



SWITZERLAND'S FOCUS ON DISASTER RISK REDUCTION



Source: Philippe Gyarmati, FOEN

This paper summarises the key elements that Switzerland considers important in disaster risk reduction (DRR)¹. It has been harmonised within the DRR working group² and is meant to serve as a basis to inform a coherent Swiss position at the upcoming 7th Session of the Global Platform for Disaster Risk Reduction (GP 2022).³

Overall goal in DRR

In line with the global community and as depicted in the Sendai Framework for Disaster Risk Reduction 2015–30, Switzerland strives to **reduce existing risks substantially** and to **prevent new risks**. Moreover, Switzerland is committed to strengthening the ability of its society, economy and environment to resist and adapt to hazards and recover from disasters, thereby safeguarding people's welfare.

Switzerland's approach

Integrated risk management⁴ is a process aimed at addressing and managing risks. As a **systematic approach**, it means identifying and assessing risks (*what can happen?*), evaluating and prioritising them (*what is allowed to happen?*) and taking appropriate measures to reduce them (*what should be done?*). The broad range of measures and actions in the areas of prevention and mitigation, preparedness, response and recovery are seen as **complementary mechanisms** that need to be combined in an appropriate and balanced way.

DEFINITIONS

- **Disaster** is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. Disasters are often described as a result of the combination of: the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences.
- **Risk** is defined as the potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity. It can be displayed as a product of damage and likelihood.
- **Hazard** is a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
- **Exposure** refers to who and what may be affected in an area in which hazardous events may occur. If the population and economic resources were not located in (exposed to) potentially dangerous settings, no risk would exist.
- **Vulnerability** depends on the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. There are many aspects of vulnerability, arising from various physical, social, economic, and environmental factors.
- **Capacity** refers to the combination of all the strengths, attributes and resources available within an organisation, community or society to manage and reduce disaster risks and strengthen resilience. Capacity may include infrastructure, institutions, human knowledge and skills, and collective attributes such as social relationships, leadership and management.

Integrated risk management **takes all types of hazards and their resulting risks into consideration**, assessing them via comparisons. It calls for **multi-stakeholder processes** in which decision-makers, experts and the affected communities agree on an acceptable risk level and appropriate risk reduction measures. Risks that a society faces can never be completely eliminated. Therefore, the objective is to keep the remaining risk at an acceptable level that people, communities and societies can bear, given existing social, economic, political, cultural and environmental conditions. The subsidiarity principle is central in Switzerland, with local, sub-national and national authorities sharing responsibilities. As this principle has proved effective, Switzerland advocates for responsibility-sharing. That being said, the COVID-19 crisis demonstrated that in exceptional circumstances such as pandemics, it is also important for a federal state to have mechanisms in place that allow decisions to be taken uniformly.

Different frameworks – coherent approaches and objectives

Development is only sustainable when its economic, social and environmental dimensions are protected from disasters, which often threaten human life and people's health, livelihood and security and in doing so also destroy development gains. **Embedding the principles of DRR in development planning** is a crucial and cost-effective measure to contribute to eradicating poverty and building resilient societies. DRR is therefore reflected in the **Sustainable Development Goals** of the 2030 Agenda as a cross-cutting and multi-sectoral issue.

DRR and climate change adaptation (CCA) share common concerns and approaches. These challenges have also been recognised by both the international DRR and CCA communities. As a result, both the Paris Agreement on Climate Change and the Sendai Framework for Disaster Risk Reduction (SFDRR) recognise the strong synergies that arise if DRR action is integrated when tackling the challenge of reducing the impacts of weather and climate-related hazards.

Switzerland is committed to these international frameworks and fully supports them. Regarding the Sendai Framework for DRR, Switzerland was not only heavily involved in its elaboration; the country is actively implementing it. Furthermore, Switzerland contributes to the annual progress monitoring of the framework. Information is gathered from the Federal Statistical Office and other federal agencies, universities and research institutions, insurance companies and associations.

International cooperation

DRR is an important part of Switzerland's international cooperation. Based on its experiences as a mountainous country, Switzerland has been promoting a systemic and integrated approach to risk management for decades. Switzerland supports partner countries in their efforts to understand disaster risks, to reduce existing risks and to prevent new risks, preparing for and managing disasters. This allows them to build resilient communities in line with the SFDRR. Switzerland also pro-actively integrates climate change concerns in its international cooperation as well as in multilateral processes, and supports various regional and international DRR-related organisations and initiatives.

Structure of this paper

The integrated risk management approach is also reflected in the structure of this paper. The first two chapters are dedicated to risk governance and comprehensive risk assessment, which are seen as prerequisites for successfully dealing with risks. The subsequent three chapters – prevention and mitigation, preparedness, and recovery – cover the three phases of the integrated risk management cycle. All areas call for action. The principles are illustrated with examples, best practices and experiences both from Switzerland and abroad in international cooperation.



Source: [Integrated risk management cycle](#), FOCP 2019

- 1 The DRR terminology used in this paper is largely based on the [UNDRR terminology](#).
- 2 The position paper was developed by the working group on DRR composed of representatives from the Federal Department of Foreign Affairs (FDFA), Federal Office for Civil Protection (FOCP), Federal Office for the Environment (FOEN), National Platform for Natural Hazards (PLANAT), State Secretariat for Economic Affairs (SECO), Steering Committee Intervention in Natural Hazards (LAINAT), Swiss Agency for Development and Cooperation (SDC), Swiss Federal Institute of Technology in Zürich (ETH Zurich), Swiss NGO DRR Platform, and Zurich Insurance Group.
- 3 Global Platform for DRR, 23.–28.5.2022, Bali, Indonesia
- 4 The term 'integrated risk management' corresponds to the internationally used term 'disaster risk management' (UNDRR Terminology). See also: [FOCP](#) and [FOEN](#)

1. Enabling environment: risk governance and financing

- Make DRR a **policy priority** and provide a **legal framework** and strategic orientation
- Define **clear roles and responsibilities across all levels and functions**
- Ensure effective implementation and facilitate the **coordination among and participation of all relevant stakeholders**
- Ensure that **adequate capacities and sufficient financial resources** are available
- Strengthen and give a **voice to communities**
- Systematically consider risk and risk reduction in all **relevant sectors (mainstreaming)** and integrate them in policy, strategies, programmes and project design

A **legal framework** that takes into account disaster risk issues at all levels and in all relevant sectors is a fundamental requirement for successful disaster risk reduction. For the past 150 years, Switzerland has relied on robust legislation that regulates forest and water management, putting emphasis on prevention. The state subsidises measures like river training, reforestation, structural measures, and the creation of accessible early warning systems. Furthermore, **national strategies** on DRR, climate change adaptation, sustainable development, and civil protection underline that DRR is a policy priority.

It is necessary to define **clear roles and responsibilities** at all relevant administrative levels (national, sub-national, local) and for all stakeholders (state and local authorities, private-sector institutions, academia, international and non-governmental organisations and civil society) to effectively address the prevailing and expected risks and respond to disasters. Joint planning and coordination of DRR activities by all actors – governmental and non-governmental bodies – creates synergies and reduces duplication. **Decision-making based on a participatory approach** should be transparent and inclusive.

Given that natural and other hazards hit **local communities** first and foremost, work to reduce and manage such events' risks must be well anchored at sub-national and local levels. Responsibilities and competencies have **to be delegated as far down** as necessary to ensure that local knowledge is valued, ownership guaranteed, and individual responsibility strengthened, while taking into account the limits of each administrative level's capacity. **Participatory multi-stakeholder partnerships at local level** that include the active participation of communities are key in strengthening the resilience of communities in a fast-changing, complex and uncertain risk environment.

EXAMPLES

National strategies

Switzerland has **various strategies at national level** that outline how to deal with risks. Most of them concern only one sector or policy area or have been formulated from a particular perspective. All of them focus on preventing new risks and reducing existing risks.

- Strategy: [Management of risks from natural hazards](#) (2018)
- [Federal Council strategy for adaptation to climate change in Switzerland](#) (2012)
- [National strategy for Critical Infrastructure Protection 2018-22](#)

Financing DRR

In the context of the **reorganisation of the financial responsibilities and mechanism** between the Confederation and the cantons, the roles and responsibilities regarding gravitational hazards have been intensively discussed and clarified. The Confederation provides cantons with **appropriate financial support** in the form of subsidies on a four-year basis.

- [Programme agreements of the FOEN](#) (de)

Stakeholder cooperation

In Switzerland, several **multi-stakeholder committees and bodies** carry out coordination, alignment, strategic advising, and problem-solving work. These include the following:

PLANAT, the National Platform for Natural Hazards, is an extra-parliamentary commission with 18 members from national and cantonal authorities, universities, insurance companies, and the private sector:

- [PLANAT](#)

Steering Committee Intervention in Natural Hazards (LAINAT)

Six federal agencies are coordinated by the LAINAT to issue warnings on natural hazards for the public and cantonal and/or community authorities:

- [LAINAT](#)

The **National Centre for Climate Services (NCCS)** brings federal authorities together in a virtual network. Furthermore, it serves as a knowledge hub for climate services:

- [NCCS](#)

Full, equal and meaningful participation of all actors, including those most at risk (women, older persons, persons with disabilities and indigenous persons) in decision-making must be ensured. All forms of discrimination need to be eliminated. Due to gender-specific barriers and inequalities, **women** are disproportionately impacted by disasters. Their recovery time is longer. Addressing barriers to women's and other at-risk stakeholders' ownership of property, land and natural resources is particularly important for DRR.

In order to ensure that each responsible person or organisation can play their respective role, it is essential that **suitable resources are allocated** accordingly and guaranteed in the long term. Different kinds of resources are needed: capable individuals (human resources), sufficient financial means (capital), and – among others – transparent and inclusive decision-making and budgeting processes.

A prerequisite for successful DRR is an overall awareness of and capacity to address DRR issues at all administrative levels and among the population. Aspects of such a capacity include knowledge and skills as well as social relationships and leadership. For this, inclusive and accessible organisational and individual capacity-building is key.

The use and **mainstreaming** of detailed risk assessments and cost-effectiveness considerations for risk reduction measures in all sectors (infrastructure, agriculture, land use planning, others) will prevent future losses by **risk-informed planning**. As a large part of worldwide investments is of private nature, businesses have to be included in DRR efforts. To be able to maintain operations during disasters, the private sector needs to take DRR measures to protect its assets, workforce, and supply and distribution chains.

*Lake Lucerne: flooding in Alpnachstad, canton of Obwalden, July 2021.
Source: Philippe Gyarmati, FOEN*

Swiss engagement abroad

The Government of Tajikistan endorsed the **National DRR Strategy 2019–30**, the **National CCA Strategy 2019–30** and appointed a **National Focal Point for DRR** at the level of deputy prime minister. Switzerland supported these processes through the United Nations Development Programme (UNDP).

- [UNDP in Tajikistan](#)

In Bolivia and Haiti, local administrations are strengthened in their DRR governance through organisational development (creation of **local DRR officers** and offices); **tools** (hazard maps, land-use and construction regulations); training and **capacity building**; and awareness raising regarding risks and DRR that also includes civil society and private sector actors.

- [SDC DRR programme in Bolivia](#)
- [SDC programme in Haiti \(fr\)](#)
- [Helvetas project: risk governance in Haiti \(fr\)](#)



2. Know your risk

- Consider all risk factors: **hazard, exposure, vulnerability and capacities**
- **Identify and analyse hazards** that have **different origins**
- Bear in mind the risks of **small-scale and large-scale** disasters as well as direct and indirect losses
- **Revalidate** the risks periodically and **base them on scenarios** as **environmental, climate and development changes** influence the risk patterns
- Make **information** on risks **accessible** and **available to everyone**

A society can only deal effectively with shocks and stresses if it has an in-depth **understanding of its expected new, and prevailing risks**, their direct consequences (e.g. building damage) and indirect ones (e.g. business interruptions due to infrastructure damages), as well as their complex interconnectedness. Comprehensive and broad analyses examine all types of hazards a society is facing, be it of natural (e.g. earthquakes, flooding, hurricanes, droughts or environmental degradation), technical (e.g. toxic waste, dam failures, transport accidents) or biological (e.g. pandemics, animal disease outbreaks) origin. These analyses also take into account all different scales of risks.

Although **recurrent smaller scale disasters** are usually not included in risk inventories and do not make media headlines, they often cause most of the losses of people at risk, limit development opportunities and undermine state and household budgets. This is especially true for communities living in the Global South. In Switzerland too, people have to deal with high losses in urban areas due to surface runoff after local thunderstorms.

The **character and severity of a hazardous event** depend not only on the **hazard** itself but also on the **exposure** to the hazard, **vulnerability**, and insufficient **capacities** or **measures** to reduce or cope with the potential negative consequences. All factors can be influenced by climate change, socioeconomic development, urbanisation and digitalisation.

The current focus of hazard and risk assessment is still on the changing pattern of the hazards expected to increase in frequency and in intensity due to climate change or environmental degradation. **More systematic attention needs to be paid to the changes in vulnerability and exposure of people and assets.** In many countries weak understanding of the risks, inappropriate land use planning, poor construction quality, increased disparity, exclusion and discrimination as well as the lack of enforcement of the rule of law are by far the main causes of the increase in negative impacts.

As risk factors are constantly changing, regular and **forward-looking assessments** are necessary.

EXAMPLES

National and sub-national risk overviews:

The **national disaster risk assessment** 'Disaster and Emergencies in Switzerland' applies a multi-hazard and whole-of-society approach by analysing 44 hazards in the domains of nature, technology and society jointly with experts from the public and private sector and with representatives of academia, insurers and associations. The results inform national preparedness planning, exercises and strategy development.

- www.risk-ch.ch

Sub-national risk assessments

In a federal system, it is also necessary for the sub-national entities to conduct their own risk assessment and preparedness planning, as they are the main actors responsible in the context of civil protection and disaster management. Furthermore, conducting risk assessment and preparedness planning at community level is also important for tackling the risks as close to their source as possible.

- [Kataplan guideline](#)

Risk overviews of gravitational natural hazards are created by overlaying the hazard assessment with land use plans, whereby the affected assets are identified. This shows, for example, whether a person, a building or a section of a road would be affected by a landslide or by flooding. If the possible consequences (death or damage to property) are estimated, the risk can be calculated.

- [Risk overviews of natural hazards](#) (de)

For some of the less known or even neglected natural hazards in Switzerland, sound hazard assessments have been carried out recently:

Hail climate Switzerland

Hailstones cause great damage every year in Switzerland. More than one third of the building damage caused by natural events is related to hail. A uniform national reference framework for hail hazards data, including information on hail frequency, hailstone sizes and return periods was developed in private-public-partnership with insurance companies.

- [Hail climate Switzerland](#)

Surface runoff risk map

This map shows the distribution and severity of potential surface runoff risk. It covers the whole of Switzerland, both developed and undeveloped regions, and is publicly accessible online.

- [Surface runoff risk map](#)

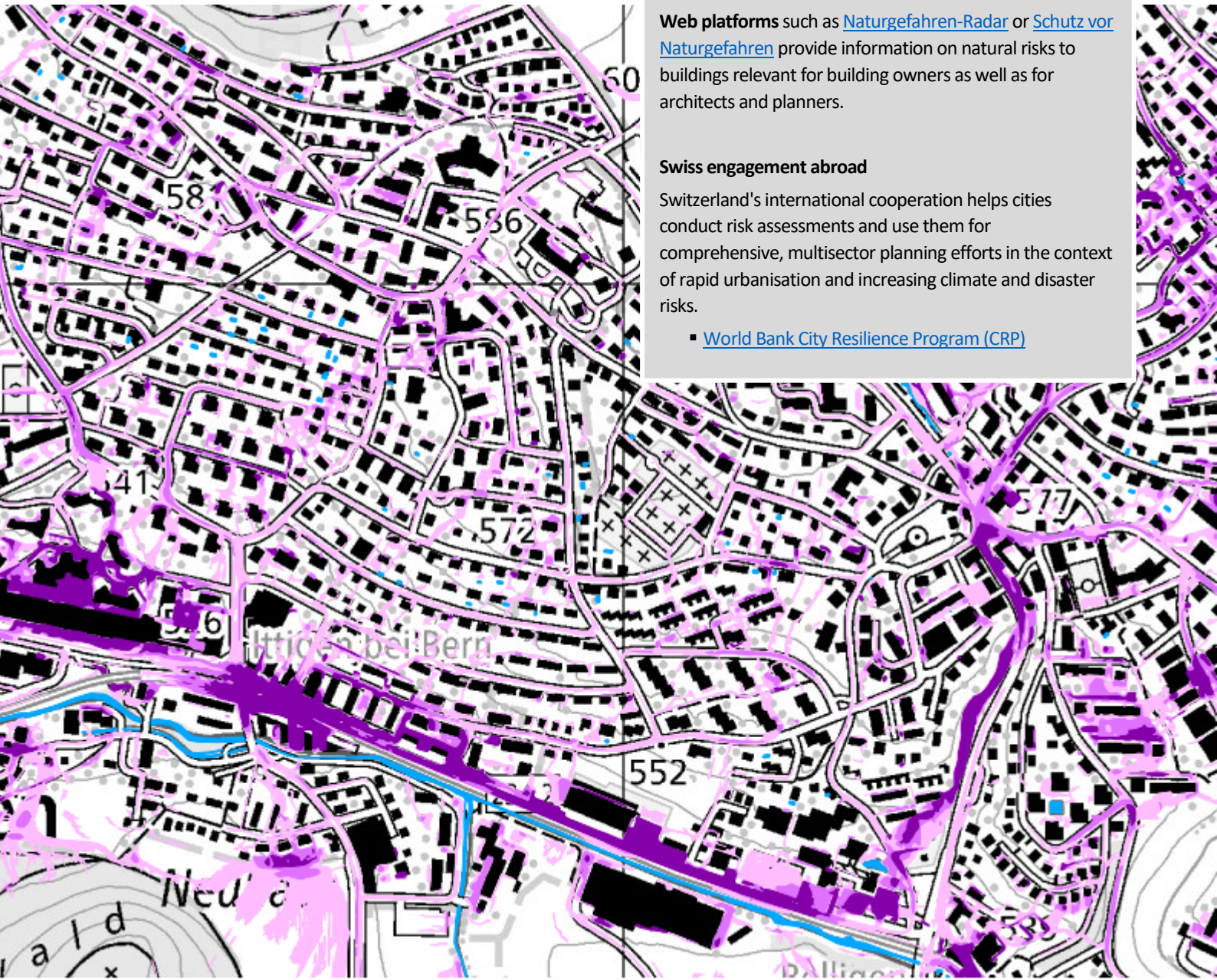
In addition to known events and statistics, possible extreme scenarios need to be considered. This applies in particular to hydro-meteorological risks.

The Intergovernmental Panel on Climate Change (IPCC) points out that **climate change accelerates processes** and is occurring faster than expected.

Stakeholders and decision-makers at all state levels, operators of the critical infrastructure affected, communities, and the general population need to have **access to relevant data and information**. Information about prevailing risks is key for awareness. While in Switzerland detailed risk information is easily accessible and free of charge, other countries are only starting to open up such access.

Local knowledge as well as the perspectives of insurance companies may complement the risk assessments carried out on a scientific basis.

Surface runoff risk map. Source: FOEN



Swiss earthquake risk model

What damage could earthquakes cause in Switzerland? At present, only a patchy answer can be given to this important question. Based on the seismic hazard, the risk model takes account of the influence of the local subsurface and the vulnerability and value of buildings.

- [Swiss earthquake risk model](#)

The **flood-risk research initiative** offers different tools to assess damages to buildings due to flooding (damage simulator) or to visualise the damage that flooding could cause. The public can contribute their own photos of past events to a nationwide repository.

- [Flood-risk research initiative](#)

Social learning videos – strategies for building owners

How can building owners be motivated to protect their properties from flooding? Social learning videos use specific learning moments and success factors to raise awareness of protective measures:

- [Social learning videos](#)

Web platforms such as [Naturgefahren-Radar](#) or [Schutz vor Naturgefahren](#) provide information on natural risks to buildings relevant for building owners as well as for architects and planners.

Swiss engagement abroad

Switzerland's international cooperation helps cities conduct risk assessments and use them for comprehensive, multisector planning efforts in the context of rapid urbanisation and increasing climate and disaster risks.

- [World Bank City Resilience Program \(CRP\)](#)

3. Prevent and mitigate risks

- Consider **all risk factors**: hazard, exposure, vulnerability, and capacities to plan for adequate and inclusive **prevention and mitigation measures**
- Advocate for **avoidance or reduction of exposure** to risks
- **Reduce the root causes of vulnerabilities and build resilience**

Once the prevailing risks are known, the risk factors help to define the most appropriate mix of measures. Enforcing risk-informed land use regulations aims to avoid hazard-prone areas for settlement and infrastructure, thus **reducing exposure to hazards**. During heat waves in Switzerland, civil protection and healthcare organisations visit elderly people at home to look after them and help **reduce their (social) vulnerability**. Afforestation reduces the intensity and probability of soil erosion and flood protection dikes limit the extent of flooding. Both measures **reduce** primarily **the respective hazard**.

In many cases, risks increase, and new risks appear as a result of misuse of natural resources and expansion of settlements and infrastructure in hazard-prone areas rather than due to a changing hazard situation. Therefore, preventive measures include laws, regulations and practices that **avoid the creation of new risks**. For instance, land use planning that prohibits settlements and other investments in disaster-prone areas.

Mitigation measures attempt to limit and reduce the adverse impacts on people, livelihoods and infrastructure. They often overlap with prevention. Examples of this include the enforcement of building codes for hazard-resistant construction and infrastructure, structural measures, such as flood protection dams, and rockfall protection nets. Natural resource management and integrated watershed management help reduce risks.

Reducing exposure permanently or temporarily is a cost-effective and efficient measure to avoid losses, in particular human losses, through people-centred accessible early warning systems and inclusive early action as well as adapted land use regulations, especially in urban settings.

When **addressing vulnerabilities**, Switzerland mainly focuses on physical vulnerability, e.g. that of infrastructure or buildings. Social vulnerabilities stemming from people's socio-economic status are largely covered by the social security system, e.g. mandatory health and building insurance, unemployment insurance, the old-age, survivors', and invalidity insurance programmes, and social welfare.

EXAMPLES

Hazard maps as tools for land use planning at local level

Almost every Swiss municipality disposes of hazard maps covering flooding, rockfalls, landslides and snow avalanches. They serve as a baseline for developing or adapting land use plans or zoning. The relevant legislation specifies how the zones are to be used and if construction permits can be issued.

- [Spatial planning and natural hazards](#)

Coordination of spatial planning and major accident prevention

In recent years, risks have been rising as a result of housing development surrounding installations **with a major accident potential**. Careless construction activities and zoning changes can significantly influence the density of people living near such installations (stationary chemical plants, railway lines, roads and high-pressure natural gas and petroleum pipelines) and heighten risk. The conflicts of interests should be prevented by **taking greater account of accident prevention in spatial planning**.

- [Coordination of spatial planning and major accident prevention](#)

Proofing of buildings

In addition to the legal and insurance requirements, building standards also define protection targets for new buildings and extensions. SIA standard 261 and 261/1, 'Actions on load-bearing structures' and 'Actions on load-bearing structures – supplementary specifications', include technical requirements for protecting buildings from hail, snow pressure and all gravitational natural hazards (flooding/surface runoff, landslides, rockfalls, debris flow and avalanches) as well as from earthquakes.

- [SIA standards 261 and 261/1](#) (de)

Sponge city

This new urban construction model will be applied as a pilot project in Swiss cities. It aims to alleviate a city's waterlogging, water resources shortage, and urban heat island effect and improve the ecological environment and biodiversity by absorbing and capturing rainwater and using it to reduce flooding. A similar approach is also applied by Switzerland in its international cooperation work in Vietnam.

- [Pilot project sponge city](#)
- [Mekong Urban Flood Proofing and Drainage Program](#)

Reducing the root causes of vulnerability is well anchored in Switzerland's **development agenda**: **poor individuals, households and communities** are often disproportionately affected by disasters and face a higher risk of forced displacement due to disasters and the adverse effects of climate change. High vulnerability and low capacities due to inadequate access to resources and difficulties making a living, poverty, poor governance, discrimination, exclusion and inequality lower resilience against shocks and stresses and heighten the risk of falling into the poverty trap.

The project in Delémont is creating plenty of extra benefits for the local population: natural spaces are enhanced and the River Sorne integrated into the socioeconomic life of the town.
Source: Markus Forte, Ex-Press, FOEN

Flood protection – a community project

After a flooding event that caused damage costing millions of Swiss francs, the city of Delémont has taken numerous steps to prevent flooding and created extra benefits for the environment and the local population at the same time. All measures were drawn up in a participatory process and paved the way for similar initiatives.

- [Community project in Delémont](#)

One Million Youth Actions Challenge (1MYAC)

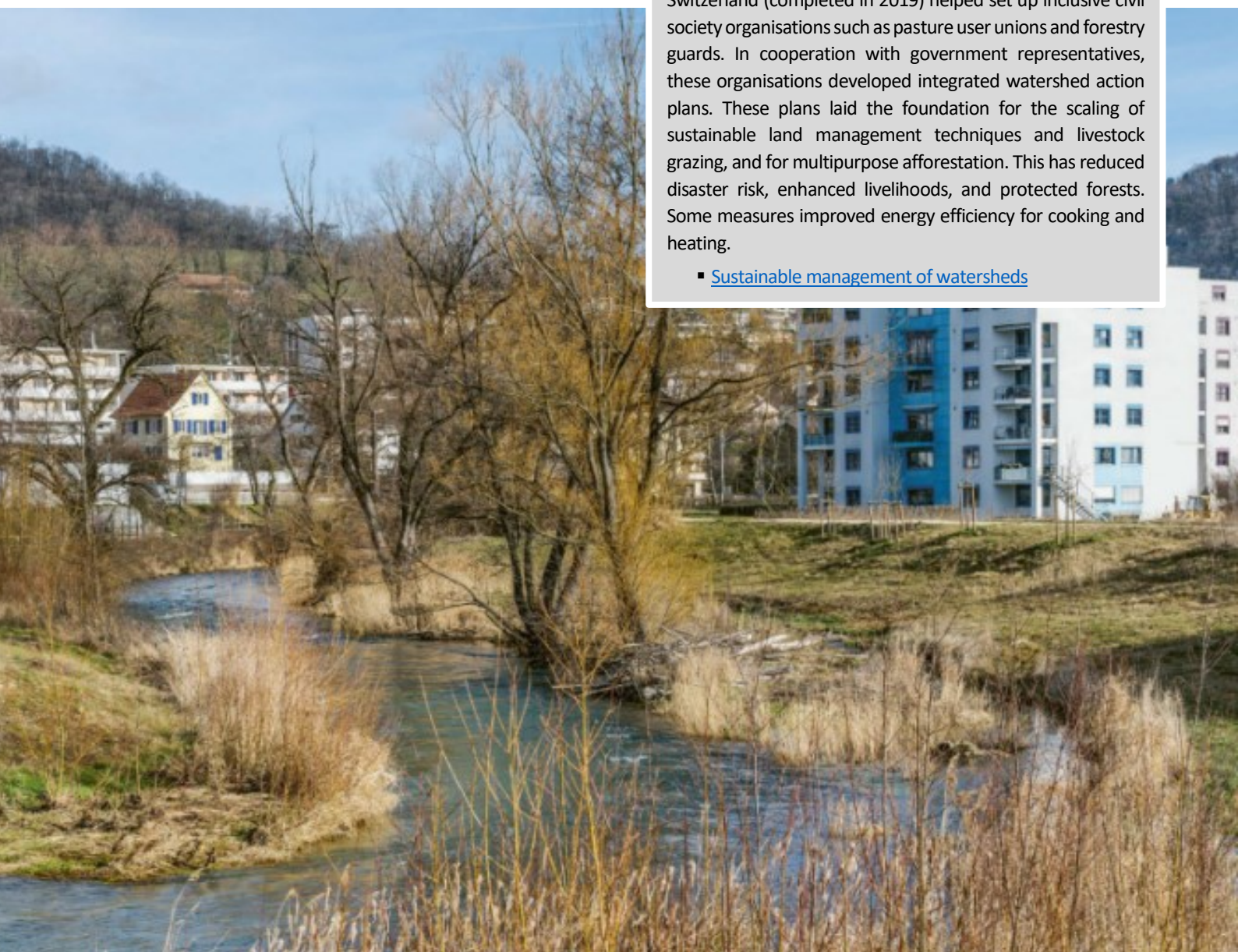
The 1MYAC initiative aims at mobilising youth (aged 10 to 30) from all over the world to implement over one million individual or collective actions for a more sustainable planet Earth. All actions are related to one of the following four Sustainable Development Goals (SDGs): SDG 6 on 'clean water and sanitation', SDG 12 on 'responsible consumption and production', SDG 13 on 'climate action' (climate change) and SDG 15 on 'life on land' (biodiversity).

- [Join the challenge!](#)

Sustainable management of watersheds

Flash floods and mudslides threaten the inhabitants of the Muminabad district in Tajikistan. A project of Caritas Switzerland (completed in 2019) helped set up inclusive civil society organisations such as pasture user unions and forestry guards. In cooperation with government representatives, these organisations developed integrated watershed action plans. These plans laid the foundation for the scaling of sustainable land management techniques and livestock grazing, and for multipurpose afforestation. This has reduced disaster risk, enhanced livelihoods, and protected forests. Some measures improved energy efficiency for cooking and heating.

- [Sustainable management of watersheds](#)



4. Prepare for a better response

- Strengthen preparedness at all levels with a multi-risk approach
- Establish accessible (early) warning systems and mechanisms that allow for an effective and inclusive response
- Strengthen individual as well as institutional preparedness
- Promote risk transfer mechanisms and emphasise the active role of insurance in risk reduction
- Support anticipatory humanitarian actions and promote inclusive protection frameworks for climate change and disaster related forced displacement

Preparedness aims at ensuring an effective response to disasters. It refers to the capacity of people and institutions to anticipate hazardous events, and then to cope effectively with disasters. **Preparedness measures** are most effective when well-coordinated and combined. The successful implementation of measures such as accessible early warning systems, inclusive protection frameworks and contingency planning, stockpiling of equipment and supplies, the development of arrangements for coordination, accessible evacuation and public information, and associated training and field exercises requires thoughtful planning a great deal of time before an actual event occurs. **Response actions** include saving lives, reducing negative health impacts, ensuring public safety and meeting the basic subsistence needs of all the people affected.

Since the devastating floods in Switzerland in 2005, the '**warning, alerting and response chain**' has been significantly improved. The different responsible federal offices harmonised their data collection, forecasting and warnings. Today, the national authorities issue high-quality and timely warnings and alerts. Cantonal authorities lead the emergency operations based on their civil protection system consisting of five partner organisations: police, fire service, healthcare system, technical services and the civil protection organisation. App-based accessible push warnings and alerts are able to target the population effectively. Based on the recommendations and instructions given, individuals can protect themselves or help minimise losses.

The capacities of emergency units or fire brigades required are often the same for different disasters. **Training programmes** take into account multiple threats, e.g. flooding, earthquakes, and chemical accidents. In addition, ordinary people and communities are often first responders to hazardous events; they have to be enabled, trained and adequately equipped to cope with such events.

EXAMPLES

Local natural hazard advisors

Analysis of major flood events in Switzerland in the recent past has shown that local expertise is a crucial prerequisite for dealing successfully with such incidents. Civil staff units and emergency services rely in particular on local expert advice. Since 2010, the cantons have trained local natural hazard advisors to serve municipal authorities or communities.

- [Local natural hazards advisors](#) (article on p. 24)

Natural Hazards Portal

The federal agencies involved are constantly monitoring the natural hazards situation and are responsible for **issuing warnings** to the cantonal and communal authorities and the public. Warnings on severe and very severe hazards may be subject to a broadcast obligation, in which case they are issued as 'Government Warnings' that include instructions for action by public and private radio and television stations.

- [Current natural hazards situation](#)

Common Information Platform for Natural Hazards (GIN)

This password-protected experts' tool combines all available data on natural hazards in Switzerland in a user-friendly map application. It provides a solid foundation for identifying natural hazards early and dealing with them successfully.

- [GIN platform](#)

Swiss warning and alert system – Alertswiss

Switzerland has a nationwide **network of sirens** that can be used to alert the population in case of disasters and emergencies. **Alertswiss** was put in place to **warn** the general population **rapidly** via a mobile app and website and to provide information directly and in an accessible format on important behavioural recommendations. Alertswiss is in use throughout Switzerland among the responsible civil protection authorities. Alertswiss also offers information about various hazards as well as **specific behavioural recommendations to raise awareness** and to conduct and facilitate emergency planning.

- [Alertswiss](#)

Preparedness planning is a comprehensive, yet pragmatic concept for a risk-informed approach to systematically reducing identified risks. It connects preventive and emergency provisions. Preparedness plans create conditions for dealing with disasters and emergencies as quickly and efficiently as possible. Well-organised preparedness makes it possible to limit damage and reduce impacts in the event of an incident.

- [Hazard analysis and emergency provisions](#)

An important element of individual, household and community preparedness is **insurance and other financial protection schemes**. These schemes provide the financial resources to recover swiftly from the losses caused by disasters, and also put an economic price tag (the insurance premium) on the given risk. Besides insurance coverage, social protection provided by the government as well as solidarity mechanisms at community level (e.g. emergency funds in-cash or in-kind) are common forms of risk transfer.

While **risk transfer** is an important measure and has consistently been shown to increase recovery speed and completeness compared to those not insured, a risk transferred is not yet a risk reduced or eliminated. Research also shows that many insurance products are not specifically designed to be pro-poor or gender-sensitive, and do not reach those who suffer the most from the consequences of disasters.

In the Global South, one in three people are still not adequately covered by early warning systems related to hydro-metrological hazards. Therefore, Switzerland is committed to strengthening **anticipatory humanitarian actions** that provide accessible early warnings as well as critical support to communities before hazards turn into disasters. **Early actions** include, for instance, transporting people at risk to accessible shelters, protecting assets and livelihoods by early inclusive cash transfers, early harvesting, or reinforcing housing and classrooms.

The civil defence service informs residents of Bern's Matte district about flooding. Source: FOEN



Emergency meeting points

The cantonal and communal authorities are planning and establishing **emergency meeting points** all over Switzerland. At these emergency meeting points, during disasters and emergencies, information and support (food, first aid, shelter) are provided to the population and – if necessary – they are also used as meeting points to organise a collective evacuation. The authorities provide information via radio and television and Alertswiss when the emergency meeting points are in operation.

- [Emergency meeting points](#)

Earthquake Claims Organisation

This broad-based organisation helps manage the response to severe earthquakes. With the information provided, authorities can assess the buildings for further use and insurers are able to quickly estimate the damage caused. This ensures that financial resources from insurance benefits and relief funds can be distributed quickly in order to start reconstruction. The organisation was founded in mid-2021 by the cantons and the insurance industry.

- [Earthquake Claims Organisation](#)

International initiatives

Switzerland contributes to **international initiatives** that help the countries most at risk to improve their preparedness and to act early in anticipation of disasters. One example here is the **Climate Risk and Early Warning Systems (CREWS) Initiative**, an innovative pooled financing mechanism. CREWS' objective is to significantly increase access to early warnings and risk information in least developed countries (LDCs) and small island developing states (SIDS). CREWS projects build community response capability by strengthening preparedness and awareness.

- [CREWS initiative](#)

Through the **Weather4UN** pilot project, Switzerland supports the development of the **WMO Coordination Mechanism (WCM)**. It aims to provide easy access to relevant weather, water and climate information and expert advice for the humanitarian community in order to anticipate and better prepare for and respond to disasters, emergencies and crises. The project is being implemented by MeteoSwiss in close collaboration with the SDC, WMO secretariat and its members, as well as with the IFRC and the humanitarian community.

- [Weather4UN](#)



5. Build back better and more resilient

- Learn from past events
- Use the **window of opportunity** to not reproduce the risks and to contribute to **sustainable long-term development**
- Invest in inclusive preparedness and prevention

The aftermath of an event is seen as a **continuing process, reaching from early recovery** that aims at restoring basic services and facilities (electricity, water, sewage, food supply, hygiene, hospitals, schools) for the functioning of a community towards recovery that contributes **to long-term sustainable development**. In other words, recovery interventions aim at restoring and improving livelihoods and assets, systems, and activities to avoid or reduce future disaster risk for all. That means they should not recreate the existing risk.

Organisations, (financial) mechanisms and structures for recovery have to be in place and responsibilities clarified in order to successfully recover from an event. **Recovery involves many stakeholders from a wide range of areas**; their interactions have to be structured well before an event. Common training or simulation exercises allow them to gain familiarity with each other and their respective competencies.

DRR measures, and prevention activities in particular, are difficult to communicate, as they only prove valuable during or after an event. Therefore, the opportunity should be taken to analyse DRR efforts in the light of past events. Such an **event analysis or after-action report conveys lessons learnt** and indications for potential adjustments. They may cover the functioning of mitigation measures, the level of preparedness or the functioning of crisis management.

In the aftermath of an event, the **political will** to invest in DRR measures is often high. This opportunity should be used to foster resilient and inclusive reconstruction, risk-based land use planning, and the implementation of environment-friendly measures. The reconstruction phase must also be used to proactively address social disparities and differentiated vulnerabilities, particularly among those who have been temporarily or permanently displaced.

Despite escalating economic losses due to disasters, the **international aid community** continues to focus on responding to disasters and their aftermath with more than 95% of humanitarian financial resources spent on relief and recovery, and less than 5% spent on reducing underlying risk factors. However, there is clear evidence that the benefits of prevention and preparedness measures are substantial in terms of tangible savings: **prevention and preparedness do pay off!** Without a significant increase in prevention investments, the spending on relief and reconstruction is likely to become even more unsustainable in future than it is today.

EXAMPLES

Event analyses

The **flooding of August 2005** represents one of the most cost-intensive events in Switzerland's recent history. In an in-depth event analysis, the hydro-meteorological processes, the impacts, and the coping mechanisms were examined. The recommendations point to deficiencies in flood protection policy and propose strategies for improvement.

- [Synthesis report – floods of 2005](#)

One of the recommendations of the event analysis 2005 called for an **improvement of inter-institutional collaboration**. This resulted in the project OWARNA (Optimisation of Early Warning and Alerting of Natural Hazards) and the creation of the Steering Committee Intervention in Natural Hazards (LAINAT).

- [Project OWARNA](#)

The 2005 flooding caused massive deposits of debris in the lower reach of a torrent in Brienz, in the canton of Bern. Two people lost their lives, more than 300 people had to be evacuated, and several houses were destroyed, with others severely damaged (see images below). A **local, solution-oriented event analysis** documented the event and outlined a concept for future measures. To ensure protection, a considerably larger corridor was realised. This meant that the streets on either side had to be **relocated and that the buildings** close to the channel, which were partially or completely destroyed during the event, were **not allowed to be rebuilt**. The plots of those buildings were acquired for this project.

- [Project Brienz](#)

In summer 2018, Switzerland had to deal with **water shortages, heatwaves and droughts** and their various impacts on the health of the population and livestock as well as on infrastructure (in particular river freight transport, road and rail transport, and energy supply).

- [Event analysis – summer 2018](#)

A **scientific analysis of Switzerland's COVID-19-pandemic crisis management** revealed that DRR principles and a risk-informed approach are also fundamental for dealing with health risks. It showed that the links between health and disaster (risk) management entities have to be strengthened.

- [Study of the Centre for Security Studies \(CSS\), ETH Zurich](#)



The **Post-Event Review Capability (PERC)** is a flexible method that provides research on and independent reviews of large flood and wildfire events. It seeks to answer questions related to aspects of flood resilience, flood risk management, and disaster intervention. It looks at what went well, as well as opportunities for improvement, and results in a set of actionable recommendations to build back better and to reduce future risk.

- [PERC method](#)

Event cadastre - StorMe

StorMe is the central database used throughout Switzerland for the standardised recording and documentation of natural events like flooding, landslides, rockfalls and avalanches.

- [StorMe](#)

The 2005 flooding caused massive deposits of debris in the lower reach of a torrent in Brienz (BE).

Left: The new channel during the construction phase.

Below: The debris fan of Glyssibach after the 2005 event. Red: buildings that were destroyed. Blue: buildings with severe damage. Yellow: buildings with light damage.

Source: Interpraevent, Excursion Guide Brienz BE, EX7

This document is available at:

<https://www.shareweb.ch/site/disasterriskreduction/themes-and-resources/Pages/strategic-documents.aspx>

