

Adaptation preparedness scoreboard:

Country fiche for Italy

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

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

¹ The first versions of the fiches, prepared in consultation with the Member States in 2014-15, were unpublished and used to fine-tune the scoreboard.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.

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

ACCC	Alpine Convention on Climate Change
ANCI	National Association of Italian Municipalities
APCCA	Action Plan on Climate Change in the Alps
ARPAs	Regional agencies for environmental protection
C3-Alps	Climate Change Capitalisation
ClimChAlp	Climate Change, Impacts and Adaptation Strategies in the Alpine Space
CMCC	Euro-Mediterranean Centre for Climate Change
CoM	Covenant of Mayors for Climate and Energy
EIA	Environmental Impact Assessment
ERDF	European Regional Development Fund
ESNACC	Elements for a Strategy Document
EUSAIR	EU Strategy for the Adriatic-Ionian Region
EUSALP	EU Strategy for the Alpine Region
ISPRA	Institute for Environmental Protection and Research
MAREMED	MAritime REgions cooperation for MEDiterranean Project
MATTM	Ministry for the Environment, Land and Sea
MIUR	Ministry for Education, University and Research
NAP	National Adaptation Plan
NAS	National Adaptation Strategy
PNACC	National Adaptation Plan
PNR	National Research Programme
ROP	Regional Operative Programme
SEA	Strategic Environmental Assessment
STRADA	Adaptation Strategies in Transboundary Areas
UPI	Union of Italian Provinces
WIZ	WaterIZe spatial planning project

POLICY FRAMEWORK

Adaptation strategies

A1. National adaptation strategy

The Italian National Adaptation Strategy (NAS)³ was adopted in June 2015 through a Decree of the Climate and Energy Director General.

To help elaborate the NAS, some background documents⁴ were published:

- A national climate impact and vulnerability assessment of the national sectors
- An analysis of the European and national policy framework for climate adaptation
- Elements for a strategy document: 'Elementi per una Strategia Nazionale di Adattamento ai Cambiamenti Climatici' (ESNACC). A public consultation process on its contents was closed in January 2014.

The 'Conferenza Unificata', the Committee of Ministers, Regions and Municipalities delivering advice on areas of its jurisdiction, issued a positive opinion on the Italian NAS⁵ in October 2014. Local authorities, regions and central government, coordinated by the Ministry for the Environment, Land and Sea (MATTM), are expected to implement the NAS, through the development of adaptation plans. The NAS is planned to be updated within 5 years.

A2. Adaptation strategies adopted at subnational level

A survey of the ongoing development of climate adaptation strategies (and plans) at the regional level was carried out in 2016 by the Institute for Environmental Protection and Research (ISPRA, 2016)⁶. The survey indicated that around 50% of regions (e.g. Sardinia⁷, Calabria, Apulia) had recognised the cross-cutting nature of adaptation in their governance model and/or were developing their own strategy (and/or plan). Some other regions were reviewing their regulatory measures (e.g. EIA) and planning tools (e.g. EU Structural Funds) to better integrate adaptation (e.g. Abruzzo, Molise). Yet other regions were promoting adaptation at the local level by supporting cities and municipalities who have joined the Covenant of Mayors for Climate and Energy (CoM), as territorial coordinators (e.g. Lazio, Abruzzo). Since the 2016 ISPRA study, Liguria has been particularly active on climate adaptation, hosting the international network on urban adaptation to climate change and

³ Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2015, Strategia Nazionale di Adattamento ai Cambiamenti Climatici. URL: http://www.minambiente.it/sites/default/files/archivio/allegati/clima/documento_SNAC.pdf

⁴ Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2015, Documenti di supporto alla strategia nazionale di adattamento ai cambiamenti climatici. URL: <http://www.minambiente.it/pagina/documenti-di-supporto-alla-strategia-nazionale-di-adattamento-ai-cambiamenti-climatici>

⁵ Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2015, Strategia Nazionale di Adattamento ai Cambiamenti Climatici. URL: http://www.minambiente.it/sites/default/files/archivio/allegati/clima/strategia_adattamentoCC.pdf

⁶ ISPRA Ambiente, 2016, Strategie e piani di adattamento ai cambiamenti climatici. URL: <http://annuario.isprambiente.it/entityada/basic/6358> URL: <http://annuario.isprambiente.it/entityada/basic/6358>

⁷ Sardegna Resiliente, URL: <http://sardegnaresiliente.it/http://sardegnaresiliente.it/>, Date accessed: May 2018

proposing a scoping document on climate adaptation in Genoa for approval by the European Commission⁸. The Lombardy Region has now approved its Regional Adaptation Strategy⁹.

Under the European Regional Development Fund (ERDF), the Italian Ministry for the Environment, Land and Sea (MATTM) has coordinated a project to support several regional environmental authorities, including Calabria¹⁰ and Apulia¹¹, in implementing the principles of the NAS in future regional adaptation plans.

Adaptation action plans

B1. National adaptation plan

Italy is preparing the Piano Nazionale di Adattamento ai Cambiamenti Climatici (PNACC) – a National Adaptation Plan (NAP) – to implement the NAS. The first draft NAP was published in 2017¹². The purpose of the NAP will be to guide ministries, regions, and local authorities on integrating adaptation criteria into policy processes. The NAP is being developed by the MATTM's Directorate General for Climate and Energy. The preparatory work is being shared between national, regional and local institutions, including research centres.

The MATTM launched a public consultation on the draft NAP, which closed on 15 October 2017. It has also set up a technical committee to review the draft. Once the output of the public consultation and review are integrated with the draft, the NAP will be finalised.

B2. Adaptation plans adopted at sub-national level

A total of 220 Italian municipalities are signatories to the CoM, of which 106 have submitted action plans¹³, for example, the city of Bologna produced a Local Plan for Adaptation in the context of the BLUEAP Project.

ISPRA's survey in 2016 addressed the ongoing development of adaptation plans at the sub-national level¹⁴ (see Section A2). Lombardy¹⁵ has published an adaptation action plan, with

⁸ Comune di Genova, URL: <http://www.comune.genova.it/node/76573>, Date accessed: May 2018

⁹ Regione Lombardia, URL: http://www.regione.lombardia.it/wps/wcm/connect/946249ce-87c4-4c39-88f9-5eab3a264f14/Documento+Azione+Adattamento+RL_9dic.pdf?MOD=AJPERES&CACHEID=946249ce-87c4-4c39-88f9-5eab3a264f14, Date accessed: May 2018

¹⁰ European Commission, 2018, ROP Calabria ERDF ESF, URL: http://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/italy/2014it16m2op006

¹¹ European Commission, 2018, ROP Puglia ERDF ESF, URL: http://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/italy/2014it16m2op002

¹² Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2017, PNACC, URL: http://www.minambiente.it/sites/default/files/archivio_immagini/adattamenti_climatici/documento_pnacc_luglio_2017.pdf

¹³ Covenant of Mayors, URL: <https://www.covenantofmayors.eu/about/covenant-initiative/covenant-in-figures.html>, Date accessed: May 2018

¹⁴ ISPRA Ambiente, 2016, Strategie e piani di adattamento ai cambiamenti climatici. URL: <http://annuario.isprambiente.it/entityada/basic/6358>

¹⁵ Regione Lombardia, URL: http://www.regione.lombardia.it/wps/wcm/connect/946249ce-87c4-4c39-88f9-5eab3a264f14/Documento+Azione+Adattamento+RL_9dic.pdf?MOD=AJPERES&CACHEID=946249ce-87c4-4c39-88f9-5eab3a264f14, Date accessed: May 2018

other regions, such as Friuli-Venezia Giulia, working actively towards developing their own regional adaptation plans¹⁶.

B3. Sectoral adaptation plans

A national operating plan for the prevention of the effects of heatwaves on health was developed by the Italian Ministry of Health in collaboration with other institutions¹⁷. The plan includes a mapping system with bulletins announcing heatwave risks¹⁸. Its main objective is to foster coordination between institutions at different levels of governance, and to provide guidelines for implementation of a centralised system for prediction and prevention of the effects of heatwaves on health.

A White Paper on “Challenges and opportunities of rural development for mitigation and adaptation to climate change” was published by the National Rural Network in 2011¹⁹. It provides information and analysis of climate impacts on agriculture, the livestock sector, food production and forestry, and proposes possible strategies for climate mitigation and adaptation.

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

The MATTM is responsible for elaborating the NAS and NAP, and for implementing specific elements. In this context, it promotes the participation of ministries and sub-national governments in the adaptation policy-making process.

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

Yes / In progress / No

¹⁶ Cambia il clima in Friuli Venezia Giulia, 2018, URL: <http://www.arpa.fvg.it/cms/tema/osmer/approfondimenti/cambiamenti-climatici.html><http://www.arpa.fvg.it/cms/tema/osmer/approfondimenti/cambiamenti-climatici.html>, Date accessed: May 2018

¹⁷ Piano Nazionale della Prevenzione 2014-2018, 2015, URL: <http://www.salute.gov.it/portale/caldo/dettaglioPubblicazioniCaldo.jsp?lingua=italiano&id=2285><http://www.salute.gov.it/portale/caldo/dettaglioPubblicazioniCaldo.jsp?lingua=italiano&id=2285>

¹⁸ Ondate di calore. URL: <http://www.salute.gov.it/portale/caldo/homeCaldo.jsp><http://www.salute.gov.it/portale/caldo/homeCaldo.jsp>, Date accessed: May 2018

¹⁹ Rete Rurale Nazionale, “Libro bianco: Sfide ed opportunità dello sviluppo rurale per la mitigazione e l’adattamento ai cambiamenti climatici”, 2011. URL: <https://www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/5799>

Horizontal coordination is achieved by the Institutional Panel established to support elaboration of the NAS. The Panel includes representatives from the ministries of: Economic Development; Agricultural and Forestry Policies; Infrastructures and Transport; Health; Education, University and Research; Cultural and Environmental Heritage; Regional Affairs; and Tourism and Sport. Other institutional stakeholders are also represented on the Panel, such as the Department of Civil Protection, regional committees, the National Association of Italian Municipalities (ANCI) and the Union of Italian Provinces (UPI).

The Institutional Panel is involved in the elaboration of the NAP. Representatives of the ministries involved have been provided with the draft NAP and have been asked to actively contribute to the contents of the document. Notably, the draft NAP defines roles and responsibilities for implementing the various adaptation actions identified.

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

Representatives of local and regional institutions are involved in the Institutional Panel established to support elaboration of the NAS (see Indicator 1b), alongside the ministries: the Union of Italian Provinces (UPI), the National Association of Italian Municipalities (ANCI), and the Italian Committee of the Regions. The process of drafting, finalising and adopting the NAP is following a similar approach. The MATTM has established an interregional panel with the National State-Regions Commission for Climate Change and an inter-ministerial panel, involving the same ministries in the formulation of the NAS. The aim is to collect views from all of the actors involved in the NAP process and to evaluate the implementation of adaptation actions at national, regional and local level. There is vertical coordination in all sectors (i.e. water, air, energy, nature, territory).

At the subnational level:

- Some regions have recognised the cross-cutting nature of adaptation in their governance model (e.g. Sardinia²⁰ has a dedicated website for climate adaptation and resilience)
- Some regions (e.g. Abruzzo, Molise) are reviewing consideration of adaptation in their regulatory measures (e.g. Environmental Impact Assessment, EIA) and planning tools (e.g. EU Structural Funds)
- Some regions (e.g. Lazio, Abruzzo) are promoting adaptation at local level by facilitating the European CoM
- Some municipalities (e.g. Bologna)²¹ have also come up with their own adaptation plan, coherent with the NAS.

In Italy, all 220 municipalities have already committed to adaptation planning and actions through the framework of the CoM²².

²⁰ Sardegna Resiliente, URL: <http://sardegnaresiliente.it/http://sardegnaresiliente.it/>, Date accessed: May 2018

²¹ BLUEAP, 2018, Bologna adaptation plan for a resilient city, URL: <http://www.blueap.eu/site/>

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 bottom-up approach was used in developing the NAS, starting with an online survey launched in October 2012 on the perception of climate risks and on the country's "adaptation concept."

In 2013, both an on-line public consultation and "ad hoc" consultations with NGOs, regions and cities were organized, in order to promote the involvement of citizens and stakeholders, such as: NGOs, municipalities, private sector and trade unions. The ESNACC (see Section A1 above) was subject to public consultation, the results of which were integrated in the final NAS, e.g. a chapter on "Intersectoral aspects", addressing disaster risk management, monitoring, synergies, research, and sustainable development.

The MATTM undertook an online public consultation (22 February to 15 March 2017) in order to gauge public perceptions of climate adaptation, to understand climate vulnerabilities and impacts, and to identify adaptation options from the different stakeholders and regions. The MATTM also consulted the public (August to October 2017) on the draft NAP.

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

Yes / No

The NAS contains some references to transboundary and international cooperation (albeit not systematic), particularly in relation to: adaptation measures in biodiversity conservation; monitoring and risk evaluation; desertification; and the exchange of good practices and experiences. More specifically, the NAS states that international cooperation programmes will be established on: desertification with countries in the Mediterranean basin (e.g. through the Euro-Mediterranean Centre for Climate Change, CMCC, which was inaugurated in Venice in April 2018²³); and mountainous areas with countries of the Alpine region.

The draft NAP also contains examples of transboundary and international cooperation, for instance:

- MAritime REgions cooperation for MEDiterranean(MAREMED), which was established to develop tools for enhancing and coordinating regional, European and Mediterranean policies on six thematic strategies, including climate adaptation in coastal areas; the project ended in 2013²⁴

²² The Covenant of Mayors, URL: http://www.covenantofmayors.eu/index_en.html, Date accessed: May 2018

²³ CMCC, 2018, Centre for Climate Change, URL: <https://www.cmcc.it/events/cmcccafoscari-the-new-center-on-climate-change>

²⁴ MareMed, 2010, Editorial: Presentation of the results and achievement of the Maremed project, URL: <http://www.maremed.eu/index.php>

- The WaterIZE spatial planning project (WIZ), which encompasses climate adaptation in relation to future management of drinking water, and is an example of transboundary cooperation between Italian and Spanish partners.²⁵

At the interregional level, Italy is a contracting party to the Alpine Convention on Climate Change and the implementation of the Action Plan on Climate Change in the Alps adopted in March 2009²⁶. The country is a partner in the cooperative and transboundary projects carried out in the region to address adaptation, such as Climate Change, Impacts and Adaptation Strategies in the Alpine Space (ClimChAlp), Adaptation Strategies in Transboundary Areas (STRADA), Climate Change Capitalisation (C3-Alps) and others (e.g. that address climate adaptation with regard to management of natural hazards, winter tourism, or transboundary river basin management).

Italy is also participating in the implementation of the two EU-level macro-regional strategies, which include consideration of climate adaptation: the EU Strategy for the Alpine Region (EUSALP²⁷) and the EU Strategy for the Adriatic-Ionian Region (EUSAIR²⁸). As part of EUSALP for example, climate change is considered under the risk governance and green infrastructure action groups (as part of a thematic policy area on environment and energy). Furthermore, Italy is actively cooperating internationally on climate change, as relevant for effective management of challenges in the Mediterranean²⁹. Climate impacts on alpine tourism have also been researched and general strategies and recommendations have been developed³⁰.

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

Italy is covered by a comprehensive observational network. Climate monitoring informs weather forecasting and an early warning system. National and regional monitoring networks (such as the Department of Civil Protection's hydro-meteorological networks, and other national and regional agro-meteorological networks, including the Air Force Meteorological Service) provide time-series data of current and recent past climate variability and trends that are used to calculate climate indicators for Italy. However, the time series for each of the

²⁵ WIZ, URL: <http://www.wiz-life.eu/index.php>, Date accessed: May 2018

²⁶ Alpine Convention, 2009, Action plan on climate change in the Alps, URL: http://www.alpconv.org/en/ClimatePortal/Documents/AC_X_B6_en_new_fin.pdf

²⁷ EU Strategy for the Alpine region, URL: <https://www.alpine-region.eu/>, Date accessed: May 2018

²⁸ EU Strategy for the Adriatic and Ionian region, URL: <http://www.adriatic-ionician.eu/http://www.adriatic-ionician.eu/>, Date accessed: May 2018

²⁹ Farnesina, 2017, The Italian strategy in the Mediterranean stabilising the crisis and building a positive agenda for the region. URL: <http://www.esteri.it/mae/resource/doc/2017/11/rapporto-med-maeci-2017-eng.pdf>

³⁰ ClimAlpTour, 2011, Climate change and its impact on tourism in the Alpine sector. URL: https://www.researchgate.net/profile/Primo_Pipan/publication/318351465_ClimAlpTour_-_Il_Cambiamento_Climatico_e_i_suoi_impatti_sul_turismo_nello_Spazio_Alpinolinks/59654295a6fdcc69f148bd7a/ClimAlpTour-II-Cambiamento-Climatico-e-i-suoi-impatti-sul-turismo-nello-Spazio-Alpino.pdf

different variables have their own characteristics in terms of continuity, completeness, spatial coverage and data quality. Trends in mean temperature and cumulated precipitation, as well as their extremes, are updated regularly.

Some data are available through specific online networks, such as: the ISPRA website³¹; the Long-Term Ecosystem Research in Europe website³²; the Polaris website on areas of potential flooding in Italy³³; and the Government's public safety website³⁴. A monitoring network to help infrastructural projects cope with hydrogeological risk is also in place³⁵.

The website of the 'National system for the collection, elaboration and dissemination of environmentally relevant climate data' (Sistema nazionale per la raccolta, l'elaborazione e la diffusione di dati Climatici di Interesse Ambientale, SCIA) and annual reports published by ISPRA disseminate information on extreme temperature and precipitation events. Some indicators of extreme weather events are updated and disseminated annually through the Italian Environmental Yearbook (ISPRA), including with regard to: floods, landslides, number of injured people and deaths due to flooding, number of injured people and deaths due to landslides, losses and damages due to flooding, losses and damages due to landslides, and mortality due to heatwaves.

The National System for Environmental Protection (i.e. the National Institute for Environmental Protection and Research and the regional environmental protection agencies) is seeking to define a national set of climate impact indicators, including a more comprehensive set relating to extreme weather events.

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 NAS is based on several climate scenarios and projections carried out by the CMCC and the Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA). The draft NAP³⁶ provides an analysis of current and future climate conditions in Italy. Climate projections for the periods 2021-2050 and 2071-2100 (IPCC AR5) have been produced using high-resolution climate models for two scenarios: RCP 4.5 and RCP 8.5. Sectoral assessments of impacts and vulnerabilities, which are included in the draft NAP, are based on a review of existing literature and on the outputs of climate projections (up to 2050).

³¹ ISPRA website, <http://www.isprambiente.gov.it/it/banche-dati>, Date accessed: May 2018

³² Long-Term Ecosystem Research in Europe website, <http://www.lter-europe.net/elter/data>, Date accessed: May 2018 (site under construction)

³³ Popolazione a Rischio da Frana e da Inondazione in Italia, <http://polaris.irpi.cnr.it/>, Date accessed: May 2018

³⁴ Italian Public Safety, <http://italiasicura.governo.it/site/home/dissesto/link.html>, Date accessed: May 2018

³⁵ ISPRA webpage on infrastructure risks, http://www.rendis.isprambiente.it/rendisweb/geo.jsp?id_reg=20, Date accessed: May 2018

³⁶ Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2017, Consultazione su piano nazionale adattamento cambiamenti climatici, URL: <http://www.minambiente.it/pagina/consultazione-su-piano-nazionale-adattamento-cambiamenti-climatici>

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

Yes / In progress / No

A number of vulnerable sectors have been identified in the NAS, namely:

- Water resources (quantity and quality)
- Desertification, soil degradation and drought
- Hydrogeological risk (landslides, flooding and erosion)
- Biodiversity and ecosystems (terrestrial ecosystems, marine ecosystems, inland water ecosystems and transition ecosystems)
- Health
- Forestry
- Agriculture, aquaculture, marine fishery
- Energy (production and consumption)
- Coastal zones
- Tourism
- Urban settlements
- Critical infrastructure (in relation to cultural heritage, transport, and industry)

The NAS also refers to vulnerability assessments addressing the mountainous areas of the Alps and Apennines, and the Po River Basin.

Vulnerability screening processes have taken place in Italy. In 2009 the report "I cambiamenti climatici in Italia: evidenze, vulnerabilità e impatti"³⁷ presented the knowledge on impacts and vulnerability assessments across several sectors, including water resources, agriculture, forestry, health and others. A technical panel of experts established in 2012, constituted by about 100 scientists and coordinated by the CMCC (see Indicator 4a), carried out a comprehensive assessment of climate impacts and vulnerabilities. The assessment sought to identify key vulnerabilities, sectors and related measures and was published in 2014³⁸, as part of the NAS process. The approach used was based on literature review and expert knowledge. A sectoral vulnerability assessment included in the draft NAP is based on an updated review of the literature and on climate projections.

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

Yes / **In progress** / No

³⁷ Centro Euro-Mediterraneo sui Cambiamenti Climatici, 2018, I cambiamenti climatici in Italia: evidenze, vulnerabilità e impatti, URL: <http://www.cmcc.it/it/publications/i-cambiamenti-climatici-in-italia-evidenze-vulnerabilita-e-impatti> URL: <http://www.cmcc.it/it/publications/i-cambiamenti-climatici-in-italia-evidenze-vulnerabilita-e-impatti>

³⁸ Ministero dell' Ambiente e della Tutela del Territorio e del Mare, 2014, Rapporto sullo stato delle conoscenze scientifiche su impatti, vulnerabilità ed adattamento ai cambiamenti climatici in Italia. URL: http://www.minambiente.it/sites/default/files/archivio/allegati/clima/snacc_2014_rapporto_stato_conoscenze.pdf

The need for transboundary coordination is not systematically addressed in the NAS. However, the NAS explicitly mentions transboundary coordination when referring to: climate impacts on and adaptation of biodiversity and ecosystems; and desertification. The NAS also refers to the need to harmonise risk indicators with neighbouring countries. The draft NAP does not take transboundary risks into account in a coordinated manner. It includes examples of transboundary cooperation in evaluating climate impacts by some sectors and in particular regions (e.g. the AdaptAlp project³⁹) linked, in most cases, to specific projects or examples of best practice.

This indicator is assessed as ‘in progress’, as transboundary risks are not addressed in a coordinated manner across a range of relevant sectors.

4. Knowledge gaps

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

Yes / **In progress** / No

The NAS identifies cooperation with the research and innovation community as one of its key principles. Research is needed in many sectors. A research programme, or its elements, is not defined as part of the document, and there is no plan for stakeholder involvement in the identification of research priorities. However, the research community was involved in the development of the NAS and is involved in developing the NAP, e.g. through the technical panel of experts established for this purpose in 2012 (see Indicator 3c).

The CMCC facilitates the involvement of the research community and the prioritisation of research. The evaluation of available knowledge and involvement of the research community was essential for the production of the ESNACC. The CMCC was appointed as the institution responsible for collecting the information needed to elaborate the NAS.

Several research programmes funded by the Italian government address climate change as a priority. The most recent National Research Programme (PNR, 2014-2020)⁴⁰ considers “Climate action, environment, resource efficiency and raw materials” as one of the main challenges for research. The PNR is the result of a wide consultation led by the Ministry for Education, University and Research (MIUR) and the Ministry of Economic Development. The consultation involved the most relevant public and private, national and regional stakeholders. The PNR identifies an action plan addressing the major challenges identified at community level and emerging from the smart approach of territories at national level. The Italian PNR has aligned its structure to Horizon 2020, but there is no description available of the topics to be covered in climate action.

Furthermore, several universities as well as regional agencies for environmental protection (ARPAs) are actively conducting research on climate data monitoring, regional climate modelling and regional impact assessment.

³⁹ AdaptAlp, 2018, URL: http://www.regione.vda.it/territorio/adaptalp_i.asp

⁴⁰ Ministero dell’Istruzione, dell’Università e della Ricerca, 2016, Programma nazionale della ricerca 2015-2020, URL: http://www.istruzione.it/allegati/2016/PNR_2015-2020.pdf

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

Trends in mean temperature and cumulated precipitation, as well as their extremes, are updated regularly and disseminated through the SCIA website and the ISPRA annual reports. Some regions have local initiatives, e.g. monitoring systems and weekly forecast of snow cover in Valle d'Aosta.

Despite the draft NAP being featured on a dedicated MATTM web page, Italy does not have a dedicated website providing access to climate adaptation relevant information or data, e.g. a repository of key documents or a climate services website. The NAS encouraged establishment of a national platform, using Climate-ADAPT as a model, as well as a national observatory in order to support decision making. However, such a platform does not exist yet. The intention was also to establish a permanent stakeholder forum to collect requests for training and information from the Italian territory and to implement actions. The websites currently presented in Climate-ADAPT are those of the MetOffice and the CCMC, which present mostly administrative information and a general description of their objectives.

Despite the lack of a dedicated portal, the MATTM regroups key documents such as the NAS in one webpage, as well as some of the aforementioned documents⁴¹, such as the vulnerability assessment by the CMCC. These are theoretical, policy-based documents. Other information, such as scientific data and monitoring is provided by separate institutes, as stated under Indicator 3a. Projection data and scenario results are available, for example, through the CMCC.⁴²

The de-centralised sources complement each other and address specific needs, although the proposed central platform would be a desirable improvement.

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

There is some evidence of systematic actions on capacity-building taking place in a coordinated manner or, at least, it is encouraged and monitored by the central administration. Several actions are mentioned in the draft NAP that focus on capacity building and education. For example, Lombardia's regional adaptation plan includes capacity-building and knowledge dissemination among its objectives. The CMCC organises training programmes related to climate adaptation for graduate students.⁴³ The IPCC National Focal Point is also

⁴¹ Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2018, Adattamento ai cambiamenti climatici. URL: <http://www.minambiente.it/pagina/adattamento-ai-cambiamenti-climatici-0>

⁴² Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2018, Clime. URL: <http://www.cmcc.it/software/clime-2> and COSMO-CLM. URL: <https://www.cmcc.it/models/cosmo-clm-climate-limited-area-modelling-community>

⁴³ Centro Euro-Mediterraneo sui Cambiamenti Climatici, 2018, Training programs, URL: <http://www.cmcc.it/training-programs>

responsible, among others, for “disseminating IPCC activity and findings at all the levels within the national territory through web-site, meetings, conferences and dedicated workshops.”⁴⁴

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 risks related to each sector outlined under Indicator 3c are included in the NAS in the form of “key messages” per sector and take into account geographic specificities. For each sector, the NAS identifies a long portfolio of measures classified as soft, green, grey, or long-medium term. It also provides a compilation of good practices, win-win solutions, no or low-regrets measures, desirable options, sectoral needs, etc. These measures and good practices have resulted from the consultation process with institutional authorities and stakeholders, rather than from detailed and specific assessments. The draft NAP proposes a set of adaptation actions in each of the vulnerable sectors, as well as possible competent institutions for their implementation.

To date, implementation of adaptation measures has focused primarily on the most vulnerable sectors: agriculture, water use, forests, human health, flood risk, desertification and drought, coastal areas, biodiversity, tourism, urban settlements.

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

The draft NAP identifies 361 actions based on the following criteria⁴⁵: effectiveness, economic efficiency, side-effects, performance under uncertainties, and conditions for decision making. This methodology has allowed each action to be prioritised as high, medium-high, medium, medium-low or low.

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 NAS proposes actions aimed at reinforcing coordination between the strategies for disaster risk prevention and management and adaptation to enhance capacity to cope with some extreme events, particularly hydrogeological damage resulting from climate change.

⁴⁴ Centro Euro-Mediterraneo sui Cambiamenti Climatici, 2018, URL: <https://www.cmcc.it/ipccitalia/>

⁴⁵ Flörke et al., 2011, Final Report for the Project Climate Adaptation – modelling water scenarios and sectoral impacts.

Italy has significant tools to cope with current climatic extreme events. These include a national-regional warning system on hydro-geological and hydraulic risk for the purpose of civil protection, which build on the activities of Functional Centres.⁴⁶ Notably, there is also a heatwave prevention, communication and management programme, and a "National Operational Plan to prevent effects on human health from heat waves"⁴⁷ that, inter alia, plans monitoring of negative impacts on health.

The MATTM has taken part in several meetings on disaster risk reduction with a view to its integration with climate adaptation, although there are no mechanisms in place currently to ensure coordination and coherence between these two policy areas.

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

The NAS does not provide information on how its governance or the basic horizontal or cross-cutting activities that it identifies would be organised or financed. The 7th National Communication⁴⁸ mentions that funds disbursed have been allocated to both mitigation and adaptation. The draft NAP provides a detailed table of the necessary financial and human resources, and possible funding sources.

Up to 50% funding for adaptation actions can be obtained from "carbon trading" in relation to Directive 2003/87/CE (Art. 3). MATTM launched a programme in 2013 that used this mechanism to fund the containment of minor landslides in mountain cities, which could be worsened by climate change. Seventeen regions and almost 55 municipalities were involved in this programme.

Climate research and technological development is also financed by the Government through various schemes – see Indicator 4a.

An ongoing initiative for monitoring adaptation actions included in regional operative programmes (ROP) is being undertaken through the "Network of Environmental Authorities and Managing Authorities" in relation to environmental aspects of EU Structural Funds.

Structural and cohesion funds have been used to support the implementation of adaptation-related actions, including in the water sector. Under the Partnership Agreement for Italy, 2014-2020, EUR 2,359 million have been allocated to the thematic objective "Promoting climate change adaptation, risk prevention and management", including EUR 812 million

⁴⁶ Protezione Civile, 2018, Attività di previsione. URLs: http://www.protezionecivile.gov.it/jcms/it/previsione_servizio.wp;jsessionid=1534B415C4E0033BA59B4D82703D6B9F.worker3 and http://www.protezionecivile.gov.it/jcms/it/attivita_idrogeologico.wp

⁴⁷ Ministry of Health, 2016, Piano nazionale per la prevenzione degli effetti del caldo sulla salute, URL: <http://www.salute.gov.it/portale/caldo/dettaglioContenutiCaldo.jsp?lingua=italiano&id=408&area=emergenzaCald&menu=vuoto>

⁴⁸ UNFCCC, 2017, Seventh National Communication under the UN Framework Convention on Climate Change, URL: https://unfccc.int/sites/default/files/resource/258913076_Italy-NC7-2-Italy%20Seventh%20National%20Communication%20Final.pdf

from the European Regional Development Fund and EUR 1,547 million from the European Agricultural Fund for Rural Development.⁴⁹

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 impacts are explicitly mentioned in the new EIA law. In 2013, the Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment (SEA) was published, highlighting the importance of considering climate adaptation (and potential positive/negative impacts on adaptation actions). Some regions are reviewing their regulatory measures (e.g. EIA) and planning tools (e.g. EU Structural Funds) considering adaptation (e.g. Abruzzo, Molise). Furthermore, in 2011 under the Regions for Sustainable Change programme a further guide for local entities on how to integrate climate change considerations into SEA was published for the Piemonte region, illustrating regional attention to the issue⁵⁰.

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

Yes / **No**

The national platform for disaster risk management was established by decree in Italy in 2008⁵¹. The national flood risk management plan was published in 2016. Italy has made progress in preventative measures better addressing extreme climate events e.g. for heat waves under the Ministry of Health⁵² and flooding risks in line with the Floods Directive⁵³. In particular, a recent study by ISPRA has taken into account climate impacts on water resources⁵⁴. Preparedness efforts in relation to flood risk are at the watershed level and plans

⁴⁹ European Commission, 2014, Summary of the Partnership Agreement for Italy 2014-2020. URL: https://ec.europa.eu/info/sites/info/files/partnership-agreement-italy-summary-oct2014_en.pdf

⁵⁰ Regione Piemonte, 2011, Cambiamento climatico e valutazione ambientale strategica: guida per enti locali. URL: http://www.lamoro.it/documents/CambiamentoClimaticoeValutazioneAmbientaleStrategica-guidaperglientilocali_000.pdf

⁵¹ Protezione Civile, 2008, URL: http://www.protezionecivile.gov.it/resources/cms/documents/DPCM_18_FEBBRAIO_2008.pdfhttp://www.protezionecivile.gov.it/resources/cms/documents/DPCM_18_FEBBRAIO_2008.pdf

⁵² Ondate di calore, URL: <http://www.salute.gov.it/portale/caldo/homeCaldo.jsp><http://www.salute.gov.it/portale/caldo/homeCaldo.jsp>

Date accessed: May 2018

⁵³ Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2013, Documento definitivo indirizzi operativi direttiva alluvioni, http://www.minambiente.it/sites/default/files/archivio/allegati/vari/documento_definitivo_indirizzi_operativi_direttiva_alluvioni_gen_13.pdf

⁵⁴ ISPRA, 2018, Valutazione tramite BIGBANG dell'impatto dei cambiamenti climatici sulla risorsa idrica naturale, URL: http://www.isprambiente.gov.it/pre_meteo/idro/BIGBANG_CC_ISPRA.html

were fully approved in early 2017⁵⁵. The NAP draft illustrates several actions to better manage different disaster risks due to climate change but it is difficult to assess the extent to which these actions will be implemented in national disaster planning.

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

Yes / **No**

Although planning at the sub-national level has taken into account climate impacts, currently, there is scarce evidence of a consistent approach to policy. In fact, several actions in the draft NAP refer to the importance of integrating adaptation into spatial planning (e.g. Action TT010). The NAS identifies the need to integrate land-use and land-management policies, taking into consideration the risks from different sources, including those due to climate change (e.g. desertification, hydrogeological risks, rural development, water management). According to the NAS, “the NAP will provide institutional guidance to national and local authorities, for the integration of adaptation measures within policy processes and spatial planning.” As yet, this guidance has not been defined or implemented at national level, although planning is taking place in some instances at regional level, for example, in the regions specified under Indicator 1c. Furthermore, in 2011 a guidance document on the management of climate impacts within the context of spatial planning was published for the Alpine region, illustrating transboundary consideration of this issue⁵⁶. However, no binding maritime spatial plan has yet been adopted in Italy⁵⁷.

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 main driver of mainstreaming is EU policy, with sector-relevance also playing an important role. The draft NAP includes a sector-based assessment of climate impacts, while also assigning actions. The draft NAP has provided a set of adaptation actions for a large selection of sectors. According to the information published on Climate-ADAPT, the main adaptation activities implemented so far concern the most vulnerable sectors, such as agriculture, water use, forests, human health, flood risk, desertification and drought, coastal areas, biodiversity, tourism, urban settlements.⁵² However, a consistent approach to mainstreaming is clear. Mainstreaming has been reported for the national sustainable development strategy and the National Biodiversity Strategy (minimising climate impacts is considered one of its pillars). Initial steps have also been taken in the agriculture sector through a 2011 White Paper on "Challenges and opportunities of the rural development in adapting and mitigating climate change".⁵³ For coastal areas, first steps have been taken to develop integrated coastal zone management plans in which climate change concerns will be included. The River Basin Management Plan of the Po River catchment (approved in 2013)

⁵⁵ ISPRA, 2018, Piani di gestione del rischio di alluvioni, URL: http://www.isprambiente.gov.it/pre_meteo/idro/Piani_gest.html

⁵⁶ Pütz, M., Kruse, S., Butterling, M., 2011, Assessing the Climate Change Fitness of Spatial Planning: A Guidance for Planners.

⁵⁷ MSP, URL: <http://www.msp-platform.eu/countries/italy>, Date accessed: May 2018.

aims to identify climate adaptation strategies. The Watershed Authority of the Arno River Basin also took climate impacts into account in mapping flood hazards and risks in support of river basin planning (pursuant to Directive 2007/60/EC on flood risks assessment and management)

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

Yes / **No**

The programming and use of economic instruments for the management of climatic risks is considered as one of the adaptation options for sectors such as cultural heritage, water resources, agriculture, the energy sector, coastal areas, transport and infrastructure, as listed in the NAS. However, they are mostly not yet implemented.

Mainly, the specific actions contained in the NAS are to consider insurance a strong ally towards financing climate adaptations (in the cultural heritage sector, for instance), to increase the coverage of insurance within the transport and infrastructure sector by diffusing risk awareness and systems of obligatory insurance and compensation, and to increase resilience to extreme weather events by using insurance as a way to spread out the risk.

Furthermore, generally speaking, the NAS does state the importance of exploring a public-private partnership between private insurance companies and public administration.

Some of the actions included in the NAP draft fall into the category “economic and financial instruments”. Their objective is to promote the use of insurance instruments for risk management due to climate change. Moreover, the draft NAP analyses possible sources of financing: European, National and Regional programmes. It provides information on the amount of resources, the type and objectives of the programme, the beneficiaries, sectors and type of actions involved.

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 draft NAP is available on the website of the Ministry of Environment⁵⁸. It analyses the role of different public administrations in implementing adaptation actions for each sector included in the NAP. Activities, aligned with the NAS preliminary analysis, have already been implemented in key vulnerable sectors. In agriculture, the National Strategic Plan for Rural Development aims, *inter alia*, at promoting adaptation activities for the efficient use of resources and climate resilience in the agro-food and forestry sectors. The Ministry of Health and the Department of Civil Protection have been operating an early warning system in relation to heatwaves. National guidelines for coastal protection have been developed. The strategic plan for tourism, elaborated by the Ministry of Cultural Heritage and Tourism,

⁵⁸ Ministero dell’Ambiente e della Tutela del Territorio e del Mare, 2017, Consultazione su piano nazionale adattamento cambiamenti climatici, URL: <http://www.minambiente.it/pagina/consultazione-su-piano-nazionale-adattamento-cambiamenti-climatici>

includes specific actions aimed at minimising climate impacts on tourism in the period 2017-2022.

Furthermore, several regional climate adaptation plans have been published (see Indicator 1c), including in Lombardy, and also at the municipal level with the BLUEAP project in Bologna recognised by the EU⁵⁹.

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

Yes / **No**

Cooperation mechanisms are in place with subnational administration bodies to coordinate implementation of adaptation through the “Conferenza Unificata” (see Section A). The “Conferenza Unificata” creates a mandate to translate the NAS to adaptation action plans at all levels, and the “State/Regions Conference”. It is intended that this cooperation mechanism will be reinforced in the future, as one of the aims is to enhance cooperation at all levels and set up a 'multilevel governance' system. This might also be reinforced by the Permanent Forum and national observatory mentioned under Indicator 9d. However, at the moment there is no structural cooperation in place with regions and cities with regard to NAS implementation. The draft NAP also proposes some consideration of governance (governing body, type and level of planning, emergency management) to further implementation of adaptation actions.

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**

It is unclear whether guidelines for assessing the climate impacts on projects/programmes have been developed and promulgated.

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

Yes / No

The NAS identifies, as one of its basic principles, the need to work in partnership and involve stakeholders and citizens (see also Indicator 1c). Furthermore, there has been detailed consultation of stakeholders in the definition of the draft NAP (which is awaiting final publication of the results of consultation).

The MATTM established an interregional panel with the national state-regions commission for climate change and an inter-ministerial Panel in order to involve institutions in defining the NAP. The aim is to collect the views of all actors involved in the NAP process and to share and evaluate the state of implementation of adaptation actions at national, regional and local level.

⁵⁹ BLUEAP, URL: <http://www.blueap.eu/site/cambiamenti-climatici-citta-europee-promosse-per-piani-dazione/>, Date accessed: May 2018.

Within the framework of the NAP, the establishment of two support instruments is foreseen: a forum, to promote information, education and public capacity building; and an observatory composed of representatives of regional and local authorities. Regions and ministries have been included in the panels set up for the elaboration of the NAP, and were involved in the implementation of adaptation actions throughout 2017 and will also be involved in future phases.

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**

Although the NAS makes specific reference to the importance of monitoring adaptation actions, it is not yet clear that information on adaptation actions is being systematically collected, beyond fulfilling the reporting obligations under the UNFCCC. A monitoring system to evaluate progress in implementing the NAS is neither in place at the national level nor at the regional level. The draft NAP provides an analysis of indicators useful to monitor the progress and efficacy of adaptation actions and guidelines for monitoring the implementation of adaptation actions. However, since it has not been finalised yet, it is difficult to conclude on its implementation and monitoring.

Coherence with all of the existing monitoring systems and initiatives at the national level will be created in close cooperation with ISPRA and ARPAs.

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

Yes / **No**

A system to monitor sectoral adaptation activities and their related expenditures, or to report adaptation activities, has not been established. Nonetheless, a network for monitoring infrastructural projects to cope with hydrogeological risk is in place⁶⁰. There is no actual reporting by this network, although it maintains a map of the country that identifies all of the projects currently being undertaken and their progress.

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

Yes / **No**

While climate adaptation reporting is taking place at regional, sub-national and local levels, these efforts are not consistently monitored and disseminated through an overarching system.

⁶⁰ ISPRA, 2018, Repertorio Nazionale degli interventi per la Difesa del Suolo, URL: http://www.rendis.isprambiente.it/rendisweb/geo.jsp?id_reg=20

While regions and cities are undertaking adaptation planning and implementing adaptation actions, these are not systematically reported, nor is information collected centrally in a systematic way. Nonetheless, provision of feedback from sub-national to national level is planned (given that sub-national institutions participate in the national coordination committee for adaptation, as specified in Indicator 1c). Cities were also committed to report every two years on adaptation activities under the Mayors Adapt initiative⁶¹.

The 7th UNFCCC National Communication⁶² contains some information about regional and local adaptation activities, as well as planned policies and measures.

11. Evaluation

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

Yes / No

The periodic review of adaptation actions is planned on a five-year basis, as defined in the NAS. Thus, the next review is due in 2020. The NAS mentions that the review will be informed by continuous monitoring of progress and evaluation using indicators, and the consideration of available knowledge about climate impacts and vulnerabilities.

As the NAP is still in draft format, it is unclear whether it will also be subject to a periodical review.

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

Yes / **No**

The NAS identifies that stakeholders will be consulted periodically. However, it is not specified whether or how stakeholders will be involved in the monitoring and review of adaptation policy.

⁶¹ Mayors Adapt, 2016, URL: https://www.covenantofmayors.eu/IMG/pdf/Mayors-Adapt_Reporting_Guidelines.pdf

⁶² UNFCCC, 2017, Seventh National Communication under the UN Framework Convention on Climate Change, URL: https://unfccc.int/sites/default/files/resource/258913076_Italy-NC7-2-Italy%20Seventh%20National%20Communication%20Final.pdf

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	<u>Yes</u> / 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.	<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	<u>Yes</u> / 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)	<u>Yes</u> / In progress / No
3c	Sound climate risks/vulnerability assessments for priority vulnerable sectors are undertaken to support adaptation decision making.	<u>Yes</u> / In progress / 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	progress / 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).	Yes / 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 / In progress / 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 / 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	Yes / No
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
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 / In progress / 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	Yes / No
8b	Prevention/preparedness strategies in place under national disaster risk management plans take into account climate change impacts and projections	Yes / No
8c	Key land use, spatial planning, urban planning and maritime spatial planning policies take into account the impacts of climate change	Yes / 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)	Yes / <u>No</u>
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 / <u>No</u>
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	Yes / <u>No</u>