

## SUMMARY ASSESSMENT OF DAMAGES AND NEEDS: EDUCATION AND TRANSPORT

### I. EDUCATION SECTOR

#### A. Sector Overview

1. The government regards education as key to Nepal's economic and social transformation. Historically, the education sector has received the highest percentage of the annual budget, but its share is now declining, from 16.5% in fiscal year 2009 to 13.9% in fiscal year 2015. More than 80% of the government's education budget is allocated to school education, of which about 60% goes to basic education. The major reform initiatives in the sector—the Education for All Program (2004–2009) and the School Sector Reform Program (SSRP) (2009–2016), implemented with financial assistance from various development partners through a sector-wide approach—have focused on enhancing access and equity, and improving efficiency and quality of education. This is in line with the global commitments made by the Government of Nepal to achieve the Millennium Development Goal and Education for All targets, and with aid effectiveness principles. External support has been an important component of total spending on education.

2. Under the SSRP, disaster risk reduction and school safety have been mainstreamed in the school education curriculum, in the school emergency contingency plans, and in retrofitting school buildings. The Ministry of Education and the Department of Education have developed and approved a 10-year strategy with a budget of \$560 million to scale up activities that boost the disaster resilience of schools. In the aftermath of the earthquake of 25 April 2015, however, it was found that the strategy and plans need to be revisited, updated, and operationalized.

#### B. Damage Overview

3. The impact of that first earthquake—which had a magnitude of 7.8 and was followed by two more—would have been much worse if it had struck on a weekday. The loss of human lives would have been far higher, particularly among school children and teachers.

4. Table 1 summarizes the losses of infrastructure and physical assets in the education sector based on Ministry of Education data. About 89% of schools in earthquake-affected areas were damaged or destroyed—in 8,242 community (public) schools, 25,134 classrooms were fully destroyed and 22,097 were damaged; in institutional (private) schools, 956 classrooms were fully destroyed and 3,983 were damaged. In addition, 4,416 bathroom facilities and 1,791 compound walls were damaged.

**Table 1: Estimates of Damages to Infrastructure and Physical Assets in Education**

	ECD	Schools (Grades 1–12)	TVET	Higher Education	NFE/LLL
Number of classrooms/rooms fully destroyed	784	26,090	356	1,292	37
Number of classrooms/rooms partially destroyed	--	26,080	184	3,040	7
Number of bathroom facilities	--	4,416	-	-	-
Number of compound walls		1,791	-	6	-
Equipment (NRs million)	-	140.40	90.00	155.53	-
Furniture (NRs million)	-	1,867.64	4.50	5.60	0.60
Other assets (textbooks, education materials, uniforms) (NRs million)	9.80	2,086.51	1.28	16.70	0.37

ECD = early childhood development, LLL = lifelong learning, NFE = nonformal education, NRs = Nepalese rupees, TVET = technical vocational education and training.

Source: Government of Nepal. 2015. Post Disaster Needs Assessment Report.

5. In addition to physical damages, teaching and learning was disrupted, and a feeling of insecurity prevailed among students and teaching staff. The net monetary value of the total damages to the sector is estimated at NRs31.3 billion at pre-disaster prices (Table 2). Of this, the damage to infrastructure and physical assets is estimated at NRs28.0 billion. In addition, the sector incurred costs of NRs3.3 billion to provide temporary installations such as learning centers, child-friendly spaces, and water and sanitation facilities; to remove debris and clean up; and to prepare “intact” schools as temporary shelters. Overall, the public sector bore 92% and the private sector 8% of the total damages and losses caused by the earthquake.<sup>1</sup>

**Table 2: Estimates of Damages and Losses to the Education Sector**  
(NRs million)

Subsector	Disaster Effect			Distribution of Damage and Loss	
	Damage	Loss	Total	Public	Private
ECD <sup>a</sup>	401.77	11.76	413.52	111.63	301.90
Schools (grades 1–12)	24,642.1	3,190.72	27,832.80	26,670.60	1,162.21
TVET	487.28	6.72	494.00	483.91	10.09
Higher education	2,430.41	42.18	2,472.59	1,581.81	890.78
NFE/LLL	22.80	0.70	23.40	23.40	-
Administrative buildings (including libraries)	79.40	2.2	81.60	81.60	-
<b>Total</b>	<b>28,063.80</b>	<b>3,254.03</b>	<b>31,317.90</b>	<b>28,952.90</b>	<b>2,364.97</b>

ECD = early childhood development, LLL = lifelong learning NFE = nonformal education, TVET = technical vocational education and training.

<sup>a</sup> ECD subsector excludes school-based pre-primary classes, which are reported in the schools subsector.

Source: Government of Nepal. 2015. Post Disaster Needs Assessment Report.

6. The earthquake of 25 April 2015 and the series of aftershocks led to the complete closure of schools in affected districts for 37 days (26 April–30 May). It is planned to recover the school days lost by cancelling or shortening summer vacations and annual festivals. However, even as schools started to resume classes from 31 May 2015, it will take time before normalcy returns and regular teaching–learning can take place. Adverse effects on enrollment, attendance, and internal efficiency of the school system are expected. The demand for additional labor both at home and in the market is likely to affect the school attendance of a significant number of children, particularly in higher grades; dropout rates may also increase. Concerted efforts to resume normal schooling are therefore crucial.

7. No major damages to the physical infrastructure of central agencies were reported, so the effect on these agencies should be minimal at this stage. Some district education offices including libraries suffered damages, however, totaling an estimated NRs79.40 million. Some delays occurred in the examinations by the Higher Secondary Education Board and the Teacher Service Commission; the agencies have already rescheduled. This is unlikely to affect the examination schedules planned for next year. More likely are disruptions to the work of school management committees. Further, given the redeployment of education staff for structural assessments and relief work, central and local service delivery will likely be affected significantly for some time.

<sup>1</sup> Data on damages and losses to the private sector is limited since information was provided for only 11 districts. The value of actual damages and losses to the private sector is bound to be much higher.

## C. Recovery Strategy

8. The immediate and longer-term priority measures required for recovery and “build back better” reconstruction will cost an estimated NRs41.5 billion, of which the majority (91%) is needed in the school subsector (Table 3). The estimate covers the entire education sector, public and private.

**Table 3: Estimates of Recovery and Reconstruction Needs**  
(NRs million)

Subsector	Total Cost
Schools (grades 1–12)	37,777.00
TVET	747.50
Higher education	2,480.10
NFE/CLCs	42.20
General governance and administration	430.80
<b>Total</b>	<b>41,477.60</b>

CLCs = community learning centers, NFE = nonformal education, TVET = technical and vocational education and training.

Source: Government of Nepal. Draft Post-Disaster Needs Assessment Report, 3 June 2015

9. **Short-term needs (0–1 year).** These include immediate and transitional measures to resume delivery of education services until the reconstruction and rehabilitation of permanent structures is completed. For school education alone, nearly 15,000 temporary learning centers will have to be established. Since school reconstruction will require at least 2–3 years, these temporary structures must be reinforced to withstand storms and rain and enable uninterrupted education in a safe environment. The reconstruction and rehabilitation of damaged school buildings hinges on the timely provision of suitable designs for disaster-resilient school buildings.

10. **Medium-term needs (1–3 years).** Reconstruction and retrofitting of school buildings dominate the medium-term agenda. The Strategy for Disaster Resilient Schools, approved by the government under the SSRP, will need to be updated and adopted. Reconstruction of fully destroyed schools will follow “build back better” principles—disaster-resilient technology, stronger learning environment and service delivery, and selective additional features such as solar lighting, water-harvesting structures, and internet connectivity. School locations, teacher deployment, school modalities, and incentive schemes need to be reviewed and rationalized to ensure that the limited resources are directed at a needs-based approach. The recovery plan also needs to be mainstreamed in the post-SSRP plan that the government is now formulating. It is estimated that about 5% of the schools in the most affected districts need to be relocated. In view of the enormous need for reconstruction and retrofitting, a very large boost to engineering, design, construction, supervision, and quality assurance staff is critical for rebuilding schools to disaster-resilient standards as fast as possible.

11. **Long-term needs (beyond 2 years).** This involves developing a nationwide policy and implementation plan for school safety (in all districts). In the long term, all destroyed and damaged schools need to be rebuilt or rehabilitated along “build back better” principles and by drawing on international best practice for school safety. Further, it is necessary for future programs to take on board measures to ensure that physical construction is coupled with interventions to increase the quality of education and enhance the learning environment. Mechanisms to ensure that all new constructions are disaster resilient need to be institutionalized. Likewise, disaster preparedness and response at schools and in communities need to be strengthened through on-site disaster risk management training and planning.

12. In summary, the major elements of the recovery strategy include:
- (i) **Strengthening systemic capacity to manage post-disaster response, recovery, and reconstruction effectively.** It means improving current policies, guidelines, and systems to ensure that new education buildings meet higher service and safety standards, e.g., through independent quality control and inspection requirements for the construction of school buildings. Policies and guidelines to regulate safety standards for private schools through certification, and technical and administrative support, need to be introduced.
  - (ii) **Building back better.** All new schools and other education institutions should be climate and disaster resilient in the future and include systems for clean drinking water supply, separate sanitation facilities for girls and boys, rainwater harvesting where applicable, solar energy lighting, electricity and communication connectivity, ramps for wheelchair accessibility, safe and adequately sized staircases, and furnishing and equipment. Schools should have equipment and posters for early warning and evacuations.
  - (iii) **Improving nonstructural aspects.** Boosting disaster resilience is not only about building back better from a structural perspective. It also requires interventions such as revising the curriculum and textbooks to ensure that teachers and students internalize safety issues and can act in times of need. This in turn means strengthening disaster preparedness and response at schools and in communities through on-site disaster risk management training and planning.

## II. TRANSPORT SECTOR

### A. Sector Overview

13. Transport infrastructure in the affected areas mainly comprises roads and airports. Development and adequate maintenance of roads, the predominant mode of transport in Nepal, are a critical part of the rapid response and revival strategy of support services in disaster situations, and for achieving overall long-term, regionally balanced economic growth. Domestic air transport demand continues to increase and put pressure on the Tribhuvan International Airport (TIA) in Kathmandu, the only international airport in Nepal.

14. Nepal has the lowest road density in South Asia. Around 22% of the population still has no access to roads. The strategic road network (SRN), the core network of national highways and feeder roads connecting district headquarters, covers about 14,902 kilometers (km). Of this, 51% is paved, 13% is graveled, and 36% is earthen. Only 10% of the SRN is deemed to be in good condition, 74% is in fair condition, and 16% requires urgent repairs. The overall road system includes 50,944 km of local road network (LRN), of which about 3% is blacktopped, 29% is graveled, and 68% is earthen. The 31 earthquake-affected districts have about 5,140 km of SRN and 29,443 km of LRN. For rural communities, in particular, the LRN is a critical infrastructure. The total vehicle population in the country, as of the end of the first quarter of 2014, stands at 1.63 million. This is a twofold increase since 2009. Motorcycles dominate the vehicle population in Nepal, accounting for 77.6% of total registered vehicles in the country.

15. Two central government departments are involved in developing, operating, and maintaining the country's road network – the Department of Roads under the Ministry of Physical Infrastructure and Transport and the Department of Local Infrastructure Development and Agricultural Roads (DOLIDAR) under the Ministry of Federal Affairs and Local Development. The Department of Roads directly develops and maintains the SRN. DOLIDAR manages the LRN in a decentralized manner. It provides technical support to the development and maintenance of

the LRN through the district technical offices, which are part of the local governments' district development committees.

16. The Civil Aviation Authority of Nepal is both the regulator for and operator of all airports in Nepal. Over 90% of the authority's revenue comes from TIA.

## **B. Damage Overview**

17. Some roads of the SRN have sunk or were completely destroyed by the earthquake of 25 April 2015 and the aftershock of 12 May 2015. In many mountain areas, landslides caused partial blockage of road traffic. Traffic and road access was disrupted in the 26 km Arniko Rajmarg section, adjacent to the border with the People's Republic of China, interrupting trade flows between the two countries.

18. Extensive road blockages and inaccessibility for a few weeks were seen in the LRN in the days after the earthquake. The obstructions were caused mainly by landslides, which washed out some road sections completely. The district technical offices received reports of persisting instability in fragile areas. However, impacts and severity vary widely between affected districts.

19. As for the airports, TIA and 13 domestic airports experienced minor damages to airside and landside facilities, but this did not greatly affect air transport operations, which were not suspended, although TIA incurred revenue losses during early rescue and relief operations. The losses resulted from waived landing, cargo, and airport terminal charges, fewer passengers on regular flights, and additional operational expenses to cover 24-hour service immediately after the earthquake.

20. Kathmandu, which is home to some 25 million people, neither reported a significant reduction in transportation services nor any destruction of public transportation vehicles.

## **C. Recovery Strategy**

21. The priority recovery and reconstruction needs were assessed and require short-to-long-term resources to build back better and make infrastructure more resilient to disaster and climate. The estimation of needs covers the entire transport sector, including the private sector's share in it.

22. While the main objective of recovery efforts is to restore the various modes of transport to their pre-disaster functionality, it is also an opportunity for the government to design and build more disaster-resilient infrastructure facilities along "build back better" principles. Rehabilitation and reconstruction of damaged facilities should be based on four approaches: (i) preparing and planning for minimal damage to new and rebuilt infrastructure in the upcoming monsoon season; (ii) repairing minor damage caused to infrastructure and ensuring original operating standards; (iii) rehabilitating severely damaged elements of the main infrastructure network to better (disaster- and climate-resilient) standards; and (iv) reconstructing completely destroyed sections of the core infrastructure network, such as roads and airports, also to higher standards.

23. **Short-term needs (up to 6 months).** This involves immediate and transitional measures to resume the delivery of transportation services in the various subsectors until reconstruction and rehabilitation of permanent structures is completed. Short-term interventions, to be completed within 6 months, include immediate physical works to open up access to road

sections that were blocked or washed out by landslides; repair of damages; and working toward pre-monsoon preparedness.

24. **Medium-term needs (up to 24 months).** This involves reconstruction or retrofitting of relatively small-scale transportation infrastructure and networks. All efforts will follow “build back better” principles.

25. **Long-term needs (up to 60 months).** This involves rehabilitation, reconstruction, or upgrade of larger-scale transportation infrastructure and road networks, along “build back better” principles.

26. The design philosophy, procurement modalities, and implementation strategies will differ for short-, medium-, and long-term interventions. Short-term works will be done utilizing existing government resources and contractors currently engaged in civil works; variation orders or direct contracting should be considered for these. For medium-term works, recruitment of new consultants for designs and of contractors for civil works, using fast-track procurement, should be considered. Long-term works require more detailed designs and larger procurement packages, so standard procurement procedures can apply. However, due to the urgency and importance of disaster recovery, executing agencies should establish the most efficient implementation and institutional arrangements; and the government should consider and make special provisions for this purpose.<sup>2</sup>

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<sup>2</sup> The Government of Nepal’s Cabinet decisions for procurement in special circumstances under the provisions of Article 41 (1) (gha3) of the amended Public Procurement Act (PPA) 2063 and Article 66 of the PPA 2063, and in line with the provisions in the bilateral or multilateral agreements as per Article 67 (1) (kha) for foreign-funded projects, can serve as good references to the executing and implementing agencies.