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Research Cooperation between NGI and IITR (Geotech EQ Eng. aspects)

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By

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Research Collaborations

- **Between Norway and India**

  Participating Institutes from Norway: NGI, NORSAR
  Participating Institutes from India: IITR, WIHG, Others

- **Sponsored by**

  The Royal Norwegian Embassy in India, New Delhi

- **Exchange Visits**

  Faculty, Scientists, Ph.D. Students

- **All Core Disciplines of Earthquake Engineering**

  Seismology, Soil Dynamics & Structural Dynamics

Research Collaborations (3 Phases)

- **First Phase (2003 ~ 2006)**

  Indo-Norwegian Programme of Institutional Cooperation

- **Second Phase (2007 ~ 2010)**

  Earthquake Risk Reduction in Himalaya with Institutional Cooperation between India and Norway

- **Third Phase (2012 ~ 2015)**

  Earthquake Risk Reduction on the Indian Subcontinent

Geotechnical EQ Eng. Aspects

- **First Phase (2003 ~ 2006)**

  Estimation of Ground Motion Amplifications

- **Second Phase (2007 ~ 2010)**

  (A) Liquefaction Susceptibility of Selected Sites and

  (B) Slope Stability Assessment of Critical Slopes

- **Third Phase (2012 ~ 2015)**

  Earthquake Risk and Loss Assessment in Hilly Areas: Soil Amplification, Geological and Geotechnical Data Collection, Modeling and Analysis of Slopes

Team Members

- **From India (DEQ, IITR)**

  D.K. Paul, M.L. Sharma, Ashok Kumar, Y. Singh and B.K. Maheshwari

- **From Norway**

  NGI: Amir M. Kaynia and Rajinder Bhasin

  NORSAR: H. Bungum, Conrad D. Lindholm, Dominik Lang

- **Research Scholars and Ph.D. Students**

Key Outcome / Findings

- **First Phase:** Development of attenuation relationship for Northern India, Seismic hazard, soil amplification, vulnerability and risk assessment of Dehradun.
- **Second Phase:** Liquefaction Susceptibility of Some Selected Sites has been investigated. Slope stability assessment of few Critical Slopes in Mussorie.
- **Third Phase:** collection of field data are in progress from insitu tests in Mussoorie and Nainital.

Conclusions

- Overall this collaboration has gone very well, resulted in many M.Tech. Dissertations and few Ph.D. Theses. Also research was published in reputed journals and conferences.

THANK YOU