corruption issues in the states, except for investigating and prosecuting central government employees. India's supreme audit institution, the C&AG, is the only federal institution which has the mandate to help mitigate the risk of corruption in implementation of any public policy or program across the country through its financial, compliance or performance audit.

B. The State Vigilance/Anti-corruption Framework

39. In Bihar the primary responsibility for management of fraud and corruption (preventive function) rests with the Heads of the Government Departments, who with the Chief Vigilance Officer of the Department are responsible for managing the vigilance and disciplinary function of the Departments. GoB has created five posts of Chief Vigilance Officers with each having responsibility for five departments. However, all posts of CVO are vacant.

40. There is also a Lokayukta who takes cognizance of complaints of frauds and corruption and sends them to the Vigilance Investigation Bureau as well as the Technical Examiner Cell for enquiry and report.

41. The Vigilance Department in GoB, headed by a Principal Secretary, is responsible for enquiry, investigation and prosecution of major cases of fraud, corruption and mis-appropriation

²⁸ The scope of work of external auditors of BSEIDC include a long form audit report which covers aspects relating to corporate governance, system of accounts and financial control, risk of fraud an existence of vigilance wings, control over assets & liabilities and internal audit systems and environment management.

²⁹ The external audit fees for FY 2012-13 was equivalent to US\$ 750.

³⁰ The audit for the financial year 2012-13 was completed on March 31, 2014 i.e. after 12 months.

of government funds. The Department has three investigation agencies, namely, the Vigilance Investigation Bureau, the Technical Examiner Cell and the Electricity Vigilance Cell. In order to collect intelligence about disproportionate assets belonging to corrupt Government servants, the GoB has set up Special Vigilance Unit.

C. Vigilance Systems in the Education Department

42. While GoB has taken several proactive steps to manage fraud and corruption, preventive vigilance, which is the primary responsibility of the Education Department, needs strengthening. Presently the Education Department does not have a CVO and the position has been vacant since July 2013³¹. BSEIDC also is not adequately equipped for prevention and control of fraud and corruption. While individual complaints received in a specific case are attended promptly, there is no well-defined mechanism to deal with such complaints.

43. The Board of Directors of BSEIDC comprises persons holding ex-officio positions in the GoB with the Development Commissioner, GoB as its Chairman. In accordance with the provisions of the Companies Act, an Audit Committee was constituted in February 2012, but only two Meetings³² of the Audit Committee have been held since its formation. Further meetings of the BoD also do not comply with minimum statutory requirements as per the provisions of the Companies Act read with the AoA. Annual general meetings at BSEIDC are being held in accordance with the regulations though there have been instances where general meeting of the shareholders were adjourned due to the absence of the stipulated quorum.

D. Mitigating the Risk of Fraud and Corruption through Audit

44. The CAG is a constitutional authority whose independence and level of expertise is acknowledged worldwide (including through a recent international peer review) and reflected through recent widely publicized reports; both the prevention and the detection of fraud and corruption fall within the CAG's jurisdiction: "examination of system for detection and prevention of fraud and corruption will (...) be an integral part of all regularity audits and also of performance audits, whenever it forms one of the audit (sub) objectives. (...) Audit must (...) evaluate and report on the adequacy of the systems in place and competence with which the management (of the audited entity) has discharged its responsibility in relation to prevention, detection, response and follow-up/remedial measures in relation to fraud and corruption. (...) Reports of individual cases of suspected fraud and corruption should be confidentially addressed, in the first instance, to the controlling authority concerned (...). More serious cases should also be confidentially reported to the Secretary of the Administrative Departments (where they are not the controlling offices) concerned and the investigative authorities like Central/State Vigilance Commission, Lok Ayukta, etc." Audit reports of the C&AG are in the public domain and important paragraphs (observations) are discussed by the PAC and COPU. The annual state audit report of C&AG as well as the inspection reports of the C&AG related to the education Department will be reviewed for issues, if any, relating to fraud and corruption.

³¹ The C&AG report for 2011-12 lists 4 pending cases of mis-appropriation and embezzlement in the education department, which primarily relate to mid-day meal program and submission of inappropriate settlements against advances.

³² First meeting of the Audit Committee was held on December 16, 2013.

45. Sub section 12 to section 143 of the recently introduced Companies Act, 2013 as applicable to BSEIDC provides that if an auditor of a company has reasons to believe that an offence involving fraud is being or has been committed against the company by officers or employees of the company, he shall immediately report the matter to the Central Government.

E. Other Accountability Mechanism

46. Other accountability mechanisms that also help mitigate the risks of fraud and corruption and strengthen fiduciary controls are:

- a. **Arrangements under Right to Information Act, 2005:** The RTI has become an effective accountability mechanism, with millions of applications for information being filed every year: there is empirical evidence that it is an effective tool for citizens to obtain the service they are entitled to³³. Public Information Officers have been deputed in the Education Department, Vigilance Department and the Vigilance Investigation Bureau. As per discussions, there were no pending requests for information lying with the Public Information Officer of the Education Department under the Right to Information Act.
- b. **Transparency in disclosure of information:** BSEIDC & SCERT have their own websites (www.bseidc.in and www.scertbihar.in). DR&T has also allotted funds to DIETs/PTECs/CTEs for creation of websites. Information with respect to DR&T is disclosed in the website of the Education Department, GoB (www.educationbihar.gov.in). A disclosure however is currently limited to sanction letters, fund releases, administrative circulars, annual reports and annual budget. BSEIDC has selectively disclosed progress reports for some activities.

47. *Conclusion:* Although the anti-corruption framework can be construed as potentially effective, two mechanisms call for significant strengthening: (a) Education Department's preventive function needs to be strengthened; through designating an officer not below the rank of a Joint Secretary in the State government as the CVO in the Education Department; and (b) an internal vigilance and grievance cell needs to be set up with BSEIDC.

XI. Critical Risk and Mitigation Measures

48. Table 12 below provides the key fiduciary risks identified during the assessment and proposed mitigation measures

³³ The number of RTI queries received by the State Information Commission relating to Education Dept. in 2011-12 was 12400 of which 8500 were responded to. This RTI queries related to Education Dept. represents approx. 20 % of the total queries received by the Commission

Table 12: Critical risk and mitigation measures

Risk	Mitigation Measure
The DR&T does not have adequate financial management capacity to prepare annual plan, adequately plan & budget and allocate budgets to various sub units (DIET/SCERT) which may lead to delays in Program implementation. Similarly SCERT and DIETs also do not have capacity for carrying out financial management functions.	Capacity in the department and its attendant institutions (SCERT) is being enhanced under the TA component by recruitment of consultants with appropriate knowledge and skills in financial management and supplemented with an operational guideline summarizing key rules from Bihar Budget Manual, Treasury Code and Finance Rules, with intensive training in initial years.
Existing practice of DR&T drawing funds and disbursing it to SCERT/DIET's, coupled with inadequate monitoring results in (i) overstatement of expenditure and (ii) buildup of advances (unsettled AC Bills)	Education Dept. to implement (by way of office order) its decision to require the DR&T, SCERT and DIET's to operate through the treasury, by way of sub-allocation of budgets as against parking funds in bank accounts, limit advances (AC Bills) to selected activities and monitor the same through CTMIS.
No practice or requirement for preparation of consolidated program financial reports showing financial & physical progress.	DR&T will prepare quarterly and annual program financial reports, which will be hosted on the website of the Directorate. Similarly BSEIDC will also host the progress report on program expenditures along-with procurement and physical progress information on its website.
With significant scale up envisaged in budgets and expenditure, compared to previous year's there is a significant risk of absorptive capacity. This coupled with the pricing of the DLI (which are weighted more towards the soft activities) could result in the cumulative EEPs being less than funds disbursed, if the DLIs are fully achieved.	BSEIDC operations have picked up pace. The annual expenditures have increased from INR 430 million in 2011-12 to INR 4295 million in 2013-14, representing an increase of 10 times in two years. BSEIDC has also recruited 120 engineers in 2013-14 to strengthen its implementation capacity.
System of procurement planning from the date of signing of contract at BSEIDC is inadequate	Implement a system of procurement planning from the date on which the sanction of a Program/activity is received by BSEIDC.
Bidder participation for procurements at BSEIDC is limited in most cases to only one or two bids. There is therefore a lack of competition in most cases.	Staggering similar type of works, adopting progressive methods, Suitable Packaging of Works, publicity in national newspapers and other similar measures may be taken by BSEIDC to increase competition.
Lack of contract management MIS	Develop a procurement MIS module including contract management which if possible can be integrated with the e-procurement system.

Risk	Mitigation Measure
No well-defined mechanism to deal with complaints	The complaint handling and redress system / mechanism will be developed
Lack of independent control and oversight mechanism could lead to inefficient procurement management, leakages and losses.	An Independent Firm to conduct annual post review of procurement contracts awarded by the agency
BSEIDC corporate governance practices, including financial systems, controls & financial reporting procedures need strengthening in line with the rapid scale up in investment. BSEIDC does not have a FM Manual.	Institutional development plan developed to include improvement of (i) Corporate Governance practices including effective functioning of audit committees with oversight over internal audit; statutory compliances with regularity of BoD's. Strengthening financial management practices by development of a FM Manual, implementation of ERP for financial & contract mgt. improving quality of disclosure in the annual financial statements and pro-active and timely disclosure of financial, physical & procurement progress & proc. Complaints & redressal in the public domain.
Fraud and corruption: lack of a formalized vigilance function at the department level; BSEIDC does not have a well-defined grievance redress mechanism	Appointment of CVO for the education department and making the institution of CVO effective.
Disclosure of Procurement Information	There is a need to disclose the contract award information to promote transparency.

Annex 6: Environmental and Social Assessments

1. An Environmental and Social Systems Assessment (ESSA) of the Program was undertaken by the World Bank as part of the program preparation in line with the requirements of OP/BP 9.00. The methodology of the ESSA included assessment and analysis of GoB's Program information/data, field reviews and consultations with key stakeholders. From a regulatory, legal and operational perspective, the environmental and social management system for the Program is found to be largely consistent with the core principles and elements defined under OP/BP 9.00. However, the assessment clearly indicates that the implementation/execution by the concerned departments/agencies is not always consistent or optimal.
2. A separate Integrated Safeguards Data Sheet (ISDS) has been prepared for the TA component.

Summary Environmental and Social Systems Assessment

I. Context

1. In 2009, the Government of India set an ambitious goal to improve access and quality to education through the Right of Children to Free and Compulsory Education (RTE) Act. The RTE prescribed strict standards and norms that all schools were required to meet. These reforms saw tremendous success in improving education inputs in Bihar. Under Sarva Shiksha Abhiyan (SSA) program, the main vehicle for RTE's implementation, Bihar has seen an increase in access rates and significant increase in comprehensive classroom infrastructure, reducing the Student Classroom ratio (SCR) from 79:1 to 65:1 from 2005 to 2013. However this vast expansion in the system led to significant challenges in teacher development, performance measurement, and management with which Bihar is still grappling. To devise an immediate solution to the critical issue of teacher shortages in the education sector, Bihar implemented an emergency hiring and training program. Teachers were hired on fixed term renewable contracts by local government bodies on a lower consolidated salary as compared to their permanent counterparts. A large number of the locally hired teachers were untrained at the time of their recruitment.

II. The Program

2. The Bihar – Enhancing Teacher Effectiveness Program is being supported under the World Bank's Program-for-Results (PforR) financing instrument. The proposed World Bank-financed Program aims to improve the effectiveness of elementary school teachers in Bihar, by supporting the state to develop a robust teacher education architecture to produce teachers who are effective, qualified, accountable and responsive. The Program is part of the Department of Education of the GOB's newly launched Mission Manav Vikas program which includes a wide-ranging set of reforms for the provision of quality education and improved learning outcomes for all elementary level children. The proposed Program will support all components of Bihar's teacher reform program, except those elements which the state can access under the centrally-sponsored Sarva Shiksha Abhiyan scheme. The World Bank's program will be implemented over five years from FY 2014-2019.

3. The Government of Bihar's Teacher Education Program includes the following five components:

- I. Developing high quality teacher education institutions for improved program delivery
- II. Certification of unqualified elementary school teachers and their continuous professional development
- III. Developing an effective teacher management system with a robust monitoring and evaluation mechanism
- IV. Improving accountability mechanisms at school level
- V. Improved financial and governance mechanisms

4. A hybrid operation, involving a large Program for Results (PforR) instrument plus a small Investment Project Financing (IPF) instrument to support technical assistance, has been chosen. This is because first and foremost, GOB has developed a comprehensive program for improving teacher quality. This program is effectively aligned with research evidence. However, this outcome-orientation will require considerable capacity building of the agencies implementing the program, especially in technical areas related to how to improve education quality and impact teacher behavior, built around a strong evidence base of what is actually happening in classrooms in Bihar. There is limited capacity in India to carry out this technical work, and to support the development of such capacities in Bihar.

5. The estimated funding envelop for the Program is US\$ 357 million (Table 3). This includes a commitment from Govt. of Bihar of US\$ 107 million (30% of the total cost) and the proposed Bank support of US\$ 250 million.

6. The primary beneficiaries of the program will be approximately 450,000 teachers in government elementary schools in Bihar who will benefit from a strengthened teacher education system, particularly the 90,200 unqualified teachers who will be certified with the D.El Ed. Diploma through the ODL program along with the new unqualified entrants. Among the current number of teachers in service, 41% are female teachers and out of the newly recruited teachers 50% are women in line with Bihar's policy to reserve 50% of all positions for women. Approximately 10,000 teacher educators who are already appointed or will be appointed as part of a wider GOB program will benefit directly.

7. The Program is designed to utilize and strengthen Govt. of Bihar's institutional structures for teacher education.

- a) The Department of Education of GOB will be the key implementation agency with the Directorate of Research and Training (DRT) under the department as the nodal agency for routing all implementation and fund flow mechanisms under the program. The Program will be implemented by the Directorate through BSEIDC, SCERT, DIET, and PTECs as the major executing and fund handling agencies.
- b) The BSEIDC will be the main procurement agency for all procurement activities under the program.

- c) The SCERT will oversee the academic architecture of the program covering curriculum and syllabus development; content and materials production; the development of teacher educators; capacity building of all major teacher training institutions like DIETS, BRCs and CRCs under the program and managing the ICT and ODL architecture for teacher training under the Program.
- d) A Program Management Unit (PMU) will be established to support BSEIDC, SCERT and the Directorate of Research and Training.

III. Environmental and Social Systems Assessment

8. An Environmental and Social Systems Assessment (ESSA) was undertaken by the Bank team for the Program as per the requirement set forth under Operational Policy 9.00. The aim of the ESSA was to review the capacity of existing government systems to plan and implement effective measures for environmental and social impact management of the program, including determining if any measures would be required to strengthen them.

9. The ESSA has been undertaken to ensure consistency with six “core principles” outlined in the World Bank’s Operational Policy in order to effectively manage program risks and promote sustainable development.

10. The ESSA has benefited from various inputs, including a legal and regulatory analysis; field visit to Teacher Education Institutes - at various levels – State (SCERT), District (DIETS/PTECs), Block (BRCs) and Community (CRCs), to assess environmental and social conditions and institutional capacity; and meetings with government agencies, and other stakeholders. The World Bank Specialists have worked closely with Department of Education, Govt. of Bihar and the BSEIDC to prepare the Action Plan as a guide to identify and mitigate impacts and strengthen the management system.

11. The ESSA report considers consultation, stakeholder involvement and disclosure of information from two perspectives. First, the report describes the requirements of the Government and concerned Department/Implementation Agencies with respect to individual sub-projects and evaluates the extent to which the existing practices are effective and consistent with Bank policy expectations. These practices are described in the ESSA and its specific recommendations and support for improved performance by the Govt. of Bihar is provided for in the ESSA. Second, the ESSA itself has been the subject of state level public consultations held at Patna in July and October 2013. The consultations held provided more detailed information on the PforR process, the proposed Program, and key findings and recommendations of the ESSA. The ESSA was revised incorporating comments obtained from these consultation meetings. Over-all the participants showed support for the Program.

12. The ESSA report has been published on the website of the Department of Education, Government of Bihar.

13. Assessment against Core Principles laid out in OP 9.00

Core Principle 1: General Principle of Environmental and Social Management

14. OP 9.00: Environmental and social management procedures and processes are designed to (a) promote environmental and social sustainability in Program design; (b) avoid, minimize or mitigate against adverse impacts; and (c) promote informed decision-making relating to a program's environmental and social effects.

Applicability/Summary

15. Core Principle 1 is considered in terms of environmental and social management for the education sector, as a key component of good service delivery. Specifically, since the program includes civil works related to construction/extension of new buildings/blocks within existing campuses, this becomes all the more relevant.

16. There is an adequate national regulatory framework and technical guidelines exist for environmental due diligence with respect to the potential impacts of the program. The assessed weaknesses are systemic and are related to insufficient staffing, weak coordination among the various implementers and inadequate attention to environmental concerns, particularly for the previously developed/old buildings and associated services. This can be overcome by the regulatory framework that already exists.

17. The Government of Bihar's legal and policy framework is deemed adequate to promote social sustainability. The reservation system in recruitment seeks to address long-standing inequality of access to teacher employment opportunities. This reservation system enjoys widespread political support. The TEMIS database enables the Department of Education to monitor the representation of disadvantaged groups in the teacher force, and the extent to which these groups have access to professional development opportunities and are promoted appropriately. The bottom up training needs analysis for teachers gives disadvantaged groups equal opportunities to express their preferences regarding their individual training needs; BRCs and CRCs are responsible for ensuring teachers attend planned training programs.

Core Principle 2: Natural Habitats and Physical Cultural Resources

18. OP 9.00: Environmental and social management procedures and processes are designed to avoid, minimize and mitigate against adverse effects on natural habitats and physical cultural resources resulting from program.

Applicability/Summary

19. The provisions in Core Principle 2 are considered as part of the ESIA process analyzed under Core Principle 1. The analysis confirmed that Program investments would neither impact nor convert critical natural habitats. This Core Principle will not be applicable to the Bihar TE program and the PforR as long as no new TE institutes are constructed in hitherto unidentified sites. To ensure that this remains the case, appropriate clause/s will be introduced in the program's legal documents.

Core Principle 3: Public and Worker Safety

20. OP 9.00: Environmental and so OP 9.00: Environmental and social management procedures and processes are designed to protect public and worker safety against the potential risks associated with (a) construction and/or operations of facilities or other operational practices developed or promoted under the program; (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials; and (c) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.

Applicability/Summary

21. The provisions in Core Principle 3 are considered as part of the ESIA process analyzed under Core Principle 1. Review found that Core Principle 3 is applicable to the Program, as there is physical infrastructure development involved in the Program. However, the issues pertaining to this Core Principle are considered low risk of appearing in the Program.

22. Program documentation specifies the environmental expectations involved in the proposed civil works activities to protect public and worker safety, no procurement of dangerous materials or pesticides is envisaged, and teacher education institutional infrastructure will not be carried out in areas prone to nature hazards.

Core Principle 4: Land Acquisition

23. OP 9.00: Land acquisition and loss of access to natural resources are managed in a way that avoids or minimizes displacement, and affected people are assisted in improving, or at least restoring, their livelihoods and living standards.

Applicability/Summary

24. Civil works will be carried out within existing campuses of institutions/available government land. In the absence of any land acquisition for construction, the risk of impacts on loss of land/asset/ formal and informal livelihood etc. from civil works are not likely. Based on experience in similar education projects there has been no relocation or other related impacts. Loss of access to natural resources is also a low risk, nor is there any risk of impacts on crops because involuntary land acquisition is not eligible for financing under this program (as specified in the legal agreements between the World Bank and the Governments of India and Bihar). The agreements between the Bank and the Government of Bihar also ensure that, where land is not free of encumbrances, it will not be used for program purposes. Hence, this principle does not apply to the program.

Core Principle 5: Indigenous Peoples and Vulnerable Groups

25. OP 9.00: Due consideration is given to cultural appropriateness of, and equitable access to, program benefits giving special attention to rights and interests of Indigenous Peoples and to the needs or concerns of vulnerable groups.

Applicability/Summary

26. Resettlement and environmental degradation tend to disproportionately impact the poor and vulnerable groups, documented in operational documents for other Bank projects/programs. While the Program seeks to improve the conditions of the poor and vulnerable groups, if impacts are not well-managed it is possible that vulnerable groups could be negatively impacted.

27. With respect to other marginalized and vulnerable groups, the investments under this program targets all teachers as direct beneficiaries. Thus while considering the applicability of this Core Principle, the analysis found that it was relevant in terms of ensuring that vulnerable groups are included in the planning process and program prioritization; that vulnerable groups have access to program benefits; and that the needs of vulnerable groups are considered with respect to the Programs impacts.

28. The approach of the Government is to ensure that all vulnerable groups are consulted and benefit from Government programs and there are policies/programs to this effect.

29. The ESSA found that the Government of Bihar has recently introduced a comprehensive set of legislation to ensure social inclusion across SC, ST, minority and vulnerable populations. Though this specifically relates to reservation policies, it gives a sense of GoB's intentions of wanting to share the benefits of Government programs across all segments of the state population. The program design will ensure that all teachers from disadvantaged groups will have access to training to enable them to become qualified (and therefore, permanent) teachers.

30. The teacher professional development programs are designed to build the capacity of teachers to develop their own teaching and learning materials to respond to the specific needs of their children, including through the use of indigenous knowledge as developed by Indigenous Peoples. Capacity building is required at the SCERT especially to more effectively monitor the impact of the teacher programs on disadvantaged groups.

Core Principle 6: Social Conflict

31. OP 9.00: Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

Applicability/Summary

32. The Bihar TE program will not entail social conflict in fragile states, post-conflict areas or areas subject to territorial disputes, nor will the Program cause social conflict or impact distributional equity or associated cultural sensitivities.

33. As such, the ESSA did not consider the Program with regards to Core Principle 6 as this Core principle and key element are not applicable to the operation. It is important to note that distributional equity and cultural sensitivities are covered under the analysis of system with respect to the main considerations of Core Principle 5.

IV. Overall Risk Assessment

34. Based on the findings of the Environment and Social System Assessment, the following table aggregates the risks anticipated from the program and proposes measures to mitigate those risks. These are included in the Program's Integrated Risk Assessment.

Risk Description	Risk Management
Potential environmental and social impacts of Program are not identified, mitigated, and monitored	<p>The potential environment and social risks of the program are low, straight-forward and manageable, given the fact that the program does not entail any land acquisition.</p> <p>To streamline work procedures and the actual implementation of existing regulatory /codal provisions, a guidance manual has been prepared. Monitoring and supervision of due diligence measures related to environmental and social issues will be a part of the technical assistance component of the project.</p>
Grievance Redressal Mechanisms: There is a formalized complaint mechanism at the local (district) level but its effectiveness is hampered by lack of awareness	The program will carry out dissemination and awareness raising activities amongst teachers about the work of the grievance mechanisms. As necessary funds from the technical assistance component will be used.
Staffing and skills mix is insufficient to handle environmental and social management issues	The program will ensure that all necessary staffing is available with adequate skills. BSEIDC will appoint focal points for environmental/social monitoring and implementation of the environmental actions stated in the Program Action Plan. The program will be incentivized to provide adequate resources to environmental and social management as performance is a minimum condition to achieve program objectives. The TA component of the World Bank support will enable appropriate experts to be recruited.
Involvement with participatory decision making needs to be undertaken in spirit and not led by a single individual	Dissemination and awareness raising activities for environmental and social due diligence measures will be built into the Bihar TE Program.
Consultations are held for specific purposes such as thematic areas.	The program will undertake inclusive on-going consultations with stakeholders and a training program will be developed for implementers.

V. Key Program Actions – Environment

35. Based on the findings from the assessment exercise presented in the ESSA and consultations with key stakeholders, specific measures have been agreed with the Government/Department to strengthen principles of economy, efficiency, health and safety in creating and operating Teacher Training Institutes in the state, including those related to energy.
36. Key actions agreed to address environmental risks and gaps in the existing systems are:
1. Criteria to exclude certain interventions from the Program that may impact ecologically sensitive/ important/notified wetlands, and protected monuments;
 2. A Program Action Plan that includes strengthening of the existing systems for improved environment/social management. This primarily includes the adoption of the manual on Environment Management System for Bihar TE Program and internal and third-party monitoring of the environmental/social performance of the Program
 3. Capacity building to address environmental issues for monitoring and due diligence. The capacity building will start from the first month of implementation. The Department of Education and BSEIDC will be responsible for this.

VI. Key Program Actions – Social

37. The key actions agreed with the Government of Bihar are:
1. Adoption of Program documentation for social management. This will be adopted by Program effectiveness. BDSEIC will be responsible for this.
 2. Preparation on awareness of grievance procedures and dissemination of this information. The TA component resources can be used to support the development of these procedures. The dissemination phase will start within the first 6 months of project implementation. The Department of Education will be responsible for this; seeking the assistance of the BDSEIC for any procurement of technical assistance.
 3. Capacity building to address social issues for monitoring and due diligence. The TA component resources can be used to support the development of these procedures. The capacity building will start from the first month of implementation. The Department of Education will be responsible for this; seeking the assistance of the BDSEIC for any procurement of technical assistance.

Technical Assistance (Project):

38. A separate Integrated Safeguards Data Sheet (ISDS) has been prepared for the TA (project) component. The TA Component consists primarily of consultancy services and evaluation studies and therefore no significant, long term or adverse environment or social issues are anticipated from the proposed interventions/activities. The activities proposed under the TA Component are not

likely to have any adverse or significant environmental impact. However, as part of the enabling infrastructure to be created for Teacher Training in Bihar, there is a need to provide a reliable and a cost-effective energy source for energizing ICT equipment. In this context, a specific activity included in the TA Component relates to facilitating the design, planning and execution of renewable energy interventions (solar PV technology, which has been chosen after a thorough energy assessment), which has some minor implications on safeguard requirements.

39. OP 4.01 has been triggered to ensure that the capacity building support to be provided under the TA Component for deployment of renewable energy technology (RET) factors in appropriate management approaches during planning, installation and operation of such infrastructure and remains consistent with the Bank's operational policy. On the whole, this activity will create a long term positive impact on the environment by promoting the use of efficient and clean energy source in the educational institutions of the state and will also contribute towards attaining the over-all Program objectives.

40. Social safeguard issues, including any significant, long term or adverse impacts or risks are not anticipated due to activities/interventions proposed under this operation as this TA primarily consists of consultancy services and evaluation studies. OP 4.12 is not triggered as no resettlement is envisaged due to the implementation of the activities under the TA Component. However, since the Project has a state wide coverage, OP 4.10 has been triggered to ensure that the tribal communities are not adversely affected by, or excluded from, the Project, and that they receive culturally appropriate benefits from the Project.

41. **Tribal Development Framework (TDF):** The TA Component will be guided through a TDF that has the objective of guiding the preparation of a Tribal Development Plan should one become necessary and ensure that under that Plan tribal communities are not adversely affected by, or excluded from, the Project, and that they receive culturally appropriate benefits from the Project. It describes the principles, procedures and organizational arrangements to be applied to tribal communities for the Operation to fully meet the objectives of OP 4.10 and facilitate active participation of these communities.

Annex 7: Integrated Risk Assessment

Stage: Negotiations

1. OPERATION RISKS				
1.1 Technical Risk		Rating:	Substantial	
<p>Description: Traditional distance education programs offering teacher education in India have not demonstrated success in scaling while retaining quality. Innovative approaches with the use of ICT are not yet proven.</p> <p>Telecommunications infrastructure in the state may be either inadequate and/or too expensive to enable integrated, ongoing use of ICT in program delivery with the added problem of potential issues of theft, maintenance, and inadequate power in Bihar to deploy an ICT-led delivery model.</p>		<p>Risk Management: Operation preparation conducted extensive research to develop suitable innovative models of ICT-led educational delivery systems that can overcome limitations of traditional DE modes of delivery with inbuilt processes to include regular testing and refinement of proposed delivery models before scaling. A strong M&E framework for the Operation will include frequent formative evaluation activities for ongoing cycle of feedback from evaluation into program implementation. The team will hold negotiations with telecommunications suppliers to maximize economies of scale and potential linkages with national ICT programs. The Operation will include structured professional development in use of ICT and potentially explore the concept of personal ownership model for devices (both at DIET/BRC level and for individual teachers) in order to encourage responsible use and care for devices. The team will include requirements for procurement of low-power usage in device procurement tenders and where necessary, deploy solar power to supplement and/or replace grid-based electricity</p>		
		Resp: Bank/Govt.	Stage: Imp	Due Date : Negotiations
				Status: Ongoing
1.2 Fiduciary Risk		Rating:	Substantial	
<p>Description: There may be risks associated with large procurement for ICT related hardware, which has not been done to date in the education sector by the implementing agency.</p> <p>Financial Management Capacity in DR&T, SCERT and DIET's are weak, including non-adherence with state's finance and treasury rules.</p>		<p>Risk Management : This risk would be mitigated by (i) support through the TA Component by way of critical human resources in all the three institutions - technical, procurement and financial management resources; capacity building in the initial years and incentivizing compliance through DLI's.</p>		
		Resp: Govt.	Stage: Imp	Due Date : Recurrent
				Status: Ongoing
1.3 Environmental and Social Risk		Rating:	Low	

Description: On social safeguards, the Operation implies an end of the hierarchical relationship between expert or master teacher/trainer and learner. It will be essential that all groups of untrained teachers especially women and those from disadvantaged and groups and groups with disabilities – share equally in this empowerment.	Risk Management: Design of curriculum materials include appropriate empowerment of disadvantaged groups. Environmental safeguards are built in building design and refurbishment processes.			
	Resp:	Stage: Prep	Due Date :	Status: Completed
1.4 Disbursement linked indicator risks	Rating:	Substantial		
Description: Frustration from implementing agencies if indicators are not reached and money does not flow.	Risk Management: Extensive discussions with implementing agency staff to generate understanding of the disbursement linked approach.			
	Resp:	Stage: Prep/Imp	Due Date : Recurrent	Status: Ongoing
1.5 Other Risks (Optional)	Rating:	Moderate		
Description : Weak implementation capacity undermines ability to carry out innovative program activities	Risk Management : Appointment of additional staff to SCERT and BPEC needed and tracked as part of indicator matrix A PMU will be provided as part of the TA support to strengthen capacity constraints in BSEIDC, SCERT and the DRT.			
	Resp:	Stage: Imp	Due Date : Recurrent	Status: Ongoing
OVERALL RISK RATING				
Substantial	Implementation risk is considered to be Substantial as there are weaknesses in institutional preparedness, large numbers of teachers to be trained and the novelty of the delivery mode, as well as weak technical capacity to handle an Operation of this large scale.			

Annex 8: Program Action Plan

S. No.	Key Program Actions	Responsible entity	Time frame
	Program related		
1	The Program to have a designated Project Director for the full Program period	Department of Education, GOB	June 30, 2015
2	PMU with 100% positions filled in and remain filled throughout the program	BSEIDC	July 30, 2015
3	Funds to be claimed under the program will not be budgeted under SSA, RMSA or CSS of Teacher Education	Department of Education, GOB	Throughout program period
4.	Carrying out an assessment of SCERT and preparing a development plan for the strengthening of SCERT's infrastructure and human resources	Department of Education, GOB	December 31, 2015
	Cross-cutting		
5	Strengthen the preventive vigilance function for Department of Education by designating an officer of the Department as Vigilance Officer and build its capacity to making it effective.	Department of Education, GOB	One (1) month after Effectiveness
	Procurement Arrangements		
6	Develop a procurement manual and develop SBD for goods and services, including a policy of negotiations with the lowest bidder before the award of contract as is currently being followed by BSEIDC should be got approved by the Board of Directors (BoD) of BSEIDC and no change in the policy should be made without the prior approval of the BoD of BSEIDC.	BSEIDC	Six (6) months after Effectiveness
7	Hiring consulting firm for supervision of the works under the program.	BSEIDC	Three (3) months after Effectiveness
	Financial Management		
8	Develop operational guidelines containing the relevant codes (processes & controls) from in the Bihar Treasury Code (2011), Bihar Budget Manual and Bihar Finance Rules and the key financial reports available from CTMIS (Treasury system) for the DR&T, SCERT and DIETs which will serve to both work within the existing financial regulations and strengthen compliance/adherence to such regulations by the program.	Dept. of Research & Training	June 30, 2015
9	Consolidate and strengthen the Corporate Governance and Financial and contract management systems in BSEIDC. These would include (i) compliance with statutory requirements under the Companies Act (2013) i.e. Minimum no. of Board meetings; (ii) Develop a Financial Management Manual for BSEIDC to strengthen the control framework and also to improve disclosures in the annual financial statements	BSEIDC	In a phased manner starting July 2015 through March 31, 2017

S. No.	Key Program Actions	Responsible entity	Time frame
	and Directors report especially on the Infrastructure Development Funds (IDF); (iii) make the audit committee function effectively, supported by strengthening/expanding the scope of internal audit including procurement post review and its timely appointment;		
	Social and Environment related		
10	Teacher training content to be reviewed to assess inclusion concerns for disadvantaged groups	SCERT	December 31, 2015
11	All buildings to include environment friendly elements	BSEIDC	Throughout Program implementation
12	Adoption of the Manual on Environment Management System for Bihar TE Program and internal and third-party monitoring the activities completed	BSEIDC	Six (6) months after Effectiveness

Annex 9: Technical Assistance Component

1. A Technical Assistance (TA) component will be an Investment Project Financing (IPF) loan for an amount of US\$25 million. Implementation under the TA Component will be managed in accordance with OP/BP 10.00. The TA Component will be dedicated to financing a specific set of technical assistance activities. The objective of this support will be to strengthen the capacities of BSEIDC, the Directorate of Training and Research and SCERT for improved program implementation, policy development and monitoring and evaluation. Capacity building and technical assistance activities will be financed under three main categories: (i) program implementation support through creation of a PMU; (ii) policy development, capacity building and impact evaluation activities; and (iii) hiring individuals/firms for third party verification of the DLIs.

2. ***TA Areas for Implementation:*** Capacity building and technical assistance activities to be financed under the TA component fall into three main categories: (i) program implementation; (ii) policy development and impact evaluation; and (iii) third party validation.

3. (i) *Supporting existing capacities for program implementation:* A PMU will be constituted to support existing capacity within the nodal agencies in financial management, planning, program coordination, ICT, distance learning, and the select subjective specific courses including the humanities and sciences. Additional expertise will be brought in to provide international best practices in areas of solar energy, civil works, and teacher practices as needed. This will include networking and collaboration with international technical agencies and universities of repute.

4. GoB recognizes that a piecemeal approach to incorporating ICT for improving teacher education and management is highly inefficient, and that effective change will require a comprehensive approach and extensive technical assistance. Funds will be set aside to provide systematic support for ICT.

5. (ii) *Continuous improvement in program design:* The TA will support the implementers in frequent reviews and analyses of teacher performance and student assessment data, like the NAS, to identify what is working and what is not. The TA will also support implementers at the district and block level to act on these data – to use change management approaches to improve the identified problems and to document both successes and failures in a way that will be useful for other implementers in other localities. This includes the development of internal mechanisms and hiring of needed expertise to ensure the findings from assessment translate into improved design of programs for teacher effectiveness.

6. (iii) *Third Party validation:* The TA will support the department in undertaking third party assessments/validation of the DLIs. The third party studies will provide external validation for key performance data and implementation activities. These will be discussed and finalized as part of the proposed JRMs for program tracking.

A. Policy development and monitoring and evaluations

a) *Impact Evaluations:* The evaluations will provide timely feedback to the State for improving the design of the new and innovative interventions to be introduced through

the program. The evaluations will capture the impact of alternative interventions aimed at improving teacher performance. This will include: (a) design of a rigorous, methodologically sound impact evaluation approach. The evaluations will be prospective using experimental/quasi-experimental designs; (b) completion of initial statistically valid baseline study to determine benchmarks against which to measure impact; (c) annual evaluation activities to measure progress; and (d) completion of final evaluation report, based on endline research strategies. Evaluation designs and implementation protocols are currently being prepared to identify (i) the most cost-effective online platform to improve teaching practices. This will include video time on task studies to capture teaching practices, (ii) technology to empower School Management Committees to capture and report on teacher absenteeism, and (iii) impact of alternative teacher incentives. Others will be identified as needed.

- b) *Teacher incentive reforms*: A study of teacher recruitment, deployment, and salary payments will be carried out to develop well-structured policy recommendations. This will include an assessment of the overall institutional framework and ongoing oversight mechanisms.
- c) *Human Resources Management Information System (HRMIS)*. The TA will support the design of an HRMIS. The design and implementation of an effective and relevant HRMIS that is accessible both from the central and district levels is critical to the success and sustainability of improvements in teacher management. The HRMIS will support the link between career progression and teacher performance and professional development, provide updated information on the number of teachers needed in order to meet national PTR goals, and support the payment appropriate deployment of teachers both between and within schools.
- d) *Human Resources Management Information System (HRMIS)*. The design and implementation of an effective and relevant HRMIS that is accessible both from the central and district levels is critical to the success and sustainability of improvements in teacher management. The HRMIS will support the link between career progression and teacher performance and professional development, provide updated information on the number of teachers needed in order to meet national PTR goals, and support the payment appropriate deployment of teachers both between and within schools.

7. The broad areas of the TA support along with draft Terms of Reference for each area are presented in the table below:

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
	PMU Support		
1	<u>PMU (Core)</u> (Located at DRT and headed by DRT Program Manager) <ul style="list-style-type: none"> • Program Manager- 1 	\$ 2 million	Core team (PM, FM, M&E) and implementation strengthening team members are expected to: PM: a) Plan, co-ordinate and manage the Teacher Education Project

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
	<ul style="list-style-type: none"> • Finance Management Expert - 1 • Monitoring and Evaluation- 1 (to be hired) <p><u>PMU- (Project Implementation Strengthening):</u></p> <ul style="list-style-type: none"> • At SCERT- 4 in place+ 2 to be hired) • At BSEIDC- 1 in place+ 2 to be hired <p><u>Reporting and Coordination of PMU:</u></p> <ol style="list-style-type: none"> 1. Reporting to and day to day management by respective institutions/offices 2. Contracting by BSEIDC 3. Salaries and allied expenses to be handled by BSEIDC 		<ol style="list-style-type: none"> b) Liaise with Government institution and organizations concerned with the project implementation like SCERT, BSEIDC etc. c) Provide accurate, timely & effective progress reports. d) Execute all the decisions/Direction of Directorate, Teacher Training relating to the project. <p>FM:</p> <ul style="list-style-type: none"> • Responsible for all financial activities related to budget, disbursement of funds for different activities related to project. • Ensure the expenditure of the fund for which it has been disbursed • Responsible for all types of financial reports related to project, audit and proper accounting of the funds related to the project. • Execute all the decisions/Direction of Directorate, Teacher Training relating to the project. <p>M&E:</p> <ol style="list-style-type: none"> a) Timely reporting of all program indicators. b) Maintaining appropriate MIS for real-time data collection and analysis c) Liaise with Government agencies and third parties to obtain relevant data to evaluate overall project and its components. <p>SCERT:</p> <ol style="list-style-type: none"> a) Provide necessary academic and subject specific support. b) Apply different principles and research based practices in science education. c) Reevaluate the course contents and provide necessary suggestions d) Develop potentialities of different resource persons and coordinators through organizing subject-specific capacity building program. <p>BSEIDC:</p> <ol style="list-style-type: none"> a) Monitors and directs, in collaboration with Project Management Team, all site activities b) Assess and review the project key performance indicators c) Manage changes to technical scope and assist in obtaining written approvals

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			d) Prepare reports for corrective actions, review periodic status reports prepared by Project Management Team Managers
Institutions			
	BSEIDC		
2	Firm- ICT preparing for procurement of hardware and multi-media content, advising on trends in the market, and Data base management etc.	\$ 2 million	<p>Support through the Program Management Unit in implementation with a focus on focusing on assistance with:</p> <ul style="list-style-type: none"> e) Liaison with other relevant State and National government agencies to ensure alignment of investments in ICT infrastructure are in line with wider development plans and focus on establishing sustainable, fit-for-purpose ICT infrastructure for teacher education in Bihar; f) Development of procurement specifications; g) Review and selection of suitable providers to deliver ICT infrastructure in line with specifications; h) Contracting of service providers, with clearly defined deliverables that can be measured in ways that ensure quality of delivery; i) Ensuring that service providers deliver appropriately against their contractual obligations; j) Troubleshooting and resolving problems in ICT delivery and rollout. <p>Support in developing and implementing <i>appropriate ICT maintenance strategies</i>, which include:</p> <ul style="list-style-type: none"> k) Establishment and maintenance of appropriate asset registers; l) Definition of realistic, affordable ICT maintenance plans, with clear benchmarks for turnaround times on maintenance support; m) Defining, negotiating, and procuring ICT maintenance contracts as required; n) Development and implementation of ICT (physical and virtual) security plans; o) Development and implementation of hardware and software renewal programs,

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			<p>to keep all software (including ant-virus software) up-to-date and operational and to replace hardware within identified replacement cycles;</p> <p>p) Design, implementation, and maintenance of suitable disaster recovery strategies across the system.</p> <p>Support in design and development of <i>centralized software and multi-media content platforms</i> for the teacher education system in Bihar (including TEMIS, Enterprise Content Management Systems, Learning Management Systems, Student Information Systems, and relevant mobile apps to support access to the above).</p> <p>Technical assistance will focus on supporting:</p> <p>q) Definition of business processes to accompany software systems and accompanying enterprise architectures;</p> <p>r) Definition of functional requirements and technical specifications of all software systems (where not developed already);</p> <p>s) Ensuring that service providers deliver appropriately against their contractual obligations;</p> <p>t) Troubleshooting and resolving problems in systems delivery and rollout;</p> <p>u) Integration of systems into operations of schools, teacher education institutions and GOB.</p>
3	Firm: Non-conventional energy sources (design, preparing for an overseeing procurement, ongoing supervision to identify system functioning/ efficiency)	\$ 1.5 million	<p>Contract a suitable firm/agency to:</p> <p>a) Assess generation capacity of non-conventional energy sources and its utilization;</p> <p>b) Anticipate problems including legal, financial and technical issues with view to maximize efficiency and viability of the resources;</p> <p>c) Assess role and participation in the generation and its recommended actions;</p> <p>d) Proven track record of construction of energy efficient Green Building;</p> <p>e) Availability of in-house experts;</p> <p>f) Development of procurement specifications;</p> <p>g) Review and selection of suitable providers to deliver in line with specifications;</p>

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			<ul style="list-style-type: none"> h) Contracting of service providers, with clearly defined deliverables that can be measured in ways that ensure quality of delivery; i) Ensuring that service providers deliver appropriately against their contractual obligations; j) Troubleshooting and resolving problems in delivery and rollout. k) Design, implementation, and maintenance of suitable strategies across the system; l) Support in design and development of low carbon or zero carbon emissions.
4	Firm Contract: Enhancement of procurement and FM system (including development of Procurement Manual) (ii) Conceptual Framework, TORs for consultancy for ERP	\$1m	<p>Contract a firm with the following objectives:</p> <ul style="list-style-type: none"> a) Support in preparing bids; b) Set time for the delivery once the Purchase orders (PO) are approved and authorized to assign; c) Before assigning the PO, validate the credibility of the bidders; d) Ensure that the Government approved vendors meet quality standards, assess market standard competitive rates. e) Development of Financial and Procurement Manual for the program including elements of transparency and quality standards, due diligence by cross checking and verifying track records f) Procurement processes to accompany systems and accompanying enterprise deliverables; g) Provide sufficient details of functional requirements and technical specifications of all procured goods/services; h) Ensuring that service providers deliver appropriately against their contractual obligations; i) Troubleshooting and resolving problems in systems delivery and rollout;
	SCERT Strengthening		
5	Financial management (firm) -	\$ 0.5 million	<p>Contract a firm to support SCERT to:</p> <ul style="list-style-type: none"> a) Maintain a robust financial setup; b) Check feasibility of the proposed fund flow system to track utilization on real time basis;

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			<ul style="list-style-type: none"> c) Maintain the following books of accounts and registers to be in place- Cash Book, Ledger, Journal, Registers for advances, Cheque issue register, Pay-in-slips, passbook, bank statement, Bill register, stock register, capital goods including fixed assets, non-consumable and consumable articles, register of works, Monthly accounts of receipts and payments, dispatch register, etc. d) Provide centralized and server-maintained software; e) Prepare district-wise abstract detailing monthly expenditure with respect to each district and institution-wise; f) Maintain consolidated statement indicating the progressive expenditure month to month in respect to each district; g) Maintain a quarterly expenditure statement showing the allotment and expenditure under each intervention district/institute wise;
6	Firm contract: Program management	\$ 0.5 million	<p>Support SCERT in meeting project development objectives and DLIs as per PAD by assisting with:</p> <ul style="list-style-type: none"> a) Liaising with PMU members and Government agencies. b) Identifying needs and gaps through a team consisting of program manager, coordinators and field managers. c) Supply chain management and logistics support for training institutes. d) Verification of program data, quality assurance, and tracking of performance indicators. e) Support in tracking program accounts with utilization certificates and other necessary financial requirement for the program adhered to
7	Firm contract: ICT and continuous professional development (CPD)	\$ 2 million	<p>Support in designing and implementing <i>ICT and teacher education capacity-building strategies</i> to ensure effective deployment and use of ICT, aimed at teacher educators (across DIETs, PTECs, BRCs, and CRCs), administrators across the system, school principals, teachers, and ICT technicians.</p> <p>Technical assistance will focus on:</p>

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			<ul style="list-style-type: none"> a) Identification of full range of ICT needs (covering ICT installation/maintenance, use of ICT systems, curriculum and materials development, ODL and e-learning delivery, tutoring, etc.); b) Development of capacity of state agencies to deliver training needed; c) Procurement of training from external service providers where required. <p>Support in <i>design and development of effective professional development programs for teachers in Bihar</i>, including:</p> <ul style="list-style-type: none"> a) Development of suitable curriculum frameworks (which include statements of curriculum coverage, teaching and learning methods, assessment strategies, etc.) for all identified teacher education programs; b) Support to curriculum development teams to produce effective, relevant teacher education materials; c) Development of capacity of teacher education teams to understand and become proficient in use of Open and Distance Learning and blended learning methods.
8	Leadership training programs for Teacher Educators	\$ 1 million	<p>Support SCERT's Teacher Educators by:</p> <ul style="list-style-type: none"> a) Organizing exposure visits, workshops, and facilitating practical experience in the field; b) Focus on motivational speaking, social entrepreneurship, coping mechanisms and resilience; c) Have a proven track record of successful teacher education (e.g. offering of B.Ed. or equivalent courses), familiarity with ICT and hybrid teaching methods, d) Preferably have experience in developing innovative approaches to teaching and adult education; e) Develop mechanisms for sustaining high performance and quality.
9	Midline and End line Studies on Teacher Performance	\$ 0.5 million	<p>Conduct midline/end-line study at appropriate intervals in accordance with baseline survey as follows:</p> <ul style="list-style-type: none"> a) Four districts selected by GoB, per district randomly select 100 schools (total 400)

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			<ul style="list-style-type: none"> b) Half of schools should be primary, other half upper primary schools with preferably more than 2,000 teachers enrolled in study. c) Focus on grades 4 and 6 for classroom observation, 3 visits over approximately 12 months, follow baseline survey structure d) Capture information on student and teacher attendance, grouping of children, teaching activities, teacher-student interaction e) Assessment of language teaching skills: follow baseline methodology of assessing knowledge of grammar, sentence construction, punctuation, vocabulary, reading comprehension, question development, summary writing f) Assessment of mathematics teaching skills: follow baseline methodology of assessing step-wise division problem solving, correct identification of student ability to perform tasks, step-wise problem solving including word problems, interpretation of data, develop questions; g) Analyze results and compare/contrast with baseline, document changes since baseline to account for possible differences.
	Impact Evaluations		
10	The most cost-effective online platform to improve teaching practices	\$ 0.5 million	<p>An agency with track record of high quality IE is to:</p> <ul style="list-style-type: none"> a) Cost associated with various online platforms which are currently in use to improve teaching practices b) Randomize and/or match institutions by online teaching method c) Evaluate improvement as per baseline teacher performance indicators and student assessment tools (e.g. National Achievement Survey, ASER etc.)
11	Technology to empower School Management Committees to capture and report on teacher absenteeism	\$ 1 million	<p>An agency with track record of high quality IE is to:</p> <ul style="list-style-type: none"> a) Identify appropriate technologies which could empower SMCs to monitor teachers' attendance b) Develop device applications for existing technologies (e.g. mobile phones, cameras etc.) c) Randomize and/or match SMCs and evaluate technologies employed
12	Impact of alternative teacher incentives	\$ 1.5 million	<p>An agency with track record of high quality IE is to:</p>

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			<ul style="list-style-type: none"> a) Identify appropriate incentives for improved teacher performance (financial/non-financial, study design considering behavioral economics including loss aversion, crowding out, intrinsic motivation etc.) b) Obtain all relevant approvals Government agencies/Internal Review Board and randomize and/or match institutions c) Evaluate improvement as per baseline teacher performance indicators and student assessment tools (e.g. National Achievement Survey, ASER etc.)
13	Video documentation of teacher's time on task	\$ 0.5 million	<p>An agency with track record of high quality IE is to:</p> <ul style="list-style-type: none"> a) Identify appropriate technologies to document teacher's time on task b) Perform qualitative analysis of documentation material c) Evaluate improvement as per baseline teacher performance indicators and student assessment tools (e.g. National Achievement Survey, ASER etc.)
14	Human Resources Management Information System (HRMIS)	\$ 1 million	<p>An agency with track record of high quality IE is to:</p> <ul style="list-style-type: none"> a) Identify existing HRMIS used by GoB/GoI b) Develop adequate modifications/new applications for tracking attendance, performance and work history for timely and c) Evaluate HRMIS against current system/other MIS by randomizing and /or matching institutions
15	Survey of SMCs- use of mobile telephony and low cost devices	\$ 0.5 million	<p>An agency with reputation of conducting high quality survey to:</p> <ul style="list-style-type: none"> a) Identifying availability of mobile telephony, current use, potential use, network coverage, energy sources, literacy/numeracy of users, b) Assess feasibility of training SMC members on technology use and conducting above evaluation of empowering SMCs through technology c) Evaluate potential for use of call centers to capture data, real-time data entry and analysis
16	Verification agency/agencies	\$ 2 million	<p>An agency to follow DLI verification protocols for following 15 components: DLI-1:</p>

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			<p>a) 2015-16 (Period 2):_ICT infrastructure operational in at least 250 institutions.</p> <p>b) 2016-17 (Period 3):_The completion of repairs/renovation, etc. required for ICT infrastructure and furnishing with requisite environment and energy safeguards in place in at least 95 Teacher Education institutions.</p> <p>c) 2017-18 (Period 4): The completion of repairs/renovation, etc. required for ICT infrastructure and furnishing with requisite environment and energy safeguards in place in at least 300 Teacher Education institutions.</p> <p>d) 2018-19 (Period 5): The completion of repairs/renovation, etc. required for ICT infrastructure and furnishing with requisite environment and energy safeguards in place in at least 400 Teacher Education institutions will be considered as the achievement of this indicator.</p> <p>DLI-2</p> <p>e) 2018-19 (Period 5): Improvement of end line survey results on identified parameters of recommended action plan of TEIDI in at least 75% of Teacher Education Institutions covered in baseline survey.</p> <p>DLI-3</p> <p>f) 2015-16 (Period 2): SCERT has rolled out the D.El.Ed. open and distance learning program in at least 100 [TE Institutions] using ICT based materials</p> <p>g) 2016-17 (Period 3): (i)_Verification of results of 24,000 teachers who have completed the D.El.Ed program. (ii) Evaluation of D.El.Ed Program completed and report shared.</p> <p>DLI-4</p> <p>h) 2016-17 (Period 3): Updated teacher training database in at least 20 districts</p> <p>DLI-5</p> <p>i) 2015-16 (Period 2): SMC training completed in 10% of schools, including newly-developed module on teacher accountability</p> <p>j) 2016-17 (Period 3): BEOs and BRCCs school visit, including reviewing and reporting on teacher performance and</p>

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			<p>attendance records, to be available for at least 50% of schools.</p> <p>k) 2017-18 (Period 4): SMC records including teacher attendance, maintained in at least 50% of schools.</p> <p>DLI-6:</p> <p>l) 2015-16 (Period 2): Disclosure of 100% of contract award under the program and monthly physical and financial progress of at-least 70% contracts hosted in the website of BSEIDC and 75% of complaints handled satisfactorily within a time frame as in the approved framework. Internal audit and its oversight enhanced.</p> <p>m) 2016-17 (Period 3): Published reports generated from Enterprise Resource Planning (ERP) system for BSEIDC with modules for contract and financial management; with up to date data/financial information for all contracts under the program, as of March 31, 2017.</p> <p>n) 2017-18 (Period 4): Disclosure of 100% of contract award under the program and quarterly physical and financial progress generated from the ERP system for at-least 80% contracts hosted in the website of BSEIDC and 80% of complaints handled satisfactorily as in the approved framework.</p> <p>o) 2018-19 (Period 5): Disclosure of 100% of contract award under the program and quarterly physical and financial progress generated from the ERP system for at-least 90% contracts hosted in the website of BSEIDC and 90% of complaints handled satisfactorily as in the approved framework.</p>
	<p>1. International exposure visits for Capacity Building for core project team and academic implementers/teacher educators</p>	<p>\$ 0.5 million</p>	<p>An agency with track record of organizing international exposure visits to relevant education projects in the region or beyond to:</p> <p>a) Identify relevant and best practice teacher education projects internationally, preferably in a similar context</p> <p>b) Making travel and visa arrangements, ensuring safety and minor disruption of ongoing project</p> <p>c) Documenting the exposure visit and periodically obtaining feedback of</p>

	<u>Areas</u>	<u>Tentative Funds Requirement</u>	<u>Outline TORs</u>
			participants to be included in subsequent visits
	Pilot Study		
17	Teacher incentive reforms including a pilot on tryout of teacher incentives in select block/districts	\$ 7 million	An agency with track record of running pilots to: <ul style="list-style-type: none"> a) Manage and administer the teacher incentives identified for the Impact Evaluation (see above) at the sites identified by Government b) Incentives to be finalized in collaboration with Government (financial/non-financial, study design considering behavioral economics including loss aversion, crowding out, intrinsic motivation etc.) c) Ensure on time receipt of incentives
	Total	\$ 25 million	
<u>THIRD PARTY VERIFICATION OF DLIs: AREAS</u>			
DLI 1: infrastructure <ul style="list-style-type: none"> • Firm contract for verification of Periods 2 to 5 DLI 2: institutional capacity <ul style="list-style-type: none"> • Individual contract for Period 5 to review TEIDI survey results DLI 3: quality improvement <ul style="list-style-type: none"> • Individual contract for Period 2 • Individual contract for Periods 3 DLI 4: accountability and monitoring system <ul style="list-style-type: none"> • Individual contract for Periods 1 and 3 DLI 5: Teacher accountability <ul style="list-style-type: none"> • Firm contract for Periods 2 to 5 DLI 6: Program Fiduciary Systems and Its Performance <ul style="list-style-type: none"> • Firm contract for Period 2 to 5 			

B. Institutional and Implementation Arrangements

8. The implementation arrangements for the TA Component will be the same as for PforR however will be disbursed and spent using Bank disbursement and procurement rules. In consultation with GoB it has been agreed that all procurement (primarily of consultancy services) and financial management responsibilities for the TA Component will vest with BSEIDC, which the DR&T and SCERT will provide technical inputs and have the technical responsibility & oversight over the execution and performance of the consultancies.

9. The World Bank’s assessment is that, BSEIDC has adequate capacity to fulfil its procurement & financial management responsibilities as defined under OP/BP10.00 and that the proposed arrangements (i.e. flow of funds, budgeting and accounting, internal controls, interim and annual reporting and external audit) as detailed below are adequate.

C. Financial Management

10. *Budget & Flow of funds:* DR&T will draw from the revenue budget head created for the Program and make the same available to BSEIDC³⁴, which will deposit the same in its bank account maintained with a commercial bank. Under the TA Component all payments will be made by BSEIDC upon confirmation of delivery of outputs by the consultants or monthly time sheets in case of individual consultants by DR&T and SCERT. All payments by BSEIDC are made electronically.

11. *Accounting:* The fund requirement for the TA Component will also be included under the budget head created for the Program (revenue component) in GoB's budget. A separate budget code for the TA Component in GoB budget is not considered necessary as cabinet approval has been sought for the program as a whole and BSEIDC accounting systems have the ability to account for, segregate and report on expenditures under the Program and TA Component separately.

12. *Internal controls:* All primary supporting documentation will be appropriately maintained to facilitate ex post reviews and the annual external audits.

13. *Interim and Annual Reporting:* BSEIDC will be responsible for submission of quarterly IUFRR for the purpose of reimbursement. These will contain information by component and activity. Reports will be prepared on a cash accounting basis and will be submitted to the World Bank no later than 45 days after the end of each quarter.

14. *External audit:* External audits will be performed by the external auditors of BSEIDC (a private CA firm) as per terms of reference acceptable to the World Bank. The audit report will be placed in the public domain as per Bank's disclosure policies.

D. Disbursements

15. Disbursements under the technical assistance component will be made primarily as Reimbursements on the basis of quarterly IUFRRs, which will be submitted to the World Bank through the office of CAAA. The IUFRRs will be submitted within 45 days of the end of each quarter.

E. Procurement

16. Procurement for the Program will be carried out in accordance with the World Bank's "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers (January 2011 revised July 2014)" [Consultancy Guidelines]; and the provisions stipulated in the Financing Agreement.

³⁴ A separate budget code for the TA component in GoB budget is not considered necessary as cabinet approval has been sought for the program as a whole and BSEIDC accounting systems can account for and segregate expenditures under the program and TA separately.

17. *Procurement Risk Assessment.* The Procurement Risk Assessment and Management System (PRAMS) has been carried out and finalized and based on the present broad assessment the procurement risk rating is “substantial” and a few mitigation measures to reduce the risk have been built into the Operation..

18. *Procurement Plan:* For contracts to be financed by the World Bank, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time-frame are agreed between the Borrower and the World Bank in the procurement plan. It will be updated at least annually or as required to reflect the actual program implementation needs and improvements in institutional capacity.

19. *Selection of consulting services:* Consulting firms will be selected through Quality and Cost-Based Selection (QCBS), Quality Based Selection (QBS), Selection Based on Consultants Qualification (CQS), Least-Cost Selection (LCS), Fixed Budget Selection (FBS), Single-Source Selection and Individual Consultants (IC). Short lists of consultants for services estimated to cost less than US\$ 800,000 per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Guidelines. All contracts estimated to cost more than US\$500,000 will be subject to prior review by the World Bank. The World Bank’s Standard Request for Proposal and Evaluation Reports will be used for consulting contracts above US\$ 300,000.

20. *Disclosure of Procurement Information.* The following documents shall be disclosed on the website: (i) procurement plan and updates, (ii) request for expression of interest for selection/hiring of consulting services, (iii) short list of consultants, (iv) contract award of all consultancy services, (v) list of contracts following CQS or SSS on a quarterly basis, (vi) monthly financial and physical progress report of all contracts, and (vii) action taken report on the complaints received on a quarterly basis.

21. The following details shall be sent to the World Bank for publishing in the UNDB and World Bank external website: (a) request for expression of interest for consulting services with estimated cost more than US\$ 300,000, (b) contract award details of all consultancy services with estimated cost more than US\$ 300,000, and (c) list of contracts/purchase orders placed following SSS or CQS procedures on a quarterly basis.

22. *Post Review.* All contracts not covered under prior review by the World Bank will be subject to post review during Implementation Support Missions and/or special post review missions including missions by consultant hired by the World Bank

F. Fiduciary Assessment

23. The expenditures under the TA Component will be carried out in accordance with OP/BP 10.00 (see Annex 9). Procurement of services will be carried out as per Bank procurement guidelines of January 2011 revised May 2014. This component will be managed by BSEIDC, which will be responsible for all contract payments, accounting and reporting of quarterly expenditures under the TA Component. In order facilitate this, the DR&T will draw funds from the specific budget head created for the program- (revenue head), which will be deposited by BSEIDC in its bank account. BSEIDC will open separate account codes in its financial accounting

system to account for expenditures under the TA Component and will submit quarterly IUFRR for the purpose of claiming reimbursement. No advance is required by GoB for financing the TA Component. Audit of the expenditures under the TA Component will be carried out by the external auditor of BSEIDC who is also responsible for carrying the program audit, as per ToR acceptable to the World Bank.

Table 17: Fiduciary Assessment Procedure

Scope of Audit	Responsibility	Due Date
Program audit of TA component of financial statements.	Private CA firm (external auditor of BSEIDC)	within 9 months of the close of the financial year

G. Assessment of Environment and Social Issues and Management

24. The World Bank has undertaken an environmental and social assessment, as required by OP/BP 4.01. Social safeguard issues, including any significant, long term or adverse impacts or risks are not anticipated due to activities/interventions proposed under this operation as this TA primarily consists of consultancy services and evaluation studies. OP 4.12 is not triggered as no resettlement is envisaged due to the implementation of the activities under this project. However, since the Project has a state wide coverage, OP 4.10 has been triggered to ensure that the tribal communities are not adversely affected by, or excluded from, the Project, and that they receive culturally appropriate benefits from the Project.

Annex 10: Implementation Support Plan

1. The World Bank will provide continuous implementation support, focusing on compliance with DLI disbursement requirements and contributing to joint problem-solving with Government technical staff. For each DLI the Government will be requested to produce action plans every six months, explaining the steps already taken and those planned to ensure that targets are met. The World Bank team will review these plans and suggest adjustments as necessary. In addition to formal Joint Review Missions, Bank specialists will provide continuous support as needed, in particular in providing advice and support in the development of terms of reference and in solving problems related to both meeting DLIs and meeting wider service delivery targets. The World Bank staff will work very closely with the BSEIDC, SCERT and the DRT in identifying key TA needs and helping the agencies in developing TORs and procurement strategy for the same.

2. Task Team Skills Mix Requirements for Implementation Support

3. Skills needed Number of staff weeks/year

Task team leader	10 staff weeks
Education specialist (2)	4 staff weeks each
Social systems specialist	2 staff weeks
Procurement specialist	4 staff weeks
FM specialist (country-based)	2/4 staff weeks
Energy specialist (tech assist.)	2 staff weeks
Environmental systems specialist	2 staff weeks
IT Specialist	2 weeks

4. Role of Partners in Operation implementation

Name	Institution/Country	Role
<ul style="list-style-type: none"> • DFID 	<ul style="list-style-type: none"> • Government of UK 	<ul style="list-style-type: none"> • Collaboration in TA/implementation through partner agencies like the TESS India and the UK College for School Leadership
<ul style="list-style-type: none"> • UNICEF 	<ul style="list-style-type: none"> • Multi-lateral agency 	<ul style="list-style-type: none"> • Capacity building, content development, SMC training.