EEA 2017 report on climate change adaptation and disaster risk reduction and a request for updated country information

EEA – Questionnaire for DRR and CCA (short list of questions on CCA/DRR national policies and practices on linkages between CCA and DRR – Request for additional information

The following answers are provided by the following Austrian Stakeholders - Status: 18.03.2016:

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1 Question 1: CCA/DRR Integration

How is climate change adaptation currently integrated in the existing national and subnational DRR plans, national risk assessments and relevant actions in your country (e.g. flood management, forest fire protection, drought management, heat waves planning and storm emergency planning)?

The political, socio-economical, scientific, legal and technical issues underpinning natural hazard management strategies have undergone considerable change during the past few years. Additionally, special attention must be given to the possible consequences of Climate Change, which will have certainly impacts on the frequency and magnitude of future hazardous events. Therefor conventional protection concepts are not anymore adequate in covering all the aspects a modern natural hazard management strategy requires, especially in terms like social responsibility, capacity building, and resilience are leading policy development and implementation.

To overcome these limits and in order to tackle the challenge of rising natural hazards and related risks in Austria, policy has started investing in concepts that support people at risk in terms of more ownership of risk, what also is a step towards balancing public and individual demands and interests in natural hazard management. Further capacity building, awareness raising, interdisciplinary communication and (international) co-operation were identified as key factors of such a concept.

Due to the OECD's Environmental Progress Report 2013[1], Austria's National Adaptation Strategy (NAS) is one of the most comprehensive in the OECD. Its development built on strong domestic research capacity and extensive stakeholder engagement. It provides information about likely climate changes and impacts sector-by-sector, an overview of existing adaptation initiatives, a portfolio of adaptation recommendations and guiding principles for prioritising actions. Disaster Risk Reduction (DRR)-related aspects are mainly part of the sectors „natural hazard management", „disaster management", and „water management". Some other aspects are part of other sectors (14 areas of action are covered in the Austrian NAS), e.g. forest fire protection is an issue dealt with in "forestry sector" and drought management is part of the "agricultural sector".

These parts outline the most important hints for climate change adaptation in these fields.

[1] OECD (2013), OECD Environmental Performance Reviews: Austria 2013, OECD Publishing, Paris. http://www.keepeek.com/Digital-Asset-Management/oecd/environment/oecd-environmental-performance-reviews-austria-2013_9789264202924-en#page1; http://www.oecd.org/env/country-reviews/EPR%20Highlights%20AUSTRIA%202013%20web.pdf

The current "strategy" to maintain and keep flexibility of all that are concerned by natural hazards and risk in Austria even under a changing climate can be summarised as follows:

- Limiting existing risks for human health, material assets, economic activities and the environment to acceptable levels and to prevent new unacceptable risks, in order to preserve the basis for sustainable, hazard- and climate-proof development in a long-term and foresighted perspective (e.g. by implementing the EU-Floods Directive etc.);
- Reviewing the climate change fitness of existing structural protection measures regarding the current condition of these structures, their functionality and operability and keeping the data/information about the review up-dated;
- Keeping hazard and risk maps at the state-of-the-art by permanently taking into account all relevant alterations in natural and man-made systems;
- Further enhancing coordination and co-operation between spatial planning and risk management, especially by widening the scope towards gravity induced natural hazards (like landslides, rock fall) by a special partnership between spatial planning and natural hazard-relevant authorities and institutions;
- Strengthen individual preparedness and precaution by
    - increasing public awareness, to make people better understand the necessity of risk management as a collaborative task and to create corresponding commitment and,
    - supporting individuals in strengthening / adopting their material assets by local structural protection, and,
    - supporting the establishment of co-operative structures and public-private-partnerships regarding risk precaution like Water Boards / Water Cooperatives;
- Maintain and improve the functionality of protection forests by site-specific adaptive management solutions, which include improving forest stand structures, fostering adapted species mixtures, promoting natural regeneration, preventing forest fires and controlling pests and diseases.

In order to be able to make an assessment of climate change consequences in Austria, the global climate models are downscaled to a regional or local level to be able to see e.g. differences in moisture conditions for agriculture, maximum precipitation amounts for floods and avalanches and heat wave effects in cities and urban areas.

Planning material is provided for technical options for the city planning of Austrian agglomerations with proposals for green cities (green roofs, green facades), white cities (higher albedo) and other measures to influence city climates under hotter and dryer conditions.

Heat warning system[2] has been installed by the National Meteorological Service for Austria and heat-protection plans are in place for two (Styria[3] and Carinthia[4]) of the 9 Austrian regions, other regions are in the planning phase for these warnings.

Besides early warning systems for heat, other early warning systems[5] are also in place for storm, rain, snow, black ice, thunderstorms and cold stress and are installed by the National Meteorological Service for Austria.

[2] https://warnungen.zamg.at/html/en/today/heat/at/
[3] http://www.verwaltung.steiermark.at/cms/ziel/74834789/DE/
[4] https://www.ktn.gv.at/42109_DE-ktn.gv.at-THEMEN?detail=472&thema=32&subthema=39
[5] http://warnungen.zamg.at/html/en/today/all/at/

Austria's National Adaptation Strategy has a section on disaster management which identifies priorities to maintain a high response capacity in order to cope with a potential increase in disastrous events resulting from climate change. The national risk assessment under the EU civil protection mechanism identifies heat waves and floods as key risks, both scenario analyses take benefits from the knowledge, which was compiled in the Austrian Climate Change Assessment Report (AAR14)[6].

2 Question 2: Good practices

What are in your opinion examples of good practices of integration and/or synergy of CCA and DRR in your country? Both national and subnational examples (links and references) of organizational and implementation practices are welcome.

There is scientific consensus that continued climate change will alter the natural hazard patterns. The topographic, geomorphologic and climatic diversity of the Austrian territory requires, however, a regionally and locally differentiated view. Sensitive areas are likely to be affected by natural hazards related to climate change, while others will not experience any change compared to the current situation, and some places could even benefit from favourable potentials in the long run, like expanding forests with protective functions. Due to this complex heterogeneity and due to present technical and scientific limitations (e.g. uncertainties in climate models and knowledge gaps concerning impacts and vulnerability), the generalisation and simplification of the effects of climate change on natural hazards over large areas is not appropriate and has to be avoided in order to prevent inadequate conclusions for risk management. Because of persistent changes in the natural, societal, and economic systems, future-oriented and sustainable natural hazard and risk management needs **permanent adjustment** (not only because of climate change). Especially in Austria, but this is also valid for the whole Alps, which has always been and will always be sensitive to diverse natural hazards, it is a key task to maintain flexibility of all parts of society concerned with natural hazards.

Austria has a long-standing tradition in identifying and assessing natural hazards. Its technical capacity has developed state-of-the-art hazard monitoring systems, which have ensured nationwide, systematic and regular assessments of hazards. Austria is highly aware that current hazard patterns are continuously evolving and has embraced the importance of factoring in uncertainty and the potential impacts of climate change when estimating the future severity and frequency of natural disasters. Austria also recognises the importance of changes in exposure driven by the increased occupation and changes in the use of land in hazard zones, and the ecological, economic and social implications of disasters. It has therefore engaged in developing a prospective approach to its risk prevention and mitigation management, ensuring a regular and dynamic updating of hazard/risk maps and adapting a Systems Engineering-oriented process regarding protective infrastructure to potential impacts of climate change.

Adaptation activities at the local level (regions, municipalities) were initiated mainly through research projects (), where collaboration with local authorities took place (e.g. FAMOUS[7], CapitalAdapt[8], RIVAS[9], ARISE[10] - funded via the Austrian Climate and Energy Fund (KLI.EN)[11]). Within the FAMOUS project for example, tools and methods, which shall help to tackle the challenges of

[6] https://www.ccca.ac.at/de/apcc/

[7] http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/anpassungandenklimawandel/kwa_tools/kwa_leitfaden/kw_lffamous/

[8] http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/anpassungandenklimawandel/kwa_tools/kwa_leitfaden/kwa_hbklimanetz/

[9] http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/kwa_news/kwa_forschung/kwa_rivas/

[10] http://arise-project.at/en/

[11] https://www.klimafonds.gv.at/home-en-US/

adaptation in Austria are developed and applied in 2 case study areas (Upper Austria, region Waldviertel).

The project CapitalAdapt is focusing on the role of human and social capital in adapting to climate change. In 2 case study areas (municipality Virgen and city of Klosterneuburg) an assessment of human and social capital was carried out. Together with the local government and local stakeholders, adaptation measures were jointly developed.

The project ARISE looks at the current global burning embers concept of the IPCC. With the city of Lienz and its stakeholders, this concept has been downscales, regional climate scenarios and socio-economic scenarios developed and local burning embers identified. Based on this information, recommendations for adaptation measures with the stakeholders in Lienz for precipitation related extremes, heat and drought, civil- and self-protection as well as alternatives to winter-tourism were co-developed.

In a number of projects financed by European Territorial Cooperation (ETC) programme lines, assessments on climate change impacts, in different case study regions, were performed. Adaptation options, often in close collaboration with regional and local stakeholders, have been developed. Examples of these projects within the ETC Alpine Space Programme include: CLISP[12], AlpWaterScarce[13], AdaptAlp[14], GRaBS[15], ClimAlpTour[16], PARAmount[17], Manfred[18], C3-Alps[19]). As an outcome of these projects, in many cases adaptation activities have been taken up and initiated in the participating regions.

A Web-platform for climate change adaptation in Austria (www.klimawandelanpassung.at) has been developed (funded via the Austrian Climate and Energy Fund (KLI.EN)). It also hosts a database[20] on projects and adaptation actions in Austria. These examples should help to increase general understanding of adaptation, and demonstrate that many initiatives involving adaptation are already on-going – although not necessarily under the headline of climate change adaptation. Additional a regular newsletter is being issues every two months, previous examples can be viewed[21] and registration to receive this newsletter is open[22]. More than 700 subscribers already receive the newsletter, aiming to spread existing knowledge and enable stakeholders to act.

Regarding natural hazard management, the local governments on province level have legislation competence in a) development planning, b) building affairs, and c) catastrophe/disaster measures and execution competence in a) flood control and b) supra-local disaster management. On community/municipality level they have execution competence in a) land-use planning and building (also by considering hazard and risk maps), b) local disaster management and c) avalanche commission (where appropriate). Both levels (province, community) are contributing in financial terms to protection measures (together with the federal state). The communities have – in most cases – the responsibility to maintain protection structures.

Early warning systems for extreme events provide the possibility to minimize damage for property, health and life, if delivered in adequate form, which can be easily understood by people from Austria and abroad. The National Meteorological Service organized a Europe wide warning system

[12] http://www.clisp.eu/content/
[13] http://www.alpine-space.org/2007-2013/projects/projects/detail/Alp-Water-%20Scarce/show/#project_outputs
[14] http://www.adaptalp.org/
[15] http://www.grabs-eu.org/
[16] http://www.climalptour.eu/content/
[17] http://www.paramount-project.eu/
[18] http://www.manfredproject.eu/
[19] http://www.c3alps.eu/index.php/en/
[20] http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/kwadatenbank/
[21] http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/newsletterregistrierung/kwa_archiv/
[22] http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/newsletterregistrierung/

(meteoalarm.eu)[23] which standardized and summarizes the warnings and alerts of 36 European countries in a way which is flexible to changed climatic conditions and based on impact of extreme events.

3 Question 3: Views on new EEA 2017 CCA/DRR report

What specific topics could the EEA 2017 CCA/DRR report cover in order to support the respective activities at national or subnational level in your country?

Risk governance mechanisms under a climate change perspective

Exchange of best practice and technology with other countries

Assessment of synergies between CCA and DRR in terms of climate-related risk management

[23] http://meteoalarm.eu/index.php?lang=en_UK