

Landslides

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# The Sixth World Landslide Forum (WLF6), Florence, 2023



## Introduction

The 6th World Landslide Forum (WLF6; <https://wlf6.org>) was held from November 14 to 17, 2023, in Florence at the Palazzo dei Congressi (Fig. 1).

The WLF6 was focused on landslide science for sustainable development as a contribution to the Kyoto 2020 Commitment for Global Promotion of Understanding and Reducing Landslide Disaster Risk (KLC2020) (Sassa 2021), a commitment to the Sendai Landslide Partnerships 2015–2025 (Sassa 2015), the Sendai Framework for Disaster Risk Reduction 2015–2030, the 2030 Agenda Sustainable Development Goals, the New Urban Agenda, and the Paris Agreement (Casagli et al. 2022, 2023).

The Forum provided a platform for fruitful collaboration between landslide researchers and stakeholders to define common priority actions for landslide risk reduction at the global level. The Forum addressed key aspects related to landslide analysis, landslide monitoring and early warning, landslide modeling, landslide hazard and risk assessment, mitigation techniques, landslide triggering mechanism, and climate change.

The 6th World Landslide Forum was attended by a broad international audience interested in landslide disaster risk reduction: research and academic institutions, UN organizations, EU institutions and agencies, national governments and local authorities, non-governmental organizations with an interest in and activities related to disaster risk reduction, international and national civil protection and disaster relief organizations and agencies, and the private sector engaged in research, development, and practical application of landslide risk reduction technologies and solutions. In particular, the WLF6 was attended by more than 1200 participants from 61 countries. In total, 853 abstracts were submitted: 643 oral presentations and 210 e-posters.

The Forum was a sustainable event in line with the 2030 Agenda and the Sustainable Development Goals. The venue, the Palazzo dei Congressi, is located in the city center of Florence, in a strategic position within walking distance of the city's main attractions. No printed material was provided to the participants. The detailed scientific program, the schedule, and all general information were available on the congress app. The program and the proceedings of the Forum were distributed to the participants in electronic form and can be downloaded from the Forum's website ([wlf6.org](https://wlf6.org)).

The 6<sup>th</sup> World Landslide Forum was awarded the Medal of the President of the Italian Republic, which is awarded for events of great scientific and cultural importance (Fig. 2).

## Organizers, organizing committees, patronage, partners, and sponsors

### Organizers

International Consortium on Landslides (ICL), UNESCO Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards, University of Florence, Italy, and the Global Promotion Committee of International Programme on Landslides and KLC 2020 (GPC/IPL-KLC).

### ICL supporters

United Nations Educational, Scientific and Cultural Organization (UNESCO), World Meteorological Organization (WMO), Food and Agriculture Organization (FAO), United Nations Office for Disaster Risk Reduction (UNDRR), United Nations University (UNU), International Science Council (ISC), World Federation of Engineering Organizations (WFEO), International Union of Geological Sciences (IUGS), International Union of Geodesy and Geophysics (IUGG)

### Forum Chair

Nicola Casagli, University of Florence

### Co-chairs

Kyoji Sassa, Professor Emeritus, Kyoto University, Secretary General of ICL

Paolo Canuti, Chair holder, UNESCO Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards, University of Florence

### Medal and patronage

WLF6 has received the Medal of the President of the Italian Republic and the patronage from 37 public institutions, including five Italian Ministries: Minister of Environment, Minister of University and Research, Minister of Civil Protection, Minister of the Interior, and Minister of Infrastructure and Transport.



Fig. 1 WLF6 logo

#### Partners

It has received the partnership from 19 national and international associations.

#### Secretariat

Secretary General: Veronica Tofani, University of Florence

It was composed of 16 members from the University of Florence (Casagli et al. 2023).

#### International scientific committee

It was composed of 24 members including ICL members and internationally recognized scientists in the field of landslide research and landslide risk reduction (Casagli et al. 2023).

#### Local organizing committee

It was composed of 42 members including the members of the ICL Italian network and staff from University of Florence (Casagli et al. 2023).

#### Sponsors and exhibitors

21 sponsors and 27 exhibitors

#### Report

#### General information

The Forum was planned for November 14–17, 2023 (Table 1). November 13 was dedicated to the ICL/IPL meeting. The opening plenary session was held on November 14. Parallel scientific sessions were held from November 15 to 17. Eleven workshops



Fig. 2 Medal of the President of the Italian Republic

**Table 1** WLF6 general program

Day/time	Morning 8:30–13:00	Afternoon 14:30–18:00	Evening
Monday 13th		ICL/IPL meeting	
Tuesday 14th	Opening greetings from organizers, ICL supporting organizations, and host organizations KLC2020 General Conference 2023 with high-level panel discussion	WLF6 plenary lectures Recognition and Awards Ceremony	Welcome cocktail
Wednesday 15th	Parallel sessions		
Thursday 16th	Parallel sessions		Banquet
Friday 17th	Parallel sessions	Closing ceremony	

and side events were organized during the Forum. The closing plenary session took place on November 17 in the afternoon.

A total of 1202 participants from 61 countries from 4 continents attended the Forum (Tables 2 and 3).

### Opening plenary session

Program of the opening plenary session:

- 9:00–10:30 Opening Ceremony

Opening address from the primary organizers

- Nicola Casagli—ICL President and Chair of the 6th WLF
- Paolo Canuti—UNESCO Chairholder prevention and sustainable mitigation of geo-hydrological hazard

Greetings from United Nations organizations

- Tshilidzi Marwala—Under-Secretary-General of the United Nations/Rector of the United Nations University

- Mami Mizutori—UN Special Representative of the Secretary-General for Disaster Risk Reduction
- Qu Dongyu—Director-General of the Food and Agriculture Organization (FAO)
- Elena Manaenkova—Deputy Secretary-General of the World Meteorological Organization (WMO)
- Lidia Brito—Assistant Director-General for Natural Sciences of United Nations Educational, Scientific and Cultural Organization (UNESCO)

Greetings from scientific organizations

- Motoko Kotani—Vice-President for Science and Society of the International Science Council (ISC)
- Mustafa B. Shehu—President of the World Federation of Engineering Organizations (WFEO)
- John Ludden—President of the International Union of Geological Sciences (IUGS)
- Chris Rizos—President of the International Union of Geodesy and Geophysics (IUGG)

Welcome messages from host organizations in Italy

- Marco Pierini—Vice Rector of Florence University
- Nello Musumeci—Minister for Civil Protection
- Anna Maria Bernini—Minister of University and Research
- Gilberto Pichetto Fratin—Minister of Environment

**Table 2** WLF6 in figures

Participants	1202
Countries/regions	61
Plenary sessions	2
Parallel sessions	48
Oral presentations	643
E-poster presentations	210
Workshops and side events	11
Exhibitors' booths	27

- 10:30–11:00 Coffee break
- 11:00–13:00 KLC2020 General Conference 2023 & Panel Discussion

Opening of the KLC2020 General Conference 2023  
 Signing ceremony of new KLC2020 signatories  
 Panel discussion “KLC2020 Review and way forward”  
 Adoption of the Florence Declaration on Landslide Risk Reduction  
 Joint photo of the panelists and the new KLC2020 signatories

**Table 3** WLF6 registered participants

No.	Country/region	Participants
1	Albania	1
2	Algeria	3
3	Armenia	1
4	Australia	3
5	Austria	29
6	Belgium	9
7	Brazil	6
8	Republic of Cameroon	1
9	Canada	18
10	Chile	4
11	People's Republic of China	97
12	Chinese Taipei	40
13	Colombia	6
14	Congo	4
15	Croatia	15
16	Czech Republic	16
17	Denmark	1
18	Ecuador	1
19	Egypt	1
20	El Salvador	1
21	France	21
22	Georgia	4
23	Germany	39
24	Greece	12
25	Hungary	1
26	Iceland	3
27	India	25
28	Indonesia	1
29	Iran	1
30	Italy	524
31	Japan	63
32	Malaysia	1
33	Marocco	1
34	Mexico	2
35	Nepal	5

**Table 3** (continued)

No.	Country/region	Participants
36	Netherlands	7
37	New Zealand	8
38	North Macedonia	1
39	Norway	32
40	Philippines	3
41	Poland	23
42	Portugal	7
43	Puerto Rico	1
44	Republic of Cyprus	2
45	Romania	4
46	Russian Federetion	1
47	Rwanda	1
48	Serbia	1
49	Slovakia	3
50	Slovenia	5
51	South Korea	14
52	Spain	18
53	Sri Lanka	11
54	Sweden	2
55	Switzerland	32
56	Thailand	2
57	Turkey	7
58	Uganda	1
59	UK	18
60	USA	37
61	Uzbekistan	1
<b>Total participants</b>		<b>1202</b>

- 13:00–14:00 Lunch
- 14:00–16:00 WLF6 Plenary lectures

Olivier Dewitte—Royal Museum for Central Africa  
*Landslides in tropical environments: insight from the East African Rift*  
 Xuanmei Fan—Chengdu University of Technology  
*Mechanisms and prediction of earthquake and climate change induced cascading hazards*  
 Jonathan Godt—USGS  
*New US National Strategy for Landslide Loss Reduction*



**Fig. 3** Joint photo of the panelists and the new KLC2020 signatories

Giovanni B. Crosta—Università degli Studi di Milano Bicocca  
*Landslides impact on structures and infrastructures*

- 16:00–16:30 Coffee break
- 16:30–18:00 Recognition and Awards Ceremony

World Centers of Excellence on Landslide Risk Reduction  
 Varnes Medals  
 IPL-KLC Award for Success  
 Hiroshi Fukuoka IPL Award  
 Oldrich Hungr Awards

During the KLC2020 General Conference 2023 & Panel Discussion, the Florence declaration on risk reduction has been adopted. The declaration is a further commitment to KLC2020, in order to share information and best practices, support research and development of new technologies, and build capacity at all levels to improve landslide preparedness and response (Figure 3). The full text of the Declaration is available at <https://wlf6.org/florence-declaration/>.

During the recognition and awards ceremony, the Varnes Medal, the Oldrich Hungr Award, the Fukuoka Award, and the IPL-KLC Award for Success were presented. The Varnes Medal 2022 goes to Prof. Edward N. Bromhead and Prof. Charles Ng, and the Varnes Medal 2023 to Prof. Irasema Alcántara-Ayala. The Hiroshi Fukuoka IPL Prize is awarded to Prof. Vít Vilímek and Prof. Jan Klimeš. The Oldrich Hungr Awards were recognized to Clarence Choi and Tommaso Carlà for 2022 and 2023, respectively, while the IPL-KLC Award for Success was awarded to Maneesha V. Ramesh.

Parallel sessions program

The Forum was organized in the following scientific themes:

*Theme 1: Kyoto Landslide Commitment for sustainable development*

Coordinators: Kyoji Sassa, Matjaž Mikoš, Shinji Sassa, Khang Dang

*Theme 2: Remote sensing, monitoring and early warning*

Coordinators: Veronica Tofani, Michel Jaboyedoff, Jan Klimes, Hans-Balder Havenith

*Theme 3: Testing, modeling and mitigation technique*

Coordinators: Binod Tiwari, Kazuo Konagai, Sabatino Cuomo, Xuanmei Fan

*Theme 4: Mapping, hazard, risk assessment and management*

Coordinators: Paola Reichenbach, Snježana-Mihalić Arbanas, David Huntley, Maneesha Ramesh

*Theme 5: Climate change, extreme weather, earthquakes and landslides*

Coordinators: Vít Vilímek, Alexander Strom, Stefano Luigi Gariano, Dalia Kirschbaum

*Theme 6: Progress in landslide science and applications*

Coordinators: Zeljko Arbanas, Fawu Wang, Faisal Fathani, Beena Ajmera

For each theme, several sessions were proposed. In total, 48 scientific sessions were organized, 643 oral presentations were delivered, and 210 e-posters were presented (Table 2). The final list of the sessions with the number of oral and e-poster presentations is reported in Table 4. The WLF6 Proceedings can be freely downloaded from [https://wlf6.org/wp-content/uploads/2023/12/WLF6\\_ABSTRACT-BOOK\\_FINAL.pdf](https://wlf6.org/wp-content/uploads/2023/12/WLF6_ABSTRACT-BOOK_FINAL.pdf).

**Table 4** WLF6 scientific sessions, number of oral and poster presentations

Theme	Session number Session title	Conveners	Oral presentations	E-poster presentations
1	1.1 INTERNATIONAL PROGRAMME ON LANDSLIDES AND GLOBAL AND INTERNATIONAL ACTIVITIES FOR KLC2020	Kyoji Sassa Matjaž Mikoš, Irasema Alcántara-Ayala Qunli Han Kazuo Konagai, Claudio Margottini, Snježana Mihalić Arbanas	23	3
	1.3 CASCADING MULTI-HAZARD RISKS: SUBMARINE LANDSLIDES, TSU-NAMIS, AND IMPACTS ON INFRASTRUCTURES	Shinji Sassa David Tappin, Finn Løvholt	14	2
	1.4 LANDSLIDES AND SOCIETY: CULTURAL, EDUCATIONAL, ETHICAL AND SOCIAL ASPECTS IN SUSTAINABLE LANDSLIDE RISK REDUCTION	Matjaž Mikoš Irasema Alcántara-Ayala, Beena Ajmera Peter T. Bobrowsky, Giuseppe Di Capua, Claudio Margottini, Silvia Peppoloni	15	9
	1.7 CULTURAL HERITAGE THREATENED BY LANDSLIDES: FROM EARTH OBSERVATION AND IN SITU INVESTIGATION TO SUSTAINABLE MITIGATION MEASURES	Claudio Margottini William Frodella, Daniele Spizzichino, Nacho Gallego Revilla Stefano Morelli Roberta Boni, Rosa María Mateos Ruiz	9	8
	1.9: LANDSLIDES AND OTHER GROUND FAILURES TRIGGERED BY THE FEBRUARY 6, 2023 M7.7 AND M7.6 TURKEY-KAHRAMANMARAS EARTHQUAKES	Candan Gokceoglu, Janusz Wasowski, Tolga Gorum, Kemal Onder Çetin, Claudio Margottini,	5	0

**Table 4** (continued)

Theme	Session number Session title	Conveners	Oral presentations	E-poster presentations
2	2.1 CASE STUDIES AND STATE OF THE ART ON LANDSLIDE MONITORING	Philipp Marr Thomas Glade, Chris Massey, Dalia Kirschbaum, Raymond W.M. Cheung	26	14
	2.2 INTEGRATED APPLICATION OF DEFORMATION MONITORING TECHNIQUES AND PROCESS ANALYSES OF DEEP-SEATED LANDSLIDES	Christine Fey Christina Rechberger, Chiara Crippa, Louise Vick	14	7
	2.3 PROACTIVE RISK MANAGEMENT BASED ON INNOVATIVE MONITORING METHODS	Daniele Giordan Lars Harald Blikra, Giovanni B. Crosta, Jean-Philippe Malet, Nick J. Rosser	7	1
	2.4 MULTIPLATFORM AND MULTISENSOR APPLICATIONS FOR LANDSLIDES CHARACTERIZATION AND MONITORING	Guglielmo Rossi Stratis Karantanellis, Lidia Loiotine, Carlo Tacconi Stefanelli, Francesco Mugnai, Marco Mulas	14	5
	2.5 GEOPHYSICAL IMAGING, CLOSE-RANGE SENSING AND GEOMODELING OF LANDSLIDE PROCESSES	Hans-Balder Havenith Veronica Pazzi, Salvatore Martino, Anne-Sophie Mreyen, Romy Schlögel	11	4
	2.7 INVESTIGATION OF MASS MOVEMENTS IN ALPINE ENVIRONMENTS WITH REMOTE SENSING METHODS	Federico Agliardi Benedetta Dini, Mylène Jacquemart, Andrea Manconi, Alessandro Mondini	12	8
	2.8 EARTH OBSERVATION DATA FOR LANDSLIDE PREDICTION AND RISK ASSESSMENT	Maria Teresa Brunetti Giriraj Amarnath, Silvia Peruccacci, Thomas Stanley, Luca Brocca	7	0
	2.9 PAST, PRESENT AND FUTURE OF SATELLITE INTERFEROMETRY FOR LANDSLIDES	Matteo Del Soldato Lorenzo SOLARI, Guadalupe BRU, Qingkai MENG, Rosa Maria PALAU BERASTEGUI	21	3
	2.10 SOIL MOISTURE AND RAINFALL MEASURED THROUGH REMOTE SENSING FOR MONITORING AND PREDICTING LANDSLIDES	Massimiliano Bordoni Luca Ciabatta, Evelina Volpe, Thomas Stanley	7	2
	2.11 ENHANCEMENTS IN LANDSLIDE DATA ANALYSIS FOR IMPROVED UNDERSTANDING, FORECASTING AND EARLY WARNING SYSTEMS	Katsuo Sasahara Michael Hendry, Emanuele Intrieri, Renato Maciotta Pulisci, David Elwood,	13	5
	2.12 LANDSLIDE EARLY WARNING SYSTEMS: INNOVATIONS AND APPLICATIONS	Samuele Segoni Manfred Stähli, Neelima Satyam, Annette Patton, Luca Picuillo, Graziella Devoli	21	10

Table 4 (continued)

Theme	Session number Session title	Conveners	Oral presentations	E-poster presentations
3	3.1 RECENT ADVANCEMENT IN LABORATORY AND IN-SITU TESTING METHODS FOR LANDSLIDE AND SLOPE ANALYSES	Binod Tiwari Beena Ajmera	15	5
	3.2 NATURAL FIELD LABORATORIES ON LANDSLIDES	Salvatore Martino Dagar Bakun-Mazor, Chiara Colombero, Martin Ziegler	11	1
	3.3 RECENT ADVANCEMENT ON SLOPE STABILITY AND DEFORMATION ANALYSIS	Binod Tiwari Beena Ajmera	14	1
	3.4 PHYSICAL AND NUMERICAL MODELLING OF LANDSLIDE-STRUCTURE-INTERACTION (LSI)	Sabatino Cuomo Mario Martinelli, Vikas Thakur, Clarence Choi	14	2
	3.5 ROCK FALLS AND ROCK AVALANCHES	Giovanni Crosta Franck Bourrier, Anna Giacomini, Shiva Pudasaini	18	7
	3.6 LANDSLIDES PREDICTION: ADVANCED TECHNIQUES AND ALTERNATIVE DATA SOURCES FOR UNCERTAINTY ASSESSMENT AND REDUCTION	David J. Peres Francesco Marra, Elena Leonarduzzi, Chao Zhao, Ben MIRUS	12	2
	3.7 ADVANCEMENTS IN LANDSLIDE AND DEBRIS FLOW MITIGATION USING GEOSYNTHETICS AND OTHER SOLUTIONS	Kazuo Konagai Binod Tiwari, Jouni Jokela, Daniele Cazzuffi, Sabatino Cuomo, Zeljko Arbanas	10	0
	3.9 GEOTECHNICAL MITIGATION OF LANDSLIDE HAZARD THROUGH NATURE-BASED SOLUTIONS (NBS)	Marco Uzielli Vittoria Capobianco, Federico Preti, Lorenzo Borselli	10	0



**Table 4** (continued)

Theme	Session number Session title	Conveners	Oral presentations	E-poster presentations
4	4.1 REGIONAL AND GLOBAL LANDSLIDE INVENTORIES: PARAMETERS AND PRINCIPLES OF COMPILATION	Anja Dufresne Xuanmei Fan, Alexander Strom	12	5
	4.2 SPATIAL LANDSLIDE ASSESSMENTS AND BEYOND: NEW CHALLENGES IN MAPPING, MODELLING, VALIDATION AND SCENARIO BUILDING	Thomas Glade Helene Petschko, Stefan Steger, Bianca Carvalho Vieira, Susana Pereira	28	14
	4.3 WEAK POINTS IN LANDSLIDE SUSCEPTIBILITY MODELLING	Txomin Bornaetxea Anika Braun, Ivan Marchesini	17	4
	4.4 SHALLOW LANDSLIDES: MONITORING, MODELING, PREDICTING	Massimiliano Bordoni Roberto J. Marin, Stella Moreiras, Jie Dou	10	5
	4.5 ROCKFALL DATA: COLLECTION METHODS, ANALYSIS AND USE FOR HAZARD AND RISK ASSESSMENTS	Mauro Rossi Sandra Melzner	15	9
	4.6 LANDSLIDES IN URBAN ENVIRONMENTS	Rosa Maria Mateos Ruiz Roberto Sarro, Eleftheria Poyiadji, Mateja Jemec Auflič	16	5
	4.8 LANDSLIDE IMPACTS, VULNERABILITY AND QUANTITATIVE RISK ASSESSMENTS OF PEOPLE, COMMUNITIES, STRUCTURES, AND INFRASTRUCTURE	Dario Peduto Olga Mavrouli, Mike Winter, Paola Salvati	29	10
	4.9 LAND USE AND SLOPE MANAGEMENT PRACTICES WITH LANDSLIDE OCCURRENCE: PAST, RECENT AND FUTURE CHALLENGES AND ADAPTATION STRATEGIES	Claudia Meisina Thomas Glade, Filippo Catani, Yazidhi Bamutaze	11	0
	4.10 LANDSLIDE RISK MANAGEMENT: THE CHALLENGES OF TRANSDISCIPLINARY RESEARCH IN DATA-SCARCE ENVIRONMENTS	Mihai Micu Olivier Dewitte, Olena Ivanik, Taras Shevchenko, Judith Uwihirwe, Veronica Zumpano	7	0
	4.11 ASSESSING GEOHAZARDS OF SUBMARINE LANDSLIDES: WHERE ARE WE? AND WHAT ARE WE MISSING?	Silvia Ceramicola, Morelia Urlaub, Nicola Scarselli, Latino Chiocci, Gemma Ercilla	8	6

Table 4 (continued)

Theme	Session number Session title	Conveners	Oral presentations	E-poster presentations
5	5.1 LANDSLIDES AND CLIMATE CHANGE: PROCESSES, TRENDS, CHALLENGES AND PERSPECTIVES	Corrado Camera Guido Rianna, Martina Böhme, Alfredo Reder, Greg M. Stock	7	9
	5.2 LANDSLIDES IN THE COLD REGIONS AND EXTREMES	Costanza Morin Myliène Jacquemart, Jan Blahút, Giulia Magnarini, Daniel Dräbing, Sam McColl	15	3
	5.3 TOWARDS A HOLISTIC UNDERSTANDING OF LANDSLIDE-INDUCED DISASTER CASCADES IN THE HIMALAYAS	Sumit Sen Ugur Ozturk, Roopam Shukla, Kristen Cook, Siva Srikrishna	7	2
	5.4 WILDFIRE, EROSION AND LANDSLIDE IN THE FRAMEWORK OF GLOBAL WARMING: CIVIL PROTECTION AND LAND MANAGEMENT AIMED AT MITIGATION OF EFFECTS ON SLOPES INDUCED BY EXTREME EVENTS	Giuseppe Mandrone Dario Peduto	10	1
	5.5 ADVANCES IN EARTHQUAKE-INDUCED LANDSLIDE RESEARCH	Paolo Frattini Hans-Balder Havenith, Giovanni Forte, Odin Marc, Salvatore Martino,	23	3
	5.6 LANDSLIDES, EARTH DAM AND LEVEE FAILURES DURING RECENT EXTREME PRECIPITATION EVENTS	Daniel Pradel Navid H. Jafari, Miguel Pando, Kenneth S Hughes Merz, Alesandra Morales	6	0
	5.7 TIMESCALES IN EVOLVING LANDSCAPES AFFECTING LANDSLIDE HAZARD AND RISK	Yi Zhang Dongxia Yue, Mike Winter, Tom Dijkstra, Guan Chen	11	6

**Table 4** (continued)

Theme	Session number Session title	Conveners	Oral presentations	E-poster presentations
6	6.1 ADVANCES IN UNDERSTANDING AND MODELLING THE INTERNAL AND SURFACE DEFORMATION OF LANDSLIDES	Luigi Guerriero Lisa Borgatti, Diego Di Martire, Mirko Francioni, Doug Stread	22	8
	6.4 MACHINE LEARNING APPLICATIONS IN LANDSLIDE SCIENCE	Filippo Catani Xuanmei Fan, Biswajeet Pradhan, Cees Van Westen, Yunus Ali Pulpadan	18	6
	6.5 HYDROLOGICAL MONITORING, MODELLING, AND ANALYSIS OF RAINFALL-INDUCED LANDSLIDES	Benjamin Mirus Luca Piciullo, Elena Leonarduzzi, Maneesha Vinodini Ramesh, Wei-Li Liang, Pantaleone De Vita	9	4
	6.6 ADVANCES IN UNDERSTANDING, QUANTIFYING AND MODELING THE CONTRIBUTION OF PLANTS TO SLOPE STABILITY	Elena Benedetta Masi Wei Wu, Massimiliano Bordoni, Mariagiovanna Moscarillo, Jorge Pedro Galve	7	3
	6.7 4D HIGH-RESOLUTION TOPOGRAPHIC SURVEYS TO SUPPORT THE ANALYSIS OF SLOPE INSTABILITY PROCESSES IN HIGH-STEEP SLOPE AGRICULTURAL AND FORESTED LANDSCAPES	Sara Cucchiaro Elisa Arnone, Alberto Beinat, Paolo Tarolli	6	0
	6.8 LANDSLIDES IN SUBAERIAL AND SUBAQUEOUS VOLCANIC ENVIRONMENTS	Federico Di Traglia Lorenzo Borselli, Irene Manzella, Lauren N. Schaefer, Morelia Urlaub	9	0
	6.9 LANDSLIDE STUDIES IN ITALY: STATE OF THE ART AND FUTURE PERSPECTIVES	Paola Revellino Domenico Calcaterra, Veronica Tofani, Andrea Cevasco, Mirko Francioni	18	5

### Data availability

Not applicable.

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