I. Project Context

A. Country context

1. India is one of the most densely populated countries in the world with over one billion people and it is vulnerable to natural hazards particularly earthquakes, floods, droughts, cyclones, and landslides. The Global Climate Change and Vulnerability Index, reveals that India is ranked as the second most vulnerable country in the world\(^1\) to natural hazards. As per the latest seismic zoning map (Zones V to I based on risk) brought out by the Bureau of Indian Standards (BIS)\(^2\), about 60% of the country is prone to earthquakes of intensity VII or more on the MSK\(^3\) scale. Over 8% of India’s landmass is susceptible to cyclone hazard; about 68% of the area is drought prone; 12% of area is susceptible to floods and approximately 15% of the total area of the country is susceptible to landslides.

2. The most vulnerable areas are located in the Himalayan and sub-Himalayan regions. Climate induced disasters are very common in the entire Himalayan region. Monsoon rains further accentuates the intensity of climate disasters. The rapid retreat of the Himalayan glaciers has consequences for water-related hazards, such as glacier lake outburst floods,

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\(^{2}\) IS 1893 -Part 1: 2002, Map of Seismic Zones of India

\(^{3}\) The Medvedev–Sponheuer–Karnik scale, also known as the MSK is a macro-seismic intensity scale used to evaluate the severity of ground shaking on the basis of observed effects in an area of the earthquake occurrence. Scale VII is indicated as strong
and for water stress, as a result of the decline in fresh water supplies during the lean season. According to the Fourth Assessment report of the Intergovernmental Panel on Climate Change (IPCC), the incidence and intensity of floods in the Himalayan region are expected to increase as a result of an increase in precipitation during the monsoon season and glacial retreat, both occurring due to the changing climate.

3. India has made great strides in moving from a reactive emergency response to being proactive and implementing disaster preparedness and risk reduction initiatives. India enacted the Disaster Management Act in 2005 and established the National Disaster Management Authority (NDMA) and State Disaster Management Authorities (SDMAs). NDMA has proactively formulated guidelines and procedures for dealing with specific natural disasters and is mandated to frame policies, plans and guidelines for Disaster Management. The Risk Management Framework developed in India has served as a blue print and best practice model for other countries.

4. The 12th Five Year Plan, 2012-2017, of the Government of India (GoI) has clearly outlined the aim of consolidating progress made towards disaster preparedness, prevention and risk mitigation by integrating them into the development process. Significant levels of capacity need to be built and resources committed in order for India to make meaningful progress towards minimizing its overall risk and vulnerability to natural hazards.

5. In keeping with the GoI’s commitment to disaster risk mitigation at the national and state levels, the proposed project will focus on the post disaster recovery plans in the State of Uttarakhand as well as strengthen the capacity of State and other entities on disaster risk management. GoI has gained a lot of experience over the past decade in recovery and reconstruction following the Bhuj earthquake, the Asian tsunami and Bihar Kosi floods wherein risk mitigation and infrastructure and community resilience have been integrated into post-disaster reconstruction projects.

Uttarakhand

6. Uttarakhand was formed on November 9, 2000 to become the 27th State of India. Located at the foothills of the Himalayan mountain ranges, it is predominantly a hilly State, having international boundaries with the People’s Republic of China in the north and Nepal in the east. On its north-west lies the State of Himachal Pradesh, while on the south it is bounded by Uttar Pradesh. The high Himalayan ranges and glaciers form most of the northern parts of the state while the lower reaches are densely forested (covering about 60% of the state) with rich natural resources and wildlife habitats. Two of India’s major rivers, the Ganga and the Yamuna, originate from Uttarakhand.

7. The State of Uttarakhand comprises 13 districts that are grouped into two regions (Kumaun and Garhwal) and has a total geographical area of 53,484 sq. km. The economy of the State primarily depends on agriculture and tourism. The State is home to some of the most important pilgrimage centres known as the “Char-Dham”, i.e. the Gangotri,
Yamunotri, Kedarnath and Badrinath, all of which are situated in the northern region. The state receives over 32 million tourists annually, a majority of whom visit the state during the peak summer season (May-July) for pilgrimage and recreation. The region is also a well-known tourist destination and has many trekking trails.

B. Situation in Urgent Need of Assistance

8. The monsoon in June 2013 arrived almost two weeks earlier than expected in Uttarakhand. Between June 15 to 17, 2013, cloud bursts and heavy (64.5 - 124.4 mm) to very heavy rainfall (124.5 – 244.4 mm) hit several parts of the higher reaches of the Himalayas in the State of Uttarakhand. This unprecedented rainfall resulted in a sudden increase in water levels giving rise to flash floods in the Mandakini, Alakananda, Bhagirathi and other river basins and also caused extensive landslides at various locations. Adding to this, continuous rains and melting of the Chorabari glacier caused waters in the Chorabari Lake to rise. The lake’s weak moraine barrier gave way and a huge volume of water along with large glacial boulders came down the channel to the east devastating Kedarnath town, Rambara, Gaurikund and other places in its wake. According to official sources, over 900,000 people have been affected by the event in the state of Uttarakhand.

9. The districts of Bageshwar, Chamoli, Pithoragarh, Rudraprayag and Uttarkashi were most affected by this disaster. This region is among the country’s most important pilgrimage circuit and as the disaster coincided with the peak tourist and pilgrimage season, it significantly increased the number of casualties, missing, and affected population. A total of 580 human lives were lost; over 5,400 people are still reported as missing; 4,200 villages were affected; 9,200 cattle/livestock lost; and 3,320 houses were fully damaged, about 995 Public Buildings were damaged, close to 9000 km of roads were affected, 85 motor bridges, and 140 bridle bridges were damaged. This event also left over 70,000 tourists and 100,000 local inhabitants stranded in the upper reaches of the mountain terrain.

10. The numerous landslides and toe erosion by the sediment loaded rivers caused breaching of roads/highways at many locations and washed away several bridges (steel girder bridges, beam bridges, suspension/cable bridges). Traffic was disrupted along all national highways and link roads in the region along with the disruption of telecommunication lines, all adding to the impact of the disaster. Many hotels, rest houses and shops around the temple in Kedarnath were completely destroyed.

Joint Rapid Needs Assessment

11. The World Bank (WB) and the Asian Development Bank (ADB) on receiving a request from the Department of Economic Affairs (DEA), (GoI), fielded a Joint Rapid Damage and Needs Assessment (JRDNA) Mission within the State. The JRDNA team visited the State during July 29 to August 07, 2013, and in collaboration with the GoU undertook a multi-sectoral assessment of the damages and laid the ground for an immediate recovery and reconstruction needs framework. The assessment, while considering the impact of the disaster on the entire state, focused mainly on the five most affected districts: Bageshwar, Chamoli, Pithoragarh, Rudraprayag, and Uttarkashi and

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6 UN Sitrep “Uttarakhand Flood” No. 10. UNDMT July 10, 2013
relied upon the damage and loss assessment carried out by the state government.

12. The unprecedented rainfall in June 2013 that caused massive flooding and landslide in the State has severely impacted all the communities that are scattered in the mountainous terrain. As highlighted in the Joint Rapid Damage and Needs Assessment (JRDNA)\(^7\), the continuous rain disrupted normal life and affected over 900,000 people in the state. The report estimated the cost of damage reconstruction to be about $661 million. Based on the findings of the JRDNA, the DEA, GoU, ADB and the World Bank agreed on a framework for assistance for the disaster recovery and future risk reduction.

C. Sector and Institutional Context

13. The State of Uttarakhand is endowed with vast natural resources and is one of the most frequented pilgrimage/tourist circuits in India. It is estimated that about 70% of the state’s population depends on agriculture for their livelihood, while the tourism sector contributes about 25% to the GSDP. The State receives over 32 million tourists and pilgrims annually, majority visiting the state during the peak summer season (May-July).

14. The state has a very fragile terrain that is prone to natural disasters. The entire State falls within Zone IV and Zone V (Zone V represents the highest level of seismicity) of the Earthquake Zoning Map of India. The districts of Bageshwar, Chamoli, Pithoragarh, Rudraprayag and Uttarkashi all fall within the Seismic Zone V. In the recent past the State has witnessed two major earthquakes (Uttarkashi 1991 and Chamoli 1999). Every year, the state faces losses, particularly during the monsoon season, due to rains, cloudbursts, landslides, floods, hailstorms and water logging events.

15. Under the Disaster Management Act 2005, Uttarakhand constituted the State Disaster Management Authority (USDMA). The State has also established the Disaster Mitigation & Management Centre (DMMC) which works as an autonomous institute under aegis of Department of Disaster Management Government of Uttarakhand. DMMC is the apex center in the field of Disaster Mitigation & Management in Uttarakhand which functions as a think-tank for the State and incorporate prevention, preparedness and mitigation aspects for all projects.

16. GoU’s institutional capacity to manage the disaster was challenged during the recent cloud burst event.

17. The Government of Uttarakhand recognizes the need to simultaneously work on disaster risk reduction and management measures within the State and quickly help communities recover from the impacts of disaster. The proposed project, ‘Uttarakhand Disaster Recovery Project’ (UDRP), takes into account the lessons from other disaster events and the multi-sectoral needs assessment undertaken during the JRDNA, aims to improve the resilience of the State’s infrastructure and its communities from impacts of future disasters and climate change. In agreement with the GoU, the proposed project constitutes a large multi-sector engagement on risk and vulnerability reduction, by assisting

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\(^7\) The Joint Rapid Damage and Needs Assessment (JRDNA) was conducted by the World Bank and Asian Development Bank in collaboration with the Government of Uttarakhand during July 29 to August 07, 2013.
in reconstruction of damaged infrastructure, restore connectivity and improve technical support to state entities in managing future disaster risks.

D. Higher Level Objectives to which the Project Contributes

18. The proposed project is aligned to the Bank’s Country Partnership Strategy (CPS FY13-17) to enhance disaster risk management systems. The project is solidly anchored within the “Strategic Engagement Area 3: Inclusion” of the India CPS - which states that the World Bank work in this area will: “(i) help build institutional capacity to prepare for and manage the impact of natural disasters and (ii) help people protect themselves from natural disasters and recover quickly from them”.

19. This project also supports India’s major policy shift to proactive risk management and allows implementation of a demand-driven program specifically in areas where the Bank offers significant experience in translating national risk mitigation strategies into effective policies and strengthening the capacity of institutions for improved service delivery. Furthermore, the design and implementation of the proposed project will offer important lessons to be shared with other countries in their efforts to systematically address the reduction of multi-hazard risks. The proposed project also creates a solid basis for a long-term partnership with India that ultimately benefits millions of people exposed to natural disaster risks.

II. Project Development Objectives

20. To restore housing, rural connectivity and build resilience of communities in the affected districts of Uttarakhand and increase the technical capacity of the State entities to respond promptly and effectively to an eligible crisis or emergency.

III. Project Description

21. The proposed UDRP will have six components that cover the recovery and reconstruction needs within the affected areas of the State and future oriented risk reduction efforts. A short description of objectives and activities in each of the components is given below:

Component 1: Resilient Infrastructure Reconstruction – US$ 25 million

22. The objective of this component is to focus on the immediate needs of reconstruction of damaged houses and Public Buildings. The aim is to reduce vulnerability of the affected population and restore access to basic services of governance.

Component 2: Rural Road Connectivity – US$ 155 million

23. This component’s objective is to restore the connectivity lost due to the disaster by reconstruction of damaged roads and bridges: village roads (Non-PMGSY\(^8\)), Other District

\(^8\) PMGSY – Pradhan Mantri Gram Sadak Yojana – a large National Program financed by GoI for improving/establishment of rural roads to connect villages to the main road networks. This program is also partially financed by the World Bank
Roads (ODRs)\(^9\), bridle roads and bridle bridges. The roads and bridges will be designed to withstand earthquake and flood forces as per the latest design guidelines from the Bureau of Indian Standards, the Indian Roads Congress and the Ministry of Road Transport and Highways. The affected rural areas will be benefitted by the restored access to the market thereby increasing the economic growth in these areas by bringing in new employment opportunities, trade and investment, and timely access to health and education services.

**Component 3: Technical Assistance and Capacity Building for Disaster Risk Management - US$ 38 million**

24. The objective of this component is to enhance the capabilities of government entities and others in risk mitigation and response. This component would entail the following tasks: Risk Assessment Modeling and Capacity Building of Uttarakhand Space Applications Center (USAC); Establishment of a Decision Support System (DSS); River Morphology Study; Slope Stabilization Study; Strengthening of the Uttarakhand State Disaster Management Authority (USDMA); Strengthening Hydro-meteorological network and Early Warning Systems (EWS) and Strengthening Emergency Response Capacity.

**Component 4: Financing Disaster Response Expenses –US$ 12 million**

25. This component will support the financing of eligible expenses already incurred by the State during the disaster response period. The expenses will include but will not be limited to reimbursement of fuel purchased and used for helicopter rescue missions, hiring of heavy equipment for clearing of roads to restore immediate connectivity, etc.

**Component 5: Implementation Support –US$ 20 million**

26. This component will include incremental operating costs, that of operating the Project Management Unit (PMU) and respective Project Implementation Units (PIUs) in the line agencies. The component will also include creation of small, temporary field implementation offices with the necessary equipment and furniture etc. In addition, the component will also include consultancies required for the preparation and supervision of specific activities, trainings, exposure visits and knowledge exchange programs.

**Component 6: Contingency Emergency Response- US$ 0 million**

27. Following an adverse natural event that causes a major natural disaster, the respective government may request the Bank to re-allocate project funds to support response and reconstruction. This component would draw resources from the unallocated expenditure category and/or allow the government to request the Bank to re-categorize and reallocate financing from other project components to partially cover emergency response and recovery costs. This component could also be used to channel additional funds should they become available as a result of an eligible emergency.

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\(^9\) ODRs are generally the link roads between Village Roads and Major District Roads (MDRs)
IV. Financing (in USD Million)

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V. Implementation

A. Institutional and Implementation Arrangements

28. **Oversight and Approvals** - Under the Uttarakhand State Disaster Management Act, 2005, the GoU has formed a ‘Core Committee’, headed by the Chief Secretary for evaluation and monitoring of the reconstruction program. This core committee will primarily be responsible for monitoring the post disaster works of all the implementing agencies. In addition the GoU has also constituted a ‘High Powered Committee for Sanctioning of Post Disaster Reconstruction Works’, chaired by the Additional Chief secretary. This committee will provide all approvals: administrative and financial to all the post disaster recovery, reconstruction and risk mitigation works. In addition the committee will also address interdepartmental coordination and follow on external clearances where required.

29. **Project Management Unit** - Under the USDMA a Project Management Unit (PMU) will be formed headed by a full time Project Director and supported by the three Project Managers, one each for housing and public buildings; roads and bridges; and strengthening disaster management components. In addition the PMU will be supported by Procurement, Financial Management, Administration, Project Support and MIS unit. Staff will be deployed from various departments and through recruitments from open market or using other existing arrangements for deployment of specialists.

30. **Project Implementation Units** - Housing and Public Building works will be carried out by the Uttarakhand State Infrastructure Development Corporation, and Roads and Bridges by the Public Works Department. Technical and Capacity Building Component will be managed by the PMU itself with the support of Uttarakhand State Disaster Management and Mitigation Center and Uttarakhand Space Application Center. In addition there would be a District Coordination Committee wherein the District Magistrate will be the nodal officer for coordination, monitoring, and progress review etc. All implementing departments/agencies create exclusive setup for implementation of the project components including the nodal units at the departmental headquarter for preparation of detailed project reports, tendering, evaluation, financial management, safeguard compliance etc.

B. Results Monitoring and Evaluation

31. A result framework will be used to monitor and evaluate the achievement of the PDO and the outcome indicators. Project Monitoring will occur as a periodic function, and will include process reviews/audits, reporting of outputs, and maintaining progressive
records. Broad thematic areas that will be supervised and monitored include the following: i) Social and Environmental Monitoring; ii) Regular Quality Supervision & Certification; iii) Periodic Physical Progress Monitoring & Third Party Quality Audit and iv) Monitoring and Evaluation for results.

32. **Social and Environmental Monitoring** - This will comprise the following sets of activities: i) Monitoring compliance with environmental regulations, social and environmental safeguards and Environmental and Social Assessment provisions; and (ii) overall State-Level monitoring and oversight of social and environmental issues at state/project levels.

33. **Regular Quality Supervision & Certification** – This will be carried out by the respective implementing units within the line departments. Third party quality monitoring and independent certification of goods and works procured under the project shall form the Quality Management System. Detailed quality guidelines will be developed by PMU/PIU and adopted by all implementing units and other stakeholders.

34. **Periodic Physical and Financial Progress Monitoring & Third Party Quality Audit** – Physical progress monitoring will be carried out by the implementing units within the line departments on a monthly basis and report to PMU which will in turn share the reports on a quarterly basis with the Bank. Financial progress will be reported through the quarterly Interim Financial Reports (IFRs). PMU/PIU will strengthen the existing MIS and create a detailed MIS where needed for management of the information database, which will be an online tool for gathering updates by the implementing units within the line departments. A portion of this database will also be uploaded on the project websites as part of regularly sharing information with the public. In addition the PMU will appoint a Third Party Quality Audit Agency for ensuring compliance to prescribed standards and specifications for works. This agency will carry out stage wise, random checks on the ongoing works and report to PMU including reporting on compliances by the implementing agencies.

35. **Monitoring and Evaluation:** Continuous monitoring of the project, its achievement would be taken up by the Core Committee. The Core Committee will also appoint special agencies to assist them.

C. **Sustainability**

36. Sustainability of the project proposed has been enhanced due to the following:

37. **Ownership:** The Uttarakhand government has shown keen interest and initiative in taking this project forward. The Department of Economic Affairs (DEA) has given high importance to the project and to the partnership with the Bank in the area of disaster risk management. All this indicates a strong commitment and a sense of ownership which enhances the sustainability of the project.

38. **Institutional Capacity:** The USDMA’s are the legally empowered nodal disaster management agency at the state level. This project will help strengthen the USDMA as an operational institution and would help sustain investments in risk mitigation and its
mainstreaming into development. In addition a key outcome of the project will be the improved capacity of the respective line departments, District Administration, and technical Institutions to engage in long term planning to manage risks and respond to future disasters.

39. **Community Participation and Feedback Mechanisms:** The project is designed to involve the community in the selection and planning of the housing component. In addition, a well thought communication strategy will create awareness, inform communities about various components, along with a grievance redress system. This will promote local level ownership making the project sustainable.

40. **Technical Sustainability:** The project will assist in strengthening the hydro-meteorological services within the State and technically assist in enhancing its capabilities in risk mitigation and response. The work undertaken in multiple components will enable the GoU to strategically use and understand models/tools in sustainable risk mitigation and response.

**VI. Safeguard Policies**

41. The project triggers the following safeguard policies: i) Environmental Assessment (OP/ BP 4.01); ii) Natural habitats (OP/BP 4.04); iii) Physical and Cultural Resources OP/BP 4.11; iv) Involuntary Resettlement (OP/ BP 4.12); and v) Forests (OP/ BP 4.36). The project has been assessed to be Category B, based on the in-situ and moderate nature of the construction activities of the proposed sub-projects. No adverse or irreversible impacts of project interventions are envisaged. The projects impacts are limited and are technically and institutionally manageable. However, considering the fact that many of the project activities are in the sensitive hilly environments, ‘Environmental and Social Assessment’ will be carried out for the respective sub-projects as applicable, as per the ‘Environmental and Social Management Framework (ESMF)’ developed for the project.

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<th>Safeguard Policies Triggered by the Project</th>
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