



Adaptation preparedness scoreboard:

Draft country fiche for Italy

Disclaimer

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

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

Table of Contents

POLICY FRAMEWORK	2
Adaptation strategies.....	2
A1. National adaptation strategy.....	2
A2. Adaptation strategies adopted at subnational levels.....	3
Adaptation action plans	3
B1. National adaptation plan	3
B2. Adaptation plans adopted at sub-national level.....	4
B3. Sectoral adaptation plans	4
SCOREBOARD	4

DRAFT

Step A: preparing the ground for adaptation	4
1. Coordination structure.....	4
2. Stakeholders' involvement in policy development.....	6
Step B: assessing risks and vulnerabilities to climate change.....	7
3. Current and projected climate change	7
4. Knowledge gaps	10
5. Knowledge transfer.....	11
Step C: identifying adaptation options	12
6. Adaptation options' identification	12
7. Funding resources identified and allocated.....	13
Step D: Implementing adaptation action.....	14
8. Mainstreaming adaptation in planning processes.....	14
9. Implementing adaptation	16
Step E: Monitoring and evaluation of adaptation activities	17
10. Monitoring and reporting	17
11. Evaluation.....	18
SUMMARY TABLE.....	20

POLICY FRAMEWORK

Adaptation strategies

A1. National adaptation strategy

The Italian national adaptation strategy (NAS)¹ was adopted in June 2015 with a Directional Decree of the Climate and Energy General Director.

In order to elaborate the NAS some background documents² have been published:

1. A national impacts and vulnerability assessment concerning the national sectors;
2. An analysis of European and National POLICY FRAMEWORK for adaptation;
3. 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 positive advice to the Italian NAS³ in

¹ Ministero dell'Ambiente e della Tutela del Territorio e del Mare (2015) Strategia Nazionale di Adattamento ai Cambiamenti Climatici, http://www.minambiente.it/sites/default/files/archivio/allegati/clima/documento_SNAC.pdf

² <http://www.minambiente.it/pagina/documenti-di-supporto-alla-strategia-nazionale-di-adattamento-ai-cambiamenti-climatici>

³ http://www.minambiente.it/sites/default/files/archivio/allegati/clima/strategia_adattamentoCC.pdf

DRAFT

October 2014. Regions, local and central Authorities, coordinated by the Ministry for the Environment, Land and Sea, would subsequently start to implement the NAS, starting by preparing an "Adaptation Plan". The NAS is planned to be updated within 5 years.

A2. Adaptation strategies adopted at subnational levels

A survey on the ongoing processes towards climate change adaptation strategies and plans at regional level carried out by the Institute for Environmental Protection and Research (ISPRA) describes the following state of the art: Lombardia Region approved its Regional Adaptation Strategy. Other regions (Valle D'Aosta, Piemonte, Friuli Venezia Giulia, Emilia Romagna, Toscana, Abruzzo, Sardegna, Calabria and the Province of Trento) have started procedures aiming to define planning documents on adaptation (Strategies or Plans)⁴.

Some regions (e.g. Sardegna, Calabria, Puglia) recognized the cross-cutting nature of adaptation into their governance model; some other regions are reviewing their regulatory measures (e.g. EIA) and planning tools (e.g. EU Structural Funds) considering adaptation (e.g. Abruzzo, Molise); while other regions are promoting adaptation at local level by supporting cities and municipalities who have joined the European Covenant of Mayors for Climate and Energy programs as territorial coordinators (e.g. Lazio, Abruzzo).

Under the European cooperation for regional development programs (ERDF), the Italian Ministry for the Environment, Land and Sea (IMELS) has for the regions Calabria, Sicilia, Campania and Puglia coordinated a project to support the regional environmental authorities to implement the principles of the NAS in future regional adaptation plans. A report for each region on the state of the art of the consideration of climate change in planning activities has been released on October 2016.

Noteworthy to mention at the interregional level, are the Alpine Convention on Climate Change, as well as the implementation of the Action Plan on Climate Change in the Alps which was adopted in March 2009 by the Contracting Parties.

Adaptation action plans

B1. National adaptation plan

Italy has prepared a draft National Adaptation Plan (NAP) for the implementation of the NAS. The NAP is to provide guidance to ministries, regions, and local authorities for the integration of disaster risk management (DRM) and adaptation into policy processes. The NAP is being developed by the Directorate General for Climate and Energy of Italian Ministry for the Environment, and it is being shared with national, regional and local institutions.

It was originally stated in the NAS that the NAP should be ready by December 2016. The Ministry for the Environment launched a public consultation on the draft National Adaptation Plan, which closed on 15 October 2017. It has also set up a technical committee to review the draft. Once the draft document and the output of the public consultation and review are integrated, the NAP will be finalized. Finalization is tentatively planned for the first half of 2018.

⁴ <http://annuario.isprambiente.it/entityada/basic/6358>

DRAFT

B2. Adaptation plans adopted at sub-national level

More than 150 cities (covering about 7% of Italy's population) have committed to adaptation planning and actions through the framework of the Covenant of Mayors. At local level, an example is the city of Bologna, which has a Local Plan for Adaptation, produced in the contest of BLUEAP Project.

As far as adaptation plans at subnational level, a survey on the ongoing processes towards climate change adaptation strategies and plans at regional level (carried out by the Institute for Environmental Protection and Research (ISPRA)) indicates that Lombardia and Abruzzo Regions are working towards adaptation plans,⁵

B3. Sectoral adaptation plans

A National Operating Plan for Prevention of the Effects of heat waves on health was developed by the Italian Ministry of Health in collaboration with other institutions. The main objective is to foster coordination between institutions at different level of governance, and to provide guidelines for implementation of a centralised system for prediction and prevention of the effects of heat waves on health.

A White Paper "Challenge and opportunities into rural development for mitigation and adaptation to climate change" was published within the National Rural Network 2007-2013. It entails information and analysis on the impacts of climate change on agriculture, livestock sector, food production and forestry, and proposes possible strategies for mitigation and adaptation to climate change.

SCOREBOARD

Step A: preparing the ground for adaptation

1. Coordination structure

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

Yes / No

In Italy, the Ministry for the Environment, Land and Sea (*Ministero dell'Ambiente e della Tutela del Territorio e del Mare*, MATTM) has the primary responsibility for elaborating the National Adaptation Strategy and Plan and coordinating it with stakeholders. Its main responsibility is to make policies to protect the water, the air, the land, nature, and all aspects related to energy and climate change. For this, the Ministry is divided into seven directorates, including one on climate and energy.

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

Yes / In progress / No

⁵ Environmental Yearbook, 2016

DRAFT

In terms of the NAS. Horizontal coordination in the Italian adaptation process has taken place through an Institutional Panel set up to support the elaboration of the national strategy. Represented Ministries include the Ministry of Economic Development, the Ministry of Agricultural and Forestry Policies, the Ministry of Infrastructures and Transport, the Ministry of Health; the Ministry of Education, University and Research; the Ministry of Cultural and Environmental heritage; the Ministry of Regional affairs and Tourism and Sport, and other institutional stakeholders such as the Department of Civil Protection, regional committees, ANCI (the national association of Italian municipalities) and UPI (the Union of Italian Provinces). The draft NAP further defines roles and responsibilities for the implementation of the different adaptation actions identified.

The above mentioned Institutional Panel is also involved in the elaboration of the NAP. Representatives of the Ministries involved are provided of the draft NAP document and they are asked to actively contribute to the contents of the document.

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 under the NAS, alongside the ministries: the Union of Italian Provinces (UPI), the National Association of Italian Municipalities (ANCI), and the Italian Committee of the Regions.

The NAS includes a plan for setting up a governance system for the NAP, a '*permanent forum*', to ensure stakeholders' participation, to identify and address the specific needs of sectors and territories. The process of drafting, finalising and adopting the NAP is following a similar approach. The Ministry for Environment, Land and Sea has established an Interregional Panel with the national State-Regions commission for climate change and an inter-ministerial Panel, involving the same ministries as for the formulation of the NAS. The aim is to build a ground for adaptation to collect the points of view of all actors involved in NAP and share and evaluate the state of the implementation of adaptation actions at national, regional and local level.

The NAP should be developed through a thorough collaboration between ministries, provinces, regions and municipalities, as well as with the private sector and civil society in general. Cooperation is for all sectors (water, air, energy, nature, territory) The NAP will establish a coordination mechanism, the Italian National Observatory, composed by Regional and local authorities, to identify priorities at territorial and sectoral level and to monitor the efficacy of adaptation actions.

One should note that at regional level, some regions:

- recognized the cross-cutting nature of adaptation in their governance model (e.g. Sardegna, Calabria, Puglia);
- are reviewing their regulatory measures (e.g. EIA) and planning tools (e.g. EU Structural Funds) considering adaptation (e.g. Abruzzo, Molise);
- some regions are promoting adaptation at local level by facilitating the European Covenant of Mayors for Climate and Energy programs (e.g. Lazio, Abruzzo).

DRAFT

- some municipalities (Bologna)⁶ also have come up with their own AP, coherent with the NAS.

Under the European cooperation for regional development programmes (ERDF), DG-CLE has coordinated a project to support the regional environmental authorities of four Italian regions (Calabria, Sicilia, Campania and Puglia) to implement the principles of the NAS in future regional adaptation plans. A report for each region was released in October 2016.

In Italy, more than 150 cities have already committed to adaptation planning and actions through the framework of the Covenant of Mayors⁷ - these cities cover about 7% of Italy's population.

Flood risk management plans coordinated at the level of the river basin district were established by Italian River Basins. According to Directive 2007/60/EC, flood risk management plans shall be reviewed and, if necessary, updated by 22 December 2021 and every six years thereafter. Moreover, the likely impacts of climate change on the occurrence of floods shall be taken into account in the reviews.

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 bottom-up approach developing the Italian adaptation Strategy was implemented starting with an on-line survey on the perception of risks of climate change and on the "adaptation concept" in the country, launched in October 2012.

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 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.

On the 22nd of February 2017, the Ministry for the Environment, Land and Sea opened an online public consultation for the definition of the NAP, that ran until the 15th of March 2017. The objective of this public consultation was to collect views and suggestions to understand vulnerability and impacts to climate change and to identify adaptation options from the different stakeholders and regions with the aim to cope with climate change.

At the beginning of August 2017, the Ministry for the Environment launched a public consultation on the draft National Adaptation Plan, that will be opened until 15 October 2017.

⁶ <http://www.blueap.eu/site/>

⁷ http://www.covenantofmayors.eu/index_en.html

DRAFT

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

Yes / No

The NAS contains some, though not systematic, reference to transboundary and international cooperation, in particular for the adaptation measures in biodiversity conservation, monitoring and risk evaluation, desertification, as well as the exchange of good practices and experiences. In terms of specific cooperation mechanisms, it is stated in the NAS that for desertification challenges, international cooperation programmes will be established with countries of the Mediterranean basin (for example through the CMCC, the Euro-Mediterranean centre for climate change), similarly for mountainous areas with countries of the alpine region.

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

- MAREMED Project (MARitime REgions cooperation for MEDiterranean) was established with the aim to develop tools for enhancing and coordinating regional, European and Mediterranean policies on six thematic strategies, among which adaptation to climate change in coastal areas.⁸
- The WIZ Project (WaterIZE spatial planning) encompass future drinking water management conditions to adapt to climate change. It is also an example of transboundary cooperation between Italian and Spanish partners.⁹

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 2009. The country is a partner in the cooperative and transboundary projects carried out in the region to address adaptation, such as ClimChAlp (Climate Change, Impacts and Adaptation Strategies in the Alpine Space), STRADA (Adaptation Strategies in transboundary areas), C3-Alps and others (e.g. adaptation to management of natural hazards, adaptation of winter tourism to climate change, or transboundary river basin management). Italy is participating in the implementation of the two EU level macro-regional strategies: EUSALP¹⁰ and EUSAIR¹¹ to address various climate related challenges shared in the region.

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

A comprehensive observational network covers the Italian territory. The monitoring of climate data is organized and adjusted to set up weather forecasting and for an early warning system. As regards current and recent past climate variability and trends, time

⁸ <http://www.maremed.eu/index.php>

⁹ <http://www.wiz-life.eu/index.php>

¹⁰ <https://www.alpine-region.eu/>

¹¹ <http://www.adriatic-ionian.eu/>

DRAFT

series belonging to national and regional monitoring networks (hydro-meteorological networks by Civil Protection, national and regional agro-meteorological networks including the Air Force Meteorological Service) are used to calculate climate indicators over Italy. However, time series have different characteristics in terms of continuity, completeness, spatial coverage and data quality. Trends of mean temperature and cumulated precipitation, as well as their extremes, are updated regularly and disseminated through 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 by the National Institute for Environmental Protection and Research (ISPRA). Some regions have local initiatives, e.g. monitoring systems and weekly forecast of snow cover in Valle d'Aosta.

Some data are available in specific networks as <http://www.isprambiente.gov.it/it/banche-dati>; <http://www.lteritalia.it>; <http://polaris.irpi.cnr.it/>; <http://italiasicura.governo.it/site/home/dissesto/link.html>. Furthermore, a network for monitoring infrastructural projects to cope with hydrogeological risk is in place: http://www.rendis.isprambiente.it/rendisweb/geo.jsp?id_reg=20.

SCIA website and annual reports published by ISPRA illustrate the record of temperature and precipitation extreme events which are regularly updated and disseminated.

Some impact indicators of extreme events are yearly updated and disseminated through the Italian Environmental Yearbook (ISPRA). Examples of such indicators are: flood events, landslide events, injured and dead people due to flooding, injured and dead people due to landslides, losses and damages due to flooding, losses and damages due to landslides, mortality due to heatwaves (recent indicator, short time series).

The National System for Environmental Protection (i.e. the National Institute for Environmental Protection Agency and the Regional Environmental Protection Agencies) is working towards the definition of a national set of climate change impact indicators, including a more comprehensive set of extreme events impact indicators.

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 CMCC and the Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA). The draft NAP¹² provides an analysis of current and future climate conditions in Italy, through climate projections for the periods 2021-2050 and 2071-2100, which are obtained using high resolution climate models for two scenarios: RCP 4.5 and RCP 8.5. Analysis is integrated by geographical specificities, in terms of exposure, sensitivity and adaptation capacity. Impacts and vulnerability of sectors included in NAP are based on a review of existing literature and on the outputs of climate projections

¹² <http://www.minambiente.it/pagina/consultazione-su-piano-nazionale-adattamento-cambiamenti-climatici>

DRAFT

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

Yes / In progress / No

A number of priority 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 infrastructures (cultural heritage, infrastructures for transport, industry); and 2 special cases:
- vulnerability assessments for the mountain 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*"¹³ presented the knowledge on impacts and vulnerability assessments over several sectors such as water resources, agriculture, forestry, health and others. A Technical Panel of Experts established in 2012, constituted by about 110 scientists and coordinated by CMCC (see 4a.) carried out a comprehensive assessment of climate change impacts and vulnerabilities, published in 2014¹⁴, as part of the NAS process, with the aim to identify key vulnerabilities, sectors and related measures. The approach used is based on literature review and experts appraisal. Vulnerability of priority sectors included in draft NAP is based on an update of existing literature and on the outputs of climate projections.

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

Yes / **In progress** / No

The need for transboundary coordination is not systematically addressed in the NAS. However, it is explicitly mentioned when referring to the impacts and adaptation of biodiversity and ecosystems, and desertification. There is also a reference to the need to homogenize risk indicators with neighbouring countries, which shows awareness about the need to have consistent risk assessments across boundaries. Also in the NAP transboundary risks are not taken into account in a coordinated manner. It includes examples of transboundary cooperation in evaluating impacts of climate change by some

¹³ <http://www.cmcc.it/it/publications/i-cambiamenti-climatici-in-italia-evidenze-vulnerabilita-e-impatti>

¹⁴ http://www.minambiente.it/sites/default/files/archivio/allegati/clima/snacc_2014_rapporto_stato_conoscenze.pdf

DRAFT

sectors and in particular regions (the Alps, for example) linked, in most cases, to specific projects.

Since transboundary risks are not taken into account *in a coordinated manner* across a reasonable range of relevant sectors performance on this indicator is assessed as 'in progress'.

4. Knowledge gaps

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

Yes / In progress / No

The NAS identifies as one of its key principles the work in cooperation with the research and innovation community. Research is identified in many sectors as necessary, but a specific plan for the involvement of the stakeholders in the identification of research priorities is not clearly settled. A research programme, or the elements for it, is not defined as part of the document. However, the research community has been involved in the development of the NAS and is being involved in the NAP, including through the Scientific Panel established for this purpose. Moreover, several research programmes funded by the Italian government address climate change as a priority (see details below).

An Italian climate research network, the *Euro-Mediterranean Centre on Climate Change (CMCC - Centro Euro-Mediterraneo sui Cambiamenti Climatici)* facilitates the involvement of the research Community and the prioritisation of research. For the production of the ESNACC and the evaluation of available knowledge, the involvement of the research community has already been essential. CMCC was appointed as the institution responsible for collecting the information needed to elaborate the national adaptation strategy.

In addition, the Italian Ministry of Education, Universities and Research supports and manages the National Antarctic Research Programme (PNRA), which is implemented by the National Scientific Commission for the Antarctic (CSNA), the National Research Council (CNR), the National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA).

The most recent National Research Programme (PNR, 2014-2020)¹⁵ considers "Climate action, environment, resource efficiency and raw materials" one of the main challenges. The most recent PNR represents the result of a wide consultation lead by the Ministry for Education, University and Research (MIUR) and the Ministry of Economic Development and the involvement of the most relevant public and private, national and regional stakeholders. The PNR identifies an action plan addressed to the major challenges posed by the contemporary society which are identified at community level and are emerging from the smart approach of territories at national level. The Italian PNR has aligned its structure to Horizon 2020, but there is not a description available of the topics to be covered in climate action.

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

¹⁵ 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

Italy does not have a dedicated website providing access to climate change adaptation relevant information or data, e.g. a repository of key documents or a climate services website. The NAS encouraged the setting-up of a national platform, using Climate-ADAPT as model, as well as a National Observatory in order to support decision making. However, such a platform has not been set up. The intention was also to establish a permanent stakeholders' forum to collect requests from territory and to implement actions for training and information will be created. The websites currently presented in Climate-ADAPT are those of the MetOffice or the CCMC, offering mostly administrative information and a general description of their objectives.

Despite the lack of a dedicated portal, the Ministry for Environment, Land and Sea regroups in one webpage key documents such as the NAS, and some of the documents that have been aforementioned¹⁶, such as the vulnerability assessment by the CMCC. These are theoretical, policy-based documents. Other information, such as scientific data and monitoring is done on separate platforms, by separate institutes, as stated in 3a. Projection data and scenario results are available, for example, through the CMCC.¹⁷

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 seems to be limited evidence of systematic actions on capacity-building taking place in a coordinated manner and at least encouraged or monitored by the central administration. However, capacity-building activities occur at regional level; for example, the regional adaptation plan of Lombardia includes capacity-building and knowledge dissemination among its objectives. The CMCC organises training programmes related to climate change adaptation for graduate students.¹⁸

The IPCC National Focal Point is also 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."¹⁹

¹⁶ <http://www.minambiente.it/pagina/adattamento-ai-cambiamenti-climatici-0>

¹⁷ See, for example, <http://www.cmcc.it/software/clime-2>; <https://www.cmcc.it/models/cosmo-clm-climate-limited-area-modelling-community>

¹⁸ <http://www.cmcc.it/training-programs>

¹⁹ <https://www.cmcc.it/about-ipcc-focal-point>

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 in 3c are outlined 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 in soft, green, grey, long-medium term as well as a compilation of good practices, win-win solutions, no or low-regrets measures, desirable options, sectoral needs, etc., which result from the consultation process with institutional authorities and stakeholders, rather than from detailed and specific assessments; hence indicative adaptation measures are only identified based on lighter processes.

The draft NAP proposes a set of adaptation actions in each of the vulnerable sectors, as well as the institutions responsible for their implementation. It also identifies preferable actions based on criteria described in draft NAP. The main adaptation activities implemented till now concern the most vulnerable sectors as 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 preferable actions based on the following criteria²⁰: effectiveness, economic efficiency, side-effect, performance under uncertainties and conditions for decision making.

The methodology followed in draft NAP is based on the application of the aforesaid criteria to categories of actions, with the aim of attributing them an order of preference (high, medium and low). The actions with a high order of preference are selected and described in terms of sectors involved, possible authorities for implementation and monitoring indicators.

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 contains a proposal for actions aiming at reinforcing coordination between the disaster risk prevention and management and the adaptation strategies, to guarantee an

²⁰ Flörke et al. (2011) – Final Report for the Project Climate Adaptation – modelling water scenarios and sectoral impacts

DRAFT

enhanced capacity to cope with some extreme events, in particular the hydrogeological damage, including under climate change.

Italy has significant tools to fight current climatic extreme events, including 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*,²¹ and a notable heatwaves' prevention, communication and management programme, and a "National Operational Plan to prevent effects on human health from heat waves"²² that, inter alia, plans a monitoring for negative impacts on health. The Civil Protection department is in close cooperation with the Ministry of Environment in order to tackle impacts of climate change. It is not clear whether this cooperation between the Civil Protection Unit and the Ministry of Environment is of a structural nature.

7. Funding resources identified and allocated

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

Yes / **In progress** /No

The NAS does not provide information on how the governance or the basic horizontal or cross cutting activities within the NAS would be organised or financed. The 6th National Communication²³ does not contain information on financing either.

The draft NAP defines the possible sources of funding and assesses the necessary financial and human resources.

Currently, financial resources for adaptation can be obtained from the application of the Directive 2003/87/CE (art. 3) concerning the setting up of the "carbon market" for trading CO2 allowances. The revenues of the auctions can be used, up to the extent of 50% of the total, to support adaptation to climate change impacts. On this basis, the Ministry of Environment has spent part of the 2013 revenues for the containment of little landslides in mountain cities, caused or worsened by climate change. 17 regions and almost 55 municipalities were involved in this program. This initiative implied the approval of program agreements between the Ministry of Environment and the beneficiary Regional Administration.

Climate scientific research and technological development in Italy is also financed by the government through various schemes – see 4a.

Through the "Network of Environmental Authorities and Managing Authorities" related to environmental aspects of EU Structural Funds actions an initiative for monitoring adaptation actions included in regional operative program (POR) is currently in course.

Structural and cohesion funds have been used to support the implementation of actions relevant for adaptation, including in the water sector.

Under the Partnership Agreement for Italy, 2014-2020, EUR 2359 million has been allocated to the thematic objective "Promoting climate change adaptation, risk prevention and management", including EUR 812 million from the European Regional

²¹ http://www.protezionecivile.gov.it/jcms/it/previsione_servizio.wp?jsessionid=1534B415C4E0033BA59B4D82703D6B9F.worker3:
http://www.protezionecivile.gov.it/jcms/it/attivita_idrogeologico.wp

²² <http://www.salute.gov.it/portale/caldo/dettaglioContenutiCaldo.jsp?lingua=italiano&id=408&area=emergenzaCaldo&menu=vuoto>

²³ http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/ita_nc6_resubmission.pdf

DRAFT

Development Fund and EUR 1547 million from the European Agricultural Fund for Rural Development.²⁴

Step D: Implementing adaptation action

8. Mainstreaming adaptation in planning processes

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

Yes / No

Climate change considerations have been integrated in the national frameworks and regulations for impact assessment of projects (EIA) or programmes/Plans (SEA). Some regions are reviewing their regulatory measures (e.g. EIA) and planning tools (e.g. EU Structural Funds) considering adaptation (e.g. Abruzzo, Molise).

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

Yes / **No**

Some activity has been reported on prevention measures better addressing extreme climate events (e.g. for heatwaves, national and regional warning system for the hydrogeological and hydraulic risks). However, they seem to address mostly short term extreme events, not having tackled yet through a long term planning process how to address potential alterations in regimes that could modify the risks of different events. The NAS contemplates measures to better integrate the modifications in risks due to climate change but it is unclear if this has yet been 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**

The NAS identifies the need to integrate land use and land management policies, taking into consideration the risks from different sources, including those of climate change (desertification, hydrogeological risks, rural development, water management, etc.). For the moment it has not been defined or implemented at national level. However, this is occurring in some instances at regional level, in the regions specified in 1c.

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

²⁴ European Commission (2014) Summary of the Partnership Agreement for Italy, 2014-2020, https://ec.europa.eu/info/sites/info/files/partnership-agreement-italy-summary-oct2014_en.pdf

DRAFT

Mainstreaming has been reported for the National Biodiversity Strategy, where minimising the effects of climate change 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".²⁵ For coastal areas, first steps have been taken to develop Integrated Coastal Zone Management plans, where climate change concerns would be included. Water management has started to integrate climate change considerations as well: the River Basin Management Plan of the Po River catchment (approved in 2013) aims at identifying strategies for adaptation to climate change, and the Watershed Authority of the Arno River Basin took into account climate change impacts in mapping flood hazard and risk in support to river Basin planning (pursuant to Directive 2007/60/EC on flood risks assessment and management).

The NAP will provide a set of adaptation actions in order to mitigate and take advantage from climate change for the different areas and 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.²⁶

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 change adaptations (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.

Among the preferable actions included in draft NAP, some of the actions 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 analyse 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.

²⁵ Ministero delle Politiche Agricole, Alimentari e Forestali (2011) Sfide ed opportunità dello sviluppo rurale per la mitigazione e l'adattamento ai cambiamenti climatici, <http://www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/5799>

²⁶ <http://climate-adapt.eea.europa.eu/countries-regions/countries/italy>

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 web site of the Ministry of Environment²⁷. It analyses the role of different public administrations for implementation of adaptation actions, for each sector included in NAP. It also proposes some consideration and hypothesis of governance, to set up for implementation of adaptation actions (governing body, type and level of planning, emergency management).

So far, some regional action plans have been published (see 1c), also at the municipal level with the Blueap project in Bologna, although it is not clear whether the actual implementation has already started.

However, implementation activities, aligned with the NAS preliminary analysis, have been implemented already in key vulnerable sectors, e.g. in agriculture, the National Strategic Plan for Rural Development aims, inter alia, at promoting adaptation activities for the efficient use of resources and the resilience of climate change in the agro-food and forestry sectors; the Ministry of Health and the Dept. of civil protections have been operating an early warning system to prevent impacts from heatwaves; national guidelines for coastal protection have been developed; the strategic plan for tourism, elaborated by the Ministry of Cultural Heritage and Tourism, includes specific actions aimed at minimising the impacts of climate change on tourism in the period 2017-2022.

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

Yes / **No**

Cooperation mechanisms with subnational administration bodies for the coordinated implementation of adaptation are in place through the "Conferenza Unificata" (see section A), where there is a mandate to work in adaptation action plans that would develop the NAS at all levels, and the "State/Regions Conference". It was intended for this cooperation mechanism to be reinforced in the future, as one of the aims is to enhance cooperation at all levels and set up a 'multilevel governance' system. The permanent forum and national observatory mentioned in 9d. might also reinforce this. However, at the moment there is no structural cooperation in place with regions and cities in the implementation of the NAS.

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 change impacts on projects/programmes have been developed and promulgated.

²⁷ <http://www.minambiente.it/pagina/consultazione-su-piano-nazionale-adattamento-cambiamenti-climatici>

DRAFT

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 1c). To facilitate the multi-level governance process during the implementation of the NAP, an Italian National Observatory composed by Regional and local authorities will be established to identify priorities at territorial and sectorial level and to monitor the efficacy of adaptation actions. A "permanent forum" will also be established to promote information, education and public capacity building in adaptation.²⁸

To involve institutions in plan definition, the MATTM has established an interregional Panel with the national State-Regions commission for climate change and an inter-ministerial Panel. The aim is to build a ground for adaptation to collect the points of view of all actors involved in NAP and share and evaluate the state of the implementation of adaptation actions at national, regional and local level. We could not find other information on the involvement of stakeholders in the implementation of the NAS.

Neither the Forum nor the Observatory have been established yet. The draft NAP comprises a description of the structure and organization of the Forum and considerations about the Observatory, composed of representatives of Region and local Authorities. Regions and Ministries included into the panels set up for the elaboration of the NAP, will be also involved in the future phases of implementation of adaptation actions.

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**

Information on adaptation actions is not being systematically collected, beyond fulfilling the reporting obligations under the UNFCCC. For the moment a system to monitor adaptation activities and their related expenditures, or to report adaptation activities, is not in place. A monitoring system to evaluate progress in implementing the NAS is not yet in place neither at national level nor at 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. Coherence with all the existing monitoring systems and initiatives at national level will be created in close cooperation with ISPRA (National Institute for environmental protection and research) and the Regional Agencies for Environmental Protection (ARPA).

Nonetheless, a network for monitoring infrastructural projects to cope with hydrogeological risk is in place²⁹. There is no actual reporting done, it is essentially a map of the country which monitors all the projects currently being undertaken and the progress on the latter.

²⁸ <http://climate-adapt.eea.europa.eu/countries-regions/countries/italy>

²⁹ http://www.rendis.isprambiente.it/rendisweb/geo.jsp?id_reg=20

DRAFT

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

Yes / **No**

For the moment a system to monitor adaptation activities and their related expenditures, or to report adaptation activities, is not in place.

Some progress at regional level has been made in implementing the 100/2012 Law (art. 3 bis) on national and regional alert system for hydro-geological and hydraulic risk.

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

Yes / **No**

The 6th National Communication contains some information about regional and local adaptation activities. Reported activities comprise Draft Guidelines for 'local adaptation action plans of urban systems to climate change' in the framework of the Sustainable Cities network and Coordination of Italian Local Agenda 21 (2011), a national survey of best practices in Italian urban and regional planning to support the process of adapting local entities to climate change, and some regional activities, e.g. in the Abruzzo region. Through the "Network of Environmental Authorities and Managing Authorities" related to environmental aspects of EU Structural Funds actions an initiative for monitoring adaptation actions included in regional operative program (POR) is currently ongoing.

There are no coordination mechanisms in place to cooperate with the subnational level in implementing adaptation activities. While regions and cities are undertaking adaptation planning and implementing adaptation actions, these are not systematically reported, nor information is collected at the central level in a systematic way. Nonetheless, feedback from sub-national to national level is planned to be provided (given that sub-national institutions participate in the national coordination committee for adaptation, as specified in 1c). Cities will also be reporting on their adaptation activities in the framework of the Covenant of Mayors.

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 5-year basis (thus the next review is due in 2020), as defined in the Italian NAS. Monitoring progress and continuous evaluation using indicators, and the consideration of knowledge available about climate, climate change, impacts and vulnerability, are mentioned as the sources for review.

The NAP not being published yet, it is not clear whether it will also be subject to a periodical review.

DRAFT

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

Yes / **No**

The NAS identifies, as one of the elements that a NAS must comprehend a periodic consultation of stakeholders. However, it is not specified whether/how stakeholders would be involved in the monitoring and review of adaptation policy.

The active involvement of stakeholders will be carried out through the institution of the permanent Forum, as established by Directorial Decree which adopted the NAS. The Forum will promote information, education and capacity building of citizens and stakeholders. The draft NAP comprises a description of the structure and organization of the Forum.

DRAFT

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.	Yes / <u>In progress</u> / 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) Yes / In progress / No (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>		

DRAFT

Adaptation Preparedness Scoreboard		
No.	Indicator	Met?
4	Work is being carried out to identify, prioritise and address the knowledge gaps	Yes / In progress / No
5 Knowledge transfer		
5a	Adaptation relevant data and information is available to all stakeholders, including policy makers (e.g. through a dedicated website or other comparable means).	Yes / In progress / No
5b	Capacity building activities take place; education and training materials on climate change adaptation concepts and practices are available and disseminated	Yes / In progress / No
Step C: Identifying adaptation options		
6 Identification of adaptation options		
6a	Adaptation options address the sectoral risks identified in 3c, the geographical specificities identified in 3b and follow best practices in similar contexts	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 Funding resources identified and allocated		
7	Funding is available to increase climate resilience in vulnerable sectors and for cross-cutting adaptation action	Yes / In progress / No
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
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
8d	National policy instruments promote adaptation at sectoral level, in line with national priorities and in	Yes / In progress / No

DRAFT

Adaptation Preparedness Scoreboard		
No.	Indicator	Met?
	areas where adaptation is mainstreamed in EU policies	
8e	Adaptation is mainstreamed in insurance or alternative policy instruments, where relevant, to provide incentives for investments in risk prevention	Yes / No
9 <i>Implementing adaptation</i>		
9a	Adaptation policies and measures are implemented, e.g. as defined in action plans or sectoral policy documents	Yes / In progress / No
9b	Cooperation mechanisms in place to foster and support adaptation at relevant scales (e.g. local, subnational)	Yes / 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	Yes / No
9d	There are processes for stakeholders' involvement in the implementation of adaptation policies and measures.	Yes / No
Step E: Monitoring and evaluation of adaptation activities		
10 <i>Monitoring and reporting</i>		
10a	NAS/NAP implementation is monitored and the results of the monitoring are disseminated	Yes / No
10b	The integration of climate change adaptation in sectoral policies is monitored and the results of the monitoring are disseminated	Yes / No
10c	Regional-, sub-national or local action is monitored and the results of the monitoring are disseminated	Yes / No
11 <i>Evaluation</i>		
11a	A periodic review of the national adaptation strategy and action plans is planned	Yes / No
11b	Stakeholders are involved in the assessment, evaluation and review of national adaptation policy	Yes / No