

Adaptation preparedness scoreboard:

Draft country fiche for Austria

Disclaimer

This draft country fiche was prepared in the context of the implementation of the EU's Strategy for Adaptation to Climate Change (EUAS). The indicators were developed and agreed with experts from the Member States (MS). This draft version of the fiche is published as background information to the public stakeholder consultation about the evaluation of the EUAS running from early December 2017 to early March 2018. It constitutes work in progress, a particular stage of information collection and dialogue between the Commission and the Member States. It presents a snapshot of the status in the country as of September or October 2017. The fiches are planned to be finalised and published as an annex to the strategy's evaluation report in the fourth quarter of 2018, before which they will be further updated and modified. Should you have any specific comments on the draft fiche, please send it to the mailbox CLIMA-CLIMATE-CHANGE-ADAPTATION@ec.europa.eu

Please note that the assessments (yes/no/in progress) need to be read in conjunction with the narrative that accompanies them. They assess the state of play within each country. While all effort has been made to ensure the coherence across fiches in the assessment of the same indicator, it should not be directly compared across the MS. Two countries with a "yes" on the same indicator could have a different national situation leading to that assessment. Not all indicators have the "in progress" status, some can only be "yes" or "no". For a more detailed explanation of what each indicator means and how its value is determined, please refer to the description of the scoreboard, a document published alongside the country fiches.

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POLICY FRAMEWORK

Adaptation strategies

A1. National adaptation strategy

In Austria, a national adaptation strategy (NAS) was adopted on 23 October 2012 by the Council of Ministers and endorsed by the Provincial Governors' Conference on 16 May 2013. The Austrian NAS consists of two parts: a Strategic Framework (or "Context") 1 and an Action Plan 2. The aim of the Austrian NAS is to reduce negative impacts and build resilience to climate change. The strategy intends to create a national framework to ensure coordination and harmonisation of the various climate change adaptation activities in all areas. In August 2017, a revised version of the NAS was adopted by the Austrian Council of Ministers.

A2. Adaptation strategies adopted at subnational levels

¹ BMLFUW (2012). The Austrian Strategy for Adaptation to Climate Change. Part 1 – Context. Available at: https://www.bmlfuw.gv.at/dam/jcr:f2e2e558-f714-4676-8768-

e9b4d32be6a4/AustrianAdaptationStrategy_Context_FINAL_25092013_v02_online.pdf
² BMLFUW (2012). Die österreichische Strategie zur Anpassung an den Klimawandel. Teil 2 – Aktionsplan. Handlungsempfehlungen für die Umsetzung. Available at: https://www.bmlfuw.gv.at/dam/jcr:34b6f38d-4fba-40af-a4ca-

In Austria, the Bundesländer (NUTS II) have legislative and executive powers with regard to e.g. spatial planning, nature protection, transport, all of which have relevance to climate change adaptation. Bundesländer are also responsible for the administration, implementation and enforcement of certain federal laws at the lower levels of government.

The Bundesländer have either developed regional adaptation strategies [Oberösterreich (2013), Steiermark (2015), Vorarlberg (2016), Salzburg (2017)], integrated adaptation and mitigation strategies [Tirol (2015)], or they have integrated adaptation into existing climate mitigation strategies [Niederösterreich (2011), Wien (2009)]. Kärnten is in the process of preparing a climate adaptation strategy. In Burgenland, adaptation measures are directly integrated into sectoral programmes and strategies. The Bundesländer propose, enact and implement measures.

Adaptation action plans

B1. National adaptation plan

A national adaptation plan (NAP) was adopted in 2012 (as part of the NAS) and revised in 2017. The NAP presents a catalogue of 136 adaptation options for 14 areas for action. These areas are: agriculture, forestry, water resources and water management, tourism, energy (with a focus on the electricity industry), protection from natural hazards, construction and housing, disaster risk management, health, ecosystems and biodiversity, transportation infrastructure and selected aspects of mobility, spatial planning, business/industry/trade, and cities (with a focus on urban green and open spaces).

B2. Adaptation plans adopted at sub-national level

B3. Sectoral adaptation plans

The development of local adaptation strategies is supported by KLAR! - Climate Change Adaptation Model Regions³ - programme which was launched in 2016. Until the end of March 2017, regions and municipalities were invited to submit their application including a basic concept to the Climate and Energy Fund, who initiated the programme in cooperation with the Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW). For the first call, 800.000 EUR of funding was available. Henceforward, 23 participating model regions from all over the country have been selected to demonstrate how adaptation to climate change can be implemented on a small (local and regional) scale and prepare their adaptation strategies by the end of 2017.

An increasing number of activities carried out at regional and local level can be identified already, however these are not always explicitly "labelled" as adaptation. Many of these activities are fostered by applied research projects, which are financed by the ACRP (Austrian Climate Research Programme) of the Climate and Energy Fund⁴ and StartClim⁵. Examples of Bundesländer-level activities are touristic concepts and water management measures for an important large lake in eastern Austria, research projects

³ KLAR!-Website: www.klar-anpassungsregionen.at Factsheet: http://klaranpassungsregionen.at/fileadmin/FactSheet en final.pdf

Klima Energi Fonds. Climate Research Programme. Available at: https://www.klimafonds.gv.at/foerderungen/aktuellefoerderungen/2015/austrian-climate-research-programme-2/

StartClim. Available at: www.startclim.at

devoted to impacts and adaptation measures in the Alps, projects for flood risk management and spatial planning, protection of forests and habitats, and concepts for safeguards against summertime overheating of buildings in urban areas. 6 The Austrian government has recentbly published a good practice guide presenting various examples how cities and communities can implement adaptation actions.⁷

Finally, Austria is also engaged in a considerable share of projects carried out at transnational level, funded by EU programmes.

SCOREBOARD

Step A: preparing the ground for adaptation

1. **Coordination structure**

1a. A central administration body officially in charge of adaptation policy making

Yes / No

In Austria, the Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW) holds overall responsibility for adaptation policy-making.

1b. Horizontal (i.e. sectoral) coordination mechanisms exist within the governance system, with division of responsibilities

Yes / In progress / No

All Federal Ministries were invited to join the NAS development process and to provide feedback and comments via three rounds of written consultations. More precisely, the Inter-ministerial Committee to Coordinate Measures to Protect Global Climate (IMC Climate Change) was regularly updated on the status of work towards the NAS. (According to the latest amendment of the Austrian Climate Protection Law⁸, § 4. (2), instead of the IMC the National Climate Protection Committee is in charge of adaptation to unavoidable impacts of climate change. The Committee meets at least once a year and is chaired by the BMLFUW.)

1c. Vertical (i.e. across levels of administration) coordination mechanisms exist within the governance system, enabling lower levels of administration to influence policy making.

Yes / In progress / No

The Bundesländer are highly committed to cooperate with the Federal Ministry on climate change adaptation. Climate coordination officers/units have been installed in all provincial governments, they also act as the main agents of vertical cooperation with the

⁶ BMLFUW (2012). The Austrian Strategy for Adaptation to Climate Change. Part 1 – Context, p. 63ff. Available at: https://www.bmlfuw.gv.at/dam/jcr:f2e2e558-f714-4676-8768-

e9b4d32be6a4/AustrianAdaptationStrategy_Context_FINAL_25092013_v02_online.pdf ⁷ BMLFUW (2016). Unsere Gemeinden im Klimawandel: Good Practice Broschuere. Available at:

https://www.bmlfuw.gv.at/dam/jcr:73969c08-9351-49fd-a2f3-85bf25c55167/Good%20Practice_Broschuere.pdf

https://www.bmlfuw.gv.at/umwelt/klimaschutz/klimapolitik_national/klimaschutzgesetz/ksg.html

National Ministry⁹. The Federal Ministry for Agriculture, Forestry, Environment and Water Management together with all Bundesländer (decision taken by the LURK - Provincial Environmental Speaker's Conference) has established an implementation plan for 2016/17 summarizing a few specific measures to be implemented in these two years. One of the decisions¹⁰ was the implementation of "dialogue events"¹¹ in various Austrian cities. 12 such dialogue events took place in the years 2016 and 2017. Climate change impacts and adaptation are currently well reflected, based on the current scientific knowledge available, in the National Flood Risk Management Plan RMP 2015¹² and the National River Basin Management Plan 2015. There are close linkages with the latest knowledge from climate science and with the Austrian Adaptation Strategy.

2 Stakeholders' involvement in policy development

2a. A dedicated process is in place to facilitate stakeholders' involvement in the preparation of adaptation policies

Yes / No

A broad participatory process conducted by the Environment Agency Austria (EAA) accompanied the strategy development. The main objective of the participation process was to discuss the adaptation options identified by the scientific community (expert studies) with stakeholders from the organised public (e.g. federal and provincial ministries or related institutions, interest groups and social/environmental NGOs) for inclusion in the policy paper¹³.

For the development of the strategy, stakeholders have been consulted via online-surveys, written feedback on policy drafts and advisory committees. Governmental stakeholders from national level and sub-national level have been actively involved. The private sector, interest groups and researchers have been consulted and information has been gathered from the general public.¹⁴

2b. Transboundary cooperation is planned to address common challenges with relevant countries

Yes / No

In the NAS/NAP, cooperation to address common challenges with neighbouring countries is not explicitly addressed. Austria is participating in several international partnerships that are actively working in climate change and adaptation issues, although it is not clear how these interact with the Austrian strategic approach to adaptation.

⁹ Nachmany, M, S. Frankhauser, J. Davidová et al. (2015). Climate Legislation in Austria. An excerpt from: The 2015 Global Climate Legislation Study. A review of Climate Change Legislation in 99 countries. Grantham Research Institute on Climate Change and the Environment, London.

¹⁰ https://www.wien.gv.at/umweltschutz/pdf/lurk-2015.pdf

http://klimawandelanpassung.at/index.php?id=31609

https://www.bmlfuw.gv.at/english/water/National-Flood-Risk-Management-Plan.html

¹³ Climate-ADAPT (2017). Austria, Summary. Available at: http://climate-adapt.eea.europa.eu/countries-regions/countries/austria

regions/countries/austria ¹⁴ BMLFUW (2014). Self-assessment survey from Austria. National adaptation policy processes in European countries. EEA, Publications Office of the European Union, Luxembourg

Austria is a contracting Party to the International Commission for the Protection of the Danube River, which adopted a Climate Adaptation Strategy in 2012¹⁵. The strategy is based on a thorough assessment of the possible impacts of climate change and suggests possible means to adapt to and mitigate them.

Austria is also a member country of the Alpine Convention, a framework that sets out general measures for the sustainable development in the Alpine region. A ministerial declaration¹⁶ on climate change was adopted in 2006, followed in 2009 by an action plan¹⁷ of measures for the Alpine region to contribute to the reduction of emissions affecting the climate and the development of strategies to adapt to a changing environment. Within the Alpine convention, guidelines have been developed on local adaptation to climate change for water management and natural hazards in the Alps and for climate change adaptation at the local level in the Alps¹⁸. In addition, the recently established Advisory Committee on the Alpine Climate (Alpine Climate Board)¹⁹ under the Alpine Convention gathers climate change specialists from the eight Alpine States and Observer organisations. It aims at bundling the current contributions of the Alpine Convention to climate change mitigation and adaptation and will prepare recommendations for future reinforced action, for the attention of the next Alpine Conference in 2018, with the establishment of a climate-neutral Alpine space 2050 as overarching goal.

A shared task of all Alpine countries is to intensify research work on the consequences of climate change. Joint activities are taking place in the EU Strategy for the Alpine Region (EUSALP) in Action group 8²⁰, which focuses on improving risk management and coping with the impacts of climate change, including major natural risks prevention.

The EU Interreg project, C3-Alps aimed to foster transboundary cooperation with the focus on information and knowledge transfer²¹. During the course of the C3-Alps project (2012-2014) an informal exchange among ministerial representatives of all Alpine countries was initiated. Meetings took place twice per year and served the purpose of transnational coordination for issues of common concern. These activities are continuing.

Step B: assessing risks and vulnerabilities to climate change

3 Current and projected climate change

3a. Observation systems are in place to monitor climate change, extreme climate events and their impacts

Yes / In progress / No

Data collection and provision is located at the Central Institute for Meteorology and Geodynamics (ZAMG) with meteorological stations measuring temperature, precipitation,

¹⁵ ICPDR (2013). Strategy on Adaptation to Climate Change. Available at:

https://www.icpdr.org/flowpaper/viewer/default/files/nodes/documents/icpdr_climate-adaptation-strategy.pdf

¹⁶ Alpine Convention (2006). Ministerial Declaration on Climate Change. Available at:

http://www.alpconv.org/en/convention/protocols/Documents/AC_IX_declarationclimatechange_en_fin.pdf

¹⁷ Alpine Convention (2009). Action Plan on Climate Change in the Alps. Available at: Alpine Convention. The Climate Portal. Available at: http://www.alpconv.org/en/ClimatePortal/default.html

¹⁸ Alpine Convention. The Climate Portal. Available at: http://www.alpconv.org/en/ClimatePortal/default.html

Alpine Climate Board instituted by the XIVth Alpine Conference in October 2016

https://www.alpine-region.eu/action-group-8

²¹ Climate-Adapt. C3-Alps. Available at: http://climate-adapt.eea.europa.eu/metadata/projects/c3-alps-2013-capitalising-climate-change-knowledge-for-adaptation-in-the-alpine-space

wind, sunshine and many other meteorological parameters²². Already since 1948, data about damage caused by extreme events are recorded by ZAMG. The VIOLA (VIolent Observed Local Assessment)²³ project started in 2014 with the development of a digital extreme-weather-platform. It works like a search engine for the inclusion and search for extreme-events and offers different search options. In the frame of the project damage.at²⁴ (funded by the Austrian Climate and Energy Fund), the feasibility for the development of an Austrian-wide damage-database for weather- and climate-related natural hazards is currently being assessed.

The Austrian Panel on Climate Change (APCC) has conducted a comprehensive assessment to document and integrate current scientific knowledge of climate change and its anticipated impacts on Austria as well as present the needs and possibilities for mitigation and adaptation. The APCC report was published in September 2014 ²⁵, after the release of the IPCC Working Group III 5th Assessment Report. It consists of three volumes that present the existing knowledge on climate change in Austria, and on the needs and possibilities for mitigation and adaptation.

3b. Scenarios and projections are used to assess the economic, social and environmental impacts of climate change, taking into account geographical specificities and best available science (e.g. in response to revised IPCC assessments)

Yes / In progress / No

New regional climate scenarios for Austria and its nine provincial states are available since autumn 2016 and are based on 13 EURO-CORDEX models, 12.5x12.5 km grid and using two THG scenarios. Results are available via the CCCA-Data portal ²⁶.

A scientific evaluation of the financial consequences of climate change in Austria has been presented in January 2015 as results of the ACRP (Austrian Climate Research Programme) project Costs of Inaction (COIN). Main results of the projects PACINAS (Public Adaptation Costs: Investigating the National Adaptation Strategy) and PACTCH:ES (Private Adaptation Threats and Chances: Enhancing Synergies with the Austrian NAS implementation) have already been published in mid-2017. (http://anpassung.ccca.at/pacinas/ergebnisse/,

http://anpassung.ccca.at/patches/ergebnisse/)

3c. Sound climate risks/vulnerability assessments for priority vulnerable sectors are undertaken to support adaptation decision making.

Yes / In progress / No

The Austrian NAS contains a qualitative vulnerability assessment for nine sectors (i.e. water, tourism, agriculture, forestry, electricity and energy, housing and construction, health, ecosystems and biodiversity and transport/infrastructure) which has been carried out by the Environment Agency Austria in cooperation with the Institute of Meteorology of the University of Natural Resources and Life Sciences. These vulnerability reports fed into the NAS. For the other 5 sectors (protection from natural hazards, disaster risk

²² ZAMG. Climate. Available at: https://www.zamg.ac.at/cms/en/climate

²³ https://www.zamg.ac.at/cms/de/forschung/klima/datensaetze/viola

https://www.joanneum.at/de/lernen-sie-uns-kennen/aktuelles/news/detail/article/damageat.html

²⁵ APCC. Available at: http://www.apcc.ac.at/

²⁶ CCCA. Data Centre. Available at: https://data.ccca.ac.at/group/oks15

management, spatial planning, business/industry/trade, cities) such separate studies have not been carried out. Nevertheless, for the Action Plan (NAP) a descriptive vulnerability assessment has been included for all 14 sectors, highlighting however the rather big differences in the level of knowledge and detail across sectors.

3d. Climate risks/vulnerability assessments take transboundary risks into account, when relevant

Yes / In progress / **No**

Vulnerability assessments do not take transboundary risks into account.

Knowledge gaps

4. Work is being carried out to identify, prioritise and address the knowledge

Yes / In progress / No

The Austrian Assessment Report 2014 (AAR14)²⁷ built an active network of Austrian research institutions, individual scientists, policymakers, and other stakeholders to carry work on climate change forward. Upon the initiative of Austrian universities, the Climate Change Centre Austria (CCCA) was formally established in 2011. The objective of the CCCA is to improve the quality and efficiency of Austrian climate research through networking and the promotion of cooperation, but also to enhance its international visibility²⁸.

A workshop with scientists was conducted within the framework of the participatory process accompanying the development of the strategy²⁹ to determine the research needs specifically for implementation of measures in the national adaptation strategy. The aim was to facilitate a dialogue between science/research and politicians and other decision-makers. The progress report³⁰ on the Climate Adaptation Strategy also indicated research needs. In addition, Science Plan 2017³¹ (Climate Change Centre Austria) showcases the research needs and gaps identified by the Austrian scientific community. The research needs identified are being addressed in research programmes such as the Austrian Climate Research Program (ACRP) of the Climate and Energy Fund and the national climate research programme StartClim³².

5 **Knowledge transfer**

5a. Adaptation relevant data and information is available to all stakeholders, including policy makers (e.g. through a dedicated website or other comparable means).

²⁷ CCCA (2014). AAR14. Available at: https://www.ccca.ac.at/en/apcc/austrian-assessment-report-apcc-aar14-information-andmaterials/

⁸ Climate-ADAPT (2017). Austria, Summary. Available at: http://climate-adapt.eea.europa.eu/countriesregions/countries/austria ²⁹ KWA. Climate Change Adaptation in Austria. Available at:

http://www.klimawandelanpassung.at/ms/klimawandelanpassung/en/

⁰ BMLFUW (2015). Anpassung an den Klimawandel in Österreich: Fortschrittsbericht. Available at:

^{502.}pdf
32 BMLFUW (2012). The Austrian Strategy for Adaptation to Climate Change. Part 1 – Context. Available at: https://www.bmlfuw.gv.at/dam/jcr:f2e2e558-f714-4676-8768e9b4d32be6a4/AustrianAdaptationStrategy_Context_FINAL_25092013_v02_online.pdf

Yes / In progress / No

The website of the BMLFUW contains information on the strategy, including for example a good practices brochure for municipalities³³.

The national platform for climate adaptation³⁴ contains information on climate research, policy, proposed implementation measures and examples and support for municipalities, Bundesländer and sectors. The databank is useful for finding relevant resources, e.g. sector-specific research or adaptation practice for a specific region. It is possible to subscribe to a newsletter³⁵.

The climate research department of the Central Institute for Meteorology and Geodynamics (ZAMG) presents scientific information on climate change³⁶.

The website of the Climate Change Centre Austria (CCCA) provides climate data and ongoing research activities³⁷.

5b. Capacity building activities take place; education and training materials on climate change adaptation concepts and practices are available and disseminated

Yes / In progress / No

For raising public awareness on impacts and adaptation to climate change, the Ministry of Agriculture, Forestry, Environment and Water Management has published a brochure for the general public³⁸, "translating" the national adaptation strategy's content into easily understandable language and providing concrete tips for individuals. This brochure has been sent to all municipalities in Austria and has been further distributed via contacts and networks.

A handbook with methods and tools which helps to tackle the challenges of adaptation was published³⁹ to support politicians and experts in the public administration of provinces and cities, as well as actors in regional management in developing adaptation strategies. It provides guidance for the strategic and proactive examination of climate change impacts. Also, a practical guide for adaption on a local level is available⁴⁰ which provides information on regional climate impacts and specific measures that can be implemented on a city level as well as tools that can be used in workshops.

The NAS includes recommendations for communication and education of the wider public, but does not provide information on the coordination of capacity building. The BMLFUW, together with the provincial states have financed various capacity building activities for the regional and local level (e.g. workshops in regions, brochure with 11 good-practice examples on adaptation from regions across Austria⁴¹). This exemplifies

³³ BMLFUW (2016). Unsere Gemeinden im Klimawandel. Available at: https://www.bmlfuw.gv.at/dam/jcr:73969c08-9351-49fd-a2f3-85bf25c55167/Good%20Practice_Broschuere.pdf

³⁴ KWA. Climate Change Adaptation in Austria. Available at: http://klimawandelanpassung.at

³⁵ KWA. Newsletter registration. Available at:

http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/newsletterregistrierung/kwa_archiv/

³⁶ ZAMG. Informationsportal Klimawandel. Available at: https://www.zamg.ac.at/cms/de/klima/informationsportal-klimawandel

³⁷ CCCA. Available at: https://www.ccca.ac.at

³⁸ CCCA. COIN. Available at: http://coin.ccca.at/

³⁹ Umweltbundesamt (2014). Methods and Tools for Adaptation to Climate Change. Available at: http://www.klimawandelanpassung.at/fileadmin/inhalte/kwa/pdfs/HANDBUCH_EN.pdf

⁴⁰ CCCA. Ihre Gemeinde im Klimawandel. Available at: http://www.ccact.anpassung.at/

⁴¹ BMLFUW (2016). Unsere Gemeinden im Klimawandel: Good Practice Broschuere. Available at: https://www.bmlfuw.gv.at/dam/jcr:73969c08-9351-49fd-a2f3-85bf25c55167/Good%20Practice_Broschuere.pdf

the cooperation-based network approach of vertical governance with predominantly voluntary instruments is in place. One example reflecting the nature of this cooperation-based network mode are dedicated workshops in the Bundesländer which were financed by the Ministry of Agriculture, Forestry, Environment and Water Management in cooperation with the Climate and Energy Fund. These workshops aimed to support the Bundesländer in building capacity for adaptation, discuss implementation means and highlight research results relevant for the respective province as a basis for deciding on concrete adaptation measures.

As mentioned above, a new pilot project to foster adaptation in Austrian regions started in September 2016. 42

Step C: identifying adaptation options

6 Adaptation options' identification

6a. Adaptation options address the sectoral risks identified in 3c, the geographical specificities identified in 3b and follow best practices in similar contexts

Yes / No

The Austrian NAS contains a qualitative vulnerability assessment for nine out of the 14 sectors (see 3c). For the remaining 5 sectors, the NAP presents a descriptive vulnerability assessment. Adaptation options are defined based on these assessments (incl. geographic specificities when relevant) and stakeholder consultations and expert judgment. Adaptation measures are described in high level of detail and interlinkages to other areas and links to existing instruments are indicated.

6b. The selection of priority adaptation options is based on robust methods (e.g. multi-criteria analyses, stakeholders' consultation, etc.) and consistent with existing decision-making frameworks

Yes / No

Adaptation options have not been prioritised, but criteria for prioritisation are identified in the NAS. In general measures that provide benefits independent of climate change ("win-win") or measures that entail no disadvantages in case the actual climate trends do not correspond to projections ("no-regret") should be prioritised, as well as flexible measures. Furthermore, prioritisation according to the "Europe 2020 – A strategy for intelligent, sustainable, and inclusive growth" is suggested.

6c. Mechanisms are in place to coordinate disaster risk management and climate change adaptation and to ensure coherence between the two policies

Yes/ **In Progress** / No

As an alpine country, Austria is used to adapting and coping with environmental risks for centuries. The Federal Ministry of the Interior is responsible for the coordination of the State Crisis and Disaster Protection Management (DRM) in Austria, whereas the BMLFUW is responsible for coordinating the national adaptation policy. One of the NAS actions aims at coordinating DRM and adaptation policies, through a continuous review,

⁴² See the project: (KLAR!).

modification, and implementation of the SKKM Strategy 2020 (Strategy for National Crisis and Disaster Protection Management)⁴³, taking into account the effects of climate change. Regular exchange between the Ministries and working groups on the Adaptation Strategy as well as the progress report ensure bi-lateral coordination. Also joint efforts to work on the 2nd National Risk Assessment as well as on the upcoming national portal for the reduction of disaster risk in Austria (ASDR) brings along regular exchange and improved coordination.

7 Funding resources identified and allocated

7. Funding is available to increase climate resilience in vulnerable sectors and for cross-cutting adaptation action

Yes / **In Progress** / No

The NAS does not include a dedicated budget (no numbers) or an expenditure commitment for adaptation activities to increase climate resilience in vulnerable sectors and for cross-cutting adaptation action. The NAS only states that 'the implementation of the recommendations must be achieved within the existing jurisdictions of all governmental authorities (federal, state, local)' and are to be 'covered by the resources available in the applicable financial frameworks of the public sector (federal, state, local)'. While it is not possible to directly conclude that a critical mass of actions or consistent funding is in place for vulnerable sectors, the phrasing of the NAS does indicate that sufficient funding should be available – also for adaptation activities in vulnerable sectors.

Some actions can be confirmed to be taking place, but these are pilots and/or the duration is limited (see 5b above for examples).

Step D: Implementing adaptation action

8 Mainstreaming adaptation in planning processes

8a. Consideration of climate change adaptation has been included in the national frameworks for environmental impact assessments

Yes / No

Climate change adaptation will be addressed in the upcoming amendment of the Environmental Impact Assessment Law in Austria in early 2018. Additionally the guidance documents for conducting Environmental Impact Assessment Reports are currently being revised in order to comply with the requirements of the amended EIA Directive.

8b. Prevention/preparedness strategies in place under national disaster risk management plans take into account climate change impacts and projections

Yes / No

The proposed measures in the NAP to improve natural disaster preparedness under climate change are based on experiences with natural disaster management in the past

⁴³ SKKM (2009). Strategie 2020. Available at: http://www.bmi.gv.at/cms/BMI_Zivilschutz/skkm/files/002_SKKM_Strategie_2020.pdf

and expert judgement. One of the proposed actions in the NAP is developing knowledge on the projected change in natural processes and resulting possibilities for early warning systems. The other adaptation measures are mainly related to the precautionary principle by hazard zoning and promoting hazard and risk awareness, self-sufficiency and responsible behaviour.

The National Crisis and Disaster Protection Management Strategy 2020 (Staatliches Krisen- und Katastrophenschutzmanagement Strategie 2020 – SKKM, 2009) does not include projected climate change and does not mention climate change as one of the major challenges for disaster protection management. One of the proposed actions in the NAP is to adapt and implement the SKKM Strategy 2020 in line with expected climate change impacts.

8c. Key land use, spatial planning, urban planning and maritime spatial planning policies take into account the impacts of climate change

Yes / No

Spatial planning legislation is task of the Bundesländer. This results in different levels of detail for the inclusion of different areas of climate adaptation: flood risks and natural hazard management are generally included in spatial planning legislation, but specific measures are not identified, such as zoning. Prioritisation of ecological functions is currently also generally not covered in much detail⁴⁴.

Guidance is provided by the Austrian Conference on Spatial Planning (ÖROK), which stresses the importance of including legally binding definitions of hazard zones including flood retention areas and flood runoff areas in spatial planning legislation and in building codes. It is found necessary to enforce stricter zoning practice, which rules out any zoning as building land of areas at risk of flooding. Zoning should also include, next to areas exposed to risk of flooding, torrents and avalanches, other natural hazards such as rockslides and landslides as well as forested areas with a protective function. Other climate adaptation measures that are mentioned are: compact and functional mixed settlements, energy-saving construction, areas for flood protection, flood retention and outflows, but also green areas and biotopes close to residential areas to improve the local climate. The ÖROK 2011 is primarily a voluntary agreement reached by ÖROK members. However, the concept was prepared and adopted with the consensus of all the parties involved⁴⁵.

The implementation of adaptation measures within spatial planning is rated heterogeneously by stakeholders within the progress report, and important climate adaptation measures such as implementing blue and green infrastructure are not yet sufficiently included in spatial planning policies⁴⁶.

8d. National policy instruments promote adaptation at sectoral level, in line with national priorities and in areas where adaptation is mainstreamed in EU policies

Yes / In Progress / No

 ⁴⁴ BMLFUW (2015). Anpassung and den Klimawandel in Österreich. Fortschrittbericht. Federal Ministry of Agriculture, Forestry,
 Environment and Water Management, Vienna.
 ⁴⁵ ÖROK (2011). Austrian Spatial Development concept. ÖREK 2011. Austrian Conference on Spatial Planning, Vienna

⁴⁶ BMLFUW (2015). Anpassung and den Klimawandel in Österreich. Fortschrittbericht. Federal Ministry of Agriculture, Forestry, Environment and Water Management, Vienna.

Integration of climate change adaptation into existing instruments and decision making processes is recognised as one of the guiding principles of the Austrian NAS. In the 14 areas for action listed in the NAP, it is recognised that at the time of writing the NAP only a few instruments were in place on sectoral level that could directly and sufficiently address the effects of climate change.

So far, climate change and its many effects is not sufficiently being considered in strategic decisions in various sectors. Institutional barriers and lack of political will hinder the implementation of adaptation measures⁴⁷. Nevertheless, climate adaptation is being integrated into sectoral policies for agriculture (within the National Agricultural Programme [2015]), forestry (the Forest Strategy 2020+ [2016])^{48 49}, energy (Energie der Zukunft. Ableitung von prioritären Massnahmen zur Adaption des Energiesystems an den Klimawandel [2010])⁵⁰, biodiversity (The Biodiversity Strategy Austria 2020+ $[2014])^{51}$.

8e. Adaptation is mainstreamed in insurance or alternative policy instruments, where relevant, to provide incentives for investments in risk prevention

Yes / No

Several recommendations proposed under significant sectors in the NAP involve the insurance sector and refer to it as key actor (e.g. agriculture, protection from natural hazards, disaster risk reduction, health, business). Recommendations include the development of new risk assessment methods, development and extension of risk sharing instruments, awareness-raising. At present, there is no information available about the extent to which these actions have been implemented.

The "Österreichische Hagelversicherung" is the main insurance company for agriculture against natural disasters, including hail, frost, storms, snow load, droughts, floods, animal pests. Target groups are farmers, gardeners and wineries. "Hagelversicherung" also initiates/initiated targeted Climate action projects.

The NAP progress report describes that the insurance of agricultural land has remained constant, no new instruments have been developed to promote further insurance. In general, it is concluded in the Progress report that it is not yet clear to what degree climate change adaptation is integrated within private risk management.

9 Implementing adaptation

9a. Adaptation policies and measures are implemented, e.g. as defined in action plans or sectoral policy documents

Yes / In Progress / No

The progress report evaluates the state of implementation of the proposed actions in the NAP. Several proposed measures have been (partly) implemented, mainly in forestry,

lex.europa.eu/resource.html?uri=cellar:21b27c38-21fb-11e3-8d1c-01aa75ed71a1.0022.01/DOC_1&format=PDF

⁵⁰ BOKU. FIS. Available at:

⁴⁷ BMLFUW (2015). Anpassung and den Klimawandel in Österreich. Fortschrittbericht. Federal Ministry of Agriculture, Forestry, Environment and Water Management, Vienna.

48 EC (2013). A new EU Forest Strategy: for forests and the forest-based sector. Available at: http://eur-

lex.europa.eu/resource.html?uri=cellar:21b27c38-21fb-11e3-8d1c-01aa75ed71a1.0022.01/DOC_1&format=PDF EC (2013). A new EU Forest Strategy: for forests and the forest-based sector . Available at: http://eur-

 $https://forschung.boku.ac.at/fis/suchen.projekt_uebersicht?sprache_in=de\&menue_id_in=300\&id_in=7199$ ⁵¹ BMLFUW (2014). Biodiversity Strategy Austria 2020+. Conserving Diversity - securing quality of life and prosperity for us and future generations. Available at: https://www.cbd.int/doc/world/at/at-nbsap-v3-en.pdf

water management, natural disaster management, and to some extent agriculture and tourism.

Climate change and its many effects is not sufficiently being considered in strategic decisions throughout Austria. Institutional barriers and lack of political will hinder the implementation of adaptation measures ⁵².

9b. Cooperation mechanisms in place to foster and support adaptation at relevant scales (e.g. local, subnational)

Yes / No

Although it seems like there is no systematic or coordinated structure in place, activities do take place to cooperate with and support the local and regional levels. For vertical coordination throughout the implementation phase, existing committees such as the National Climate Protection Committee are important for a regular exchange of information, experiences and lessons learned and close contact between the Ministry and the provincial states. The Federal Ministry for Agriculture, Forestry, Environment and Water Management together with all provincial states has established an implementation plan for 2016/17 summarizing a few specific measures to be implemented in these two years.

The Ministry of Agriculture, Forestry, Environment and Water Management supports adaptation activities across regions or municipalities mainly by providing information ⁵³, funding specific projects and developing tools and guidelines⁵⁴. Fostering regional adaptation is focused on a number of ACRP financed projects.

However, it is not clear how effective vertical governance of the NAS implementation is guaranteed, or how cooperation is effectively arranged or implemented.

The measures described in the action plan identify key actors for their implementation, but the NAS does not describe a clear governance system that ensures the necessary coordination or the turning of recommendations into specific action. For vertical coordination and implementation, existing committees such as the National Climate Protection Committee are important for a continuing regular exchange and close contact between the Ministry and the provinces. The Ministry of Agriculture, Forestry, Environment and Water Management also initiated workshops in 2014 in order to build capacity for adaptation and foster the topic in the provinces. Due to the success, a second series of workshops were conducted from autumn 2016 focusing on building capacities in Austrian regions and among regional/local stakeholders. In addition, the M&E scheme through its design is meant to foster a dialogue towards assigning a share of responsibilities for actual implementation.

In September 2016, a new pilot project to foster adaptation in Austrian regions has started. In a first phase, regions can apply for support in order to develop a specific adaptation plan shaped to their special concerns. In case of positive evaluation of their concept, the region receives funding for hiring an adaptation manager responsible to

⁵² BMLFUW (2015). Anpassung and den Klimawandel in Österreich. Fortschrittbericht. Federal Ministry of Agriculture, Forestry, Environment and Water Management, Vienna.

black (2016). Anpassung an den Klimawandel in Stadt und Region. Available at: http://www.bbsr.bund.de/BBSR/DE/Veroeffentlichungen/Sonderveroeffentlichungen/2016/anpassung-klimawandel-dl.pdf;isessionid=D3F9C3D23F8AF48656C761BAB4529763 live11294? blob=publicationFile&v=2

steer the implementation of adaptation measures throughout the following two years 55. https://www.klimafonds.gv.at/foerderungen/aktuelle-foerderungen/2016/klar/

9c. Procedures or guidelines are available to assess the potential impact of climate change on major projects or programmes, and facilitate the choice of alternative options, e.g. green infrastructure

Yes / No

The Institute for Meteorology published a Strategic support for integrating climate change into project planning for large projects, as part of the research project ENVISAGE-CC, funded by the ACRP ⁵⁶. The project can be seen as a starting point to sensitise the project developers of large scale infrastructure projects subject to Environmental Impact Assessment (EIA) and to raise awareness for climate change impacts. Especially in terms of climate-proofing infrastructure, the project was successful. With a follow-up project named SPECIFIC (SPEcific Climate change ForesIght in projeCt design)⁵⁷ this effort is broadened to other actors like environmental authorities and consultants (EIA assessors/ practitioners) and focuses on rail, highway and power grid projects.

In order to support politicians and experts in the public administration of provinces, regions and cities, as well as actors in regional management in developing adaptation strategies, a handbook with methods and tools which helps to tackle the challenges of adaptation was published (see 5b.). It provides guidance for the strategic examination of the consequences of climate change in all areas for action covered by the Austrian NAS. The handbook is one of the main results of the project FAMOUS (Factory of Adaptation Measures operated ad different Scales)⁵⁸ financed by the Climate and Energy Fund.

Another overarching guidance was published at the end of 2014: A communication strategy⁵⁹ focuses on practically oriented, target group specific and action motivating recommendations for effectively communicating climate change and adaptation.

9d. There are processes for stakeholders' involvement in the implementation of adaptation policies and measures.

Yes / No

Although activities have taken place in the past and there are some activities currently underway and planned (see below), it is unclear to which extent non-public administration stakeholders are being involved currently.

The Federal Ministry for Agriculture, Forestry, Environment and Water Management together with all Bundesländer has established an implementation plan for 2016/17

⁵⁵ Climate-ADAPT (2017). Austria, Summary. Available at: http://climate-adapt.eea.europa.eu/countries-regions/countries/austria

⁵⁶ BOKU-Met (2015). Strategische Unterstützung bei der Projektplanung zur Berücksichtigung von Klimawandelfolgen. Available at: http://www.klimawandelanpassung.at/fileadmin/inhalte/kwa/pdfs/Envisage_StrategischeUnterstuetzung_BOKU-Met_Report_24.pdf

https://www.rali.boku.ac.at/ilen/forschungsprojekte/specific/

⁵⁸ Prutsch, A., Felderer, A., Balas, M., König, M., Clar, C., Steurer, R. (2014): Methods and Tools for Adaptation to Climate Change. A Handbook for Provinces, Regions and Cities. Environment Agency Austria, Wien. Available at:

http://www.klimawandelanpassung.at/fileadmin/inhalte/kwa/pdfs/HANDBUCH_EN.pdf

59 Umwelt Bundesamt (2014). Ein Leitfaden zur erfolgreichen Kommunikation. Available at:
http://klimawandelanpassung.at/fileadmin/inhalte/kwa/pdfs/cctalk_strategie_Web-Version.pdf [29]
http://www.bmlfuw.gv.at/dms/lmat/umwelt/klimaschutz/klimapolitik_national/anpassungsstrategie/broschuere/Klimawandel-Brosch-re-Web/Klimawandel%20Brosch%C3%BCre%20Web.pdf

summarizing a few specific measures to be implemented in the next step. For example, a working group on increased private risk precaution in case of extreme weather events was established in Austria. In addition, it was agreed to make stronger joint efforts to support adaptation at regional level (i.e. through regional workshops, a brochure with good-practice examples).

Step E: Monitoring and evaluation of adaptation activities

Monitoring and reporting

10a. NAS/NAP implementation is monitored and the results of the monitoring are disseminated

Yes / No

A progress report was published by the BMLFUW in 2015⁶⁰ on the state of implementation of the measures described in the NAP. Monitoring and evaluation of the NAS/NAP is based on a twofold and pragmatic approach and is closely related to the NAP⁶¹. It comprises two modules: the first module is a stakeholder survey ("selfassessment approach"; based on the Action plan and sent to the key actors mentioned therein); the second module presents a criteria-approach ("indicator-based approach" with qualitative and quantitative data collections). No information is available on allocated budgets, but the cost of inaction was calculation by the ACRP project COIN (Costs of Inaction) in 2015⁶². For Costs of public Adaptation: see the projects PACINAS.⁶³ For the role of private actors in Adaptation: see the project PATCH:ES⁶⁴

10b. The integration of climate change adaptation in sectoral policies is monitored and the results of the monitoring are disseminated

Yes / No

The central progress report assesses the implementation of adaptation measures for 14 different sectors and thus the integration of climate change adaptation into sectoral policies can be deduced. With regard to mainstreaming in sectors, there seems to be no specific system in place.

10c. Regional-, sub-national or local action is monitored and the results of the monitoring are disseminated

Yes / No

Information is collected and disseminated at sub-national and local levels.

11 **Evaluation**

11a. A periodic review of the national adaptation strategy and action plans is planned

⁶⁰ BMLFUW (2015). Anpassung and den Klimawandel in Österreich. Fortschrittbericht. Federal Ministry of Agriculture, Forestry, Environment and Water Management, Vienna.

61 BMLFUW (2014). Anpassung an den Klimawandel in Österreich. Konzept für die Fortschrittsdarstellung. Federal Ministry of

Agriculture, Forestry, Environment and Water Management, Vienna

⁶² CCCA. COIN. Available at: http://coin.ccca.at/

⁶³ http://anpassung.ccca.at/pacinas/ergebnisse/.

⁶⁴ http://anpassung.ccca.at/patches/ergebnisse/.

Yes / No

Based on results from self-assessments and data collection based on indicators, a first progress report of the state of implementation of the Austrian Adaptation Strategy and Action Plan was published in 2015. It shows that the measures recommended in the NAP have been or are being implemented in all activity fields although the level of progress varies from sector to sector. Future M&E and reporting is planned on a five-year-cycle⁶⁵.

11b. Stakeholders are involved in the assessment, evaluation and review of national adaptation policy

Yes / No

The progress report for the state of implementation of the Austrian adaptation strategy is based on a stakeholder survey ("self-assessment approach") and a data based approach (criteria/indicators). This twofold approach provided a good opportunity for valuable feedback on the assessment, evaluation and review of adaptation actions as well as recommendations for further implementation of adaptation measures.

⁶⁵ Climate-ADAPT (2017). Austria, Summary. Available at: http://climate-adapt.eea.europa.eu/countries-regions/countries/austria

SUMMARY TABLE

	- " .	
No.	Indicator	Met?
Step A	: Preparing the ground for adaptation	
1	Coordination structure	
1a	A central administration body officially in charge of adaptation policy making	<u>Yes</u> / No
1b	Horizontal (i.e. sectoral) coordination mechanisms exist within the governance system, with division of responsibilities	Yes / In Progress / No
1c	Vertical (i.e. across levels of administration) coordination mechanisms exist within the governance system, enabling lower levels of administration to influence policy making.	Yes / <u>In</u> <u>Progress</u> / No
2	Stakeholders' involvement in policy development	
2a	A dedicated process is in place to facilitate stakeholders' involvement in the preparation of adaptation policies	Yes / No
2b	Transboundary cooperation is planned to address common challenges with relevant countries	Yes / No
Step change	_	
3a	Observation systems are in place to monitor climate change, extreme climate events and their impacts	Yes / In progress / No
3b	Scenarios and projections are used to assess the economic, social and environmental impacts of climate change, taking into account geographical specificities and best available science (e.g. in response to revised IPCC assessments)	Yes / In progress / No
3c	Sound climate risks/vulnerability assessments for priority vulnerable sectors are undertaken to support adaptation decision making.	Yes / In progress / No
3d	Climate risks/vulnerability assessments take transboundary risks into account, when relevant	Yes / In progress / No
4	Knowledge gaps	•
4	Work is being carried out to identify, prioritise and address the knowledge gaps	Yes / In progress / No
5	Knowledge transfer	
5a	Adaptation relevant data and information is available to all stakeholders, including policy makers (e.g. through a dedicated website or other comparable means).	Yes / In progress / No
5b	Capacity building activities take place; education and	Yes / In progress

	Adaptation Preparedness Scoreboard	Γ
No.	Indicator	Met?
	and practices are available and disseminated	
Step C	: Identifying adaptation options	
6	Identification of adaptation options	
6a	Adaptation options address the sectoral risks identified in 3c, the geographical specificities identified in 3b and follow best practices in similar contexts	<u>Yes</u> / No
6b	The selection of priority adaptation options is based on robust methods (e.g. multi-criteria analyses, stakeholders' consultation, etc.) and consistent with existing decision-making frameworks	<u>Yes</u> / No
6c	Mechanisms are in place to coordinate disaster risk management and climate change adaptation and to ensure coherence between the two policies	Yes/ <u>In Progress</u> / No
7	Funding resources identified and allocated	
7	Funding is available to increase climate resilience in vulnerable sectors and for cross-cutting adaptation action	Yes / <u>In</u> <u>Progress</u> / No
Step D	: Implementing adaptation action	
8	Mainstreaming adaptation in planning processes	
8a	Consideration of climate change adaptation has been included in the national frameworks for environmental impact assessments	Yes / <u>No</u>
8b	Prevention/preparedness strategies in place under national disaster risk management plans take into account climate change impacts and projections	Yes / <u>No</u>
8c	Key land use, spatial planning, urban planning and maritime spatial planning policies take into account the impacts of climate change	Yes / <u>No</u>
8d	National policy instruments promote adaptation at sectoral level, in line with national priorities and in areas where adaptation is mainstreamed in EU policies	Yes / <u>In</u> <u>Progress</u> / No
8e	Adaptation is mainstreamed in insurance or alternative policy instruments, where relevant, to provide incentives for investments in risk prevention	Yes / <u>No</u>
9	Implementing adaptation	•
9a	Adaptation policies and measures are implemented, e.g. as defined in action plans or sectoral policy documents	Yes / <u>In</u> <u>Progress</u> / No
9b	Cooperation mechanisms in place to foster and support adaptation at relevant scales (e.g. local, subnational)	<u>Yes</u> / No
9c	Procedures or guidelines are available to assess the potential impact of climate change on major projects or programmes, and facilitate the choice of alternative options, e.g. green	Yes / No

Adaptation Preparedness Scoreboard		
No.	Indicator	Met?
	infrastructure	
9d	There are processes for stakeholders' involvement in the implementation of adaptation policies and measures.	Yes / No
Step E	: Monitoring and evaluation of adaptation activities	
10	Monitoring and reporting	
10a	NAS/NAP implementation is monitored and the results of the monitoring are disseminated	Yes / No
10b	The integration of climate change adaptation in sectoral policies is monitored and the results of the monitoring are disseminated	<u>Yes</u> / No
10c	Regional-, sub-national or local action is monitored and the results of the monitoring are disseminated	<u>Yes</u> / No
11	Evaluation	
11a	A periodic review of the national adaptation strategy and action plans is planned	Yes / No
11b	Stakeholders are involved in the assessment, evaluation and review of national adaptation policy	<u>Yes</u> / No