



CURRICULUM VITAE

NAME : RENGERS, Niek

DATE AND PLACE OF BIRTH : 6 November 1939, Wageningen, The Netherlands

NATIONALITY : Dutch

EDUCATION

1951 - 1958 : Gymnasium, Wageningen, The Netherlands
1958 - 1965 : University, Leiden, The Netherlands, Drs. Degree in **Geology (MSc.)**
1966 - 1971 : University, Karlsruhe, Germany, Dr. Ing. Degree in **Civil Engineering (PhD)**

KEY QUALIFICATIONS : Rock mechanics
: Engineering geology
: Remote sensing
: Natural hazard assessment
: Management of education and research

LANGUAGES AND DEGREE OF PROFICIENCY

<u>Language</u>	<u>Speaking</u>	<u>Reading</u>	<u>Writing</u>
1. Dutch	mother tongue		
2. French	good	good	fair
3. English	good	good	good
4. German	good	good	good
5. Spanish	good	good	fair

MEMBERSHIPS OF PROFESSIONAL SOCIETIES

2003 - 2007 : President of the International Association of Engineering Geology and the Environment (IAEG).
1988 - 1995 : Past President of the Dutch Association for Engineering Geology (Ingeokring)
1980 – to date : Founding member of the Dutch Association for Engineering Geology (Ingeokring)
Since 1969 : Member of the International Society for Rock Mechanics (ISRM).
Since 1959 : Member of the Royal Geological and Mining Society of The Netherlands.

Special Awards

2014 : International Scientific and Technological Cooperation Award of the Peoples Republic of China. Honour date Dec 2014, Honour issuer National Office for Science and Technology Awards, P.R. China
2005 : Honorary member of the Dutch Association for Engineering Geology (Ingeokring)

EMPLOYMENT RECORD

- 2005 – 2019** : Chengdu University of Technology (China), State Key Laboratory for Geo-Hazard Prevention
Position held : **Visiting Professor**
- 1992 - 2000** : International Institute for Aerospace Survey and Earth Sciences (ITC), Enschede, the Netherlands
Position held : **Vice-rector**
Description of duties : Responsible in the directorate for internal management of the Institute and educational affairs.
- 1971 – 2005** : International Institute for Aerospace Survey and Earth Sciences (ITC), Enschede, The Netherlands
Position held : **Associate Professor in Engineering Geology**
Description of duties : For many years head of Division of Engineering geology. Responsible for the courses in engineering geology at the advanced postgraduate (MSc) and at the PhD level.
Responsible for research and consulting in engineering geology, slope stability, earthquake hazard and risk studies, etc.
- 1981 - 2004** : Delft University of Technology
Position held : Senior lecturer in Engineering Geology
Description of duties : Responsible for the subjects of engineering geological mapping, photo-interpretation and remote sensing and for engineering rock mechanics at the postgraduate level.
- 1967 - 1971** : University of Karlsruhe, Faculty of Civil Engineering, Institute for Soil and Rock Mechanics, KARLSRUHE, Federal Republic of Germany
Position held : Staff member of the rock mechanics section
Description of duties : Responsible for a fundamental research programme on friction in rock mechanics. Co-operating in and partly responsible for rock mechanics consulting projects.
- 1965 - 1967** : University of Leiden, Department of Geology, Section Engineering Geology, LEIDEN, The Netherlands
Position held : Research assistant engineering geology
Description of duties : Development of terrestrial photographic surveying techniques.

CONSULTANCY, CONTRACT EDUCATION AND RESEARCH EXPERIENCE

- 1995 to 2004 : Member Research School, Center of Technical Geosciences (CTG), Delft, NL (1995-to date).
- 1968 to present : More than 30 assignments of a duration longer than 3 weeks, in 19 countries in Asia, Africa, Central- and South America. Additionally, yearly fieldwork periods of 3 to 4 weeks with postgraduate students of ITC and TU Delft in Europe (Spain and Italy), Asia (Sri Lanka and Indonesia) and Latin America (Colombia and Costa Rica)

SPECIAL ACTIVITIES

- Period : 1999 - 2002
Description : Director of the UNESCO Program Capacity Building for Natural Disaster Reduction (CBNDR)
- Period : 2003 - 2005
Description : ITC Local Team Leader and Long-Term Expert in Thimphu, Bhutan, in the Institutional Cooperation Program between ITC and the

Department of Geology and Mines of the Royal Government of Bhutan.

Period : 1985 - 1994
Description : Chairman Committee on Slope Stability of the International Association for Engineering Geology and the Environment (IAEG)

Other Committees

Period : 1990
Description : Chairman of the Scientific Committee of the 6th International Congress IAEG, Amsterdam

Period : 2004
Description : Adviser of the Organising Committee of the 1st EurEnGeo Conference, Liege, Belgium

Supervised PhD studies : Supervisor of 9 PhD studies

PUBLICATIONS

1976 to date : More than 60 publications in the form of a book, papers in (refereed) journals and in congress proceedings on a large variety of topics from rock mechanics, engineering geology, Remote Sensing, GIS, to natural hazard assessment, etc.

Hack R, Orlic B, Ozmutlu S, Zhu S & Rengers N (2006) Three and more dimensional modelling in geo-engineering. Bulletin of Engineering Geology and the Environment. Springer Verlag. ISSN: 1435-9529. Vol. Dec 2005: DOI 10.1007/s10064-005-0021-2. pp 1 - 11 (reviewed article)

Hack R., Price D. & Rengers N. (2005) Una nueva aproximación a la clasificación probabilística de estabilidad de taludes (SSPC). In "Ingeniería del Terreno", IngeoTer 5. chapter 6. publ. U.D. Proyectos, E.T.S.I. Minas - Universidad Politécnica de Madrid. ISBN 84-96140-14-8. pp. 418. (reviewed chapter book) (in Spanish)

Hack R., Price, D. & Rengers N. (2003). A new approach to rock slope stability - a probability classification (SSPC). Bulletin of Engineering Geology and the Environment. Springer Verlag. Vol. 62: article: DOI 10.1007/s10064-002-0155-4. pp. 167-184 & erratum: DOI 10.1007/s10064-002-0171-4. pp 185-185 (reviewed article)

Rengers N., Hack R., Huisman M., Slob S. & Zigterman W. (2002) Keynote: Information technology applied to Engineering Geology. Engineering Geology for Developing Countries - Proceedings of 9th Congress of the International Association for Engineering Geology and the Environment. Durban, South Africa, 16 - 20 September 2002 - J. L. van Rooy and C. A. Jermy, editors. pp. 121-143. (keynote address & article)

Rengers, N.; Huisman, M.; Hack, H.R.G.K. & Rupke, J. (2001): Quantification of engineering geological parameters - GIS-based slope instability hazard and risk assessment. 50th Geomechanics Colloquium, October, 2001, Salzburg, Austrian Society for Geomechanics. in Felsbau, 19, nr. 5, pp. 102-106. (keynote & reviewed article)

Price D.G., Rengers N, Hack H.R.G.K., Brouwer T. & Kouokam E. (1996) Problem recognition index (PRI) applied to the Falset Area. Proc. I Congres del Priorat, Gratallops, Province Tarragona, Spain. (article)

Rengers N., Hack R., Huisman M., Slob S. & Zigterman W. (2002) Keynote: Information technology applied to Engineering Geology. Proc. 9th Congress of the International Association of Engineering Geology and the Environment, Durban, South Africa, September 2002. (submitted)

Rengers, N.; Huisman, M.; Hack, H.R.G.K. & Rupke, J. (2001): Quantification of engineering geological parameters - GIS-based slope instability hazard and risk assessment. 50th Geomechanics Colloquium, October, 2001, Salzburg, Austrian Society for Geomechanics. in Felsbau, 19, nr. 5, pp. 102-106. (article & presentation)

1997 Deketh, H.J.R., N. Rengers. The role of engineering geology in natural hazard reduction for sustainable development. Special Lecture for Theme 3 of the International Symposium of the IAEG. Engineering Geology and the Environment, Athens, Greece, 23-27 June 1997. publ. Balkema, Rotterdam.

1997 Rengers, N. Application of satellite remote sensing in coastal hazard assessment. Invited Lecture for ESA, III Conferencia Espacial de las Americas, Montevideo, Uruguay, 28-29 April 1997.

1997 Soeters, R., M.T.J. Terlien, N. Rengers. Application of satellite imagery in geohazard zonation with emphasis on seismic hazards. Invited Lecture for ESA, Colloquium Application of Space Techniques for Hazard Management in the Mediterranean Rabat, Morocco, September 18-20, 1997. (To be published)

1997 Westen, C.J. van, N. Rengers, M.T.J. Terlien, R. Soeters. Prediction of the occurrence of slope instability phenomena through GIS-based hazard zonation. In: Geol Rundsch Vol. 86, 1997 pp. 404-414

1997 Groot, R., N. Rengers. Access, Use and Pricing of Geo-Data. Invited Presentation at the European Research Conference on space-time modelling of bounded natural domains: virtual environments for the geosciences. 9-14 December 1997, Rolduc, the Netherlands.

1996 Soeters, R., C.J. van Westen, N. Rengers. Prediction of the Occurrence of Slope Instability Phenomena through Hazard Zonation. Presentation during Joint Convention Geologische Verein and KNGMG on prediction in geology, Vrije Universiteit - Fac. Der Aardwetenschappen Amsterdam, 22-24 February, 1996

1996 Rengers, N., C.J. van Westen. Application of Satellite Remote Sensing for Natural Disaster Reduction in Developing Countries. Keynote lecture. Conference on the Application of Remotely Sensed Data and Geographic Information Systems (GIS) in Environmental and Natural Resources Assessment in Africa. Harare, Zimbabwe, March 15-22, 1996. pp.170-176.

1996 Rengers, N. UNESCO coordination programme for disaster reduction through sustainable development. In: Conference on the application of remotely sensed data and geographic information systems (GIS) in environmental and natural resources assessment in Africa. Harare, Zimbabwe, March 15-22, 1996. pp.405-412.

1996 Rengers, N., T. Brouwer, H.R.G.K. Hack, E. Kouokam, D. Price. Problem recognition index (PRI) applied to the Falset area. In: I congrés del priorat, Gratallops, 13-15 December, 1996. pp. ...

1995 Genske, D.D., N. Rengers. The Engineering Geology Group Delft.

1995 Rengers, N. "Landslide Hazard Mapping for Sustainable Development". Invited paper for the Regional Workshop on Landslide Hazard Management and Control in the Hindu Kush, Himalayas at ICIMOD, Kathmandu, Nepal

1994 Rengers, N., Soeters, R., van Westen, C.J. "GISSIZ: Training Package for the use of geographical information systems in slope instability zonation". 10th Thematic Conference Geologic Remote Sensing, San Antonio, Texas, 9-12 May 1994.

1994 Rengers, N., Soeters, R., van Westen, C.J. "Methodological aspects in hazard zoning with a special reference to the application of remote sensing". Experiences of a research project on mountain hazard zoning in the Andean Cordillera in Colombia. Workshop on remote sensing applied to geological hazard mapping programme on geological applications of remote sensing. GARS, Unesco, Paris, 3 February 1994.

1994 Rengers, N., Soeters, R., van Westen, C.J. "Slope instability of remote sensing and GIS in recognition, analysis and zonation". Natural hazard assessment and mitigation the unique role of remote sensing. The Royal Society, London, 8-9 March 1994.

1994 Rengers, N., van Westen, C.J. "Application of Satellite Remote Sensing for Natural Disaster Reduction in Developing Countries". IDNDR, World Conference on Natural Disaster Reduction, Yokohama, Japan, 23-

27 May 1994. The Effects of Disaster on Modern Societies pp. 39-49 (English), pp.95-100 (French), pp. 151-156 (Spanish).

1994 Rengers, N., Soeters, R., Terlien, M.T.J. and van Westen, C.J. "An engineering geological GIS data base for mountainous terrain". 7th Congress of the International Association of Engineering Geology. 5-9 September 1994, Lisboa, Portugal.

1994 Rengers, N. (Editor). Engineering Geology of Quaternary Sediments. Proceedings of the 20-year jubilee symposium of the Ingeokring, Delft, pp. 146, Balkema, Rotterdam, The Netherlands.

1993 Rengers, N., Soeters, R. "Applications of satellite Remote Sensing and GIS, to the inventory and analysis of geological hazards: a review of the results of an UNESCO sponsored project of international cooperation". Natural Hazards Mapping - Proceedings of the International Forum Geological Survey of Japan. Report No. 281, pp. 85-99.

1993 Rengers, N. "Mountain hazard mapping in the Andean environment: an international project to integrate Remote Sensing and GIS for hazard mapping". International Forum "Natural Hazards Mapping", Tsukuba (Tokyo) Japan, June 22-24, 1993.

1993 Rengers, N., Soeters, R. "Satellite Remote Sensing and GIS for Landslide Hazard Zonation". International Symposium "Operationalization of Remote Sensing", Enschede, The Netherlands April 19-23, 1993. Volume 3, pp. 133-140 and volume 9 pp. 215-222.

1993 Rengers, N., Soeters, R., van Westen, C.J. "Mountain hazard mapping making use of Remote Sensing and Geographic Information Systems". Proceedings "25th International Symposium on Remote Sensing and Global Environmental Change", Graz, Austria. April 4-8, 1993. Volume 1, pp. I-54-I-65.

1992 Rengers, N. "Mountain hazard mapping in the Andean environment: an international project to integrate remote sensing and GIS for hazard mapping". 29th International Geol. Congress, Kyoto, Japan, 1992.

1992 Rengers, N. "Mountain hazard mapping in the Andean environment: an international project to integrate remote sensing and GIS for hazard mapping". Conference on 'development related research; a second look at the role of the Netherlands', Groningen, December 9-10; Session IV, pp 55-59.

1992 Rengers, N. "Mountain hazard mapping in the Andean environment using geographical information systems, an international research cooperation project". Proc. 1er Simposio Internacional RS y GIS para el Estudio de Riesgos Naturales, pp 446-448, BogotB, March 1992.

1992 Rengers, N., Soeters, R. and van Westen, C.J. "Remote sensing and GIS applied to mountain hazard mapping". Episodes, Vol 15 No 1 pp 36-45, March 1992.

1992 Rengers, N. and Soeters, R. "Applications of satellite remote sensing to the inventory and analysis of geologic hazards". 29th International Geol. Congress, Kyoto, Japan. Symposium I-2-12, 1992.

1992 Rengers, N., Soeters, R., van Riet, P. and Vlasblom, E. "Large-scale engineering geologic mapping in the central Spanish Pyrenees; with separate colour map". ITC Journal 1991 No 4, pp 262-268.

1992 Rengers, N. and Soeters, R. "Applicability of remote sensing in GIS for slope stability hazard zonation: A review with emphasis on the aspects of scale and resolution". Proc. 1er Simposio Internacional RS y GIS para el Estudio de Riesgos Naturales, pp 18-34, BogotB, March 1992.

1991 Rengers, N. and Mhller-Salzburg, L. "Esperimenti Cinematici su Modelli Geomeccanici" (translated from German). Consiglio Nazionale delle Ricerche, Istituto di Ricerca per la Protezione Idrogeologica, Rapporto Interno, pp.1-16.

1991 Rengers, N., Soeters, R. and van Westen, C.J. "Remote sensing capabilities for use in GIS. Applied to mountain hazard mapping: Possibilities for today and wishes for development in the future". ERIM symp. on Remote Sensing in Global Geoscience Processes. Un Boulder, USA, May 4, 1991.

1990 Akinyede, J.O., Turner, A.K. and Rengers, N. "Predictive Modelling of Roadway Costs in Northeastern Nigeria". Transportation Research Record No.1288: Geotechnical Engineering 1990, pp 175-182. National Research Council, Washington DC, USA.

1990 Rengers, N., Soeters, R., van Riet, P.A.L.M. and Vlasblom, E. "Large-Scale Engineering Geological mapping in the Spanish Pyrenees". Proceedings 6th International IAEG Congress, pp.235-243, Balkema, Rotterdam.

1990 Rengers, N., Weir, M. and R'singh, J.W. "Analytical Photogrammetry for Measurement and Plotting of Steep Rock Slopes". Proceedings 6th International IAEG Congress, pp.245-252, Balkema, Rotterdam.

1990 Akinyede, J.O., Turner, K.A. and Rengers, N. "Use of Remote Sensing to Estimate Earthwork Volumes for Road Construction". Proceedings 6th International IAEG Congress, pp.543-550, Balkema, Rotterdam.

1990 Akinyede, J.O. and Rengers, N. "Highway Cost Modelling Using a Geotechnical Information System". Proceedings 6th International IAEG Congress, pp.2349-2358, Balkema, Rotterdam.

1989 Rengers, N. "Discontinuous Rock Mechanics, Part II: Engineering Rock Mechanics in Tunnelling and Foundations of Large Dams", pp. 1-133.

1988 Rengers, N. and Verwaal, W. "Handbook for Rock Mechanics Laboratory Testing" TUD Delft internal publication, pp. 1-84.

1988 Rengers, N. and Soeters, R., Damen, M.C.J. and van Westen, C.J. "Aerial Surveying and Mapping" lecture notes for topic 02-02 of the M.Sc. Course Transportation and Road Engineering in Developing Countries", pp. 1-92.

1988 Price, D.G. and Rengers, N. "Engineering Geological Mapping and Photo Interpretation" TUD Delft lecture notes for the subject q 102, pp. 1-213

1988 Rengers, N., Berghuis, R. and R'singh, J.W. "Recent Developments in the Preparation of Maps and Plans of Steep Rocks lopes with help of stereo-photogrammetry" Delft Progress Report, Vol. 13, Nr. 1/2, pp. 297-306, 1988.

1987 Rengers, N. "Rock Mechnacis laboratory Manual" Geological and Mineral Survey Project, Directorate of Environmental Geology, Soil and Rock Mechanics Analysis Section, pp. 1-78.

1986 Rengers, N. "Use of (stereo-)orthophotography prepared from aerial and terrestrial photographs for engineering geological maps and plans". Proceedings of the 7th Int. Symposium of the Int. Soc. of Photogrammetry and Remote Sensing ISPRS, Comm. VII: Interpretation of Photographic and Remote Sensing Data, Vol. 26, Part 7/2, pp. 665-668.

1985 Rengers, N. and Soeters, R. "Procedures for field description and classification of engineering geological soil and rock units". ITC Publication GOL19, pp. 1-41.

1984 Rengers, N. and Soeters, R. "The effect of map scale on detail and quality of the map content in engineering geological mapping". 27th Int. Geological Congress, Moscow, Theme C.17.1.5.

1984 Rengers, N. "(Stereo-) Orthophotography: A Valuable Tool for Engineering Geological Mapping". 27th Int. Geological Congress, Moscow, Theme C.17.1.5.

1983 Rengers, N. "New Developments in Engineering Geological Mapping using Aerial Photographs". ITC Journal 1983-2, pp. 109-132.

1983 Sissakian, V., Rengers, N. and Soeters, R. "Engineering geological mapping from aerial photography: The influence of photo scale on mapping quality and the use of stereo-orthophotography". ITC Journal 1983-2, pp. 109-118.

1982 Rengers, N. and Soeters, R. "Two examples of gravitational spreading in the area of Bohi (Spanish Pyrenees)". ITC Journal 1982-3, pp. 283-289.

1981 Soeters, R. and Rengers, N. "An engineering geological map from large-scale photography". ITC Journal 1981-2, pp. 140-152.

1981 Price, D.G. (Chairman) and Rengers, N. (Secretary). "Report of the Commission on Site Investigations". Bulletin of the International Association of Engineering Geology IAEG, No. 24, pp. 185-226.

1980 Rengers, N. "Principles of Engineering Geology". Lecture Notes ITC, Enschede (The Netherlands), pp. 1-69 + 2 appendices.

1980 Rengers, N. Geological Nomenclature, Chapter 29: "Engineering Geology". Royal Geological and Mining Society of The Netherlands, pp. 347-365.

1980 Price, D.G. and Rengers, N. "The Development of an International Code of Good Practice for Site Investigations". Proceedings of the 26th International Geological Congress, Paris.

1980 Rengers, N. and Soeters, R. "Regional Engineering Geological Mapping from Aerial Photographs". Bulletin of the IAEG, No. 21, pp. 103-111.

1980 Soeters, R. and Rengers, N. "Dos Ejemplos de Hundimientos Gravitacionales en los Alrededores de Caldas de Bohi (Pirineos Lleidanos)". Libro Jubilar J.M. Rios, Tomo III, pp. 193-202.

1980 Rengers, N. "Remote Sensing for Engineering Geology - Possibilities and Limitations" (translated into Arabic). The Syrian Geological Magazine, Issue Number Five, pp. 92-108.

1979 Rengers, N. "Remote Sensing for Engineering Geology - Possibilities and Limitations". ITC Journal 1979-1, pp. 44-67.

1978 Rengers, N. "Engineering Geological Mapping from Photographs and other Remote Sensing Images". Proceedings of the Int. Symposium on Remote Sensing for the Observation and Inventory of Earth Resources and the Endangered Environment, Freiburg (FRG), Vol. II, pp. 1383-1401.

1978 Rengers, N. "Remote Sensing for Engineering Geology - Possibilities and Limitations". 3rd International Congress of the International Association of Engineering Geology. Panel Contribution to Theme IV, Madrid, Vol. 10, pp. 267-281.

1976 Rengers, N. "Special Applications of Photographs in Engineering Geology". Lecture Notes ITC, Enschede (The Netherlands), pp. 1-68.

1975 Rengers, N. "Short Introductory Course on Photogeology". ITC, Enschede (The Netherlands), pp. 1-53.

1973 Rengers, N. "Friction properties and frictional behaviour of rock separation planes". Proceedings Rock Mechanics Course at the International Centre for Mechanical Sciences, Udine, pp. 187-196.

1973 Rengers, N. "Principios de Ingenieria Geologica". Centro Inter-Americano de Fotointerpretacion CIAF, Bogota (Colombia), pp. 1-93.

1972 Rengers, N. "Das Scherverhalten von verzahnten Trennflächen in Granit". Heft 55, Veröffentlichungen des Institutes für Bodenmechanik und Felsmechanik, Karlsruhe, pp. 124-138.

1971 Rengers, N. "Unebenheit und Reibungswiderstand von Gesteinstrennflächen". Dissertation. Heft 47 der Veröffentlichungen des Institutes für Bodenmechanik und Felsmechanik, Karlsruhe, pp. 1-129.

1971 Fecker, E. and Rengers, N. "Measurement of Large-Scale Roughnesses of Rock Planes by Means of Profilograph and Geological Compass". Proceedings of the Symposium of the Int. Soc. of Rock Mech., Nancy, Vol. 1-I-18.

1970 Rengers, N. "Influence of Surface Roughness on the Friction Properties of Rock Planes". Proceedings of the 2nd International Conference on Rock Mechanics, Belgrado, Vol. I, pp. 229-234.

1969 Rengers, N. "Etudes Theoriques et Experimentales sur les Proprietes du Frottement dans les Fissures Rocheuses". Colloque de Mecanique des Roches, Toulouse, pp. 1.183-1.187.

1969 Rengers, N. "Die Reibung in der Felsmechanik". Heft 38, Veröffentlichungen des Institutes für Bodenmechanik und Felsmechanik, Karlsruhe, pp. 37-39.

1969 Rengers, N. and Mueller, L. Kinematische Versuche an geomechanischen Modellen". Rock Mechanics, Suppl. I, pp. 20-31.

1967 Rengers, N. "Terrestrial Photogrammetry: a Valuable Tool for Engineering Geological Purposes". Rock Mechanics and Engineering Geology, Vol. V/2-3, pp. 150-154.