

## **Dr. KAREN SUDMEIER-RIEUX**

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Dual U.S. and French citizen

### **AREAS OF EXPERTISE**

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- Ecosystem-based solutions to climate change and disaster risk reduction
- Resilience and community-based landslide management in Nepal
- Development of on-line and progressive teaching methods
- Vast international network and successful grant writer

#### **2013 - current SENIOR RESEARCHER AND LECTURER**

*University of Lausanne (UNIL), Risk Group, Institute of Earth Sciences (ISTE), Switzerland*

- Co-developed and currently teaching: “Environment and Livelihoods” (2015/2016, 2016/2017), in collaboration with the Institute of Geography and Sustainable Development (IGSD) at UNIL.
- Developed and delivered lectures in collaboration with numerous institutes and universities (see list below)
- Developed sessions for the Massive Open Online Course (MOOC), “Disasters and Technology” at EPFL, Switzerland (2016) and “Wicked problems in Environmental Education” MOOC, Cornell University (2015)
- Managed interdisciplinary research and policy advocacy project “*Ecosystems Protecting Infrastructure and Communities*” bio-engineering demonstration sites for landslide risk reduction and resilience-building in Nepal, with a team of researchers and practitioners in Switzerland and Nepal (2013-2017).
- Obtained grant and managed interdisciplinary research project on “*Sustainable Land Management in Mountain Regions of Bolivia and Nepal*” 2012-2014, including international workshop
- Directly supervised numerous MSc student theses / mentored PhD candidates

#### **2012 - current UNEP TRAINING AND EDUCATION CONSULTANT**

*United Nations Environment Programme, Post-conflict and disaster management branch  
Geneva, Switzerland*

- Capacity building on Integrated Strategic Environmental Assessments with the Governments of Nepal and Ivory Coast for reconstruction of post-disaster areas.
- Co-organized workshop, “Ecological engineering for disaster risk reduction” with United Nations University, Bonn Germany (2016).
- Developed training package with the World Business Council for Sustainable Development on natural infrastructure for the private sector (2016).
- Developed the MOOC: “Disasters and Ecosystems: Resilience in a Changing Climate”, with numerous partners, attracting over 12,000+ participants and continues to receive international attention (2015)
- Developed Master’s module: “Disasters, Environment and Risk Reduction” in collaboration with the Technical University of Cologne, Germany (2014).
- Developed and conducted national training workshops and training of trainers programmes on: “Ecosystems, disaster risk reduction and sustainable development”, with government agencies and universities worldwide

**2007 - 2011 RESEARCHER/ PhD Candidate**

*University of Lausanne, Faculty of Geosciences and Environment, Switzerland*

- Completed PhD research on a community based operational framework for assessing resilience, risk and vulnerability of mountain populations in Nepal.

**2004 - 2009 IUCN COMMISSION FOR ECOSYSTEM MANAGEMENT & CONSULTANT**

*IUCN – International Union for the Conservation of Nature (IUCN), Gland, Switzerland*

- Thematic lead for IUCN Commission on Ecosystem Management group on Disaster Risk Reduction 2006-2016: organized numerous workshops at IUCN World Conservation Congresses in 2008, 2012, 2016.
- Obtained grants and managed IUCN Innovation programme to coordinate regional work on disaster risk reduction and climate change adaptation (2008).

**1999-2004 MATERNITY LEAVE**

- Educated my two children; edited and translated scientific papers; taught English at community center; volunteered on town's environmental board.

**1997-1999 RESEARCH MANAGER**

*Division of Travel Development, State of Utah, Salt Lake City, USA*

- Managed travel statistics and research on eco-tourism for the State of Utah.

**EDUCATION**

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**2007-2011 PhD GEOSCIENCES AND ENVIRONMENT**

*University of Lausanne, Faculty of Geosciences and Environment, Institute of Geomatics and Analysis of Risk, Switzerland: PhD thesis: "On Landslide Risk, Resilience, Vulnerability and Risk of Mountain Populations in Central-Eastern Nepal"*

**1993-1996 MASTERS OF SCIENCE, FORESTRY RESOURCES**

*University of Minnesota, Department of Forestry Resources, St. Paul, USA  
MSc thesis: "Evaluating the effectiveness of environmental training courses"*

**1988-1991 DIPLÔME D'ÉTUDES (M.A.) INTERNATIONAL DEVELOPMENT**

*Graduate Institute for Development Studies, (IUED) Geneva, Switzerland*

**1985-1988 BACHELOR OF ARTS, INTERNATIONAL RELATIONS AND FRENCH**

*University of Wisconsin, Madison, USA and Université d'Aix-Marseille, Institut de Sciences Politiques, France*

**1981-1984 INTERNATIONAL BACCALAUREATE**

*Norra Real High School, Stockholm, Sweden*

### I. Books and peer reviewed papers

- Sudmeier-Rieux, K., Adhikari, A., Derron, M-H, Devkota, S. Jaboyedoff, M. Leibundgut, G., Michoud, C., Tonini, M., Vicarelli, M., Vulliez, C. (in review) Eco-safe roads in Nepal – Lessons in promoting bio-engineering for erosion and landslide mitigation, *International Journal of Disaster Risk Reduction*
- Devkota, S. Shakya, NM, **Sudmeier-Rieux, K.** Jaboyedoff, M. Van Westen, C. McAdoo, BG, Adhikari, A. (submitted) Development of Monsoonal Rainfall Intensity-Duration-Frequency (IDF) Curves and Empirical Model for data-scarce situations: the case of Central-Western Hills of Nepal, *Catena*
- Vulliez, C. T., M. Sudmeier-Rieux, K. Devkota, S., Derron, M-H. Jaboyedoff, M. (in review) Land use changes, landslides and roads in the Phewa Watershed, Western Nepal from 1979-2016. *Journal of Applied Geography*
- Doswald, N., Estrella, M. and **K. Sudmeier-Rieux** (2017) Ecosystems' Role in Bridging Disaster Risk Reduction and Climate Change Adaptation. In: Kelman, I., Mercer, J. and JC Gaillard. *The Routledge Handbook of Disaster Risk Reduction, including Climate Change Adaptation*, pp. TBD
- Renaud, F., **Sudmeier-Rieux, K.**, Estrella, M. and U. Nehren (2016) *Ecosystem-Based Disaster Risk Reduction and Adaptation in Practice*, Springer, 628pp.
- Sudmeier-Rieux, K., Jaboyedoff, M. Fernandez, M., Penna, I. and JC Gaillard (2016) *Identifying Emerging Issues in Disaster Risk Reduction, Migration, Climate Change and Sustainable Development - Shaping Debates and Policies*, Springer 296pp.
- Schwilch, G., Adhikari, A, Jaboyedoff, M., Jaquet, S., Kaenzig, R, Liniger, H.P., Penna, I., **Sudmeier-Rieux, K.** and B.R. Upreti (2016) Impacts of Outmigration on Land Management in a Nepali mountain area, In: Sudmeier-Rieux, K., Jaboyedoff, M., Fernandez, M., Penna, I. and JC Gaillard (2016) *Identifying Emerging Issues in Disaster Risk Reduction, Migration, Climate Change and Sustainable Development - Shaping Debates and Policies*, Springer publisher, pp.177-196
- Jaboyedoff, M . Michoud, C. Derron, M-H. Voumard, J. Leibundgut, G. **Sudmeier-Rieux, K.** Nadim, F. and E . Leroi, (2016) Human-induced landslides: toward the analysis of anthropogenic changes of the slope environment. *Landslides and Engineered Slopes. Experience, Theory and Practice* Proceedings of the 12th International Symposium on Landslides (Napoli, Italy, 12-19 June 2016) Edited by Stefano Aversa, Leonardo Cascini, Luciano Picarelli, and Claudio Scavia
- Leibundgut, G., **Sudmeier-Rieux, K.** Devkota, S., Jaboyedoff, M., Derron, M-H., Penna, I. Nguyen, L. (2016) Rural earthen roads impact assessment in Phewa watershed, Western region, Nepal. *Geoenvironmental disasters* 3 (13), 2016
- Jaquet, S., Schwilch, G., Hartung-Hofmann, F., Adhikari, A., **Sudmeier-Rieux, K.**, Shrestha, G., Liniger, H.P. and T. Kohler (2015) Does outmigration lead to land degradation? Labour shortage and land management in a western Nepal watershed *Applied Geography* 62 (2015) 157-170
- Sudmeier-Rieux, K., Fra Paleo, U., Garschagen, M., Estrella, M., Renaud, F.G., and M. Jaboyedoff (2014) Opportunities, incentives and challenges to risk sensitive land use planning. Lessons from Nepal, Spain and Vietnam. *IJDRR*, Nov. 14, 2014, 10.1016/j.ijdr.2014.09.009
- Sudmeier-Rieux, K. (2014) Resilience – an emerging paradigm of danger or of hope? *Disaster Prevention and Management*, Volume 23, issue 1, pp. 67 - 80
- Renaud, F, **Sudmeier-Rieux, K.** Estrella, M. (2013) *The Role of Ecosystems in Disaster Risk Reduction* United Nations University Press, Tokyo, 489pp.
- Jaquet, S, **Sudmeier-Rieux, K.** Derron, M-H, Jaboyedoff, M. (2013) “Community forests, landslides and livelihoods in Nepal” In: Renaud, F, Sudmeier-Rieux, K, Estrella, M (eds.) *The Role of Ecosystems in Disaster Risk Reduction* United Nations University Press, Tokyo, pp. 343-368
- Sudmeier-Rieux, K. (2013) “Operationalizing ‘resilience’ for disaster risk reduction in mountainous Nepal”, *Disaster Prevention and Management* (22) 4
- Sudmeier-Rieux K., F. P., U., Garschagen, M., Estrella, M., Renaud, F.G., Jaboyedoff, M. (2013) Opportunities, incentives and challenges to risk sensitive land use planning. Lessons from Nepal, Spain and Vietnam. *UNISDR, Global Assessment Report Technical Paper and submitted to the International Journal for Disaster Risk Reduction*, 30 pp.
- Mori, A.S., Spies, T.A., **Sudmeier-Rieux, K.** and A. Andrade (2013) Reframing ecosystem management in the era of climate change: Issues and knowledge from forests, *Biological Conservation* 165 (2013) 115–127
- Sudmeier-Rieux, K, Jaquet, S, Derron, M-H, Jaboyedoff, M, Basyal, GK. (2013) A Neglected Disaster: Landslides and Livelihoods in Central-Eastern Nepal. In: Margottini, C., Canuti, P., Sassa, K. (Eds.) *Landslide Science and Practice Volume 4: Global Environmental Change* (2013) pp 169-176
- Sudmeier-Rieux K, Jaboyedoff M, Breguet A, Dubois J. (2011) “The 2005 Pakistan Earthquake

Revisited: Methods for Integrated Landslide Assessment”, *Mountain Research and Development*, 31(2):112-121

Sudmeier-Rieux, K, Jaquet, S, Derron, M-H, Jaboyedoff, M, Devkota, S. (2011) A Case Study of Landslides and Coping Strategies in Two Villages of Central-Eastern Nepal, *Journal of Applied Geography*, Vol. 32, 680-690pp.

## II. Solicited publications

- Sudmeier-Rieux, K. (2012) "Ecosystem Approach to Disaster Risk Reduction: basic concepts and recommendations to governments, with a special focus to Europe" A special report for the Council of Europe, European and Mediterranean Major Hazards Agreement (EUR-OPA) 48 pp.
- Sudmeier-Rieux, K, Gaillard, JC, Sharma S. (2012) "Nepal: Landslides, Flooding and Adaptation Responses" Emerald Books Volume on *Climate Change Modeling for Local Adaptation in the Hindu Kush-Himalayan Region*, Edited by Armando Lamadrid and Ilan Kelman, Oslo: Center for International Climate and Environmental Research – Oslo (CICERO)
- Sudmeier-Rieux, K. and N. Ash (2012) "Investing in Natural Capital and Ecosystem-Based Adaptation" *IPCC Special Report on Extreme Events* (2011) p. 370-371.
- Sudmeier-Rieux, K. "Landslides and Rural roads in Nepal" textbox contribution to: Wisner, B, Gaillard JC and Kelman, I. (2011) *Handbook of Hazards and Disaster Risk Management and Reduction*. Routledge
- Gaillard, JC, **Sudmeier-Rieux**, K, Kelman, I and B. McAdoo (2011) "Cross-cultural interactions." In: Penuel BK and Statler M. (Eds.) *Encyclopedia of Disaster Relief*. Thousand Oaks, CA: SAGE Publications: 91-94
- Kelman, I, Gaillard, JC, Sudmeier-Rieux, K. (2011) Community response. In: Penuel BK & Statler M. (Eds.) *Encyclopedia of Disaster Relief* Thousand Oaks, CA: SAGE Publications: 79-82

## III. Other publications

- Devkota, S., **Sudmeier-Rieux, K.**, Penna, I., Eberle, S., Jaboyedoff, M., Adhikari, A. and R. Khanal (2014) *Community-based bio-engineering for eco-safe roadsides in Nepal*. Lausanne : University of Lausanne, International Union for Conservation of Nature, Nepal and Department of Soil Conservation and Watershed Management, Government of Nepal, 42 pp.
- Sudmeier-Rieux, K., Ash, N, and R. Murti (2013) *Environmental Guidance Note to Disaster Risk Reduction, Revised*. Gland: IUCN, 40p
- Sudmeier-Rieux, K. (2011) "On Landslide Risk, Resilience, Vulnerability and Risk of Mountain Populations in Central-Eastern Nepal" PhD Thesis, University of Lausanne, 308pp.
- Sudmeier-Rieux, K, Ash, N. and I. Kelman (2009) « Keeping Safe in Perilous Times, Protection against natural hazards » In : McNeeley, J. Mittermeier, R.A., Brooks, T., Boltz, F. and Ash, N. (Eds) (2009) *The Wealth of Nature, Ecosystem Services, Biodiversity and Human Well Being, Cemex Conservation Book Series*, pp. 101-110
- Sudmeier-Rieux, K. and N. Ash (2009) *Environmental Guidance Note to Disaster Risk Reduction*, Gland:IUCN, 40p.
- Sudmeier-Rieux, K, Jaboyedoff, M, Breguet, A, Dubois, J, Peduzzi, P, Qureshi, R., Jaubert, R. (2008) "Strengthening Decision-Making Tools for Disaster Risk Reduction: An example of an integrative approach from Northern Pakistan", *Magazine of the International Human Dimensions Programme for Global Environmental Change, October 2008, Issue 2. IHDP Bonn, Germany:74-77* <http://www.ihdp.unu.edu/file/IHDP+Updates/IHDP+Update+2008+2?menu=60>
- Sudmeier-Rieux, K, Tapia, R., M, Breguet, A, Dubois, J., Jaboyedoff, M., Peduzzi, P, Qureshi (2010) Mapping land use change in post-earthquake AJK, Pakistan: lessons learned and challenges. In: Kaufmann, V. and Sulzer, W. (2010) *Grazer Schiften der Geographie und Raumforschung*, Proceedings of the 10<sup>th</sup> International Symposium on High Mountain Remote Sensing Cartography, Kathmandu, Nepal. 8-11 September, 2008, ICIMOD, pp. 151-158.
- Sudmeier-Rieux, K, Quereshi, A.R, Peduzzi, P, Jaboyedoff, M, Breguet, A, Dubois, J, Jaubert, R. (2008) An Interdisciplinary approach to understanding landslides and risk management: A case study from earthquake affected Kashmir. Mountain Forum, *Mountain GIS e-conference*, January 14-25 2008. [http://www.mtnforum.org/rs/ec/scfiles/Neelum\\_PAK\\_landslides\\_2007.pdf](http://www.mtnforum.org/rs/ec/scfiles/Neelum_PAK_landslides_2007.pdf)
- Sudmeier-Rieux, K. Reflections on the GIAN Experience in the Context of a Case Study on Disaster Risk Reduction in Northern Pakistan. 2008. *Les Liaisons Fructueuses, Des rencontres insolites de disciplines et d'institutions : l'aventure du Réseau Universitaire international de Genève à l'aube du XXI<sup>e</sup> siècle*. RUIG : Genève:30-35
- Sudmeier-Rieux, K, Peduzzi, P., Quereshi, A.R., Jaboyedoff, M., Jaubert, R., Rietbergen, S., Nessi, J., Breguet, A., Dubois, J. (2007) *Disaster Risk, Livelihoods and Natural Barriers: Strengthening Decision-Making Tools for Disaster Risk Reduction, a Case Study from Northern Pakistan*, Islamabad:IUCN-Pakistan:70 p.

[http://www.iucn.org/about/union/commissions/cem/cem\\_resources/index.cfm?uNewsID=1663](http://www.iucn.org/about/union/commissions/cem/cem_resources/index.cfm?uNewsID=1663)

Sudmeier-Rieux, K. 2007. *Lessons from Landslides*. The World Conservation Magazine, IUCN, Gland Switzerland, pp. 10-12

[http://www.iucn.org/resources/world\\_conservation/2008\\_issue1/index.cfm](http://www.iucn.org/resources/world_conservation/2008_issue1/index.cfm)

Sudmeier-Rieux, K, Masundire, H, Rizvi, A, Rietbergen, S, (Eds.) 2006. *Ecosystems, livelihoods and Disasters: An integrative approach to disaster risk management*, IUCN, Gland, Switzerland 70pp.

## **LECTURES AND PRESENTATIONS**

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- Lecture: CERG-C, Geneva, On landslide risk and forests in Nepal, May 2017
- Panelist: UN Food and Agriculture Organisation, "Biodiversity and disasters", Rome, Jan. 2017
- Panelist: Convention on Biological Diversity, "Biodiversity and disasters", Cancun, Mexico, December 2017
- Workshop: Learning tools for ecosystem-based disaster risk reduction. IUCN World Conservation Congress, Hawaii, September 2016
- Lecture: CERG-C, Geneva, On landslide risk and forests in Nepal, May 2016
- Lecture: UNU Maastricht, On risk and resilience for disaster risk reduction, March 2016
- Lecture: Stanford University, Course: D3 Tsunamis and risk reduction, February 2016
- Keynote: United Nations Office for Disaster Reduction (UNISDR) Science and Technology Conference, "Research gaps in risk reduction", January 2016
- Presentation: Eco-Safe Roads in Nepal/ EPIC project. Consultative Workshop on Landslide Mitigation, organized by the Department of Soil Conservation and Watershed Management, Kathmandu, Nepal, 2015
- Keynote: European Union Think Tank meeting on research priorities for nature-based solutions, Horizon 2020. Brussels, 2014
- Keynote speech: Ecosystems and Disasters, Why do they matter to sustainable development? International Conference on Sustainable Development Goals in Latin America, San Luis de Potosi, Mexico, 2014
- Keynote speech: Toward Eco-Safe Roads in Nepal. PEDRR Science-Policy Workshop, Bogor Indonesia, 2014
- Keynote lecture: Ecosystem based disaster risk reduction at Chinese Research Academy for Environmental Sciences, 2013
- Training on Ecosystem based disaster risk reduction at UNEP National Training workshop, Port au Prince, Haiti, 2013
- Launching of Master's course: Disasters, Environment and Risk Reduction at World Environmental Education Congress, Marrakesh, Morocco, 2013
- Teaching of MSc module: Disasters, Environment and Risk Reduction, ITC, Netherlands, 2013
- Teaching of MSc module: Disasters, Environment and Risk Reduction at CERG-C and CERAH courses, University of Lausanne, and "Metabolisme urbaine", UNIL-IGS, 2013, 2014, 2015, 2016
- Lectures on "Culture and Risk Communications" in UNIL-ISTE course "Risk Communications", 2012, 2013, 2014, 2015, 2016
- Keynote speaker at Cologne University for Applied Sciences, introduction to Ecosystem based Disaster Risk Reduction, 2012
- Training on Ecosystem based disaster risk reduction, Swiss Development Cooperation, Bern and IUCN Asia Regional Training, Thailand, 2012

## **GRANTS**

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2016	Swiss Commission for Research Partnerships with Developing Countries (KFPE), Swiss Academy of Science "Scientific exchange on landslide risk, Nepal-Switzerland" (10,000 CHF <sup>1</sup> )
2015	University of Lausanne, Faculty of Geoscience and Environment – Fonds d'Investissement, "Rapid hazard and land use mapping prototype in post-earthquake Nepal" (20,000 CHF)
2014	University of Lausanne, Faculty of Geoscience and Environment - 10 <sup>th</sup> Anniversary Workshop grant: International Workshop, " <i>Linking Sustainable Development</i> ,

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<sup>1</sup> \* 1 Swiss Franc (CHF) is roughly equivalent to 1 USD (16 September, 2016)

*Migration, Disaster Risk Reduction and Climate Change Adaption – Emerging Issues*  
(35,000 CHF)

2012-2016	German Government (BMU) and International Union for Conservation of Nature (IUCN) Ecosystems Protecting Infrastructure and Communities (EPIC) “ <i>Nepal bio-engineering for more resilient communities</i> ” (470,000 CHF). Co-developed grant with IUCN.
2012-2014	Swiss Network for International Studies, “ <i>Sustainable Land Management in Mountain Regions of Bolivia and Nepal in the Context of Outmigration, Climate Change and Disaster Risk Reduction</i> ” (270,000 CHF)
2009-2011	Swiss National Science Foundation, Interdisciplinary fund: “ <i>Toward an Operational Framework for Assessing Resilience: Case Studies from Eastern Nepal</i> ” (186,000 CHF)
2008- 2009	IUCN Innovation Fund and Communications: <i>Disaster Risk and Ecosystems, IUCN, Gland</i> (100,000 CHF)
2008	Université de Lausanne, Faculté de Géosciences, Seed grant for field research in Eastern Nepal (5,000 CHF)
2006-2007	Geneva International Academic Network Disaster Risk, Livelihoods and Natural Barriers: “ <i>Strengthening Decision-Making Tools for Disaster Risk Reduction, a Case Study from Northern Pakistan</i> ” (50,000CHF)

## **AWARDS and BOARDS**

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**AWARDS:** Emerald publishers “Commendable paper” award for the article, “Resilience – An Emerging Paradigm of Hope or Danger” (2014) *Disaster Prevention and Management*

**BOARDS:**

1. International Union for Conservation of Nature, Commission on Ecosystem Management, Thematic lead, Ecosystem-based disaster risk reduction
2. PLoS Currents – Disasters, Editorial Board
3. International Disaster Risk Conference Scientific Board
4. Journal of Environmental Hazards, Editorial Board
5. Center for Natural Resources and Development, Technical University of Cologne, Germany

## **OTHER**

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**LANGUAGES:** Native English-speaker, fluent French and Swedish; very basic Spanish.

**RESEARCH AREAS:** Nepal, 2008 - 2016; Pakistan 2006/07.

**INTERESTS:** Cross-country skiing and just about anything related to mountains.