



IAG DENUCHANGE Annual Report 2022

Denudation and Environmental Changes in Different Morphoclimatic Zones

DENUCHANGE

<http://www.geomorph.org/denuchange-working-group/>

The IAG Working Group DENUCHANGE (Denudation and Environmental Changes in Different Morphoclimatic Zones) was approved during the 9th International Conference on Geomorphology (9th ICG) in New Delhi, India, 6-11 November 2017. This DENUCHANGE Annual Report 2022 informs about relevant DENUCHANGE activities and outputs since the previous DENUCHANGE Annual Report 2021 (24 March 2021).

1. Activities since March 2021

- Scientific session *GM4.13 Denudation, land cover dynamics and sedimentary source-to-sink fluxes under changing climate and anthropogenic impacts* (co-organized by DENUCHANGE, co-sponsored by IAG) at EGU 2021: vEGU21, Gather Online, 19-30 April 2021:
<https://meetingorganizer.copernicus.org/EGU21/session/40271>
- Virtual DENUCHANGE business and planning meetings on 13 April 2021, 3 June 2021, 7 September 2021, 23 November 2021 and 10 February 2022 (see summary reports below under 2.)
- DENUCHANGE scientific webinar on 13 October 2021 (see further details below under 3.)
- Virtual DENUCHANGE round table during the International Geomorphology Week 2022 on 1 March 2022 (see agenda below under 4.)

2. Summary reports from the virtual DENUCHANGE business and planning meetings in April, June, September and November 2021 and February 2022

Meeting on 13 April 2021, 15:00-17:00 CEST

DENUCHANGE field test site catalogue and video presentations

Katja Laute (Norway) presented her ideas on the creation of a DENUCHANGE field test site catalogue and of DENUCHANGE field test site video presentations. The DENUCHANGE field test site catalogue shall be prepared as an interactive PDF-file including short and well illustrated presentations of all accepted DENUCHANGE field test sites. Each presented field test site shall be linked to an interactive map. Dongfeng Li (Singapore) offered to help with preparing this map. The DENUCHANGE field test site catalogue shall be prepared and published by October 2021. Katja Laute will send an email with more detailed information and a call for material (photos, summary texts) within the next weeks. The idea to prepare video presentations on DENUCHANGE field test sites, field work activities at these field sites and defined key themes of DENUCHANGE was well received and this idea will be developed further over the coming months. Katja Laute will get back to all DENUCHANGE members with further information on the process.

DENUCHANGE field test site presentations

Waldemar Kociuba (Poland) provided short presentations of his three DENUCHANGE field test sites in Spitsbergen (Scott River, Reindeer Creek and Tyvjobekken Creek) and of his Polish DENUCHANGE field test site Stocki Creek. By 22 April 2021 in total 35 DENUCHANGE field test sites have been accepted for the DENUCHANGE field test site network.

Development of the EC COST Action proposal related to IAG DENUCHANGE

Achim A. Beylich (Norway) and Olimpiu T. Pop (Romania) had a first COST Action proposal planning meeting on 11 March 2021. Possible candidates to be invited to the proposal were discussed during this meeting. They have received confirmations from colleagues from Bulgaria, Hungary and Serbia (additional colleagues from outside the current group of DENUCHANGE members) for participation in the EC COST Action proposal related to IAG DENUCHANGE. A COST Action proposal core group with invited colleagues from Bulgaria (Ahinora Baltakova), Hungary (Timar Gabor), Israel (Nurit Shtober-Zisu), Italy (Francesco Comiti), Norway (Achim A. Beylich, Katja Laute), Poland (Zbigniew Zwoliński, Małgorzata Mazurek), Romania (Olimpiu T. Pop), Serbia (Milica Kasanin-Grubin), Spain (Ana Navas) and UK (Luca Mao) has been formed and this core group will have a first COST Action proposal developing meeting (Skype) in early May 2021. All DENUCHANGE members and a number of

additional international colleagues will be invited to participate in the COST Action proposal. The deadline for submission of the COST Action proposal related to IAG DENUCHANGE is 29 October 2021.

DENUCHANGE synthesis and review papers

Achim A. Beylich informed about an invitation by John F. Shroder, Editor in Chief, Treatise on Geomorphology (2nd Edition, Elsevier). DENUCHANGE members are invited to contact John F. Shroder for discussion of possible book chapters for the Treatise on Geomorphology (2nd Edition) (Elsevier). He is particularly interested in a review book chapter prepared by the DENUCHANGE group. John F. Shroder can be contacted by email: jshroder@unomaha.edu. A direct invitation has also been sent by John F. Shroder to all DENUCHANGE members. Joanna Gudowicz (Poland) is in contact with all colleagues that have provided catchment data for the DENUCHANGE SWAT modelling project. In the coming weeks she will start with working on SWAT modelling for those catchments where SWAT modelling has never been done before: Erdalen (Norway), Sulden/Solda (Italy), Estero Morales (Chile), Tuotuohe (China) and Sullivan Creek (USA). A modelling plan will be sent soon, including the work schedule: Data collection, modelling steps, output data and calibration. Achim A. Beylich (Norway) is preparing a first outline for his DENUCHANGE synthesis/review paper (Beylich et al.) on *Drivers of contemporary denudation in different morphoclimates*. The outline will be sent to DENUCHANGE members soon. It is planned to submit this multi-authored DENUCHANGE synthesis/review paper to *Nature Reviews Earth & Environment*. Antonio Cendrero (Spain) presented updated information on his synthesis paper on *Denudation, global change and the Anthropocene* (Cendrero, Remondo, Forte et al.). The current paper draft and various inputs from DENUCHANGE members were discussed. A new draft of this synthesis paper will be sent to all DENUCHANGE members in May 2021.

DENUCHANGE scientific session at EGU 2021 (vEGU21 Gather Online, 19-30 April 2021)

Achim A. Beylich informed about the upcoming (29 April 2021, 15:30-17:00 CEST) scientific session GM4.13 Denudation, land cover dynamics and sedimentary source-to-sink fluxes under changing climate and anthropogenic impacts (co-organized by the IAG WG DENUCHANGE, co-sponsored by IAG, and including 20 accepted presentations with a solicited presentation by A. Cendrero, J. Remondo and L. Forte on Denudation, global change and the Anthropocene) at EGU 2021 (vEGU21 Gather Online, 19-30 April 2021). All important session details can be found at <https://meetingorganizer.copernicus.org/EGU21/session/40271>.

Meeting on 3 June 2021, 15:00-16:15 CEST

Presentation of the new IAG Working Group on Badlands

Milica Kasanin-Grubin (Serbia) and Estela Nadal Romero (Spain) gave a presentation on their new IAG Working Group on Badlands. Achim A. Beylich had invited them to the DENUCHANGE business meeting. A possible collaboration between the two working groups on Badlands and DENUCHANGE is planned and was discussed. The collaboration can include joint round tables and virtual scientific working group webinars/workshops organized back-to-back (see also below).

COST Action proposal related to DENUCHANGE

Luca Mao (UK) presented a general overview on COST Actions and a summary of first ideas (definition of working groups within the planned COST Action related to DENUCHANGE), concrete plans and forthcoming steps for the planned COST Action proposal related to DENUCHANGE. The deadline for submission of this COST Action proposal will be 29 October 2021. Luca Mao is leading the COST Action proposal and will be the main proposer for this COST Action.

DENUCHANGE field test site catalogue

Katja Laute (Norway) gave an overview for the creation of a DENUCHANGE field test site catalogue. The DENUCHANGE field test site catalogue will be prepared as an interactive PDF-file including short and well illustrated presentations of all accepted DENUCHANGE field test sites. Each presented field test site will be linked to an interactive map. The DENUCHANGE field test site catalogue shall be prepared and published by October 2021. The deadline for submission of material (logo, photos, figure, summary texts) for this catalogue is 15 July 2021. All material should be sent to katja.laute@geofieldlab.com. By today, 35 DENUCHANGE field test sites have been accepted for the DENUCHANGE network of field test sites.

DENUCHANGE synthesis and review papers

Joanna Gudowicz (Poland) has been in contact with all colleagues that have provided catchment data for the DENUCHANGE SWAT modelling project. In July she will start with working on SWAT modelling for those catchments where SWAT modelling has never been done before: Erdalen (Norway), Sulden/Solda (Italy), Estero Morales (Chile), Tuotuohe (China) and Sullivan Creek (USA). A modelling plan will be sent, including the work schedule: Data collection, modelling steps, output data and calibration. Achim A. Beylich (Norway) is preparing a first outline for the DENUCHANGE synthesis/review paper (Beylich et al.) on *Drivers of contemporary denudation in different morphoclimates*. The outline will be sent to DENUCHANGE members soon. It is planned to submit

this multi-authored DENUCHANGE synthesis/review paper to *Nature Reviews Earth & Environment*. Antonio Cendrero (Spain) presented updated information on his synthesis paper on *Denudation, global change and the Anthropocene* (Cendrero, Remondo, Forte et al.). A new draft of this synthesis paper will be sent to DENUCHANGE members soon. The paper shall soon be submitted to a leading international journal.

Third DENUCHANGE Workshop, Haifa, Israel

Nurit Shtober-Zisu (Israel) informed about the status of the Third DENUCHANGE Workshop in Haifa, Israel. The decision on the new dates for this postponed workshop will be taken as soon as the global COVID-19 situation will allow it. Information on the workshop and the connected field trips is available at the workshop webpage under <https://denuchange.wixsite.com/denuchange2020>.

DENUCHANGE scientific webinar

A DENUCHANGE scientific webinar (half day), including scientific presentations from DENUCHANGE members and being widely announced through Geomorph-list (including a Flyer) is planned for September/October 2021. It was discussed to possibly organize this DENUCHANGE scientific webinar back-to-back with a virtual scientific workshop/webinar organized by the IAG Working Group on Badlands.

Meeting on 7 September 2021, 15:00-15:35 CEST

DENUCHANGE scientific webinar

It was discussed and decided that DENUCHANGE will organize a scientific webinar on *13 October 2021*. The webinar will include scientific talks from DENUCHANGE members and shall provide an overview of latest research outcomes on denudation presented by members of the group. All DENUCHANGE members are invited to submit abstracts (100 words) for this webinar. The webinar program will then be widely announced with a webinar flyer (including photos of all speakers and all abstracts) through Geomorph-list and other email lists. The deadline for submission of abstracts for the DENUCHANGE webinar is *21 September 2021*. Please submit your abstract (word file including the title of your presentation, your affiliation, and an abstract text of up to 100 words) and a photo (jpeg) of yourself to achim.beylich@geofieldlab.com.

Third DENUCHANGE Workshop, Haifa, Israel

Nurit Shtober-Zisu (Israel) informed about the status of the Third DENUCHANGE Workshop in Haifa, Israel. The Third DENUCHANGE Workshop is postponed to *spring 2022*. The decision on the new dates for this postponed physical workshop will be taken as soon as the global COVID-19 situation will allow this. Detailed information on the planned workshop and the connected field trips is available at the workshop webpage under <https://denuchange.wixsite.com/denuchange2020>.

DENUCHANGE scientific session at EGU 2022

Achim A. Beylich informed that a DENUCHANGE scientific session on *Hillslope and fluvial processes and associated source-to-sink fluxes and sedimentary budgets under changing climate and anthropogenic impacts*, convened by Achim A. Beylich, Katja Laute, Li Dongfeng, Ana Navas and Olimpiu Pop, is planned for the EGU General Assembly 2022, *3-8 April 2022* in Vienna, Austria. Detailed information on EGU 2022 and the planned DENUCHANGE session can be found at <https://www.egu22.eu>.

DENUCHANGE field test site catalogue

Katja Laute (Norway) presented an overview over the status of the DENUCHANGE field test site catalogue. The DENUCHANGE field test site catalogue will be prepared as an interactive PDF-file including short and well illustrated presentations of all accepted DENUCHANGE field test sites. Each presented field test site will be linked to an interactive map. A first edition of the DENUCHANGE field test site catalogue will be prepared and published online by the end of the year 2021. The deadline for submission of material (logo, photos, figure, summary texts) for this catalogue was extended until *8 November 2021*. All material for the DENUCHANGE field test site catalogue should be sent to katja.laute@geofieldlab.com.

DENUCHANGE synthesis and review papers

Joanna Gudowicz (Poland) was in contact with all colleagues that have provided catchment data for the DENUCHANGE SWAT modelling project. Joanna Gudowicz will in October start with working on SWAT modelling for those catchments where SWAT modelling has never been done before: Erdalen (Norway), Sulden/Solda (Italy), Estero Morales (Chile), Tuotuohe (China) and Sullivan Creek (USA). A modelling plan will be sent, including the work schedule: Data collection, modelling steps, output data and calibration. Achim A. Beylich (Norway) is working on the outline for the DENUCHANGE synthesis/review paper (Beylich et al.) on *Drivers of contemporary denudation in different morphoclimates*. The outline will be sent to DENUCHANGE members during fall. Antonio Cendrero

(Spain) presented updated information on his synthesis paper on *Denudation, global change and the Anthropocene* (Cendrero, Remondo, Forte et al.). A new and nearly finished draft of this synthesis paper will be sent to DENUCHANGE members soon. The finalized paper shall soon be submitted to a leading international journal.

Possible proposal for a DENUCHANGE book project

Achim A. Beylich informed about an invitation from Elsevier to contribute to an edited book on the theme of anthropogenic change and the effects on earth surface processes. If you are interested to contribute to such a possible book project, either a book edited by members of the DENUCHANGE group or a book on the general theme edited by other scientists, please confirm your interest by an email sent to Achim A. Beylich (achim.beylich@geofieldlab.com).

COST Action proposal related to DENUCHANGE

Luca Mao (UK) presented updated information on the planned COST Action proposal related to DENUCHANGE. A proposal draft will be sent to the COST Action core group soon. The deadline for submission of this COST Action proposal will be *29 October 2021*. Luca Mao is leading the COST Action proposal and will be the main proposer for this COST Action.

Meeting on 23 November 2021, 15:00-16:00 CET

New series with presentations of scientific highlights by DENUCHANGE members

Achim A. Beylich informed about a new series “Scientific Highlights” where DENUCHANGE members are invited to present highlights of their research. The series was started with an invited talk by Dongfeng Li (Singapore). Dongfeng Li presented work which he recently published in the journal *Science*: Dongfeng Li, Xixi Lu, Irina Overeem, Desmond E. Walling, Jaia Syvitski, Albert J. Kettner, Bodo Bookhagen, Yinjun Zhou, Ting Zhang, 2021. Exceptional increases in fluvial sediment fluxes in a warmer and wetter High Mountain Asia. *Science* 374, 599-603 (2021). The scientific presentation was followed by an extended discussion.

Report on the DENUCHANGE scientific webinar on 13 October 2021

DENUCHANGE organized a scientific webinar on 13 October 2021. The webinar included nine scientific talks from DENUCHANGE members and provided an overview of latest research outcomes on denudation presented by members of the group. The public webinar was well attended and received. The webinar program and flyer is available at the DENUCHANGE website

(<http://www.geomorph.org/denuchange-working-group/>).

DENUCHANGE virtual event during the International Geomorphology Week 2022

As in 2021, DENUCHANGE will again organize a virtual event (round table discussion) during the International Geomorphology Week 2022 (28 February - 4 March 2022). The DENUCHANGE round table discussion will be organized as a public virtual event on *1 March 2022, 15:00-17:00 CET*.

Detailed information on this virtual DENUCHANGE event will be announced soon.

Third DENUCHANGE Workshop, Haifa, Israel, 16-18 May 2022

Nurit Shtober-Zisu (Israel) informed about the status of the Third DENUCHANGE Workshop in Haifa, Israel. The Third DENUCHANGE Workshop is now scheduled as a physical workshop for *16-18 May 2022*. Detailed information on the workshop and the connected field trips is available at the workshop webpage under <https://denuchange.wixsite.com/denuchange2020>. All DENUCHANGE colleagues are kindly requested to inform Nurit Shtober-Zisu (nshtober@research.haifa.ac.il) before *15 January 2022* if they plan to attend this physical DENUCHANGE workshop.

DENUCHANGE scientific session at EGU 2022 in Vienna, Austria, 3-8 April 2022

A DENUCHANGE Scientific Session GM4.1 *Hillslope and fluvial processes and associated source-to-sink fluxes and sedimentary budgets under changing climate and anthropogenic impacts*, co-sponsored by IAG, convened by Achim A. Beylich, Katja Laute, Dongfeng Li, Ana Navas and Olimpiu T. Pop, will be organized at the EGU General Assembly 2022, 3-8 April 2022 in Vienna, Austria. Detailed information on the scientific session can be found at <https://meetingorganizer.copernicus.org/EGU22/session/43953>. The deadline for submission of abstracts for EGU 2022 is *12 January 2022*.

DENUCHANGE session section during the IAG International Conference on Geomorphology in Coimbra, Portugal, 12-16 September 2022

DENUCHANGE will organize a scientific session section as part of the Thematic Session 5 on *Forms, Processes and Landscape Change* (convened by Achim A. Beylich, Luca Mao, Osmar Carvalho, Roberto Verdum, Adélia Nunes) during the 10th IAG International Conference on Geomorphology in Coimbra, Portugal, 12-16 September 2022. Further information on the conference, the various conference sessions and the submission of abstracts is found at the conference website under <https://www.icg2022.eu/>.

DENUCHANGE activity at the IAG Regional Conference in Mashhad, Iran

A possible scientific activity of DENUCHANGE during the IAG Regional Conference in Mashhad, Iran, 2022, was discussed. The discussions will be continued during the next DENUCHANGE business meeting on 10 February 2022.

DENUCHANGE field test site catalogue

The current status of the DENUCHANGE field test site catalogue was presented. The DENUCHANGE field test site catalogue is prepared as an interactive PDF-file including short and well illustrated presentations of all accepted DENUCHANGE field test sites. Each presented field test site will be linked to an interactive map. A first edition of the DENUCHANGE field test site catalogue will be prepared by Katja Laute (Norway) with support from Dongfeng Li (Singapore) by the end of the year 2021. The deadline for submission of material (logo, photos, figure, summary texts) for the first edition of this catalogue was extended until *10 December 2021*. All material for the DENUCHANGE field test site catalogue should be sent to Katja Laute (katja.laute@geofieldlab.com).

DENUCHANGE synthesis and review papers

Jasper Knight (South Africa) presented the idea to develop a possible paper for the EGU journal Earth System Science Data (Copernicus), including data collections from DENUCHANGE field test sites. Joanna Gudowicz (Poland) was in contact with all colleagues that have provided catchment data for the DENUCHANGE SWAT modelling project. Joanna Gudowicz will work on SWAT modelling for those catchments where SWAT modelling has never been done before: Erdalen (Norway), Suldén/Solda (Italy), Estero Morales (Chile), Tuotuohe (China) and Sullivan Creek (USA). A modelling plan will be sent, including the work schedule: Data collection, modelling steps, output data and calibration. Achim A. Beylich (Norway) is working on the outline for the DENUCHANGE synthesis/review paper (Beylich et al.) on *Drivers of contemporary denudation in different morphoclimates*. Antonio Cendrero (Spain) presented updated information on the multi-authored synthesis paper on *Denudation, global change and the Anthropocene* (Cendrero, Remondo, Forte et al.). A new draft of this synthesis paper is currently edited and will soon be sent to DENUCHANGE members for final commenting. The finalized paper shall then be submitted to a leading international journal.

Book project on Climate and Anthropogenic Impacts on Earth Surface Processes

Achim A. Beylich informed about an upcoming edited book project (Elsevier) on the theme of *Climate and Anthropogenic Impacts on Earth Surface Processes*. The book will be edited by Achim A. Beylich, Dongfeng Li, Rosana Menendez Duarte, Mario Morellon Marteles and Marc Oliva. The invited book

editors will start to work on the outline of the planned book in January 2022. DENUCHANGE colleagues will in 2022 be invited to contribute to this edited book.

COST Action proposal related to DENUCHANGE

Luca Mao (UK) presented updated information on the COST Action proposal *SeDyChange* related to DENUCHANGE. The proposal was successfully submitted by Luca Mao on 29 October 2021. Information on the outcome of the COST Action proposal *SeDyChange* can be expected in May 2022. Luca Mao has been leading the COST Action proposal and is the main proposer for this COST Action.

Meeting on 10 February 2022, 15:00-16:00 CET

DENUCHANGE virtual event during the International Geomorphology Week 2022

As in the year 2021, DENUCHANGE will again organize a virtual event (round table discussion) during the International Geomorphology Week 2022 (28 February - 4 March 2022). The DENUCHANGE round table discussion will be organized as a public virtual event on *1 March 2022, 15:00-17:00 CET*. The main purpose of this virtual event will be to discuss relevant issues connected to the planned preparation of a proposal for a possible continuation of DENUCHANGE (possible second term, 2022-2026) after September 2022.

Third DENUCHANGE Workshop, Haifa, Israel

Nurit Shtober-Zisu (Israel) informed about the status of the Third DENUCHANGE Workshop in Haifa, Israel. The Third DENUCHANGE Workshop has again been postponed due to the continuing global COVID-19 pandemic situation. Detailed information on the planned workshop and the connected field trips is available at the workshop webpage under <https://denuchange.wixsite.com/denuchange2020>.

DENUCHANGE scientific session at EGU 2022 in Vienna, Austria, 23-27 May 2022

A DENUCHANGE Scientific Session GM4.1 *Hillslope and fluvial processes and associated source-to-sink fluxes and sedimentary budgets under changing climate and anthropogenic impacts*, co-sponsored by IAG, convened by Achim A. Beylich, Katja Laute, Dongfeng Li, Ana Navas and Olimpiu T. Pop, will be organized at the EGU General Assembly 2022, 23-27 May 2022 in Vienna, Austria. The EGU conference will be organized in a hybrid format. Detailed information on the DENUCHANGE scientific session can be found at <https://meetingorganizer.copernicus.org/EGU22/session/43953>.

The session includes 29 accepted abstracts. All presentations will be given as 5-minute oral presentations.

DENUCHANGE session section during the IAG International Conference on Geomorphology in Coimbra, Portugal, 12-16 September 2022

DENUCHANGE will organize a scientific session section as part of the Thematic Session 5 on *Forms, Processes and Landscape Change* (convened by Achim A. Beylich, Luca Mao, Osmar Carvalho, Roberto Verdum, Adélia Nunes) during the 10th IAG International Conference on Geomorphology in Coimbra, Portugal, 12-16 September 2022. Further information on the conference, the various conference sessions and the submission of abstracts is found at the conference website under <https://www.icg2022.eu/>. Abstract submission is open until 14 March 2022.

DENUCHANGE field test site catalogue

The current status of the DENUCHANGE field test site catalogue was presented by Katja Laute (Norway). The DENUCHANGE field test site catalogue is prepared as an interactive PDF-file including short and well illustrated presentations of 22 accepted DENUCHANGE field test sites. Each presented field test site will be linked to an interactive map. A first edition of the DENUCHANGE field test site catalogue is currently finalized by Katja Laute with support from Dongfeng Li (Singapore) who is preparing the maps. The first edition of the field test site catalogue will be published very soon.

DENUCHANGE synthesis and review papers

Antonio Cendrero (Spain) presented updated information on the multi-authored synthesis paper on *Denudation, global change and the Anthropocene* (Cendrero, Remondo, Forte et al.). The nearly final version of this synthesis paper was sent to all DENUCHANGE colleagues for final commenting. The finalized paper shall then be submitted very soon to a leading international journal.

Book project on Climate and Anthropogenic Impacts on Earth Surface Processes

Achim A. Beylich provided updated information on an edited book project (Elsevier) on the theme of *Climate and Anthropogenic Impacts on Earth Surface Processes*. The book will be edited by Achim A. Beylich, Dongfeng Li, Daniel Vázquez Tarrío, Mario Morellon Marteles and Marc Oliva. The invited book editors are currently working on the book structure outline of the edited book. DENUCHANGE colleagues will from March 2022 onwards be invited to contribute to this edited book.

3. DENUCHANGE scientific webinar on 13 October 2021

DENUCHANGE organized a scientific webinar on 13 October 2021. The webinar included nine scientific talks from DENUCHANGE members and provided an overview of latest research outcomes on denudation presented by members of the group.

The public webinar was well attended and received. The webinar program and flyer is available at the DENUCHANGE website (<http://www.geomorph.org/denuchange-working-group/>).

4. DENUCHANGE Round Table on 1 March 2022, 15:00-17:00 CET

Agenda

- DENUCHANGE as working group of the IAG
- DENUCHANGE working group objective
- DENUCHANGE field test sites
- DENUCHANGE publications
- Discussion on possible new directions of the working group

The key question of DENUCHANGE is:

What are the contemporary chemical and mechanical denudation rates in different morphoclimatic zones on the Earth?

Denudation is controlled by a range of environmental drivers and can be significantly affected by anthropogenic activities. The better understanding of possible effects of ongoing and accelerated environmental changes on present-day denudation requires systematic and quantitative studies (environmental monitoring) on the actual drivers of denudational processes. Only if we have an improved knowledge of drivers and quantitative rates of contemporary denudational hillslope and fluvial processes as well as of the (dis-)connectivity in landscapes and between hillslope and fluvial systems across a range of different selected climatic environments, possible effects of global environmental changes on denudation can be better assessed. Special focus is given to selected morphoclimatic zones that are expected to react particularly sensitively to ongoing and accelerated environmental changes, and the key focus of DENUCHANGE is therefore on (i) cold regions (including glacierized, glaciated and unglaciated cold climate environments), (ii) temperate regions, (iii) arid / semi-arid regions and (iv) tropical regions. The different morphoclimatic zones are defined by morphometric characteristics/signatures detected in the various zones.

DENUCHANGE

- Provides a detailed compilation and comparison of contemporary chemical and mechanical (drainage-basin wide) denudation rates in selected and clearly defined drainage basin systems in selected cold regions, temperate regions, arid / semi-arid regions and tropical regions worldwide;
- Provides a process-oriented, coordinated and integrated analysis and compilation of the respective key drivers of contemporary denudation occurring under the different present-day morphoclimates;
- Addresses the key question how environmental changes are affecting contemporary denudation rates in different morphoclimates. This also includes human activities in different morphoclimatic zones, in the context of environmental changes in the Anthropocene.

The DENUCHANGE field test site catalogue has been published in February 2022 as an interactive PDF-file including short and well illustrated presentations of 22 accepted DENUCHANGE field test sites which are currently in operation within the DENUCHANGE network. Each presented field test site is linked to an interactive map. Key information on each field test site includes short descriptions of the field sites and the methods and techniques applied, and key meteorological and hydrological data. Both field test sites with available longer data records and newly established field sites are included in the catalogue.

Selbustrand (Norway), 9 March 2022

Achim A. Beylich

Chair of IAG DENUCHANGE