Project Management Update from Nepal[1]

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Beyond Emergency Response: Project Management for Recovery from the August 2026 Floods in Nepal

1. Introduction

Recovery after a major disaster is usually judged by how quickly it restores what was lost. A harder test is whether it leaves communities safer than before. Nepal's experience after the 2015 earthquake shows that these aims can pull apart. Relocation and reconstruction programmes, carried out with good intentions and under real pressure, can place people and assets in locations that a later hazard assessment classifies as high risk. Recovery can then rebuild vulnerability. Whether it does depends largely on how the work is planned, scheduled, financed, supervised and measured, and that is the work of project management.

This report examines recovery from the August 2026 Rasuwa-Bhotekoshi flood as a project and programme management problem. Its principal evidence is the Government of Nepal's Rapid Damage and Needs Assessment (RDNA), supplemented by the World Bank reports, published scientific analyses and the national policy position set out by Prime Minister Balendra Shah at the 81st Session of the United Nations General Assembly on September 24, 2026. The Prime Minister framed the disaster as a matter of climate justice, called for regional cooperation on glacial lake monitoring and early

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warning, and criticized the priorities of the international system. These are statements of policy, and they have practical consequences for recovery programme managers. They influence what finance is available and on what terms, what data is shared across borders, and what logistics capacity can be mobilized for remote communities.

The argument is that recovery works best when it is managed as one programme with a defined purpose: communities that can live safely, earn a living and reach the services they need. The RDNA's evidence points that way. Needs are concentrated in a few large packages, services depend on shared access routes, and many cost lines overlap across sectors. Each of these is a programme-level problem that no single sector plan can resolve.

The sections that follow cover the assessed scale of needs, integrated programme control, risk-informed reconstruction, resettlement, livelihoods, performance measurement, financing, climate and regional dimensions, and programme risk. They close with practical implications. Many figures are preliminary and will change when the government completes its Post-Disaster Needs Assessment (PDNA). Statements attributed to officials are reported as positions, not as commitments of funding or delivery.

2. Assessed Impact and Recovery Needs

2.1. Assessment Basis

The RDNA was prepared under the leadership of the National Disaster Risk Reduction and Management Authority (NDRRMA), with the National Planning Commission, following the flood and debris flow of August 26, 2026 along the Bhotekoshi, Trishuli and Narayani river system. It reflects information consolidated up to September 3, 2026, with review continuing to September 10. It is a rapid assessment intended to give government and partners a planning foundation, and it is open about what it does not yet know.

Human impact figures change with each NDRRMA bulletin. As of September 26, NDRRMA records show 1,453 deaths, 5,285 people missing and 13,795 people rescued. The RDNA cautions that such categories are not mutually exclusive counts and remain subject to reconciliation.

Measure	Estimate
Physical damage	NPR 27,448 crore (US$1,812 million)
Economic losses	NPR 13,381 crore (US$883 million)
Total disaster effects	NPR 40,829 crore (US$2,695 million)
Total recovery and reconstruction needs	NPR 72,332 crore (US$4,775 million)
Needs for the first six months	US$57.66 million (1.21% of the total)
Needs beyond six months	US$4,717 million

Table 1: Summary of RDNA Estimates (Source: Government of Nepal, RDNA, September 2026. Estimates only, not approved budgets or confirmed funding.)

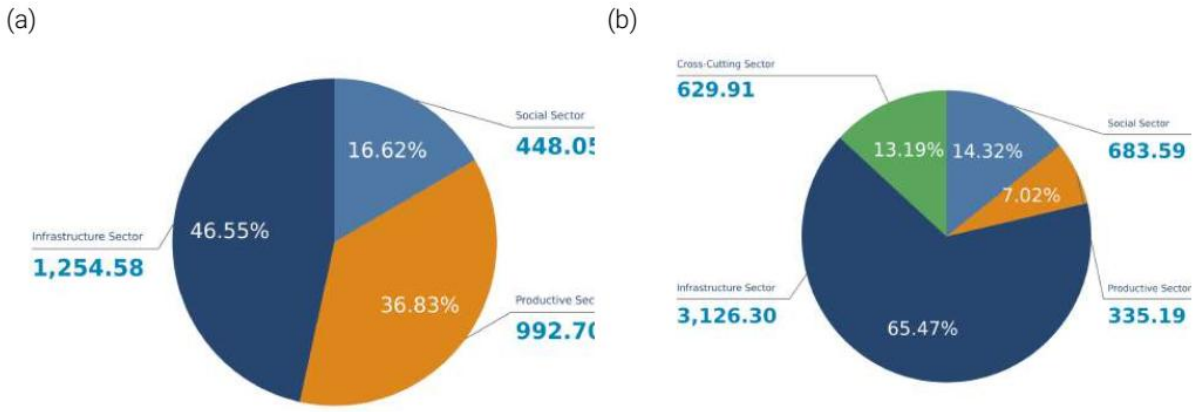

Figure 1: (a) Estimated disaster effects and (b) recovery and reconstruction needs following the 2026 Rasuwa-Bhotekoshi flood (Source: Government of Nepal, NDRRMA, 2026)

2.2. Interpreting the Figures

Each figure answers a different question, and mixing them leads to poor decisions. Damage is the estimated value of physical assets destroyed. Losses are the production, income and service flows interrupted. Recovery needs are the estimated cost of restoring services and livelihoods, reconstructing assets and reducing future risk. They exceed damage and losses combined because they include resilience and risk-reduction measures beyond replacement. The RDNA notes that the largest gaps arise in energy and disaster risk reduction, and it states that needs are not a reimbursement of losses and are not budgets.

For a programme manager, the distinction is a control point. Damage figures define what must be repaired or replaced. Loss figures show which livelihoods and services need support while assets are out of use. Needs figures show how much of the effort goes beyond restoration into risk reduction. A funding request, schedule or benefits plan that blurs the three will be hard to defend and harder to monitor.

The World Bank's Global Rapid Post-Disaster Damage Estimation (GRADE) provides an independent cross-check on damage only. It puts direct damage to physical assets at US$1.66 billion, against the RDNA's US$1.81 billion, and the Bank describes the two as broadly consistent. The gap is about US$150 million, roughly 8 percent of the RDNA figure. Economic losses and recovery needs rest on the RDNA alone.

Measure	RDNA (Government of Nepal)	World Bank GRADE
Physical damage	US$1,812 million	US$1.66 billion
Infrastructure share of damage	About 63 percent (derived from RDNA sector table)	83 percent (US$1.38 billion)
Residential or private buildings	US$422 million (includes household assets)	US$185 million (11 percent), residential buildings
Geographic concentration	Not reported at district level for all sectors	Rasuwa US$1.07 billion (64 percent); Nuwakot US$551 million; Dhading about US$39 million

Table 2: Two Independent Damage Estimates (Sources: RDNA, September 2026; World Bank, Nepal Development Update, October 2026.)

The two estimates agree on the order of magnitude, which gives planners a reasonable baseline. They differ in composition, particularly in the infrastructure and housing shares. Until the PDNA reconciles asset classifications, package-level budgets should not be built on either breakdown alone. The Bank also notes that recovery needs are about 1.8 times assessed damage and losses, consistent with the RDNA's explanation.

2.3. Concentration and Duration

Energy, private buildings and disaster risk reduction together account for US$3,837 million, about 80 percent of recovery needs, and infrastructure as a whole accounts for 65 percent. Energy, including hydropower and the grid, is the most affected infrastructure subsector, with combined damage and losses of US$997 million, and economic activities and livelihoods are the largest effect in the productive sector, at US$965 million. The RDNA treats the US$2,579 million energy need as an indicative planning requirement, not an itemized programme cost, and states that it is not an amount automatically payable by the government. Schedule and cost risk will gather in a small number of large packages. Those packages deserve the strongest governance, the earliest preparation and the closest supervision.

Duration matters equally. Early-recovery needs of US$57.66 million are 1.21 percent of the total, and the remaining US$4,717 million falls beyond six months. Recovery is overwhelmingly multi-year. It needs a stable structure, continuity of key personnel and funding commitments that extend beyond a single annual budget, so that long-lead items such as bridges, hydropower rehabilitation and housing do not stall between funding cycles. Emergency arrangements designed for weeks and months will not hold for that duration.

2.4. Economic Transmission and Recovery Timing

The World Bank analyzes the flood as an economic shock that travels through four principal channels: energy, transport, trade and tourism. It rates agriculture as a medium channel and banking and insurance as lower-impact ones. Table 3 summarizes the classification.

Channel	Bank rating	Principal evidence
Energy and electricity	High	13 affected hydropower projects totaling 759 MW, about two thirds under construction (RDNA)
Transport and trade	High	69 km of road damaged, 55 km completely; 37 motorable bridges affected, 33 washed away (RDNA); Rasuwagadhi handled 2.2 percent of merchandise imports in FY26; Prithvi Highway disrupted at Krishnabhir (Bank)
Tourism	Medium	More than 200 hotels and restaurants reportedly damaged; disruption immediately before the autumn season; revised travel advisories (Bank)
Agriculture	Medium	Low direct losses nationally, high livelihood impact locally (Bank)
Banking and insurance	Low	17 bank branches affected (RDNA); preliminary insurance claims of NPR 25.9 billion (Bank)

Table 3: Economic Transmission Channels (Source: World Bank, Nepal Development Update, October 2026).

The corridor evidence matters for programme planning. The World Bank reports that Rasuwagadhi imports fell from NPR 85.2 billion in FY25 to NPR 45.7 billion in FY26. The crossing had been closed for several months after a July 2025 glacial flood damaged the Miteri Friendship Bridge, and imports resumed in January 2026 after a temporary bridge was installed. Customs revenue collected there was NPR 13.6 billion against an annual target of NPR 40 billion. The August flood therefore struck a corridor that had already lost months of trade, and the cost of delayed access there is documented and recent.

The World Bank's outlook is a forecast and is separate from the RDNA, which does not estimate any effect on GDP growth. The Bank projects real GDP growth of 3.7 percent in FY27, with reconstruction beginning to support activity in FY27 and gaining momentum in FY28, when growth is projected to recover to 5.2 percent. It states that the pace and strength of recovery will depend on the speed and scale of reconstruction, and it names delays in reconstruction as a leading domestic risk. In the Bank's reading, delivery performance has macroeconomic weight.

3. Programme Integration and Coordination

3.1. Interdependence of Access and Services

Read as a project manager would read it, the RDNA's central finding is that recovery outcomes depend on one another. A repaired school has little value if the road to it is cut, its water system is down, or the families it serves remain in temporary accommodation far away. The RDNA states that households, businesses and public services rely on connected transport, electricity, water and communications.

The numbers show how tight the dependencies are. Of the 37 motorable bridges recorded as affected, 33 were washed away, and 55 of the 69 kilometers of damaged road were classed as completely damaged. Roads and bridges account for about 54 percent of early-recovery needs, which reflects a sound instinct: restore access first, because everything else travels along it. A single bridge may determine whether materials reach a site, whether a clinic can be restocked and whether a farmer can reach a market. That is critical-path and shared-dependency logic, and it is why recovery needs a programme structure rather than parallel sector plans.

3.2. Double Counting and the Integrated Asset Register

The RDNA points the same way. Its sector chapters warn repeatedly of double counting. Debris clearance appears in housing, roads and risk-reduction lines. Temporary water and sanitation appear in shelter and public-building estimates. Micro-hydropower rehabilitation appears in both energy and household-energy lines. Some risk-reduction works overlap with irrigation and river training. Its remedy is a common record of assets and activities across all sector programmes, so that each intervention is defined, located and costed once.

In management terms, this is an integrated register feeding a master schedule and it should exist before large sums are committed. For each asset or activity, it should hold a unique identifier, location, owner, sector, hazard exposure, estimated cost, funding source, delivery status and the outcome it is meant to support. Duplicate claims then become visible, funding gaps can be quantified and cross-sector dependencies can be

traced. Without it, each agency reports progress against its own list, and the programme cannot say what has been done, what remains or what it costs.

3.3. Institutional Arrangements and Governance Functions

The RDNA recommends that the government lead recovery through existing federal, provincial and local institutions, with NDRRMA coordinating the overall framework. It also recommends that each major intervention name a lead agency, target population, location, period, estimated cost, available resources and financing gap. That is close to a programme charter. The RDNA does not specify a central control function. I propose one as a management arrangement, not as a description of what Nepal has built: a small coordination team with authority over the integrated schedule, risk register, change control and benefits tracking, while delivery stays with provincial and local governments. It would build on current institutions, and its purpose is to expose dependencies between projects early enough to act on them.

Coordination has to be designed in. NDRRMA's Chief Executive has said, as reported by the Associated Press, that the authority cannot do all the work itself, that its role is largely to coordinate, and that infrastructure and urban planning agencies must build disaster risk into their own planning. Line agencies hold the technical capacity, budgets and legal responsibility for assets. The programme therefore needs clear decision rights, agreed reporting formats and a regular forum where cross-sector conflicts are resolved quickly. Table 4 sets out the functions such a team would perform. None requires a large organization. Each requires clear authority, reliable data and a regular reporting rhythm.

Function	Purpose	Typical product
Integrated schedule	Show dependencies across sectors and identify the critical path	Master schedule with cross-sector milestones
Asset and activity register	Define, locate and cost each intervention once	Single register shared by all agencies
Risk management	Identify, rank and assign responses to programme-level risks	Programme risk register with named owners
Change control	Decide how scope, cost and schedule changes are approved	Change log and approval thresholds
Financial tracking	Distinguish pledged, approved, disbursed and spent funds	Funding status report by source and sector
Benefits tracking	Check whether completed work delivers the intended outcomes	Outcome dashboard against validated baselines
Community feedback	Capture concerns, complaints and local knowledge	Grievance log and feedback summary

Table 4: Core Programme Governance Functions (Proposed)

3.4. Logistics and Last-Mile Delivery

In his address to the General Assembly, the Prime Minister criticized global priorities, saying the world has built flawless logistics for war and broken logistics for food. He contrasted the ability to deliver a weapon anywhere within 72 hours with the difficulty farmers face in obtaining fertilizer or fuel at market price when they need it. The remark concerned the international order, but it applies directly to recovery. Reconstruction in

mountain districts is a supply chain problem as much as an engineering one. Materials, equipment, seed, fertilizer and tools must reach places where roads are cut and bridges are gone, in the right sequence and season.

Programmes often treat logistics as a background function that contractors will resolve for themselves. With damaged access and mountain terrain, that assumption carries real risk. The logistics plan should be a named programme deliverable. It should identify supply routes and their capacity, staging and storage points, transport modes available when roads and bridges are out, alternative routes if a link fails again, and the agency responsible for each segment. It should set a measurable delivery standard, such as the time from approval of a request to arrival of materials on site. Section 4.2 describes the corridor's limited alternative routes.

Livelihood inputs belong on the same critical path as bridge repairs and housing materials. Agricultural support works only if seed, fertilizer and tools arrive before the planting window closes, and a delay of a few weeks can cost a season. A restored road that carries no inputs has restored a route and left the livelihood where it was.

4. Risk-Informed Reconstruction

4.1. Reconstruction Pressure and Residual Hazard

People in temporary accommodation deserve urgency, and the pressure to rebuild quickly is legitimate. Yet fast reconstruction in the wrong place can be worse than slower reconstruction in the right one. The RDNA states that rebuilding damaged assets in the same locations and to the same standards may reproduce existing exposure and vulnerability. It also records that unstable slopes, accumulated sediment, blocked channels and continuing rainfall remained live concerns during the assessment. The World Bank adds that the corridor had already suffered a major glacially related flood in July 2025. Residual hazard of this kind must enter the recovery plan from the start, because it determines where, when and how reconstruction can proceed safely.

4.2. A Standard Decision Sequence for Major Assets

The siting decision has to sit inside the investment decision. It cannot be an engineering check added after scope is fixed. A project can meet its budget, schedule and specification and still fail its purpose if it restores an asset in a place that remains dangerously exposed. The World Bank frames the same point as a move from building back better to building differently. In some locations, rebuilding the same infrastructure in the same place, even to a higher engineering standard, may not address the underlying risk.

The World Bank's reasoning adds two considerations that single-asset appraisals tend to miss. The first is network consequence: lifeline systems (transport, energy and communications) should be assessed for what happens when one critical asset fails, not only for the strength of each asset. The second is redundancy.

The Rasuwagadhi crossing illustrates the problem. It carried 47.3 percent of Nepal's merchandise exports to China in FY26. Of imports from China, about 11 percent moved through Tatopani and about 3 percent through Mustang, with the remainder routed mainly through Indian ports or by air. The Bank judges Mustang, at roughly 4,650 meters, to be

a useful contingency but unlikely to absorb the volumes of the principal northern corridors without substantial investment.

A standard decision sequence for each major asset puts these points into practice:

- Verify the asset's condition, function and importance to essential services.
- Assess the relevant hazards using updated multi-hazard information, and assess the consequences of failure for the network the asset supports.
- Compare repair, replacement, redesign, relocation, alternative-service options and, for lifeline assets, added redundancy.
- Evaluate whole lifecycle cost, maintenance needs, environmental effects and social consequences.
- Record the chosen option, the residual risk accepted and the basis and level of approval.
- Monitor whether the completed asset delivers the intended resilience and service outcomes.

The hazard assessment shapes site selection, scope, design criteria, cost estimate, approval level and scheduling. When the basis for choosing repair over relocation is recorded and approved at the right level, later audits can test the reasoning, and decision-makers can show what evidence they used and what risk they accepted. The Bank adds that the aim is not necessarily to create new institutions but to identify where existing arrangements worked and where targeted improvements are needed, which is consistent with the coordination arrangement proposed in Section 3.3.

4.3. Government Commitments and Their Delivery

The government has indicated that communities displaced by the August 2026 floods will be resettled in safer locations rather than returned to settlements destroyed by the disaster. It has also outlined plans for integrated new settlements, or townships, with essential services such as hospitals and schools, alongside opportunities for employment and industry. Other proposals include identifying flood-prone land that may be unsuitable for habitation, converting vulnerable riverbank areas to forest, and exploring private-sector participation in reconstruction.

These announcements establish a policy direction, but their effectiveness will depend on how they are translated into funded, accountable and implementable programmes. Each major commitment should be supported by a clearly defined scope, an implementation schedule, an approved budget, designated institutional responsibilities and measurable delivery milestones. Decisions to restrict habitation or change the use of flood-affected land require particular care because they may affect property rights, compensation, land ownership, livelihoods and access to essential services. Resettlement planning should therefore include transparent land assessment, consultation with affected communities, appropriate legal procedures, compensation arrangements and long-term monitoring to ensure that relocated households remain safe and can sustain their livelihoods. The government's own resettlement planning, as reported by The Kathmandu Post, recognizes the need to identify safe land and determine ownership and land-use

conditions before final decisions are made. For programme managers, the central challenge is to ensure that public commitments become coordinated delivery plans, with clear accountability and verifiable outcomes.

4.4. Design Standards, Supervision and Quality Assurance

Building back safer requires three essential safeguards: hazard-informed design standards, competent supervision and systematic quality assurance. Design criteria should reflect the hazards identified through site assessments, including flooding, debris flows, landslides, earthquakes or combinations of these risks. Requirements must be sufficiently clear and measurable for designers, contractors and supervisors to verify compliance consistently.

Effective supervision ensures that approved designs are implemented correctly. Independent supervisors should have the authority to inspect work, conduct or require tests, reject non-conforming construction and demand corrective action. Non-conformance reports should support programme-wide learning rather than merely allocate blame. Recurring problems, such as inadequate concrete quality or poor foundation preparation, may reveal weaknesses in workforce training, procurement practices or design specifications. Identifying these patterns enables corrective measures to be applied across multiple construction sites, improving both efficiency and reliability.

Quality assurance should extend beyond construction completion. As-built drawings, material test results, inspection records and compliance certificates must be maintained systematically and transferred to the asset owner. These records provide essential evidence of construction quality and support future maintenance, repairs and safety assessments. Their value extends beyond the immediate recovery programme: authorities and operators may depend on them for decades. Integrating these safeguards into project planning, contracting and implementation helps ensure that reconstructed assets meet defined standards, remain fit for purpose and reduce exposure to future hazards.

4.5. Staged Delivery and Decision Gates

Recovery cannot wait for every study, and it should not proceed on assumptions that later prove unsafe. The practical answer is staged delivery with defined decision gates. Early works that restore access, provide shelter and stabilize hazards can proceed once basic safety checks are complete. Permanent reconstruction of major assets should pass a gate confirming the hazard assessment, siting decision, design basis and funding.

Two events in the corridor show both the value and the risk of interim works. At Krishnabhir on the Prithvi Highway, river erosion disrupted a critical road link from August 30, 2026. Authorities built a new track, allowed trial passage for heavy vehicles from September 13 and resumed two-way traffic on September 17, after 18 days. That restored a lifeline route quickly. The World Bank also reports that the new track and other damaged sections remain vulnerable to geohazards and heavy rainfall, and that permanent rehabilitation is still necessary. Such an interim solution is a working bridge to a permanent one, and it needs a date and a budget. The same principle applies to

temporary crossings, temporary classrooms and other stopgaps, so that temporary arrangements do not become permanent by default.

Restoration of the 111 MW Rasuwagadhi hydropower project after the July 2025 flood shows realistic durations. According to the World Bank, partial generation of 37 MW resumed in December 2025, and the full capacity was reconnected to the grid in early July 2026, after rehabilitation works costing more than NPR 3.5 billion. This is a reference point, not a benchmark, because it involved one plant after a smaller event and still took nearly a year. Schedules for the 2026 packages should be tested against it, and restoration should be planned in capacity stages with interim milestones.

5. Resettlement and Community Accountability

5.1. Resettlement as a Development Programme

Deciding where people will live is likely to be the hardest part of recovery. A new site must be safe, but safety alone does not make a home. People also need access to schools, health care, roads, markets, farmland and work. Resettlement should be managed as a development programme with its own scope, schedule, budget and benefits, not as a housing project.

The RDNA reports that 3,685 people were in 37 holding centers across Rasuwa, Nuwakot and Dhading as of September 10, 2026 and that this is not a comprehensive count of displacement. It acknowledges that it did not systematically assess conditions in holding centers. Housing, land and property concerns for owners, tenants, landless households and people without documents were not comprehensively examined, and no household survey or structured community consultation was undertaken. These are honest limits of a rapid assessment, and they define the next stage of work.

5.2. Requirements for a Resettlement Workstream

A well-run workstream would include:

- site selection based on geological, hydrological and multi-hazard assessment;
- published criteria and the alternatives considered;
- consultation with residents before decisions are final;
- clear rules on eligibility, land rights and compensation;
- services and livelihood access delivered alongside housing rather than years later;
- long-term monitoring of whether relocated households remain safe and have regained their income.

Households with different needs will require different support: children, older people, people with disabilities, female-headed households, and those who have lost identity or property documents. The RDNA's baseline shows female-headed households at between 20.7 and 37.1 percent of households across the five assessed districts, so this is a large share of the people involved.

Land is often the hardest constraint. Sites must be identified, acquired or allocated and cleared of competing claims before construction begins, and each step takes time that

construction schedules rarely allow. Tenants, landless households and families without documents are the most likely to be excluded from formal processes, and that exclusion tends to resurface as disputes, delay or informal resettlement in unsafe places. The workstream should therefore include documentation and land rights from the outset, with transparent eligibility rules, support for replacing lost documents and a clear process for resolving competing claims. Where land acquisition is required, its activities and approvals should be represented on the critical path with realistic durations. Starting construction on unsecured land is a frequent source of delay and cost overrun, and it is avoidable.

5.3. Community Feedback as Programme Information

Community knowledge is programme information. Objections to a proposed site, reports of inaccessible services and complaints of exclusion are risk data and should be reviewed alongside cost and schedule reports. An expenditure dashboard will not reveal an unsafe relocation or a household left out of support. A structured feedback mechanism will, provided someone is accountable for acting on what it finds.

The mechanism needs more than one channel, so that people who cannot read or travel can still use it; a published response time; a log recording what was raised, decided and changed; and regular reporting of themes to programme management. Its test is whether it changes decisions. If complaints are recorded and nothing alters, trust erodes and communities stop offering the information the programme most needs.

6. Livelihoods and Economic Recovery

The RDNA estimates economic losses at NPR 13,381 crore (US$883 million), covering the production, income and services the disaster interrupted. Most of that falls on economic activities and livelihoods. The figures come from modelled establishment numbers and turnover assumptions, and the RDNA says plainly that they are not verified losses for individual enterprises, net income or GDP effects. Losses also continue while access, markets, power and inputs remain disrupted. A programme that looks only at physical assets will rebuild houses while livelihoods stay depressed, and households that can't earn will struggle to keep even a safe new home.

The World Bank's analysis explains why livelihood risk is higher than the national picture suggests. Direct agricultural losses are small against the national economy, so the Bank expects limited effects on aggregate output. Locally the effect is far larger. Its analysis of 2021 census data covers the 49 most affected wards, home to about 155,000 people, within 15 municipalities of about 322,000 people and 82,000 households. In those wards only about half of people worked more than six months, agriculture made up 63 percent of sector engagement, and 67 percent of workers in the municipalities were own-account or self-employed. The RDNA records modelled impacts of roughly 7,700 tons of paddy and vegetables and about 252,000 animals and birds. These are modelled estimates, not verified animal deaths or compensation entitlements. Households with fragile, informal, agriculture-based incomes have little reserve, so they should be first in line for support.

Livelihood recovery needs its own objectives and schedules. The first step is restoring the conditions that let people earn: market access, reliable power and water, and a supply

of seed, fertilizer, tools and materials. The second is bridging support for households that have lost income, such as cash transfers or temporary work on recovery projects. The World Bank notes that Nepal's developing Integrated Social Protection System, built around an integrated social registry, could help identify vulnerable households and scale up assistance. It is still under development, so the programme shouldn't assume it is operational. The third step is helping enterprises and farms restart through credit, technical advice and training. The RDNA treats enterprise verification (operating status, closure periods and employment effects) as a prerequisite for targeted assistance. Hiring locally for reconstruction can put income into affected households, build skills and strengthen local ownership of the assets that result.

On September 3, 2026, the government announced a package of relief measures. As the Bank lists them, it includes customs duty waivers for replacement machinery and vehicles, tax relief with extended filing deadlines, advance insurance payments of up to 50 percent, and loan restructuring with a year of interest relief. These are announced measures, and the sources available don't establish how many people have used them. The programme's enterprise register should be used to check whether eligible businesses are actually being reached.

Tourism shows a livelihood risk that physical reconstruction won't fix alone. The World Bank rates its impact as medium. More than 200 hotels and restaurants were reportedly damaged, and access to Langtang, Gosaikunda and the Kailash Mansarovar route was disrupted. If travelers remain unsure about safety and reliability, losses could persist after the rebuilding is largely done. Restored trails and bridges are outputs; the return of visitors is an outcome, and it needs its own indicator.

Energy raises a different economic question. The RDNA records 13 affected hydropower projects totaling 759 MW, about two-thirds of them under construction. Capacity under construction isn't generation already lost, but delays affect future supply, project finance and employment. Three of the affected projects, about 60 MW combined, already export electricity, so delays also cut export revenue. These projects belong in the integrated infrastructure schedule, with clear roles for developers, the Nepal Electricity Authority (NEA) and insurers.

Timing is a recurring risk. Agricultural calendars, monsoon seasons and winter access limit when work can happen and when inputs are useful. A livelihood plan should follow those calendars, with early decisions on input supply and monitoring to confirm that support reaches households in time to use it.

7. Performance Measurement

7.1. Outputs and Outcomes

Recovery reporting tends to count outputs: facilities repaired, systems restored, transfers made. These are necessary and verifiable, but they are measures of activity. The RDNA illustrates the gap. Its early-recovery schedule includes temporary learning centers, temporary accommodation and restored water-supply systems. These are interim arrangements, and the RDNA states that a consolidated count of affected learners, patients and service users, and the duration of interruption, is not yet available. The

programme can therefore count what it has provided but cannot yet say who is still without a permanent service.

Project management has long distinguished outputs from outcomes, and recovery is a clear case where the distinction should shape reporting.

What is counted as an output	What the household experiences as an outcome
Schools repaired	Children attending safe, good-quality school consistently
Water systems restored	Households with reliable, safe drinking water
Homes reconstructed	Families living in safe, serviced, lasting housing
Cash transfers distributed	Households regaining purchasing power and livelihoods
Psychosocial and health support delivered	Continued access to appropriate care

Table 5: Recovery Outputs Compared with Household Outcomes

7.2. Baselines and the Recovery Dashboard

The RDNA records 18 damaged schools and seven damaged health facilities but no consolidated service-user baseline. These are the baselines a benefits-focused programme would establish first, because without them nobody can later say whether recovery succeeded. Establishing these baselines would help measure changes in service availability, access and continuity for affected communities.

A recovery dashboard should track scope, schedule, cost, funding and quality, and add risk, service access, housing and resettlement, livelihoods, community accountability and verified resilience. Regular reporting would help programme managers identify gaps, monitor progress and take corrective action. Targets should be set only after the government and implementing agencies validate the baseline. Targets set without that data would undermine the plan's credibility and make it difficult to demonstrate whether recovery investments have delivered their intended benefits.

7.3. Earned Value and Benefits Realization

Earned value management gives a disciplined view of cost and schedule performance. It shows whether work completed is in line with money spent and time elapsed, and it signals early when a package is drifting. It suits infrastructure packages with defined scope and measurable progress, such as bridges, roads and buildings. Regular monitoring allows programme managers to identify variances, investigate their causes and take corrective action before delays and cost overruns become more difficult to address.

Earned value does not show whether completed work achieved its purpose. A package can finish on budget and on time and still fail to restore access, provide safe housing or reduce risk. Benefits realization management fills that gap. It starts with a statement of the benefit each project is meant to produce, a baseline measured before the work, a target, a named owner and a review date after completion. These measures should reflect the needs of affected communities and the intended purpose of the investment. Earned value helps assess delivery performance, while benefits tracking assesses whether the intended outcomes are being achieved.

7.4. Example Indicators

The indicators below show how outputs, outcomes and resilience measures can be combined. They are examples for adaptation, and targets should be set only after baselines are validated.

Dimension	Example indicator	Evidence source
Access	Share of affected communities with year-round road or bridge access	Infrastructure survey and asset register
Housing	Households living in safe, serviced, permanent housing	Housing and resettlement register
Services	Learners and patients served by permanent facilities	Education and health records
Livelihoods	Households with restored income compared with baseline	Household survey
Resilience	Critical assets with hazard assessment and approved risk response	Asset register and decision records
Warning	Exposed communities reached with a warning in time and in a form they understand	Community testing and drills
Accountability	Grievances resolved within the published response time	Grievance log
Finance	Funds pledged, disbursed and spent, by source and sector	Funding status report

Table 6: Illustrative Recovery Indicators

8. Financing and Delivery Readiness

8.1. Terms and Timing of Finance

Finance matters not only because Nepal needs resources, but because its terms and timing decide whether recovery is affordable and whether investment can reduce future risk. Loans, grants and humanitarian contributions carry different implications for public finances. The World Bank projects the fiscal deficit widening from 1.7 percent of GDP in FY26 to 3.9 percent in FY27 and 4.1 percent in FY28, financed by a mix of domestic and concessional external borrowing. It projects public debt rising from 45.1 percent of GDP to 46.8 percent in FY27 and 47.9 percent in FY28, and it expects Nepal to remain at low risk of debt distress. The aggregate debt outlook does not, by itself, rule out additional borrowing, but fiscal space and the terms of finance remain important constraints. The pressure shows up in the composition of spending.

The World Bank reports that capital expenditure has been below debt-service payments for three consecutive years, with the gap widening from 0.5 percent of GDP in FY24 to 1.8 percent in FY26, so repayment obligations already compete with investment. The Prime Minister made the same point at the General Assembly, saying that Nepal needs adequate grant-based support and that vulnerable countries should not be forced into additional debt to rebuild. A grant carries no repayment obligation and can be directed more freely toward risk reduction. Humanitarian contributions respond to immediate need and are not designed to fund multi-year reconstruction.

Timing carries similar weight. Funds that arrive after the construction season or after a procurement window has closed are worth less than the same sum arriving when works can use it. Predictable multi-year commitments let agencies plan packages, procure

contractors and retain staff, while short-cycle funding encourages small, quick projects that may not be the most resilient. Each funding offer should be examined for terms, conditions, timing and fit with the schedule, and those characteristics should be visible to decision-makers.

8.2. Instruments to Date

An estimate of US$4.8 billion raises the question of where the money will come from. The response so far includes a US$49.6 million flash appeal, launched by the United Nations and humanitarian partners on September 4, 2026 as a four-month plan for emergency assistance to more than 84,000 people, and a World Bank Group commitment of up to US$170 million in emergency financing announced in the week before the Prime Minister's address.

The government has also announced fiscal, insurance and financial-sector relief measures, which work through tax, customs, credit and insurance channels and are not reconstruction funding. Preliminary insurance claims are a separate item again. The Nepal Insurance Authority recorded 583 flood-related claims totaling NPR 25.9 billion as of August 31, 2026. These are gross insured claims, not claims paid, and the World Bank warns that they should not be read as the final loss borne by insurers. None of these instruments should be added together or mistaken for reconstruction funding. The reconstruction requirement is itself preliminary, and a comprehensive PDNA is still to be completed.

8.3. Absorptive Capacity and Project Preparation

Delivery capacity was already a constraint before the flood. The World Bank reports that capital budget execution in FY26 was 46.8 percent, and attributes it to implementation constraints, including disruption after the September 2025 unrest, which damaged more than 2,000 government buildings and institutional records. The RDNA concludes that timely spending on recovery will depend on project preparation, procurement readiness, technical capacity and coordination, as well as on the availability of finance. Funding alone does not deliver bridges. Delivery also depends on completed designs, land access, environmental screening, procurement readiness, contractor capacity and supervision. The institutional damage the Bank describes is a further reason to protect records and staff continuity in the recovery programme. The most valuable work in the coming months may be building a pipeline of assessed, designed and costed projects so that funding can be absorbed when it arrives.

8.4. Ownership, Insurance, Staging and Procurement

Four financing questions will shape the programme. The first is ownership, which the RDNA flags clearly for energy. The estimate does not say how much falls to private developers, the NEA, insurers or the public budget, and it states that the recorded need is not an amount automatically payable by the government.

The second is insurance cover. The World Bank notes a high share of uninsured assets. Public roads and highways, municipal infrastructure and some public assets, including infrastructure operated by the NEA, are not fully insured, so a substantial part of reconstruction will be financed directly by government, public enterprises, households

and firms. By contrast, engineering and contractors' risk insurance accounts for about 79 percent of the estimated claim value, which suggests that construction-stage projects are better protected than operating public assets. The Bank also expects domestic reinsurers to retain a significant share of insured losses and notes that reinsurers may reprice Nepal's risk at renewal. For the programme, insurance recoveries are a funding source with their own timing and uncertainty. The funding register should record, for each major package, whether it is insured, how much has been claimed, how much has been paid and how much remains uninsured.

The third question is staging. Finance should separate funds disbursed, approved but undisbursed, conditional and unfunded, so that pledges are not confused with cash. The fourth is procurement, where speed should not mean bypassing safeguards. Early surveys, transparent criteria, realistic contractor assessment, independent inspection and a plan for maintenance handover all reduce the risk of redesign, disputes and poor quality.

Contract design also deserves attention. Where designs are incomplete and site conditions uncertain, contract forms that share risk fairly and allow controlled variation are usually more reliable than fixed-price arrangements that push all uncertainty onto the contractor and invite claims. Packaging should reflect local contractor capacity: packages that are too large may exclude capable local firms, and packages that are too small may overload the procuring agency. Clear procedures for instructions, variations, payment certification and dispute resolution keep delivery moving when the unexpected happens.

8.5. Transparency and Access to Climate Finance

Government and partners should publish, on a regular schedule, what has been pledged, what has been agreed in legal terms, what has been disbursed and what has been spent, by source and sector. Clear criteria for accessing climate finance would help agencies prepare proposals that match funder requirements, and grant-based support should be sought where appropriate, particularly for risk-reduction works and network redundancy for lifeline assets that protect lives but generate no revenue. Linking funding to measurable outcomes, such as safe housing, restored services, functioning early-warning systems and recovered livelihoods, gives donors evidence of results and gives agencies a clear definition of success.

One caution applies. Not every reconstruction expense will qualify for climate finance. Eligibility depends on the mechanism and the agreements behind it. Some costs, such as measures that reduce exposure to climate-related hazards, may fit, and others will need different channels. A funding strategy should map each major package to the mechanisms most likely to support it and should not present expected finance as committed finance before agreements are in place.

8.6. Prioritization

Prioritization needs a transparent method that weighs life safety, essential services, livelihoods, risk reduction, equity and inclusion, and readiness and value. It should inform judgment, not replace it. The RDNA itself notes that financial magnitude is only one basis for prioritization. A bridge that scores modestly alone may open access for several

communities and several other projects, and a portfolio view captures that where project-by-project scoring would not.

9. Climate Risk, Climate Justice and International Support

9.1. The Scientific Position

Climate risk affects how recovery is financed and how reconstruction is designed. The RDNA cites World Bank data indicating that Nepal emitted approximately 48 million tons of greenhouse gases in 2019, equivalent to roughly 0.1 percent of the global total. Glacier retreat, permafrost thaw and changes in meltwater can affect slope stability, although uncertainty remains about changes in the frequency and magnitude of individual rock-and-ice failures.

The RDNA states that the influence of changing climatic and cryospheric conditions on the August 2026 flood requires further analysis, including event-attribution studies. The sources reviewed for this report do not establish that climate change caused the flood. This uncertainty does not remove the need to account for documented exposure to potential flooding and other interacting mountain hazards.

Research by Watson and colleagues, published in Scientific Reports in 2026, estimated that approximately 293,800 people in its wider high-mountain study area lived within 50 meters of vertical height above drainage channels. Separately, it identified approximately 108,500 people in Nepal along modelled Glacial Lake Outburst Flood (GLOF) flow paths. These figures describe different geographic and exposure categories and should not be treated as interchangeable estimates. The study also found that building footprints within 50 meters of vertical height above channels increased by 46 percent between 2016 and 2023, while building area within modelled GLOF extents increased by 77 percent. These findings indicate increasing exposure in the areas examined; they do not predict when a flood will occur or establish the cause of a particular disaster.

For recovery programme managers, reconstruction decisions should be informed by current, location-specific hazard assessments rather than the assumption that replacing damaged assets in their previous locations will restore safety. Site selection and engineering design should consider upstream slope conditions, sediment movement, potential flood pathways, interacting hazards and projected climate conditions over each asset's intended service life. As the RDNA recommends, recovery should restore essential services while reducing the likelihood that reconstructed homes, infrastructure and livelihoods remain exposed to foreseeable hazards.

9.2. Climate Justice and the Basis for International Support

In his address to the General Assembly, Prime Minister Shah advocated strongly for climate justice. He said that many had called the floods a "Himalayan Tsunami," that a warming climate is destabilizing the fragile Himalayan ecology, and that Nepal and other developing countries contribute less than 0.1 percent of global greenhouse gas emissions yet bear a disproportionate share of the consequences. He asked the Assembly to focus on six words: relief, rehabilitation and reconstruction, together with responsibility, compensation and resilience.

For a recovery programme, this argument has practical weight. It sets out the principle on which Nepal will seek international support and frames the expectation that finance should reach the country on fair terms. The case does not depend on proving that climate change caused this event. It rests on a low-emitting country facing a rising, documented hazard with limited fiscal room to absorb the cost, and the RDNA identifies this imbalance as grounds for support for adaptation, risk reduction and resilient recovery. The principle does not replace evidence, however. Climate justice arguments are most persuasive when backed by clear data on exposure, damage and need and by credible plans for using resources well. The RDNA, the integrated asset register and the outcome dashboard are the instruments that turn a statement of principle into an investable programme.

Finance that arrives as grants, quickly, and tied to verified community needs would do far more good than finance that adds to national debt. Commitments should be tracked from pledge through disbursement and contract to completed work and measurable benefit, so that donors and communities can both see what the money achieved. A programme that shows transparent accounts, safe construction and measurable outcomes strengthens the case for further support, and one that does not weakens it. Good project management is part of the argument for climate justice.

10. Regional Cooperation, Early Warning and Hazard Monitoring

10.1. The Himalayan Climate Resilience Mechanism

The Prime Minister proposed a Himalayan Climate Resilience Mechanism, led by Nepal, India and China, as an urgent first step. As reported, it would share satellite data and expertise, monitor dangerous glacial lakes, strengthen early-warning systems and coordinate cross-border disaster assistance. The proposal reflects a practical reality: glacial hazards originate in places and under conditions that cross national boundaries, and no single country holds all the data needed to manage them. The RDNA similarly identifies the voluntary exchange of hydrological and hazard information through existing bilateral and regional mechanisms as an opportunity, and the World Bank recommends stronger upstream information exchange and cross-border data sharing.

At this stage, the mechanism remains a proposal, and its institutional design has yet to be established. As a project it would need a charter defining purpose and scope; agreed governance among the participating countries; data-sharing protocols covering what is shared, how often, in what format and with what authentication; standards for monitoring equipment and methods; funding arrangements; and escalation procedures when a hazard is detected. Such agreements take time to negotiate, and early progress is more likely to come from practical steps, such as exchanging existing monitoring data, before formal institutions exist.

10.2. Early Warning as an Integrated System

Warning messaging was part of the August response. The RDNA records that 679,295 early-warning SMS messages were disseminated to populations in downstream risk areas. It also states that warning performance was not comprehensively evaluated, so whether warnings arrived in time and could be acted on remains to be established. The RDNA allocates NPR 35 crore for a multi-hazard early-warning system.

An early-warning system is a chain: detection, transmission, analysis, decision, dissemination, receipt and response. A weakness at any link reduces the protection of the whole, and the strength of the chain is measured by the time it leaves people to reach safety. A sound programme tests warnings against communities' real experience: whether they arrived in time, in a language people understood, with evacuation routes people knew. Testing should be end to end and repeated, including scenarios in which sensors fail, power is lost or communications are interrupted. Shared failure points should be minimized, and each critical asset should have a named owner, a maintenance regime and a funding source for recurring costs, since stations that are installed and then left unmaintained give a false sense of security. The RDNA records six damaged gauging stations, so restoring them is both a monitoring and a warning priority.

10.3. Glacial Lake Risk Reduction

Nepal has announced that design work and detailed studies to drain four glacial lakes (Thulagi, Lower Barun, Lumding Tsho and Hongu II) will begin in the fiscal year running to mid-July 2027. High-altitude work involves specialized engineering, difficult logistics and seasonal access limits, and studies are a sensible first step. The programme should treat them as a distinct package with its own technical oversight, staged decision gates after each study and clear criteria for proceeding to construction. Lake drainage reduces one category of hazard. It does not remove the need for downstream warning, land-use planning and community preparedness, so it should be managed as one part of a layered risk-reduction strategy.

11. Uncertainty and Programme Risk

11.1. Limits of the Rapid Assessment

The final management principle is humility about uncertainty. The RDNA is frank about its limits. Affected buildings, households and population are modelled from satellite imagery and census relationships and are not verified counts. Upstream and isolated areas were hard to reach. No household survey, structured community consultation or detailed engineering assessment was undertaken. It also advises that zero or blank entries should not be read as evidence of no impact and that Chitwan's limited sector coverage should be verified before it is read as low exposure. A recovery programme built on these estimates should treat them as a baseline to be tested and refined.

11.2. The Programme Risk Register

Risk management is where that humility becomes practical. A programme risk register would cover natural hazards, sector integration, finance and insurance, procurement, resettlement and social risk, environmental risk, institutional capacity and service continuity. Each risk should be assessed for its likelihood, potential impact, responsible owner and required response, with regular reviews as conditions change. Table 7 shows how these categories link to responses and to the management discipline that owns them. This approach helps programme managers identify emerging problems, clarify accountability and coordinate mitigation across sectors. It also supports timely decisions when risks affect project costs, schedules, service delivery or the safety of affected communities. The register should be treated as a living management tool, updated as new evidence becomes available and mitigation measures are implemented. It should

also distinguish identified risks from events that have actually occurred. It is illustrative, not a verified list of failures in Nepal's recovery system.

Risk category	Example risk	Possible response	Management discipline
Natural hazard	Further landslides or floods during reconstruction	Hazard-informed siting and phasing; monitoring and warning for work sites	Risk management
Integration	Facilities completed without road, water or power access	Integrated schedule and dependency tracking	Schedule and integration management
Financial	Pledges delayed or conditional	Funding status reporting; staged commitments	Cost and funding management
Insurance	Reconstruction costs for uninsured public assets fall on the budget	Package-level insurance register; contingency funding	Cost and funding management
Procurement	Poor bidder capacity or weak contract terms	Realistic packaging; contractor assessment; fair risk allocation	Procurement management
Resettlement	Relocation to unsafe or poorly served sites	Multi-hazard site assessment; consultation; services delivered with housing	Stakeholder and scope management
Environmental	Disposal of debris and sediment; river-training impacts	Environmental screening; disposal plans	Quality and environmental management
Institutional	Staff turnover and limited local capacity	Training; continuity of key staff; clear decision rights	Resource and governance management
Service continuity	Prolonged interruption of schools, clinics and utilities	Interim arrangements with defined end dates	Operations and benefits management

Table 7: Illustrative Programme Risk Register

11.3. Adaptive Management and Learning

No plan survives contact with the field unchanged, and a recovery programme should expect to revise estimates, schedules and priorities as information improves. Adaptive management builds that expectation into the structure: regular review points at which assumptions are tested against evidence, a change-control process that allows revision without losing the record of why changes were made, and a habit of recording lessons as work proceeds, not only at the end. Each material lesson should have an owner, an action, a date and a check that the action was completed. Nepal has now managed large recovery efforts after more than one major disaster, and the knowledge held by those who led them is a national asset. Capturing it in procedures, templates and training will make the next reconstruction safer.

12. Implications for Nepal's Recovery Programme

The analysis points to practical steps that government, partners and practitioners can take while the PDNA is being completed. They are recommendations, not existing requirements.

- Establish a single integrated register of assets and activities across sectors, so that each intervention is defined, located and costed once, and use it as the basis for the master schedule.
- Give the coordinating function clear authority over the integrated schedule, risk register, change control and benefits tracking, while keeping delivery with provincial and local governments.
- Adopt a standard decision sequence for major assets, with hazard assessment, options appraisal, network redundancy for lifeline assets and recorded approval before design is finalized.
- Treat logistics, including supply routes, storage, transport capacity and livelihood inputs, as a named programme deliverable with measurable delivery standards.
- Manage resettlement as a development programme, with published site criteria, consultation before decisions, early resolution of land and documentation, and services delivered with housing.
- Validate baselines for services, housing and livelihoods, and report on outcomes as well as outputs, combining earned value with benefits tracking.
- Report commitments and disbursements transparently, distinguish loans, grants and humanitarian contributions, record insurance recoveries by package, link funding to measurable outcomes, and avoid assuming that every reconstruction cost qualifies for climate finance.
- Build a pipeline of assessed, designed and costed projects so that funding can be absorbed when it arrives.
- Pursue regional cooperation on glacial lake monitoring and early warning through practical data-sharing steps, and test warning systems end to end with communities.
- Embed adaptive management and lessons learned so that the programme improves as it proceeds.

13. Conclusion

The Nepal case shows why recovery from a disaster of this kind cannot be run as a set of sector projects. The RDNA's own evidence makes the point: needs are concentrated in a few large packages, services depend on shared access routes, and the same works appear in several cost lines. What turns assessed needs into results is the ability to see those dependencies, decide where and how to rebuild before scope is fixed, keep land, procurement and design ready ahead of funding, and verify that completed work changes how people live.

Several of the controls proposed here are inexpensive: a single asset register, recorded siting decisions, a funding status report that separates pledges from cash, and outcome baselines. None requires a large new institution. Each requires authority, reliable data and a reporting rhythm. The RDNA is open about its limits and names the institutions that should lead, and that gives the programme a credible starting point.

Policy statements made at the highest level now need to be matched by delivery. The call for climate justice will carry weight in proportion to the quality and transparency of the recovery it finances. The proposal for regional cooperation will matter to the extent that it produces shared data, tested systems and reliable warnings. The observation about flawless logistics for some purposes and broken logistics for others is a reminder that supply chains for food, materials and recovery inputs deserve the same seriousness.

The test of recovery can be stated simply. Can households return to safe communities? Can children attend school and reach a clinic nearby? Can farmers and traders earn again? Will the next warning give people enough time to reach safety? Project managers influence the answers, and the influence begins when those questions are written into the plan as measures of performance from the first day.

AI Use Declaration

AI tools were used in preparing this report only to improve the clarity and readability of the language. All content was written, reviewed, and edited under human oversight. The author takes full responsibility for the accuracy, integrity, and originality of the work.

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