

Natural gravity hazards in the Canton of Vaud

Integrated risk management and climate change: challenges for a canton

Christian Gerber

UDN – DIRNA – DGE - VD

ECCE Inaugural Event, Lausanne, 09.02.2024

Who we are

Unité des dangers naturels (UDN)

Natural hazards unit

Water Division (DGE-Eau)

Forest Division (DGE-Forêt)

Directorate of natural resources and heritage (DIRNA)

General directorate of the environment (DGE)

Department of Youth, Environment and Safety (DJES)

Directed by Vassilis Venizelos

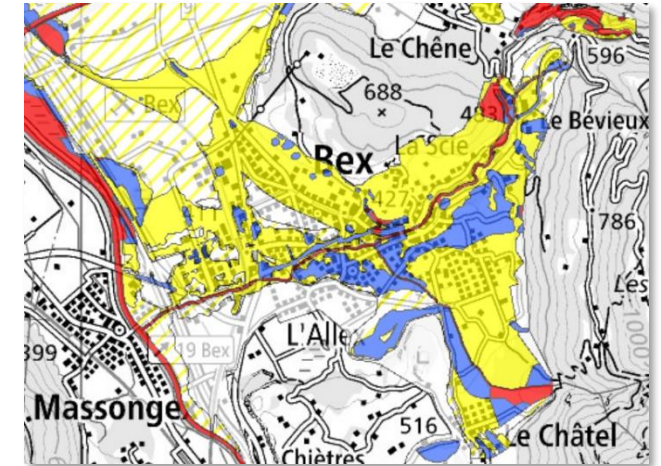
•• Unité des dangers naturels (UDN)

Activités et organisation



What we do

- Natural hazards maps (CDN)
- Risk analysis
- Risk maps (CDP)
- Events register (CEV)
- Register of protective structures (COP)
- Risk base approach to spatial planning
- Risk management and planning
- Communication
- Expertises



Natural hazards maps (CDN)



Risk maps (CDP)

Our partners

SSCM

Civil and military security service



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra



UNIL | Université de Lausanne

DGTL

General Directorate of Territory and Housing



270 townships
(out of 300)



DGMR

General Directorate of Mobility and Roads



50 private technical offices

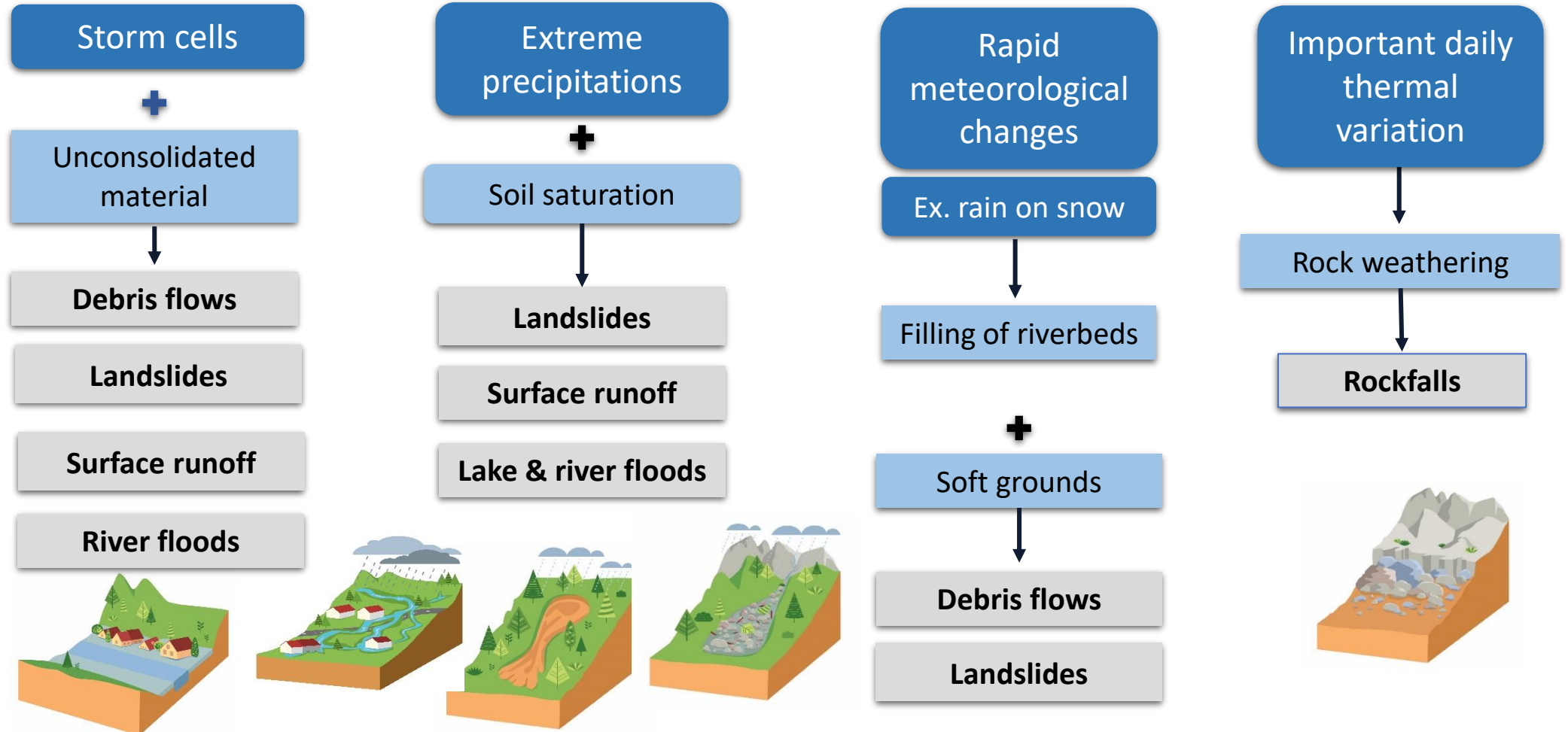


DCG

Directorate of Land Registry and Geoinformation

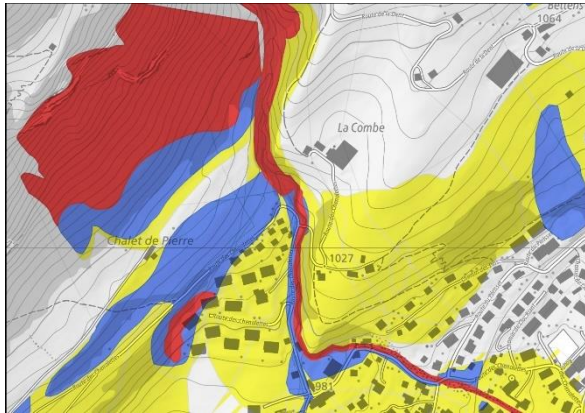


Natural hazards influenced by climate change

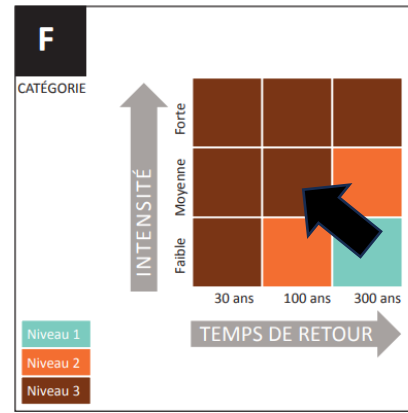
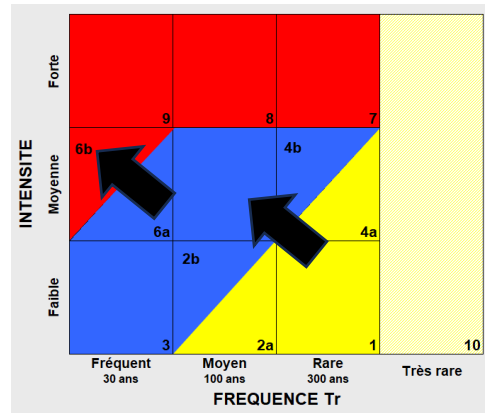


Effects of climate change 1

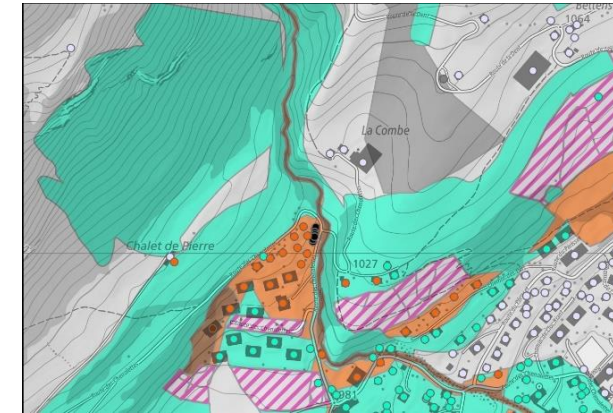
Impact on natural hazard maps and risk maps



Natural hazards maps ⇒ yellow to blue & blue to red



Risk maps ⇒ green to dark red



Challenge #1: Will we need to adapt our maps to integrate the effect of climate change. If so, to what extent? What are the costs of such a process?

Effects of climate change 2

Impact on dimensioning protective structures



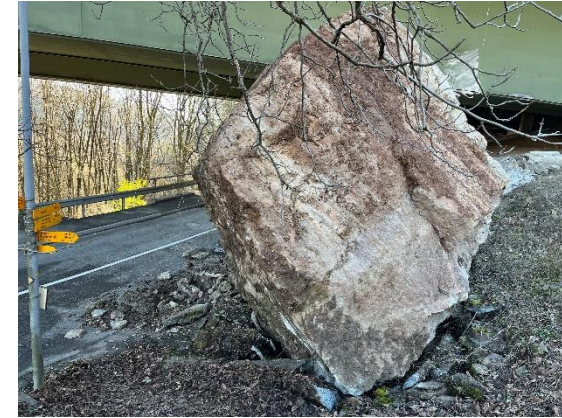
Derna, Libya, Daniel
storm, 11.09.2023

Challenge #2: Do existing protective structures still provide the same level of safety for people, property and infrastructure ? How can we assess changes in this level of protection, what are the costs of restoring adequate security?

Effects of climate change 3

Impact of the recurrence of extreme precipitation

⇒ increase of events

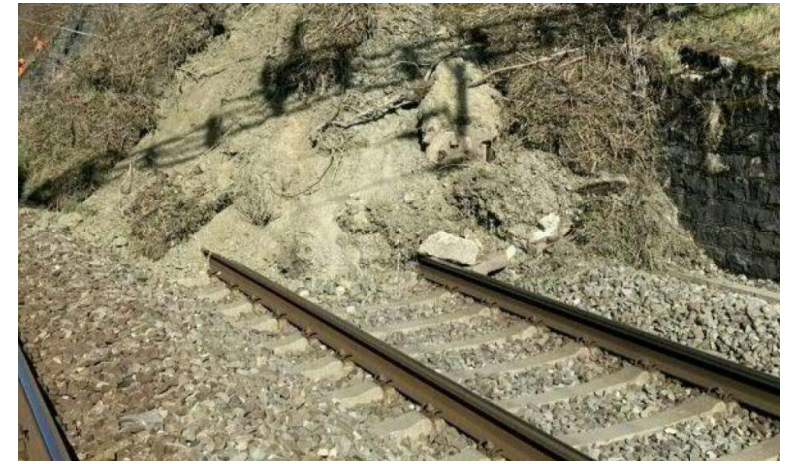


Challenge #3: Strengthen the organization and capacity of public authorities to respond to the increase in interventions.

Challenge #4: Adapting the existing legal bases to the recurrence of these situations and clarifying areas of responsibility.

Effects of climate change 4

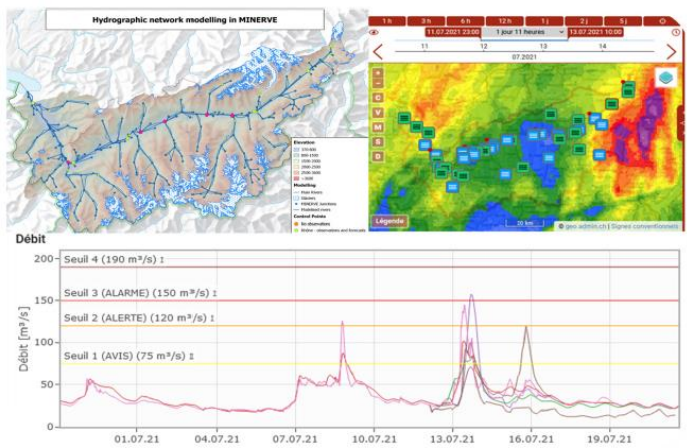
Impact on public infrastructure exposed to natural hazards



Challenge #5: Study the impact of climate change on the deterioration of infrastructures exposed to natural hazards.

Effects of climate change 5

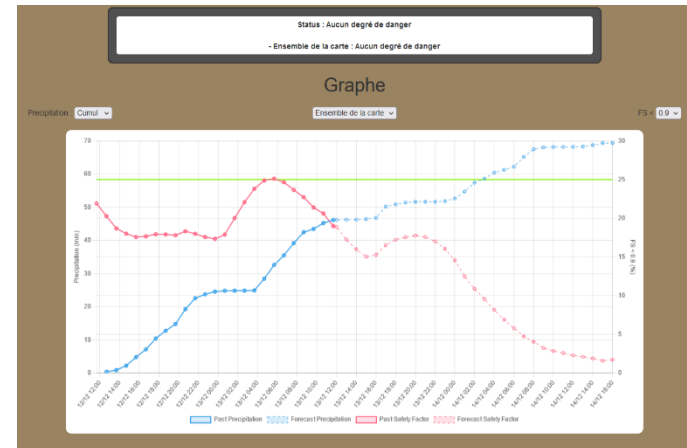
Early warning systems for natural hazards



GUARDAVAL

CANTON DU VALAIS
KANTON WALLIS

crealp



LIBERTÉ PATRIE canton de vaud

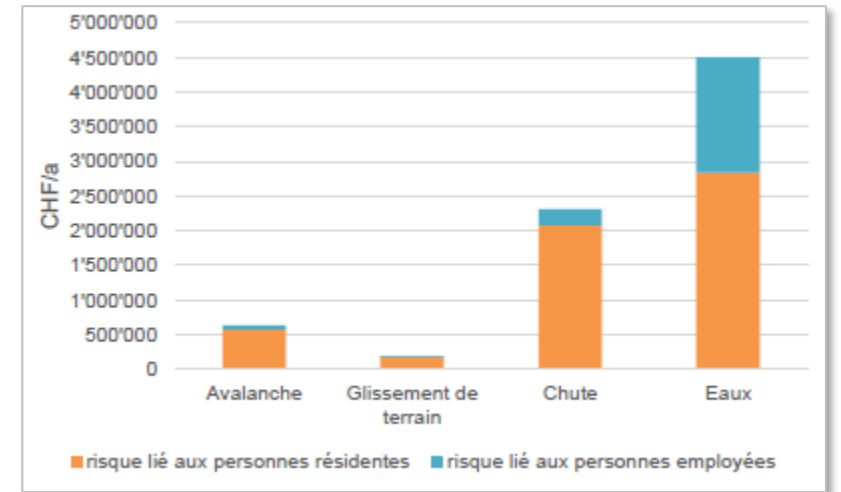
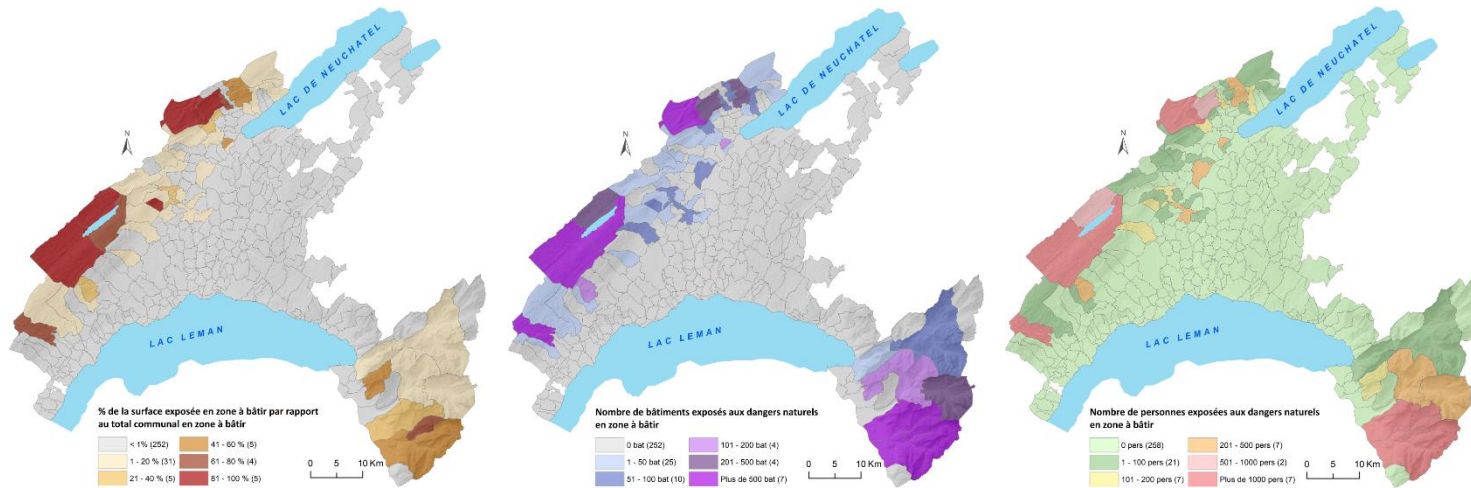
OLOAC //system

Challenge #6: Implementing a monitoring platform for natural hazards and weather conditions.

Challenge #7: Implementing an early warning system in the Canton of Vaud

Effects of climate change 6

Risk inventory and consolidation of indicators



Challenge #8: To have a robust, up-to-date inventory of natural hazard risks.

Challenge #9: Develop reliable and reproducible indicators in the Vaud region

State's responses to climate change

Adaptation of

- Baseline data and hazard and risk maps
- Legal bases
- Existing protective structures
- Planning and dimensioning measures long-term rather than for the present

Assessment of

- New risk hotspots



Developments

- Indicators of the increase in events
- Early warning systems

Improve and consolidate

- Coordination between services and with local authorities
- Response management

Challenge #10: To establish a cantonal integrated risk management plan and include the effects of climate change.

Summary

Preventing and managing natural hazards

The threat posed by natural hazards is increasing due to the impacts of climate change. Municipalities have a responsibility to protect their populations from these dangers and must consider hazard maps in their planning procedures. Each exposed municipality must carry out a risk analysis and identify protection deficits, then deploy protective measures accordingly. An intervention plan for crisis or emergency situations should also be drawn up.