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Mountain Region

The Caucasus Regional Research Agenda 2020-2030: An outlook

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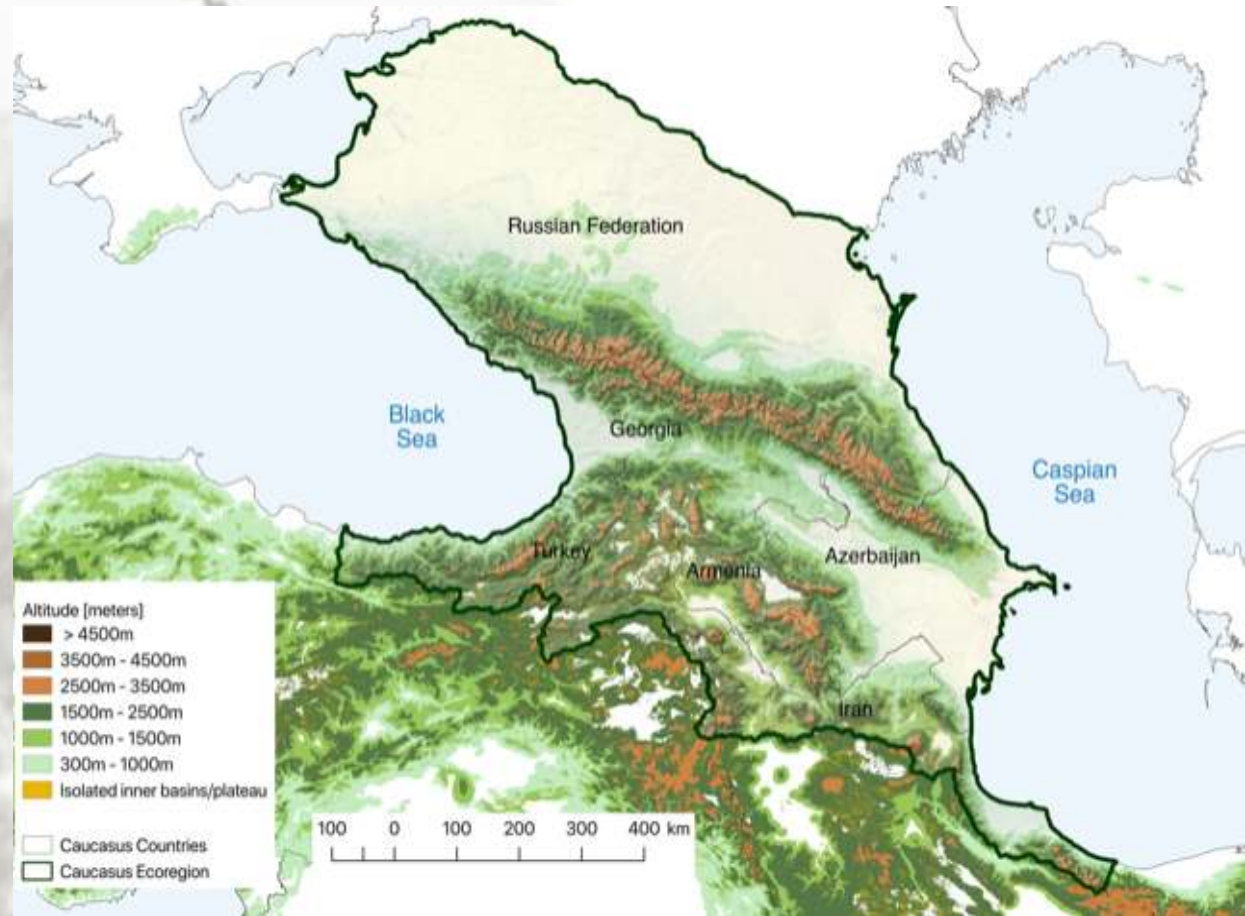


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University

Tbilisi, 30 October 2019

The Caucasus Region as it is defined in the Research Agenda

- Territory embraces **six countries:** *Armenia, Azerbaijan and Georgia* – entirely; *Iran, RF and Turkey* – partially.
- **Area:** > 550,000 km²
- **Population:** ~ 40 mln



The Caucasus: Specificity of the region

- **The unique ecoregion worldwide:** recognised among 35 “*priority places*” (by WWF) and 34 “*biodiversity hotspots*” (by Conservation International).
- **Cardinal geopolitical transformation:** removal of “Iron Curtain” but heavy fragmentation of the inner territory due to (ethno)political conflicts since the 1990s.
- **High dependence** on natural resources and **negative impact** of economic growth on the environment.
- **Necessity of strong interregional cooperation.**

Background

- C-RRA Initial draft – SNSF, the first conventional project of the SNC-mt in 2015
- C-RRA responsible partner – Tbilisi State University
- Background information collection – Iliia State University
- Overall guidance - University of Geneva, SNC-mt Coordination Unit
- Thematic chapters – Scientific Steering Group, SNC-mt, other regional scientists
- Maps – GRID-Geneva
- C-RRA final draft – Swiss Cooperation Office for South Caucasus



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Purpose: Why we need a research agenda?



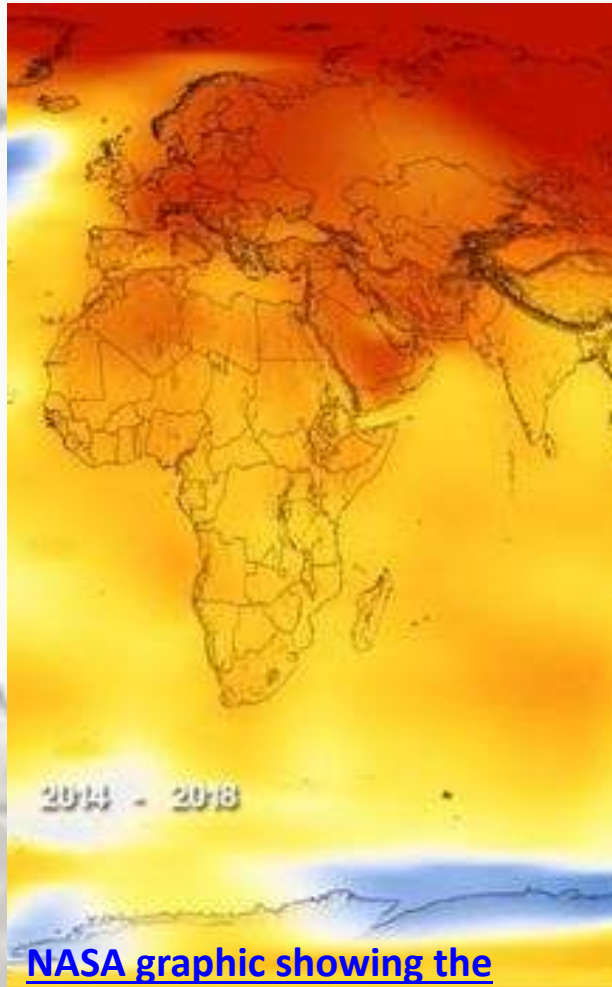
- Identification and prioritization of research and knowledge needs.
- Comprehensive, even if general, assessment of the state of knowledge and action in thematic areas.
- Foundation for coordinated and cooperative knowledge creation and informed use in practice.
- Link from research to practice, policy and vice versa.
- Inspiration of transboundary mountain cooperation between the Caucasus countries.

Identification of Main Topics for Research

- B.1 Climate change**
- B.2 Biodiversity**
- B.3 Forestry conservation and development of forests**
- B.4 Water resources and management**
- B.5 Land use and land cover change**
- B.6 Natural hazards and risks**
- B.7 Population and cultural diversity**
- B.8 Tourism and recreation**
- B.9 Socio-economic development and planning**
- B.10 Mountain cryosphere**



B1 Climate change



[NASA graphic showing the global temperature anomalies \(fragment\)](#)

Source:

<https://www.bbc.com/news/science-environment-47144058>

B1.a. Observation, Modeling, Mapping, Monitoring and MRV

B1.b. Impacts of and vulnerability to climate change for ecosystems and economic sectors and human health (adaptation)

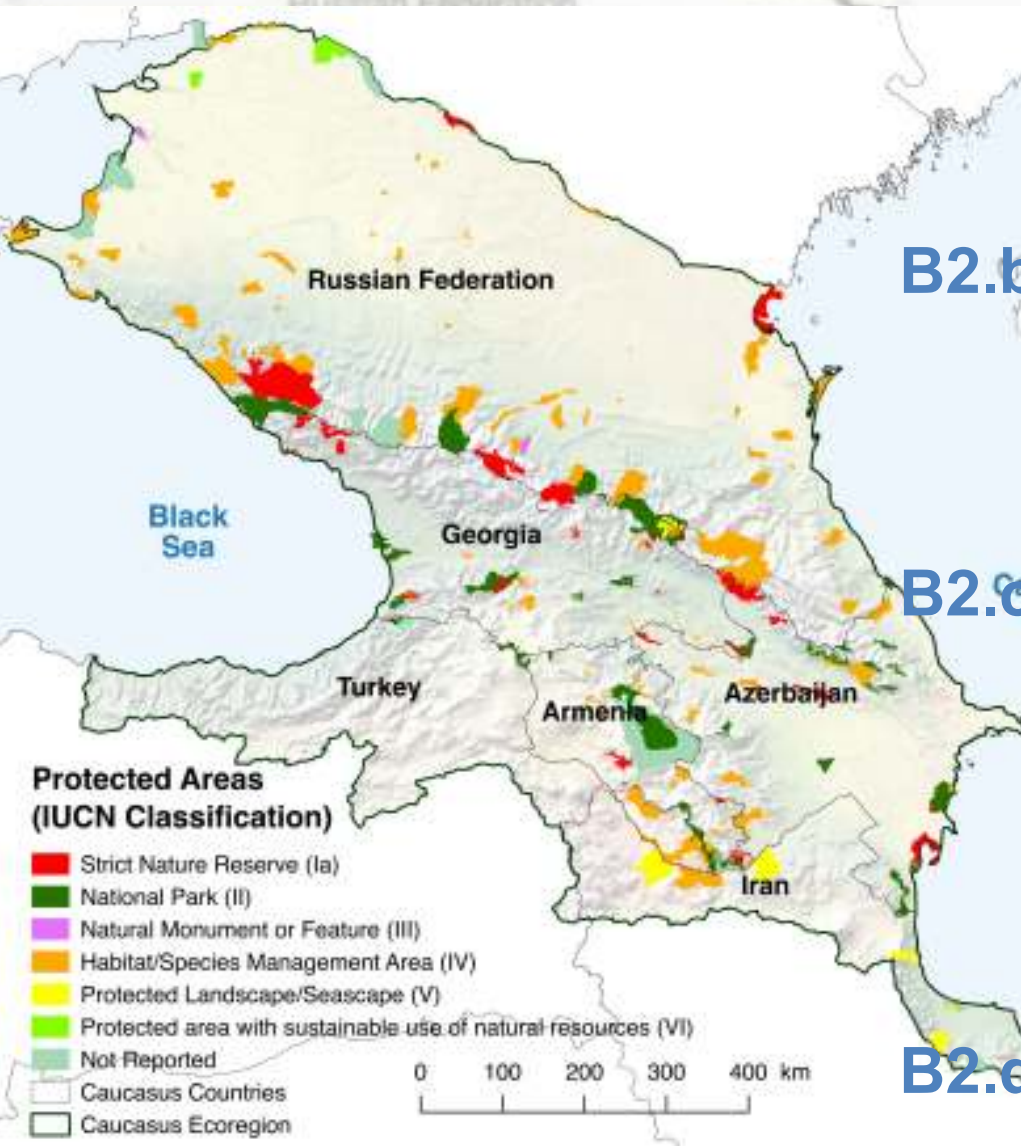
B1.c. Impact of human activities on climate change (Mitigation)

B1.d. Institutionalization and organizational structures for climate change mitigation and adaptation

B2 Biodiversity

Protected areas of the Caucasus

Source: Protected Planet: www.protectedplanet.net



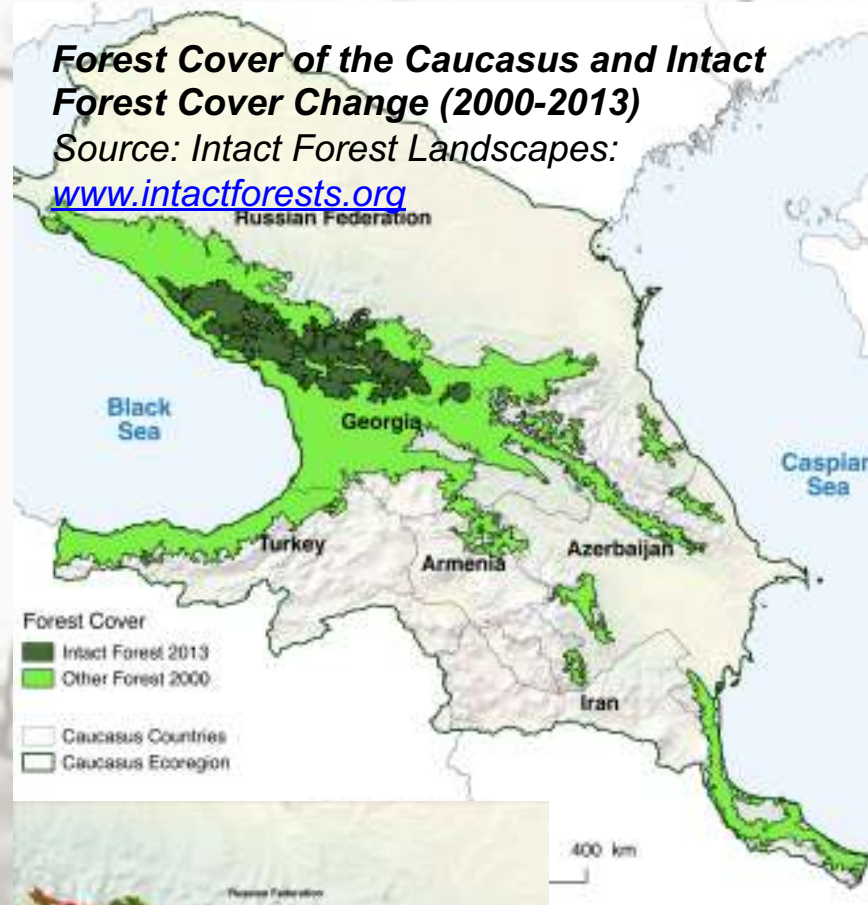
- B2.a.** Research on forest ecosystems and ecological services related to forests and sustainability
- B2.b.** Research on high mountain ecosystems, mountain pasture dynamics, and range management
- B2.c.** Research on mountain lakes, wetlands, and river ecosystems as well as their sustainability and associated ecological services
- B2.d.** Priority species research

B3 Forestry Conservation and Development

Forest Cover of the Caucasus and Intact Forest Cover Change (2000-2013)

Source: Intact Forest Landscapes:

www.intactforests.org



- B3.a.** Restoration and protection of shared (transboundary) forest landscapes
- B3.b.** Protected forest areas network
- B3.c.** Sustainable forest management (SFM) standards and guidelines
- B3.d.** Forest inventory and new technologies
- B3.e.** Forests' protective functions
- B3.f.** Forests and people
- B3.g.** Forests and climate change
- B3.h.** Ecosystem services, biodiversity and biological invasions.

B4 Water resources management

Dams and Rivers in the Caucasus

Source: HydroSHEDS: www.hydrosheds.org and
GWSP: www.gwsp.org

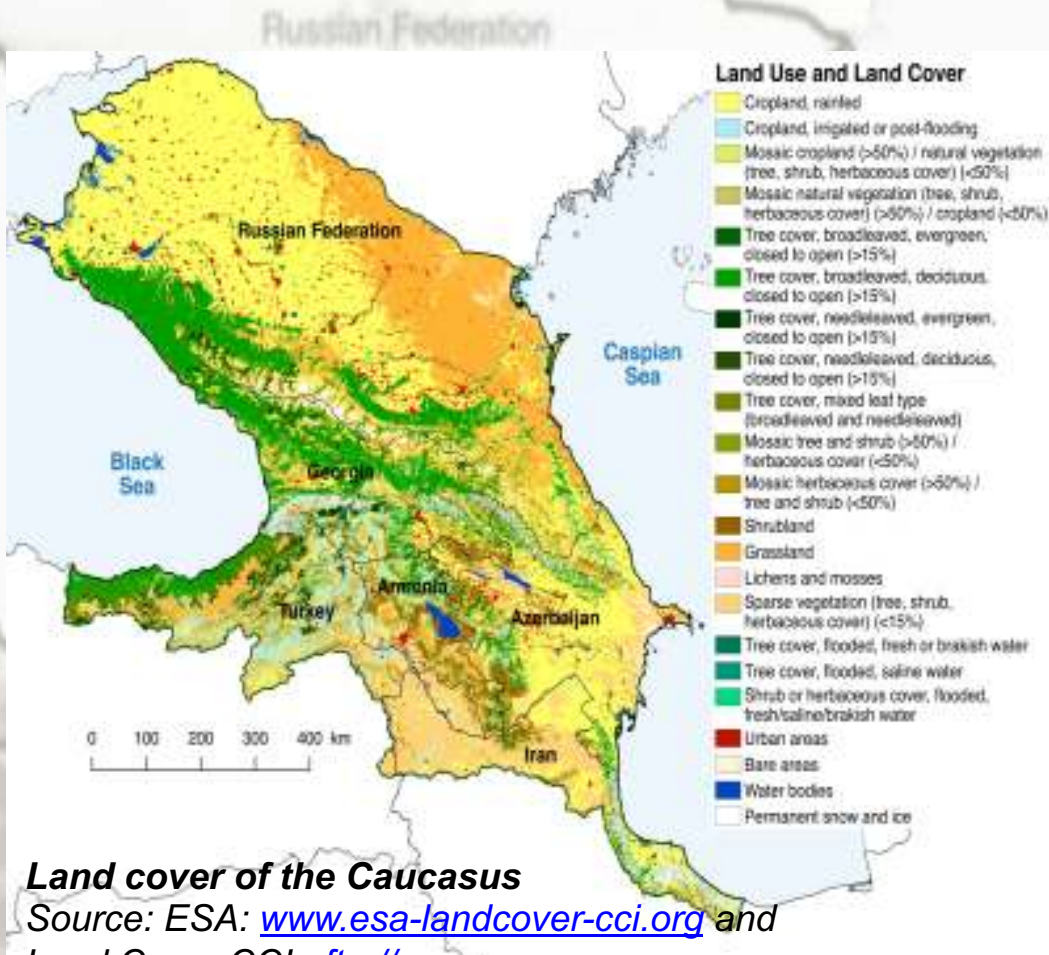


B4.a. Biophysical and social dimensions of water systems

B4.b. Institutional and economic dimensions of water systems

B4.c. Integrative instruments and interventions

B5 Land Use and Land Cover Change



Land cover of the Caucasus

Source: ESA: www.esa-landcover-cci.org and

Land Cover CCI: ftp://anon-ftp.ceda.ac.uk/neodc/esacci/land_cover/docs/ESACCI-LC-PUG-v2.5.pdf

B5.a. Observation of Land Use/Land Cover (LULC) in the region

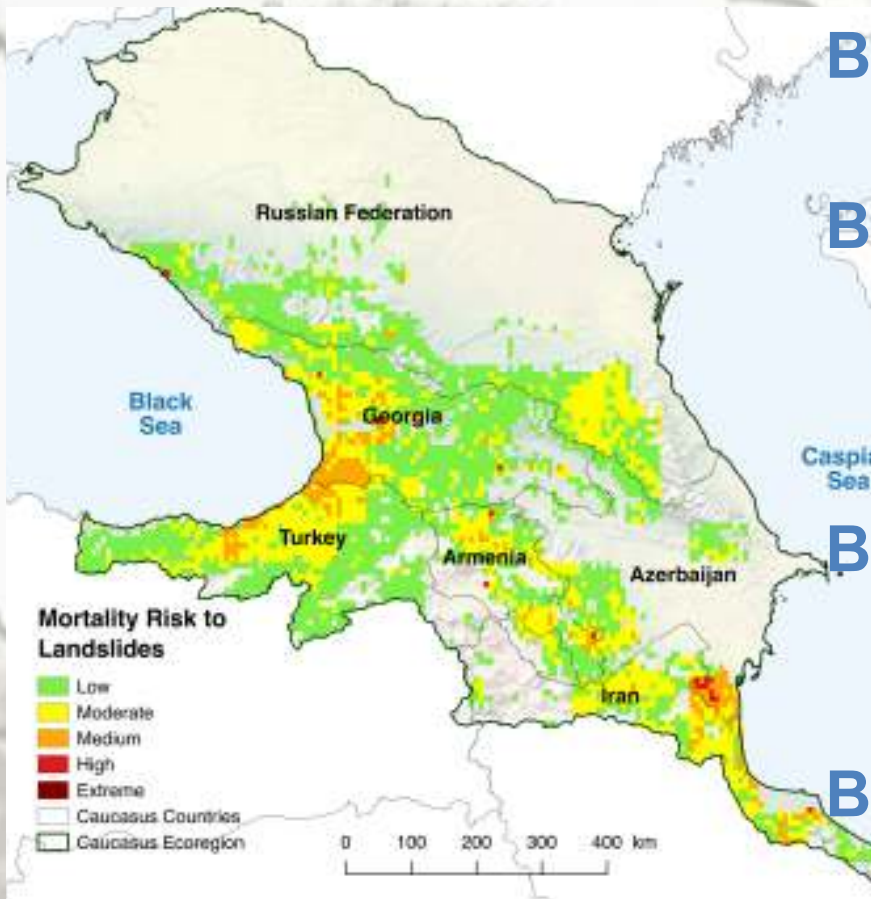
B5.b. Monitoring

B5.c. Impacts and Consequences

B5.d. Modeling

B5.e. Synthesis

B6 Natural Hazards and Risks



Mortality Risk due to Landslides in the Caucasus

Source: Preview Global Risk Data Platform:
<http://preview.grid.unep.ch>

- B6.a.** Hazard observation, mapping, monitoring and MRV
- B6.b.** Impacts of natural hazards on settlements and infrastructure, human health, economic sectors and the environment
- B6.c.** Decreasing the damage by and increasing the protection from natural hazards
- B6.d.** Effects of climate change on natural hazards and modeling
- B6.e.** Institutional effectiveness for natural hazards prevention

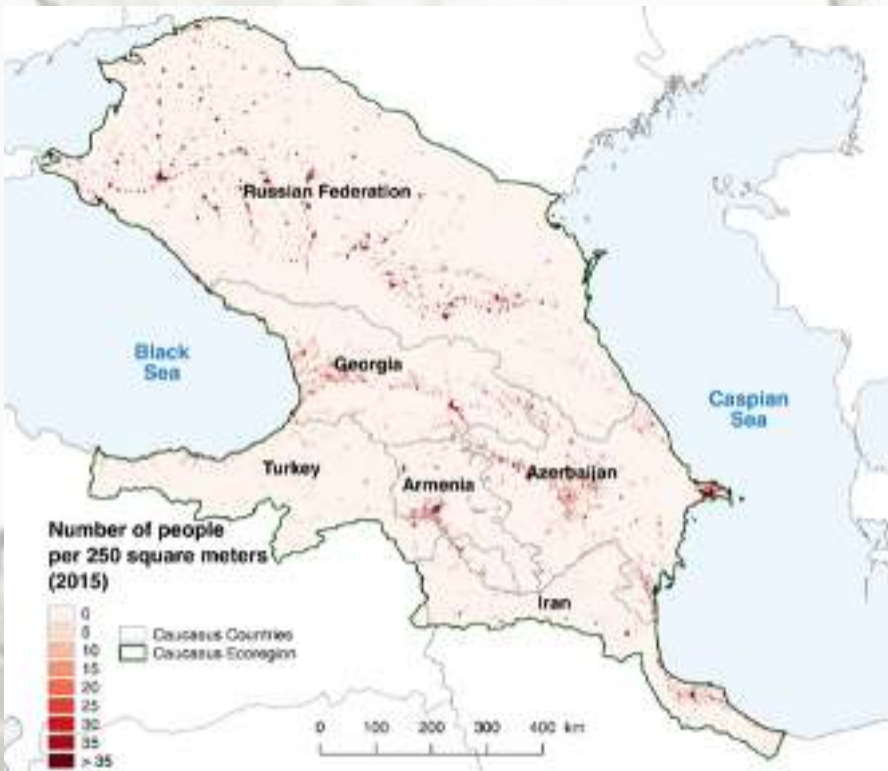
B7 Population and cultural diversity

B7.a. Conceptual research

B7.b. Demographic situation

B9.c. Settlement patterns and infrastructure

B9.d. Cultural diversity

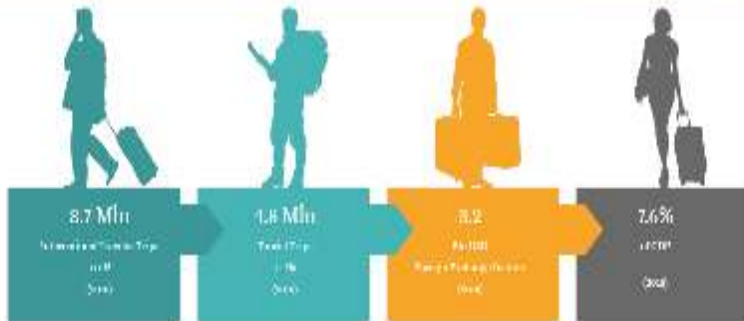


Caucasus population density

Source: GHS, http://ghsl.jrc.ec.europa.eu/ghs_pop.php

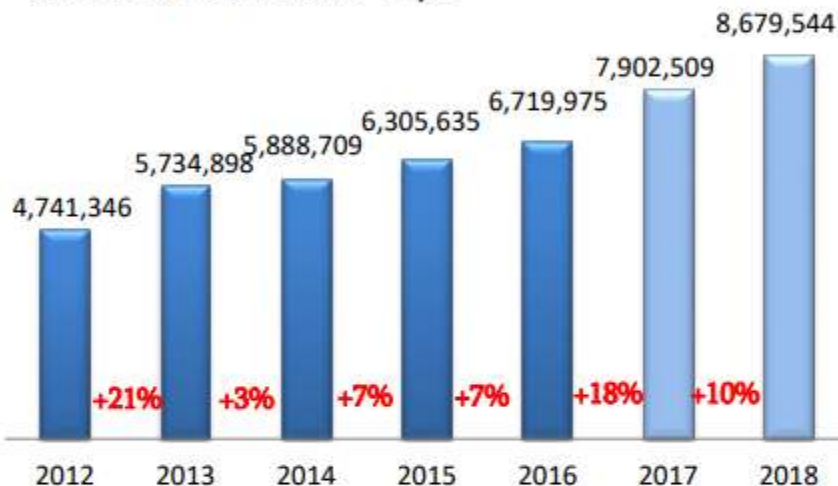
B8 Tourism and Recreation

Research



- B8.a.** Tourism, recreation and sustainable development
- B8.b.** Impact on climate change on tourism and recreation / Impact of tourism and recreation on climate change
- B8.c.** Environmental and social Impact of tourism and recreation activities
- B8.d.** Governance, policy and economy in tourism and recreation

International Traveler Trips



Source: The Ministry of Internal Affairs

B.9 Socio-economic development and planning



Source:

https://www.google.com/search?q=stepantsminda+city+plan&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjsu9yQ44nIAhXrkYsKHQBdBdQ_Q_AUIEigB&biw=1366&bih=608#imgrc=L7v5Tjzq1do-xM:

B9.a. Demographic stagnation and depopulation

B9.b. Settlements and infrastructure in mountainous regions

B9.c. Economic issues and energy generation

B9.d. Socio-economic transformation of the region over the last decades

B9 Mountain Cryosphere



Caucasus cryosphere (polygons)

Source: GLIMS: www.glims.org/maps/glims

B.10.a. Glaciers as indicators of climate change

B.10.b. The role of snow and ice in the formation of water resources

B.10.c. Natural hazards of glacial genesis (avalanches, mudflows, surges, glacial lake outburst floods)

B.10.d. Development of glacial and nival zones for sport, tourism and recreation

Cross-cutting issues

- In addition to the ten main research chapters several **cross-cutting research topics** have been identified.
- Those issues cover but are not limited to multidisciplinary research topics like:
 - Soils sustainable management,
 - Air pollution,
 - Promotion of renewable energy sources,
 - Ecosystems services,
 - the Economics of Ecosystems and Biodiversity (TEEB),
 - Landscape ecology and infrastructure,
 - Governance and decision-making,
 - Transboundary cooperation between stakeholders, especially scholars, at different administrative levels.

Cross-cutting issues

- The cross-cutting issues demonstrate importance of multidisciplinary study for establishing a solid scientific ground in decision-making and improving management.
- They should be oriented on balanced economic growth and achieving sustainability in the Caucasus region.
- The cross-cutting topics are targeted at safeguarding uninterrupted provision of natural resources and ecosystem services important for human development and decent quality of life.

Feedback of CMF2

B.1	Climate change	8.4
B.2	Biodiversity	7.6
B.3	Forestry conservation and development of forests	7.7
B.4	Water resources and management	7.7
B.5	Land use and land cover change	7.7
B.6	Natural hazards and risks	7.5
B.7	Population and cultural diversity	7.4
B.8	Tourism and recreation	7.5
B.9	Socio-economic development and planning	7.7
B.10	Mountain cryosphere	6.9

The Way Forward

- **Which target audiences should be prioritized?**
 - National academic communities, scientific academies
 - Policy makers and practitioners
 - Specialized government institutions
 - Civil society advocacy organizations
 - Professional associations

The Way Forward

- **How are priority target audiences best be reached?**
 - Academic communities: general and case-based scientific dialogue
 - Policy makers: participation in formal policy making processes (legislative consultations, EIAs, ...)
 - Practitioners (and policy makers): transdisciplinary approaches
 - NGOs/professionals association: thematic dialogue
 - Regional platform for dialogue on cross-border topics

The Way Forward

- **How can international awareness of the C-RRA be raised?**
 - Strengthen regional perspective
 - Presence & presentations at other meetings and processes
 - Exchange with other research networks
 - Participate / feed into donor coordination dialogues (country-level and UN processes)
 - Collaboration & coproduction with scientists and practitioners from other regions

The Way Forward

- **How can funding for basic and applied research on RRA topics be promoted?**
 - Collaborate to create “economies of scale”
 - Strategic partnerships with scientists in well-funded regions
 - Reach out to & lobby committed donors (also EU funding tools)

The Way Forward

- **How can the alignment of new knowledge with RRA chapters be ensured?**
 - Communicate with universities, promote master/ PhD/postdoc topics and scholarships; link to financial incentives (awards, prizes)
 - Cooperative, multi-country, cross-cutting research
 - Link new knowledge to practical life
 - Regular monitoring – analyze donor & government activities

The Way Forward

- **What mechanisms for dialogue between research and practice should be fostered?**
 - Participatory / transdisciplinary research, including at local level
 - CSO consultations
 - Scientific input in legislative processes

What can be done

- Cooperative and exchange process between practitioners and academia to ensure research for development
- Advocacy of institutional and other changes jointly by practitioners and academia
- Involvement of academia in decision-making process (institutionally and individually)
- Increasing number of practitioners and academia joint initiatives and projects
- Get funding from both business and donors
- Giving an order to research considering needs of a country

How it can be done

- Organization of regular meeting both general and thematic
- Agreeing of advocacy strategies and activities
- Ensuring that both practitioners and academia are informed about ongoing decision-making process and both participate in it
- Ensuring that academia institutionally is involved in initiatives and projects related to research and development
- Creation of opportunities for get funding from both business and donors
- Guide research for development through sharing on needs and challenges
- Selection of priority topics for joint action (to be planned)

THANK YOU FOR ATTENTION!

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