

Adaptation preparedness scoreboard:

Country fiche for Hungary

Note to the Reader

Under Action 1 of the EU's Strategy on adaptation to climate change (COM(2013)216), in collaboration with the Member States, the Commission developed an 'adaptation preparedness scoreboard'. Using the scoreboard, the Commission prepared country fiches on each Member State in an iterative consultation process.¹ The country fiches assess the Member States' adaptation policy as of June 2018, including the content of NASs and plans, for the following aspects:

- Institutional structure
- Quality of national vulnerability assessments
- Knowledge creation (national observation systems in relevant sectors² and climate modelling), transfer and use
- Action plans:
 - Quality (incl. the basis used for assessment of adaptation options)
 - Actual implementation mechanisms
- Funding mechanisms
- Mainstreaming into sectoral policies, in particular:
 - Disaster risk reduction
 - Spatial planning
 - Environmental impact assessment (EIA) (how the Directive is transposed)
 - Insurance policy
- Transboundary cooperation
- Monitoring mechanisms in different sectors and governance levels

¹ The first versions of the fiches, prepared in consultation with the Member States in 2014-15, were unpublished and used to fine-tune the scoreboard. The second drafts were published, after consulting the Member States, as background documents to the public consultation on this evaluation in December 2017.

https://ec.europa.eu/clima/consultations/evaluation-eus-strategy-adaptation-climate-change_en The final Member State consultation on the draft fiches took place in June 2018.

² These relate for example to meteorology, floods, drought, sea level, coastal erosion, biodiversity, human/animal/plant health etc.

The fiches are based on internal work by the Commission and on targeted assistance from an external contractor. They also served as input to the assessment of Action 1 of the Strategy during its evaluation. Annex IX of the Commission's SWD(2018)461 on the evaluation of the Strategy presents a horizontal assessment of the 28 country fiches, while Annex X presents the list of scoreboard indicators and the methodology used in applying them.

The assessments in the country fiches (yes/no/in progress) need to be read in conjunction with the narrative that accompanies them. They assess the state of play within each EU Member State. 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 Member States. 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".

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List of abbreviations

CF	Cohesion Fund
EEE OP	Environment and Energy Efficiency Operative Programme
ERDF	European Regional and Development Fund
ESIF	European Structural and Investment Funds
HMS	Hungarian Meteorological Service
LRAs	Local and regional authorities
NAC	National Adaptation Centre
NAGiS	National Adaptation Geo-Information System
NCCP	National Climate Change Programme (i.e. National Climate Change Action Plan)
NCCS-I	First National Climate Change Strategy
NCCS-II	Second National Climate Change Strategy
OP	Operational Programme
RDP	Rural Development Programmes

POLICY FRAMEWORK

Adaptation strategies

A1. National adaptation strategy

The 2007 Climate Change Act (no. LX)³ provided a mandate for the Hungarian Government to develop a strategy on climate change in Hungary. In 2008, the former Ministry for the Environment and Water developed Hungary's First National Climate Change Strategy for 2008-2025 (NCCS-I)⁴, which entered into force via the Parliamentary Resolution 29/2008⁵. The NCCS-I covers three major areas of action: mitigation, adaptation and awareness-raising. Compared to mitigation, consideration of adaptation plays only a minor role and the chapter is mostly descriptive and theoretical. The sectors covered by the adaptation chapter include: nature, human health, water, agriculture and spatial planning.

In accordance with the 2007 Climate Change Act, a draft Second National Climate Change Strategy for 2017-2030 (draft NCCS-II)⁶ was submitted to the Hungarian Parliament in 2017. As of June 2018, the draft NCCS-II has not been adopted. The draft NCCS-II includes a National Adaptation Strategy, a National Decarbonisation Roadmap, and a "Partnership for Climate" Awareness-Raising Plan. Compared to the NCCS-I, adaptation plays a much more prominent role in the draft NCCS II. The draft NCCS-II treats the following sectors as priority for adaptation actions: human health, water, disaster risk reduction, agriculture, nature protection, forestry, built environment and spatial planning, energy and tourism. It also includes a SWOT (strengths, weaknesses, opportunities, threats) analysis of the NCCS-I and specifically highlights the weaknesses of the adaptation chapter.

A2. Adaptation strategies adopted at subnational levels

While the NCCS-I does not discuss subnational-level adaptation strategies, the draft NCCS-II emphasises the need to actively involve regional and local authorities (LRAs), as part of its stakeholder engagement objectives, and also identifies a set of sectoral actions specifically linked to LRAs.

Currently, the 2014-2020 Environmental and Energy Efficiency Operational Programme (EEE OP), funded by the EU Cohesion Fund (CF) and the European Regional Development Fund (ERDF), provides support for the preparation of county-level adaptation strategies.⁷

As of May 2018, 18 of the 19 county-level climate change strategies, as well as the climate change strategy of Budapest have been adopted. Currently, the only exception is Békés County, where a strategy is being finalised.

³ 2007 Climate Change Act (no. LX), URL: https://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=a0700060.tv

⁴ Hungary's National Climate Change Strategy for 2008-2025, URL: <http://www.kvvm.hu/cim/documents/nes080214.pdf>

⁵ Parliamentary Resolution 29/2008, URL: <https://mkogy.jogtar.hu/?page=show&docid=a08h0029.OGY#lbj0idafef>

⁶ Draft of the Second National Climate Change Strategy for 2017-2030 (NCCS-II), URL: http://www.kormany.hu/download/f/6a/f0000/N%C3%89S_2_strat%C3%A9gia_2017_02_27.pdf#!DocumentBrowse

⁷ Personal communication with MS contact.

As of May 2018, there are twelve signatories⁸ to the adaptation actions of the Covenant of Mayors of Climate & Energy⁹ at the city level in Hungary.

Adaptation action plans

B1. National adaptation plan

The objectives of the NCCS-I were planned to be implemented by National Climate Change Programmes developed every two years. The first National Climate Change Programme (1st NCCP) for 2009-2010 was adopted in 2010 by the Governmental Decree 1005 /2010.¹⁰ The Programme included a set of adaptation actions for the priority sectors and identified indicators, financial resources and the responsible authorities for these actions.

Nevertheless, no further National Climate Change Programmes have been adopted since 2010 and, thus, currently, no adaptation plans are in place.

The draft NCCS-II indicates that National Climate Change Programmes will be developed every three years.

B2. Adaptation plans adopted at sub-national level

The county-level strategies described in Section A2 also include adaptation action plans.

B3. Sectoral adaptation plans

Separate sectoral adaptation plans do not exist, but sectoral adaptation actions are integrated into relevant sectoral strategies – see Indicator 8d.

SCOREBOARD

As the draft NCCS-II has not been adopted, the scores below are based on the NCCS-I.

Step A: Preparing the ground for adaptation

1. Coordination structure

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

Yes / No

The Department for Climate Policy in the Ministry for Innovation and Technology (former: Ministry of National Development)¹¹ is responsible for adaptation policy making and the

⁸ The 12th and the 18th district of Budapest, Békéscsaba, Debrecen, Dunaújváros, Kaposvár, Kőszegdoroszló, Nagypáli, Nyíregyháza, , Répceszemere, Szeged and Sárvár.

⁹ Covenant of Mayors signatories, URL: http://www.covenantofmayors.eu/about/signatories_en.html?q=Search+for+a+Signatory...&country_search=hu&population=&date_of_adhesion=&status=&commitments2=1 [Accessed: 23/04/2018]

¹⁰ 1005/2010. (I.21.) Korm. határozata Nemzeti Éghajlatváltozási Programról, URL: http://klima.kvvm.hu/documents/103/N_P_v_gleges_honlapra.pdf

¹¹ See at: <http://www.kormany.hu/hu/innovacios-es-technologiai-miniszterium/energiagykert-es-klimapolitikaert-felelos-allamtitkar>; former: <http://www.kormany.hu/hu/nemzeti-fejlesztési-miniszterium/fejlesztés-es-klimapolitikaert-valamint-kiemelt-kozzszolgaltatasokert-felelos-allamtitkarsag>;

implementation of the NCCS-I. Some of the priority goals of the Ministry are to support domestic climate and environmental projects and to keep the private sector representatives informed of the latest EU and domestic funding opportunities. The Climate Policy Department is responsible for international and EU-level climate negotiations and national climate law-making. It also includes the National Climate Protection Authority, which carries out tasks related to administration on F-gases and the EU Emissions Trading System, and to the National Administrator of the Registry.

The National Adaptation Centre (NAC)¹² acts as a background institute, and takes part in the development of climate change strategies, national adaptation strategies and climate change action plan(s) and supports the coordination of implementation. Furthermore, the Mining and Geological Survey of Hungary (former Geological and Geophysical Institute of Hungary) acts as an institution providing background research.

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

Yes / In progress / **No**

There is no systematic horizontal coordination mechanism in place in Hungary. The central coordinating body is the Ministry for Innovation and Technology (as Indicated in 1a) while other relevant ministries include the Ministry of Interior (responsible for the protection of surface waters and groundwater) and the Ministry of Agriculture (responsible for agricultural and rural development policy).¹³

The NCCS-I indicates that the responsible coordinating authority should have formed a Climate Change Policy Working Group in order to support the horizontal coordination of adaptation policy making with the relevant ministries. It is unclear if this working group is in place and how the various sectoral ministries were involved in the drafting of the NCCS-I.

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

County-level climate change platforms exist, including one for the capital. These platforms include a wide range of county-level stakeholders, including relevant governmental authorities, academia and environmental NGOs. The platforms are responsible for the dissemination of climate change related information to local stakeholders, to assess adaptation needs and to identify good practices, and as such support the implementation of climate adaptation policy.¹⁴ The platforms are supported by the EEE OP.

¹² See at: <http://nak.mfgi.hu/hu>

¹³ It should be noted that following the parliamentary elections held in April 2018, a new Government has formed modifying the competencies of certain governmental institutions. Further changes may happen regarding the responsibilities in the near future.

¹⁴ Personal communication with MS contact.

The Hungarian Alliance of Climate-Friendly Cities¹⁵, initiated by the Institute of Sociology of the Hungarian Academy of Sciences, is a partnership of local governments and NGOs providing technical advice, tools, case studies and information to cities on climate adaptation and mitigation. As of June 2018, the Alliance had 46 Hungarian member cities. The county-level platforms are responsible to report on their progress to the Hungarian Alliance of Climate-Friendly Cities.

As mentioned above, a number of cities are part of the Covenant of Mayors initiative. The Hungarian Alliance of Climate-Friendly Cities is responsible for the national and regional coordination between the members of the Covenant of Mayors.

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

The most recent draft of the NCCS-II was open for public consultation for a limited time (two weeks) in 2017. Stakeholders were invited to send their comments to a governmental email address, but no templates or questions were publicly available. Following this administrative consultation, the draft NCCS-II was first discussed by the National Environmental Protection Council, whose members are mainly NGOs and scientific institutions, and second by the National Council for Sustainable Development, which consists of members of parliamentary parties and NGOs.

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

Yes / No

The NCCS-I does not discuss transboundary adaptation issues and, thus, did not drive transboundary cooperation. In contrast, the draft NCCS-II describes some plans in this area. Furthermore, there are a number of transnational initiatives in which Hungary takes part. These are presented below in chronological order.

In 2011, during the Hungarian Presidency, the EU Strategy for the Danube Region¹⁶ was adopted. The main objectives of the Strategy are to sustainably develop the river basin macro-region, protect its natural areas, landscapes and natural values. Climate adaptation is listed as one of the issues that needs to be addressed by the Strategy.

Hungary is also a party to the International Convention for the Protection of the Danube River, under which a dedicated Climate Adaptation Strategy¹⁷ was developed in 2013.

In 2014, a Carpathian Home Development Concept Note was developed, and discussed and supported by the National Assembly of Foreign Hungarian Communities. The Concept Note

¹⁵ Klimabarat.hu, URL: <http://klimabarat.hu/> [Accessed: 23/04/2018]

¹⁶ European Union Strategy for Danube Region, 2010, URL: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52010DC0715>

¹⁷ ICPDR Programmes, URL: <http://www.icpdr.org/main/publications/programmes> [Accessed: 16/05/2018]

provides a strategic development framework for the Carpathian region until 2030. The draft NCCS-II indicates that the Concept Note supports the objectives of the draft NCCS II.

In 2016, a water summit was organised in Budapest, which specifically aimed to align actions with the UN's Sustainable Development Goals. Building on the event, the draft NCCS-II suggests that a regional adaptation centre should be established in Hungary for the Danube, but no further details are provided on this action.

The draft NCCS-II also indicates that adaptation could be strengthened via the Framework Convention on the Sustainable Development and Protection of the Carpathians¹⁸ and calls for action in the Visegrad 4 countries. The need for transboundary action also appears in a small number of adaptation options identified by the draft NCCS-II but a systematic assessment has not been completed.

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

The Hungarian Meteorological Service (HMS) operates a network for observations and measurements, providing quality control and harmonisation of long-term observation data. The HMS has a large number of meteorological stations measuring temperature, precipitation, wind, sunshine and many other meteorological parameters.

The primary impacts of climate change on climate and on weather events are fully tracked by the HMS. The secondary impacts of extreme events are tracked by the institutes mentioned below:

- Water management related information (e.g. flood, inland inundation) – General Directorate of Water Management
- Geological hazards related data and information (e.g. landslide) – Mining and Geological Survey of Hungary
- Environmental and other disaster situations related data and information – National Directorate General for Disaster Management
- Agriculture and forestry risk related data and information (e.g. ice and storm damage) – National Food Chain Safety Office
- Human health related data and information (e.g. high mortality rates caused by heat waves) – National Public Health and Medical Officer Service.

Observation and monitoring systems to assess secondary climate impacts are not operated by the HMS.

¹⁸ 306/2005. (XII. 25.) Korm. rendelete Kárpátok védelméről és fenntartható fejlesztéséről szóló Keretegyezmény kihirdetéséről, URL: http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A0500306.KOR

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

The HMS (Regional Climate Modelling Group) applies two regional climate models: the ALADIN Climate model and the REMO model.¹⁹ The scenarios and projections, included in the draft NCCS-II, are based on these models.

With regards to scenarios and projections, the latest and most important initiative is the National Adaptation Geo-information System (NAGiS)²⁰, which was established in 2014 and became operational in 2016. The NAGiS is operated by the Mining and Geological Survey of Hungary²¹ according to Government Decree No. 94/2014 (III. 21.)²² and the detailed rules of operation of the System. The legal foundation of NAGiS was laid down by the 2007 Climate Change Act, which stipulates that the implementation of the adaptation strategy framework should be supported by a national adaptation geo-information system, and by the results of climate vulnerability assessments based on this system. The reference years of the NAGiS are 1961-1990. It provides projections for the period of 2021-2050 and 2071-2100, which are based on the IPCC SRES A1B scenario²³ (AR4).

The follow up project NAGiS2 was launched at the end of 2016, which will be implemented by August 2019. Its main objectives are to further develop the methodology assessment scheme and the databases of the current system, and to create a new toolkit for local and governmental climate adaptation decision making.

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

Yes / **In progress** / No

The NCCS-I was built on the so-called VAHAVA project²⁴, which undertook a climate vulnerability assessment between 2003 and 2007. The project was carried out by the Hungarian Academy of Sciences and the former Ministry of Environment and Water, now the Ministry of National Development. It was a nationwide project, involving leading researchers from a number of scientific institutions across Hungary. The vulnerability assessment covered the following sectors: natural resources, agriculture, forestry, water, energy, transport, spatial planning, tourism, human health and insurance.²⁵

The draft NCCS-II, building on the results of the NAGiS (see above), provides a vulnerability assessment of the following sectors and areas:

¹⁹ OMSZ Modellkísérletek, URL: <http://met.hu/omsz/tevekenysegek/klimamodellezes/modellkiserletek/> [Accessed: 16/05/2018]

²⁰ See at: <http://nater.mfgi.hu/en>

²¹ See at: <http://mbfsz.gov.hu/>

²² 94/2014. (III. 21.) Korm. Rendelet a Nemzeti Alkalmazkodási Térinformatikai Rendszer működésének részletes szabályairól, URL: http://njt.hu/cgi_bin/njt_doc.cgi?docid=168214.261603

²³ Personal communication with MS contact.

²⁴ The website of the project is not operating anymore.

²⁵ KvVM, 2005, A GLOBÁLIS KLÍMAVÁLTOZÁS: HAZAI HATÁSOK ÉS VÁLASZOK, ELŐZETES ÖSSZEFOGLALÁS, URL: <http://netrix.mta.nsd.sztaki.hu/fileadmin/2005/09/vahava0915.pdf>

- Human health impacts as a result of heatwaves
- Vulnerability of arable lands and agriculture production
- Vulnerability of forests
- Impacts on natural ecosystems
- Flash flood risks in hills and mountains
- Vulnerability of drinking water supply.

The NAGiS was extended to the agricultural sector (AGRAGiS) in order to assess its vulnerability in more detail. A further project of the NAGiS was the “Long-term socio-economic forecasting for Hungary”²⁶, which was implemented by the Institute for Regional Studies, Centre for Economic and Regional Studies, Hungarian Academy of Sciences.

A set of background studies were conducted to support some of the vulnerability assessments (e.g. nature and water)²⁷. A further project called ‘CRIGiS: Vulnerability/Impact Studies with a focus on Tourism and Critical Infrastructures’, funded by an EEA grant, was also undertaken.²⁸

Only limited information is available on the VAHAVA project, so it is difficult to deduce whether its vulnerability assessment was comprehensive. While the draft NCCS-II applied a sound vulnerability assessment methodology, it has not been officially adopted. Subsequently, an ‘in progress’ score has been assigned.

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

Yes / **In progress** / No

Transboundary risks are not covered by the NCCS-I.

Transboundary risks are also not covered by the vulnerability assessment in the draft NCCS-II and the NAGiS only covers Hungary. Nevertheless, one of the planned actions of the draft NCCS-II is to develop a geo-information model, which considers the whole water catchment area of the Danube and builds on regional hydrological models. At the same time, as noted under Indicator 2b, Hungary is part of a range of transboundary cooperation initiatives. Some of these by nature consider transboundary risks, as part of the conducted vulnerability assessments. The assessments primarily focus on the river Danube.

4. Knowledge gaps

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

Yes / **In progress** / No

²⁶ See at: <http://nater.rkk.hu/english/>

²⁷ See for instance: Somodi I., Bede-Fazekas Á., Lepesi N., Czúcz B.: Természetes ökoszisztémák éghajlati sérülékenységének elemzése, 2016.; A klímaváltozás hatása a villámárvíz kockázatra, D4.10 NATÉR kutatási jelentés, Magyar Földtani és Geofizikai Intézet, 2016.; Rotárné Szalkai Ágnes - Homolya Emese - Selmeczi Pál: A klímaváltozás hatása az ivóvízbázisokra. Kutatási jelentés. MFGI, Budapest, 2015. december 15.

²⁸ See at: <http://www.met.hu/KRITeR/en/kezd/>

The NCCS-I identified a list of areas where further research and development is needed. However, this was not done in a systematic way.

The draft NCCS-II includes a SWOT analysis of the NCCS-I and indicates that it will address the identified gaps.

Research, development and innovation are also considered in the draft NCCS-II, as a key horizontal tool, and short-, mid- and long-term actions are established. For instance, in the short-term the draft NCCS-II aims to further implement regional climate models and observation systems.

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

A dedicated portal on the Government's website on climate change is available²⁹. This website provides detailed information about domestic climate change policy, including on the NCCS-I and the draft NCCS-II.

The National Adaptation Centre³⁰ also provides information about Hungary's adaptation policy, including detailed information on the NCCS-I and the draft NCCS-II.

The website of the NAGiS³¹ provides detailed information and guidance on the use of the databases.

There is a dedicated website for climate change on the website of the Hungarian Meteorological Service (HMS)³². Information on climate projections and regional climate models is available, however, it is not fully up to date.

Finally, in 2016, a Facebook page was launched by the Ministry for National Development to share information with the public on climate change issues.

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

The NCCS-I covers education within its horizontal chapter and the 1st NCCSP identified a set of indicators for it. While the first (and only) progress report on the 1st NCCSP indicated some progress within this area, no further data (post-2012) is available on these indicators.

Capacity building and stakeholder engagement appears as an important horizontal tool in the draft NCCS-II, however, no systematic action is planned and activities are uncoordinated.

²⁹ The Government's website on climate change: <http://klima.kormany.hu>

³⁰ National Adaptation Centre website: <http://nakfo.mbfisz.gov.hu>

³¹ NAGiS website: <http://nater.mbfisz.gov.hu/>

³² HMS website: <http://met.hu/eghajlat/eghajlatvaltozas/>

During the Hungarian presidency in 2011, guidance was developed for cities and regions with support for climate action. Furthermore, a set of newly developed guidance documents on how to develop climate change strategies is available for counties, cities and villages³³ on the website of the Hungarian Alliance of Climate-Friendly Cities.

In 2013, the NAC established an online platform, the Climate Dialogue, where registered stakeholders can discuss climate change informally. This platform has targeted stakeholders during the development of the first draft of the NCCS II in 2014³⁴. Furthermore, as indicated in Indicator 1c, support is provided at the county-level as part of the climate change platforms.

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 NCCS-I identifies a set of adaptation options within the identified priority sectors, nevertheless, no references are made to the results of the VAHAVA vulnerability assessment and it is unclear what process has been used to identify these options. In contrast, the draft NCCS-II defines short-, medium- and long-term actions for the priority sectors and the identified objectives seem to build on the results of the vulnerability assessments and the observed climate impacts and projections; furthermore, expert judgement seems to be applied. The aim was to integrate the sectoral actions into other sectoral policies and strategies, as, in many cases, the NAS provides the links between the various strategies. Compared to the identification of sectoral adaptation options, the geographical focus is less apparent. Nevertheless, it is addressed in more detail in the vulnerability assessment.

Overall, given that the draft NCCS-II has not been adopted the score is based on the NCCS-I.

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 are not prioritised within the NCCS-I and no prioritisation tools have been applied. Actions are listed for all of the priority sectors. The same applies to the draft NCCS-II. While time horizons (short-, mid- and long-term) are identified for each of the adaptation actions, it is unclear how their duration was determined or what will be their actual timescales.

³³ See at: <http://klimabarat.hu/>

³⁴ Bemutatózik a Klímadialogus, URL: <http://klimadialogus.mfgi.hu/hu/cikk/bemutatokzik-klimadialogus>
Accessed: 16/05/2018

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

The 2001 Disaster Risk Reduction Act (No. CXXVIII)³⁵ makes no reference to climate change or adaptation and provides no further details about a disaster risk reduction strategy.

Although the current National Security Strategy³⁶ makes a reference to climate change, it does not present adaptation actions as a potential tool to address security problems. In order to comply with the European Strategic Investment Fund's (ESIF) ex-ante conditionality for the Thematic Objective 5 ("the existence of national or regional risk assessments for disaster management, taking into account climate change adaptation"), Hungary prepared a report³⁷ on its approach to disaster risk management, which considered climate impacts.

Disaster risk management is not discussed in detail in the NCCS-I and is only briefly mentioned in relation to the built environment and infrastructure.

The draft NCCS-II specifically assesses disaster risk reduction and security concerns and considers the projected impacts on key infrastructure, industrial security, ecological security, food safety and impacts on health care, and national security (including for instance climate migration). Short-, mid- and long-term actions are identified for disaster risk reduction and the draft NCCS-II emphasises that adaptation needs to be considered in the National Disaster Risk Reduction Strategy, which was adopted in 2012 by the Government Decision 1035/2012. (II. 21.).

7. Funding resources identified and allocated

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

Yes / **In progress** /No

While the NCCS-I does not provide details about the financing framework, the 1st NCCP indicated the specific financial resources for all of its actions. These included both EU and national funds. In contrast, information on funding resources are specifically discussed as part of the implementation framework of the draft NCCS-II and details are provided separately for mitigation and adaptation.

The key financial resources for adaptation actions come from EU funds, particularly the ERDF, CF and European Agriculture Fund for Rural Development (EAFRD). Adaptation actions are mainstreamed through Operational Programmes (the Environment and Energy

³⁵ 2011. évi CXXVIII. Törvény a katasztrófavédelemről és a hozzá kapcsolódó egyes törvények módosításáról, URL: http://njt.hu/cgi_bin/njt_doc.cgi?docid=139408

³⁶ A Kormány 1035/2012. (II. 21.) Korm. határozata Magyarország Nemzeti Biztonsági Stratégiájáról, URL: http://2010-2014.kormany.hu/download/f/49/70000/1035_2012_korm_határozat.pdf

³⁷ BM, 2014, Jelentés Magyarország nemzeti katasztrófakockázat-értékelési módszertanáról és annak eredményeiről <http://www.katasztrofavedelem.hu/letoltes/szervezet/20140718-katasztrofakockazat-ertekelesrol-jelentes.pdf>

OP³⁸, the Competitive Central Hungary OP³⁹ and the Territorial and Settlement Development OP⁴⁰) and the Rural Development Programme (RDP)⁴¹. Unsurprisingly, the Environment and Energy OP delivers the majority of adaptation actions. In total, during the 2014-2020 Cohesion Policy programming period EUR 892.71 million is allocated to adaptation actions under these three OPs (no figures are included in the draft NCCS-II on the RDP). In comparison, EUR 3024.53 million is allocated to mitigation under five OPs.

The draft NCCS-II also describes national funding sources that are allocated to both mitigation and adaptation actions.

No evidence was found on the funding of cross-cutting adaptation actions.

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

The EIA Directive and the SEA Directive are translated into Hungarian legislation via the Governmental Decree 314/2005. (XII. 25.)⁴² and the Governmental Decree 2/2005. (I. 11.)⁴³, respectively.

In June 2017, the Governmental Decree 139/2017 introduced the amended provisions of the EIA Directive. The modification prescribes, *inter alia*, that the pre-examination documentation shall include a climate sensitivity analysis for certain investment types, the analysis of potential climate impacts, risk-evaluation and potential adaptation actions.

The Governmental Decree 2/2005 transposing the SEA Directive does not provide specific details on climate adaptation.

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

Yes / No

In order to comply with the European Strategic Investment Fund's (ESIF) ex-ante conditionality for the Thematic Objective 5 ("the existence of national or regional risk assessments for disaster management, taking into account climate change adaptation"),

³⁸ See more information at: http://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/hungary/2014hu16m1op001

³⁹ See more information at http://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/hungary/2014hu16m2op002

⁴⁰ See more information at http://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/hungary/2014hu16m2op001

⁴¹ See more information at https://ec.europa.eu/agriculture/rural-development-2014-2020/country-files/hu_en

⁴² 314/2005. (XII. 25.) Korm. Rendelet a környezeti hatásvizsgálati és az egységes környezethasználati engedélyezési eljárásról, URL: http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A0500314.KOR

⁴³ 2/2005. (I. 11.) Korm. Rendelet egyes tervek, illetve programok környezeti vizsgálatáról, URL: https://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=a0500002.kor

Hungary prepared a report⁴⁴ on its approach to disaster risk management, which considered climate impacts.

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

Yes / No

While the NCCS-I discusses adaptation options for the built environment it does not make any reference to related policies. In contrast, the draft NCCS-II makes a specific reference to the National Development and Spatial Development Concept Note, which establishes the strategic orientation for the development priorities for Hungary until 2030. The legal base of the concept note is the Parliamentary Resolution 1/2014. (I. 3.)⁴⁵ and is linked to the Act XXI of 1996 on Regional Development and Spatial Planning⁴⁶, which is the main legal base of land-use and spatial planning in Hungary. The Concept Note assesses climate impacts on land-use and spatial planning and discusses the implications primarily at the national level. Nevertheless, some regional specificities are also presented. The Concept Note also provides an overview of the climate vulnerability of key sectors in Hungary and emphasises regional variations and differences in adaptation capacities. Practical implementation of the Concept Note is achieved through the operational programmes referenced in Indicator 7a.

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

The NCCS-I does not provide an overview of key national policies and how adaptation is mainstreamed into them. In contrast, the draft NCCS-II includes a specific chapter on the links between the Strategy and other sectoral policies. The following strategies, which are already in place, are specifically mentioned:

- National Rural Strategy (2012-2020)⁴⁷: the NAS makes a specific reference to the need to better adapt to climate change in the agriculture sector via for instance water use efficiency and capacity building for farmers.
- National Forestry Strategy (2016-2030)⁴⁸: the need to implement alternative forestry practices to better adapt to climate change is mentioned.
- National Environmental Protection Strategy (2015-2020)⁴⁹: adaptation actions at the local and regional level are emphasised.

⁴⁴ BM, 2014, Jelentés Magyarország nemzeti katasztrófakockázat-értékelési módszertanáról és annak eredményeiről <http://www.katasztrofavedelem.hu/letoltes/szervezet/20140718-katasztrofakockazat-ertekelesrol-jelentes.pdf>

⁴⁵ 1/2014. (I. 3.) OGY határozat a Nemzeti Fejlesztés 2030 - Országos Fejlesztési és Területfejlesztési Konceptióról, URL: <https://mkogy.jogtar.hu/?page=show&docid=a14h0001.OGY>

⁴⁶ 1996. évi XXI. Törvény a területfejlesztésről és a területrendezésről, URL: https://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=99600021.TV

⁴⁷ Nemzeti Vidékstratégia 2012 – 2020, URL: <http://videkstrategia.kormany.hu/download/4/37/30000/Nemzeti%20Vid%20C3%A9kstrat%C3%A9gia.pdf>

⁴⁸ Nemzeti Erdőstratégia 2016-2030, URL: http://www.kormany.hu/download/a/1a/d0000/Nemzeti_Erd%C5%91strat%C3%A9gia.pdf

⁴⁹ 27/2015. (VI. 17.) OGY határozat a 2015–2020 közötti időszakra szóló Nemzeti Környezetvédelmi Programról URL: <https://mkogy.jogtar.hu/?page=show&docid=a15h0027.OGY>

- National Nature Protection Strategy (2015-2020)⁵⁰: for instance, the importance of green infrastructure is indicated.
- National Biodiversity Strategy (2015-2020)⁵¹: the need to maintain ecosystem services is emphasised.
- National Environmental Technology Innovation Strategy (2011-2020)⁵²: the strategy aims to support the development of innovative and new technologies, which could help to adapt to climate change.
- National Water Strategy⁵³ (2014-2020): water policy has the explicit aim of adaptation to climate change, with special emphasis on extreme weather events and droughts. The National Water Strategy includes several adaptation measures in the field of local water management, such as water retention in local (both groundwater and surface) water reservoirs, improved irrigation and land-use change, where necessary (less arable lands at extreme low elevations).
- National Tourism Development Strategy 2030: describes climate change as among the most important future challenges that can have serious impacts on tourist destinations, and responds by putting greater emphasis on the need for climate and environmental awareness in developing tourist attractions.

Furthermore, the Constitution, the National Sustainable Development Strategy, the Partnership Agreement, the National Reform Programme, the National Development and Spatial Development Concept Note and the Carpathian Home Development Concept Note are also listed as key strategic documents that are closely linked to the overarching objectives of the draft NCCS-II and are integrating climate objectives.

Overall, there are many sectoral strategies that are increasingly considering adaptation, nevertheless, some of the key sectors are still missing, such as human health, built environment and infrastructure.

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

Yes / **No**

The need to re-evaluate the insurance sector's role in climate change policy is very briefly discussed within the NCCS-I.

In the draft NCCS-II, the need to ensure adequate insurance instruments primarily appears linked to the agriculture sector. The 2011 Act (no. CLXVIII.)⁵⁴ on climate-related risk management affecting agriculture production provides a framework on how to deal with risk

⁵⁰ NEMZETI TERMÉSZETVÉDELMI ALAPTERV, URL: <http://2010-2014.kormany.hu/download/6/c7/11000/Nemzeti%20Term%C3%A9szetv%C3%A9delmi%20Alapterv%20IV.pdf>

⁵¹ 28/2015. (VI. 17.) OGY határozat a biológiai sokféleség megőrzésének 2015-2020 közötti időszakra szóló nemzeti stratégiájáról, URL: <https://mkogy.jogtar.hu/?page=show&docid=a15h0028.OGY>

⁵² Nemzeti Környezettechnológiai Innovációs Stratégia, URL: <http://kornyezettechnologia.kormany.hu/download/c/66/40000/NKIS.pdf>

⁵³ Kvassay Jenő Terv tájékoztatás és társadalmi konzultáció, URL: <https://www.vizugy.hu/index.php?module=vizstrat&programelemid=143> [Accessed: 16/05/2018]

⁵⁴ 2011. évi CLXVIII. Törvény a mezőgazdasági termelést érintő időjárási és más természeti kockázatok kezeléséről, URL: https://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=a1100168.tv

prevention in the agriculture sector, nevertheless it does not refer to the need for adaptation actions.

Overall, no evidence could be found that adaptation is mainstreamed into insurance policies or alternative policy instruments to provide incentives for investments in risk prevention.

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

As indicated in the policy framework section, Hungary only adopted one action plan, which covered the years 2009 and 2010. In 2012, the Hungarian Government published a report⁵⁵ on the implementation of the 1st NCCP, which identified some progress with adaptation actions, including on nature and biodiversity, human health, water, agriculture, forestry and spatial planning. Furthermore, progress has been registered on some horizontal climate actions, such as in education, capacity building and research.

Since 2010, no further documented evidence has been published on the implementation of adaptation actions. Nevertheless, some actions are taking place sectorally (see mainstreaming under Indicator 8d) and at the sub-national level (see Indicator 9b).

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

Yes / No

As indicated in Indicator 1c, county-level climate change platforms are in place and support the implementation of adaptation actions. Furthermore, the Hungarian Alliance of Climate-Friendly Cities⁵⁶ and the Climate Protection Alliance⁵⁷ also provide support at the sub-national level.

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

In January 2017, climate risk guidance was developed by the Government on how the resilience and vulnerability of major projects and other projects funded by ESIF should be assessed. The adaptation guidance follows eight steps:

- Assessment of the project's sensitivity
- Analysis of the project's exposure

⁵⁵ J/6926. Számú jelentés a 2009-2010. évi Nemzeti Éghajlatváltozási Programról, URL: <http://www.parlament.hu/irom39/06926/06926.pdf>

⁵⁶ See at: klimabarát.hu

⁵⁷ See at: <http://www.eghajlatvedelmiszovetseg.hu/>

- Assessment of the potential impacts
- Risk assessment
- Identification and selection of possible adaptation options
- Assessment of the possible adaptation options
- Integration of adaptation options into the project
- Monitoring the effectiveness of adaptation options.

In addition to the guidance, a detailed description of the methodology is also available⁵⁸.

The Ministry of National Development held several trainings and briefings for the leaders of major projects supported by the Cohesion Policy on the practical utilisation of the Governmental Decree 314/2005 on the procedure of environmental impact assessment (EIA) and integrated pollution prevention and control. The Prime Minister's Office has published a technical guidance document on the detailed climate risk assessment methodology⁵⁹. This document is an amendment of the European Commission's guidance on integrating climate adaptation into the programmes and investments supported by the Cohesion Policy⁶⁰ with the addition of Hungarian local and regional specificities.

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

Yes / No

In 2009, a Climate Change Committee was formed⁶¹ to support implementation of the NCCS-I and included stakeholders from relevant ministries, academia and environmental NGOs.

As indicated in Indicator 1c, County Climate Change Platforms have also been established in every county, as a result of the support of the EEE OP, and include a wide range of stakeholders.

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**

A progress report on the 1st NCCP was published by the Hungarian Government in 2012. This report provided an overview of progress on the specific adaptation actions, including on the results for the specific indicators and the allocation of funds.

⁵⁸ Szechenyi 2020, Útmutatók, szabályzatok, URL: <https://www.palyazat.gov.hu/tmutatkszabalyzatok> [Accessed: 16/05/2018]

⁵⁹ Szechenyi 2020, Útmutató projektek klímakockázatának becsléséhez és csökkentéséhez , URL: <https://www.palyazat.gov.hu/tmutat-projektek-klimakockzatnak-becslshez-s-cskkentshez> [Accessed: 16/05/2018]

⁶⁰ https://ec.europa.eu/clima/sites/clima/files/adaptation/what/docs/swd_2013_135_en.pdf

⁶¹ Éghajlatváltozással foglalkozó kormányzati bizottság alakult, URL: <http://www.alternativenergia.hu/eghajlatvaltozassal-foglalkozo-kormanyzati-bizottsag-alakult/4054>, Date accessed: 15/05/2018

Nevertheless, as no further action plans have been published by the Government, no monitoring has been in place since 2012.

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

Yes / No

No evidence was found of the existence of sectoral monitoring since 2012.

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

Yes / No

Subnational-level monitoring reports are not published or disseminated.

11. Evaluation

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

Yes / No

The NCCS-I was expected to be reviewed first after two years of its adoption (in 2010) and then every five years (2015, 2020 and 2025). A first evaluation started in 2013, which eventually led to the drafting of the draft NCCS-II in 2017. The NCCS-I also states that National Climate Change Programmes (i.e. action plans) are to be adopted every two years. Nevertheless, there was only one NCCP adopted in 2009 and a progress report was published in 2012 (see Indicator 10a).

There is a more detailed evaluation framework in the draft NCCS-II, nevertheless, given the delay with its adoption, this evaluation framework is expected to be revised.

The first two-year long Climate Change Action Plan is planned to be developed six months after the NCCS-II is adopted. The following timeline for review is foreseen by the NCCS-II:

- The second action plan is planned to be developed in 2020 for 2021-2023 and then every three years, i.e. 2023 for 2024-2026 and 2026 for 2027-2029.
- The NCCS II is planned to be evaluated in 2020 and 2026. This evaluation will be in line with the Regulation on the Governance of the Energy Union.
- Finally, an ex-post evaluation of the NCCS-II and the renewal of the Strategy is planned to take place in 2031.

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

Yes / No

No description is provided in the NCCS-I and the draft NCCS-II on plans for involving stakeholders in the evaluation processes. Nevertheless, as noted in relation to Indicator 2a, ministries, NGOs and research organisations took part in discussions about the draft NCCS-II and had a chance to influence the revision of the NCCS-I.

SUMMARY TABLE

Adaptation Preparedness Scoreboard		
No.	Indicator	Met?
Step A: Preparing the ground for adaptation		
1 <i>Coordination structure</i>		
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 / <u>No</u>
1c	Vertical (i.e. across levels of administration) coordination mechanisms exist within the governance system, enabling lower levels of administration to influence policy making.	<u>Yes</u> / In progress / No
2 <i>Stakeholders' involvement in policy development</i>		
2a	A dedicated process is in place to facilitate stakeholders' involvement in the preparation of adaptation policies	<u>Yes</u> / No
2b	Transboundary cooperation is planned to address common challenges with relevant countries	<u>Yes</u> / No
Step B: Assessing risks and vulnerabilities to climate change		
3 <i>Current and projected climate change</i>		
3a	Observation systems are in place to monitor climate change, extreme climate events and their impacts	Yes / <u>In progress</u> / 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)	<u>Yes</u> / In progress / No
3c	Sound climate risks/vulnerability assessments for priority vulnerable sectors are undertaken to support adaptation decision making.	Yes / <u>In progress</u> / No
3d	Climate risks/vulnerability assessments take transboundary risks into account, when relevant	Yes / <u>In progress</u> / No
4 <i>Knowledge gaps</i>		
4a	Work is being carried out to identify, prioritise and	Yes / <u>In</u>

Adaptation Preparedness Scoreboard		
No.	Indicator	Met?
	address the knowledge gaps	<u>progress</u> / No
5	<i>Knowledge transfer</i>	
5a	Adaptation relevant data and information is available to all stakeholders, including policy makers (e.g. through a dedicated website or other comparable means).	<u>Yes</u> / In progress / No
5b	Capacity building activities take place; education and training materials on climate change adaptation concepts and practices are available and disseminated	Yes / <u>In progress</u> / No
Step C: Identifying adaptation options		
6	<i>Identification of adaptation options</i>	
6a	Adaptation options address the sectoral risks identified in 3c, the geographical specificities identified in 3b and follow best practices in similar contexts	Yes / <u>No</u>
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 / <u>No</u>
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	<i>Funding resources identified and allocated</i>	
7a	Funding is available to increase climate resilience in vulnerable sectors and for cross-cutting adaptation action	Yes / <u>In progress</u> / No
Step D: Implementing adaptation action		
8	<i>Mainstreaming adaptation in planning processes</i>	
8a	Consideration of climate change adaptation has been included in the national frameworks for environmental impact assessments	<u>Yes</u> / No
8b	Prevention/preparedness strategies in place under national disaster risk management plans take into account climate change impacts and projections	<u>Yes</u> / No
8c	Key land use, spatial planning, urban planning and maritime spatial planning policies take into account the impacts of climate change	<u>Yes</u> / No

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