Proposal for extension of the IAG Working Group on Denudation and Environmental Changes in Different Morphoclimatic Zones (DENUCHANGE) by a second term until 2026

Background, activities and achievements by today

The working group on *Denudation and Environmental Changes in Different Morphoclimatic Zones* (DENUCHANGE, http://www.geomorph.org/denuchange-working-group/) was approved as a new working group of the International Association of Geomorphologists (IAG) during the 9th International Conference on Geomorphology, 6-11 November 2017, New Delhi, India.

The key question of DENUCHANGE is:

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

Denudation, including both chemical and mechanical processes, is of high relevance for Earth surface and landscape development and the transfer of solutes and sediments from headwater systems through main stem of drainage basin systems to the world oceans. 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 will be given to selected morphoclimatic zones that are expected to react particularly sensitively to ongoing and accelerated environmental changes, and the key focus of DENUCHANGE will therefore be 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.

Steering Committee and core members

Dr. Achim A. Beylich (Norway) (Chair)
Dr. Antonio Cendrero (Spain)
Dr. Piotr Cienciala (USA)
Prof. Francesco Comiti (Italy)
Dr. Marta Della Seta (Italy)
Dr. John C. Dixon (USA)
Dr. Luis M. Forte (Argentina)
Dr. Joanna Gudowicz (Poland)
Prof. Jasper Knight (South Africa)
Dr. Katja Laute (Norway)
Dr. Dongfeng Li (Singapore)
Dr. Luca Mao (UK) (Co-Chair)
Prof. Małgorzata Mazurek (Poland)
Dr. Ana Navas (Spain)
Dr. Olimpiu Pop (Romania)
Prof. Juan Remondo (Spain)
Dr. Nurit Shtober-Zisu (Israel)
Prof. Zbigniew Zwoliński (Poland) (Co-Chair)

IAG DENUCHANGE working group objective, field test site fact sheets and DENUCHANGE Field Test Site Catalogue
DENUCHANGE working group objective
DENUCHANGE test site fact sheets (revised)
DENUCHANGE Field Test Site Catalogue

IAG DENUCHANGE key publications
Laute K., Navas A. & A.A. Beylich (Eds.) (2020): Denudational processes and landscape responses to global environmental changes. Geomorphology, Virtual Special Issue. For details and content see here.

IAG DENUCHANGE workshop reports
First DENUCHANGE workshop 2018
Second DENUCHANGE workshop 2019

IAG DENUCHANGE core member business meeting 2020 (virtual meeting)
Meeting agenda
Meeting summary report

IAG DENUCHANGE business and planning meetings 2021-2022 (virtual meetings)
11 February 2021, 15:00-17:30 CET Meeting summary report
13 April 2021, 15:00-17:00 CEST Meeting summary report
3 June 2021, 15:00-17:00 CEST Meeting summary report
7 September 2021, 15:00-17:00 CEST Meeting summary report
23 November 2021, 15:00-16:00 CET Meeting summary report
10 February 2022, 15:00-16:00 CET Meeting summary report

IAG DENUCHANGE Virtual Round Table, 4 March 2021, 15:00-17:30 CET
Further information and meeting summary report here

IAG DENUCHANGE Virtual Round Table, 1 March 2022, 15:00-17:00 CET
Further information is found here

IAG DENUCHANGE Scientific Webinar, 13 October 2021, 14:30-18:00 CEST
Webinar Flyer and detailed programme

IAG DENUCHANGE annual reports
DENUCHANGE annual report 2018
DENUCHANGE annual report 2019
DENUCHANGE annual report 2020
DENUCHANGE annual report 2021
DENUCHANGE annual report 2022

Justification for the proposed extension

The proposed extension of DENUCHANGE by a second term until 2026 would allow the continuation of the ongoing activities and the completion of the defined working group goals by the year 2026. Defined DENUCHANGE synthesis and review papers in leading international journals and a book on Climate and Anthropogenic Impacts on Earth Surface Processes (Elsevier) (see all details in the DENUCHANGE summary and annual reports above) will be finished as key working group outcomes in the coming years. The postponed (due to COVID-19) Third DENUCHANGE Workshop is planned to take place as an in-person event in Haifa, Israel in the beginning of 2023.

On behalf of the DENUCHANGE Steering Committee and core members,

Achim A. Beylich
Chair of DENUCHANGE

Selbustrand, Norway, 20 May 2022