EUROPEAN
COMMISSION

Adaptation preparedness scoreboard

Country fiche for France

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 sectors[2] 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[1] The first versions of the fiches, prepared in consultation with the Member States in 2014-15, were unpublished and used to fine-tune the scoreboard.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

ADEME	L'Agence de l'environnement et de la maîtrise de l'énergie (Environment and Energy Management Agency)
EIA	Environmental Impact Assessment
EUSALP	EU Strategy for the Alpine Region
INTERREG	Inter-regional cooperation programmes under the European Structural and Investment Funds
IRD	Institut de recherche pour le développment (Institute for Development Research)
INRA	Institut national de la recherche agronomique (National Institute of Agronomic Research)
NAS	National adaptation strategy
NAP	National adaptation plan
ONERC	Observatoire national sur les effets du réchauffement climatique (national observatory on the effects of global warming)
PCAET	Plans Climat-Air-Energie Territoriaux (Territorial Climate-Air-Energy Plans)
PNACC	Plan National d'Adaptation au Changement (National climate adaptation plan, or NAP)
PPRI	Plan de prévention des risques d'inondation (flood risk management plan)
SDAGE	Schémas directeurs d'aménagement et de gestion des eaux (river basin management plans)
SRADDET	Schéma regional d'aménagement, de développement durable et d'égalité des territoires (Regional Plan for Sustainable Development and Territorial Equality)
SRCAE	Schéma régional du climat, de l'air et de l'énergie (Regional Framework on Climate, Air and Energy)

In addition, several abbreviations representing the French acronym for organisations whose titles are given in English are provided once (to provide clarity for French readers).

POLICY FRAMEWORK

Adaptation strategies

A1. National adaptation strategy

A National Adaptation Strategy, NAS (Stratégie nationale d'adaptation au changement climatique), was adopted in December 2006[3]. It was developed via a wide consultation with stakeholders by the national observatory on the effects of global warming (Observatoire national sur les effets du réchauffement climatique, ONERC), and presents key actors and principles for addressing climate adaptation. A process for revising the NAS was launched with the publication in November 2015 of an evaluation report[4], which was in turn incorporated by ONERC into a wider set of recommendations for action in 2016[5], and with the announcement in 2016 of a process for the revision of the National Adaptation Plan (NAP), see below.

A2. Adaptation strategies adopted at subnational levels

At the regional level, all of the 26 (one per region) Regional Frameworks on Climate, Air and Energy (SRCAEs) have been approved, covering 100% of the French population. The SRCAE requirements include detailed information on planned mitigation, air quality and adaptation actions and measures. The section on adaptation measures in each Regional Framework is adapted to the regional context.

Adaptation action plans

B1. National adaptation plan

A National Adaptation Plan 2011-2015, NAP (Plan National d'Adaptation au Changement Climatique - PNACC), was adopted in 2011[6]. It sets out a range of proposed actions and implementation processes, covering a wide range of sectors. The NAP was developed in coordination with stakeholders. The development of a new NAP was announced in the national climate plan (Plan Climat), published in July 2017. The adoption of this new NAP is expected by the middle of 2018 but implementation of some actions and measures is already under way[7].

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[3] See ONERC, 2006 *Stratégie nationale d'adaptation au changement climatique* : https://www.ecologique-solidaire.gouv.fr/sites/default/files/ONERC_Rapport_2006_Strategie_Nationale_WEB.pdf

[4] See Conseil général de l'Environnement et du Développement durable (CGEDD), 2015, *Evaluation du plan national d'adaptation au changement climatique* http:\\cgedd.documentation.developpement-durable.gouv.fr\documents\cgedd\010178-01_rapport.pdf

[5] See *Adaptation au changement climatique : Évaluation de la démarche nationale et recommandations*, ONERC report to the Prime Minister and to Parliament, 2016. http://www.ladocumentationfrancaise.fr/rapports-publics/174000726/index.shtml

[6] Ministère de l'Écologie, du Développement durable, des Transports et du Logement, 2011 *: Plan national d'Adaptation au Changement Climatique* http://www.ecologique-solidaire.gouv.fr/sites/default/files/ONERC_PNACC_1_complet.pdf

[7] Personal communication with MS contact.

B2. Adaptation plans adopted at sub-national level

Territorial Climate-Air-Energy Plans (Plans Climat-Air-Energie Territoriaux, PCAET), which are compatible with the SRCAEs' strategic orientations and with urban planning documents, concern all levels, from the region to the municipality. Since 2010, they have been mandatory for local authorities with more than 50 000 inhabitants; and, since 2016, mandatory for local authorities with more than 20 000 inhabitants (2016 was also when air quality requirements were incorporated into the plans).

The process for the adoption of river basin management plans (Schémas directeurs d'aménagement et de gestion des eaux - SDAGE) and flood risk management plans ("plan de prévention des risques d'inondation", PPRI) is set out in detail in the national Environment Law (Code de l'Environnement[8] Livre II, titre 1er), and requires the close involvement of a river basin committee (Comité de Bassin), which includes representatives of local and regional levels of administration. The local and regional authorities are then consulted on the detailed proposals for the plans, with clear evidence of strong participation. A high level of engagement on climate adaptation issues can be observed in the river basin management plans, which are in most cases informed by a specific river basin plan for climate adaptation (plan de bassin d'adaptation au changement climatique).

B3. Sectoral adaptation plans

As established in the first NAP (2011-2015), SDAGEs (2016-2021) are required to include adaptation actions and measures. All SDAGEs had been approved by December 2015.

The National Sea and Coastline Strategy[9] (Stratégie Nationale pour la mer et le littoral) was published in July 2017. This strategy also refers to the national strategy on integrated coastline management (Stratégie intégrée de gestion du trait de côte)[10].

The National Research Strategy[11] includes a reference to climate adaptation, identifying the "responsible management of resources and climate adaptation" as one of 10 societal challenges that research efforts should address.

In the agriculture sector, the General Council for Food, Agriculture, and Rural Areas (Conseil général de l'alimentation, de l'agriculture et des espaces ruraux) was commissioned to consider the impact of climate change on the agriculture sector. Its report[12] was published in June 2017 and provides detailed recommendations for a range of scenarios.

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[8] Code de l'environnement, version consolidée au 21 avril 2018, available at : https://www.legifrance.gouv.fr/affichCode.do?cidTexte=LEGITEXT000006074220&dateTexte=29990101&categorieLien=cid

[9] See : https://www.ecologique-solidaire.gouv.fr/sites/default/files/SNML_def.pdf

[10] See : https://www.ecologique-solidaire.gouv.fr/sites/default/files/12004-1_Strat%C3%A9gie%20gestion%20trait%20de%20c%C3%B4te%202017_light.pdf

[11] http://cache.media.enseignementsup-recherche.gouv.fr/file/Strategie_Recherche/26/9/strategie_nationale_recherche_397269.pdf

[12] "Eau, agriculture et changement climatique: Statu quo ou anticipation? Synthèse et recommandations", CGAER, 2017

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 France, the Ministry for Ecological and Inclusive Transition (or Ministère de la Transition écologique et solidaire) is responsible for climate adaptation. One of the directorates of the ministry is the General Directorate on Energy and Climate. The General Directorate designs and enforces policies on climate change mitigation and adaptation. Within the General Directorate, the ONERC) is responsible for adaptation policy-making.

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

Yes / In progress / No

Until recently, there was no specific horizontal governance structure for adaptation in France, although a clear division of responsibilities was identified in the first NAP, and relevant sectoral ministries were involved in its development. Actions were listed in the first NAP according to different sectors, such as agriculture, the forestry sector, fishery, aquaculture, the energy sector, industry, the transport sector, infrastructure, buildings and tourism.

Sectoral departments were then in charge of implementing measures in their area of competence while ONERC ensured overall implementation monitoring; ONERC fulfilled this role, reviewing activity at sectoral level. Every action committed in the NAP identified the leading actors and partners to be considered for implementing each action. The NAP contained a set of identified cross-cutting actions, where many sectoral ministries were involved. More specific sectoral actions also involved several sectoral ministries, where relevant.

This governance system has been reinforced in the process of developing the revised NAP. A specialised Committee of the National Commission for Ecological Transition (CNTE) has been established to guide the actions of ONERC and will also be in charge of the regular monitoring (three times a year) of the future NAP.

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

Regional planning is led by the regional assemblies and local state representatives. Local adaptation planning is led by the local councils. There has been some vertical integration with regard to climate adaptation through the development of the SRCAE and the PCAET. The

SRCAE was created in 2010 by the Grenelle II law [13]. These plans were drawn up in collaboration between the state and the region, and include climate and energy goals, with a requirement for a section on climate adaptation. Since 2016, the duty to develop an SRCAE was replaced by a new requirement for regions to adopt a Regional Plan for Sustainable Development and Territorial Equality, SRADDET (Schéma regional d'aménagement, de développement durable et d'égalité des territoires[14]).

To implement the SRCAE at a more local level, PCAET were developed. PCAET's were defined by the NAP and integrated into the Grenelle laws. They were required for territories of more than 50,000 inhabitants and could (at the choice of the region) be combined with the SRCAE. The territories are required to integrate adaptation measures in their territorial policies. Climate change mitigation and adaptation are also integrated in the Local Urbanisation Plans and the Territorial Coherence Schemes.

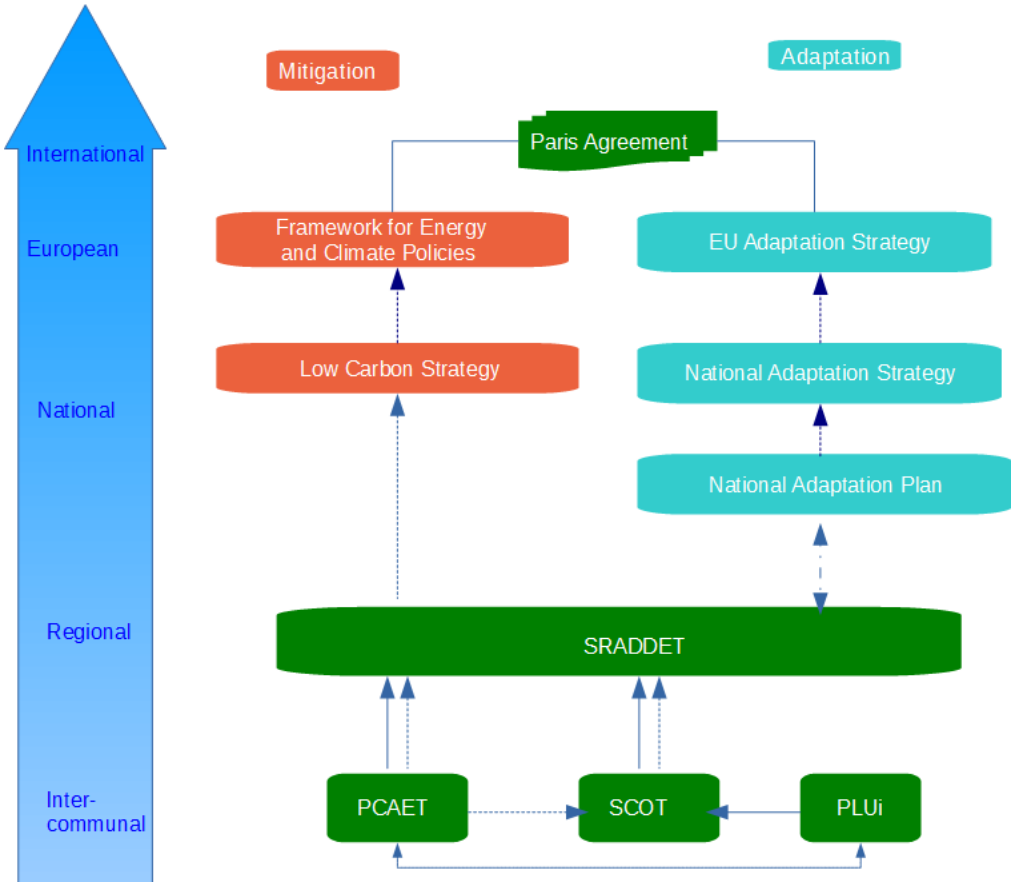
The process for local and regional governments to influence national policy-making is less detailed; however, the Grenelle consultation process, which prepared the first NAP, involved close engagement of local and regional authorities as one of five "colleges" (NGOs; state; employers; employees; territorial collectivities). The Ministry for the Ecological and Inclusive Transition has provided for the involvement of local and regional authorities in developing the revision process of the NAP, and in particular has called for the regional economic, social and environmental councils (Conseils économiques, sociaux et environnementaux régionaux) to be closely associated with the new NAP.

The coordination of cities is ensured by the regional level, because the PCAET should be in coherence with the SRADDET, but also with the sectoral plans, schemes and strategies, such as SDAGEs, PPRIs, Coastline Management Strategy or Mountain Area Strategy, when relevant.

The process for vertical and horizontal coordination is presented in the figure below.

[13] Loi no 2010-788 du 12 juillet 2010 portant engagement national pour l'environnement.
[14] See : Décret n° 2016-1071 du 3 août 2016 relatif au schéma régional d'aménagement, de développement durable et d'égalité des territoires.

Figure 1: Stakeholder's involvement in policy development



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 range of different stakeholders were involved in the development of the first NAP. In advance of its development, there was a concertation in 2010 of elected representatives, communities, the state, employers, unions and associations. National groups, overseas regions, interregional groups submitted reports in 2010. Furthermore, a report of a public consultation was published online[15]. An active process of stakeholder involvement is also in hand for the revision of the NAP.

Six working groups were engaged from June 2016 to July 2017. They proposed 33 recommendations[16], which are intended to form the basis of the new NAP. The process for the development of adaptation policy, including the development of the new NAP, relies

[15] See p.9 of the NAP, referred to in footnote 6
[16] See: https://www.ecologique-solidaire.gouv.fr/adaptation-france-au-changement-climatique#e

heavily on stakeholder engagement, and provides frequent opportunities for stakeholder input on specific issues.

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

Yes / No

The current NAS contains some statements about transboundary coordination to ensure a sound territorial approach to the adaptation action, but there is no indication of action to prepare for transboundary cooperation on common challenges. While the current NAP includes a section on international and European cooperation, it focuses on development aid issues, and on EU-level policymaking, and does not address transboundary issues related to the French territory. However, there is some transboundary cooperation at national government level, and the revised NAP is expected to address transboundary issues more directly[17].

Transboundary issues in France are mostly addressed via EU Interreg projects, or via transboundary SDAGEs (Meuse, Rhine) or transboundary observatories (Pyrenees) or international conventions (Alpine Convention, Mediterranean action plan, Indian Ocean Commission). It has not been possible to establish to what extent this is coordinated at national level, although there is active involvement of prefectoral services, representing the national government. There is some collaboration on climate adaptation in these projects. For example, the Interreg project POCTEFA between France and Spain, the Interreg 2 MERS between France, England and the Netherlands and the Interreg ALCOTRA between France and Italy have climate adaptation cooperation among their goals. The AMICE project under the Interreg North West Europe programme specifically addressed climate adaptation in the Meuse river basin. Recently, a project on adaptation in the Alpine areas (ARTACLIM) has been launched in the frame of the Interreg Alcotra (Italy-France) project. France is also involved in the implementation of the EU Strategy for the Alpine Region (EUSALP).

In 2017, France involved one of its experts in the Alpine Climate Board, which was established under the Alpine Convention to bundle together climate change initiatives in the Alpine area and to elaborate proposals for a concrete set of objectives of the Alpine Convention towards the perspective of a "climate-neutral Alpine space". In addition, close cooperation must be established with the various projects of the Alpine Space Program (the European transnational programme for the Alpine Region) and Action Groups under the EUSALP.

As of 1 January 2018, the L'ASADAC-MDP (Savoie Vivante et l'Agence touristique départementale de la Savoie) merged into AGATE (Agence alpine des territoires). The Observatoire Savoyard du Changement Climatique is part of AGATE.

[17] Personal communication with MS contact.

Step B: Assessing risks and vulnerabilities to climate change

3. Current and projected climate change

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

Yes / In progress / No

The website of Météo-France (the French national weather service) contains information on the climate in the past, present and the future[18]. Yearly and seasonal assessments, public climatologic data and early warning system for extreme events including storm surges are available to the public[19]. Data include knowledge on temperatures, rainfall, humidity, atmospheric pressure, wind, sunshine, storms, snow, droughts, etc. (Météo-France, 2017a). In addition, climate change indicators for France are available online and regularly updated on the ONERC website. They include climate indicators regarding the atmosphere, temperature and precipitation. An ONERC indicator is dedicated to population exposure to climate events[20], based on the climate events database (Gaspar[21]) crossed with the population database.

In addition to the monitoring of extreme weather events and impacts in France referred to above, France also contributes to global monitoring efforts. The Institut Pierre Simon Laplace contributes to climate studies on a global scale. The institute studies the atmosphere, the oceans, the ice, the continental surfaces, marine biogeochemistry, the radiative balance of the Earth, and the water and carbon cycles[22]. The National Observation Services are bodies tasked with documenting the formation, evolution and variability of the astronomical system and the terrestrial environment on the long term[23].

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

ONERC collects and disseminates information on the risks of climate change including climate projections. ONERC is in contact with scientific organisations, such as the National Centre for Scientific Research (CNRS), the national meteorological and climatological service (Météo-France), the Research Institute for Development (IRD) and the National Institute of Agronomic Research (INRA).

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[18] See Tout savoir sur la météo, le climat et Météo-France. Available online (accessed the 14th March 2017) http://www.meteofrance.fr/climat-passe-et-futur

[19] See: http://pluiesextremes.meteo.fr/

[20] See: https://www.ecologique-solidaire.gouv.fr/impacts-du-changement-climatique-sante-et-societe

[21] See: https://www.data.gouv.fr/fr/datasets/gaspar/

[22] Institut Pierre Simon Laplace : *A propos de l'IPSL* : https://www.ipsl.fr/Organisation/A-propos-de-l-IPSL

[23] Centre National de Recherche Scientifique (CNRS) *Services Nationaux d'Observation* : http://www.insu.cnrs.fr/node/1228

Climate projections are available through an extensive scientific approach via a reference climate scenarios report, a sea-level rise report and a downscaled indices report.

A scientific report assessing future climate projections until 2100 in France, "The climate in France in the 21th century" was published in 2014[24]. The report was commissioned by the Ministry of Sustainable Development (the current Ministry for the Ecological and Inclusive Transition), and written by scientists from Météo-France in collaboration with scientists from IPSL (Institut Pierre Simon Laplace) and from Cerfacs (Centre européen de recherche et de formation avancée en calcul scientifique). The evolution of precipitations and temperatures were studied. The scenarios are based on three of the four scenarios of the Intergovernmental on Climate Change (IPCC) 5th Assessment Report (AR5).

From 2009 to 2013, the Datar (now CGET) entrusted the regional prefects with the steering of six studies addressing vulnerability and adaptation issues at the interregional level (with the exception of Île-de-France and Overseas territories). Whenever possible, this work was articulated in line with the preparation of the SRCAE in cooperation with the Regional Councils. These six studies have also contributed to the PCAET.

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

Yes / In progress / No

In 2009[25], the Ministry of Ecology, Energy, Sustainable Development and the Sea (the current Ministry for the Ecological and Inclusive Transition) produced a report on the costs of the impact of climate change, which was the result of meetings between ministries to assess the sectoral costs of the impact and adaptation to climate change. These groups were centrally organised by the Ministry of Ecology, Energy, Sustainable Development and the Sea. The groups consisted of experts from research, administration and the private sector. The knowledge base was built around various research projects at national, regional and local level. The sectoral costs in the sectors of health, agriculture, forestry, water, transport infrastructure, building infrastructure, energy, tourism, natural risks and insurances, biodiversity and territories were presented.

In 1999, the Ministry of Ecology, Sustainable Development, Transports and Housing (the current Ministry for the Ecological and Inclusive Transition) launched the research programme 'Management and Impacts of Climate Change'[26] (GICC). Different organisms

[24] Jouzel J., G. Ouzeau, M. Déqué, M. Jouini, S. Planton, R. Vautard, M.Vrac Jouzel et al., 2014, Le climat de la France au XXIe siècle Scénarios régionalisés – Édition 2014 pour la métropole et les régions d'outre-mer, Août 2014p.3, http://www.drias-climat.fr/

[25] Ministère de l'Ecologie, de l'Energie, du Développement Durable et de la Mer (2009) : Changement climatique : Coûts des impacts et pistes d'adaptation. http://www.ecologique-solidaire.gouv.fr/sites/default/files/ONERC_rapport_Climate%20change_Costs%20of%20impacts%20and%20lines%20of%20adaptation_ENG.pdf

[26] See Gestion et Impacts du Changement Climatique : Presentation of the GICC programme. http://www.gip-ecofor.org/gicc/?q=en/node/119

contribute to the programme, such as the French Board for Economic Studies and Environmental Evaluation (D4E), the inter-ministry task-force on the greenhouse effect (MIES), the French Environment and Energy Management Agency (ADEME), ONERC, the French Biodiversity Institute, etc. They gather information on climate change impact, greenhouse gas limitation and adaptation measures to support public policies. Studies include research on impacts on health, agriculture, coastal impacts, forests, fisheries, etc. In 2012, impacts, vulnerability and adaptation options in French overseas regions were evaluated for various sectors[27].

Nevertheless, the 2015 evaluation of the NAP mentions (p.43) that no study has yet been carried out to identify the industrial sectors or tourism sectors most vulnerable to climate change or to indicate opportunities, as it was foreseen in the NAP. To fill the gaps, sectoral vulnerability assessment is expected to be conducted as part of the second NAP.

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

Yes / **In progress** / No

The assessment report (see Indicator 3c) does not consider impacts spreading across borders. The NAS contains some statements about consistency of adaptation action across boundaries, but this objective is not developed in the NAP into specific action. Nevertheless, some detailed and structured assessment of specific transboundary risks is included in material developed under transboundary structure and projects referred to at Indicator 2b above. As noted above, it is expected that the revised NAP will focus more explicitly on transboundary issues.

4. Knowledge gaps

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

Yes / In progress / No

The first NAP (2011) contained a high number of detailed and focused research actions across most thematic sections, plus an additional section on research. ONERC is charged with making recommendations about knowledge needs to inform the NAS, and works in coordination with the relevant national research institutions.

Although it is not fully clear what mechanisms exist for funding (e.g. there is not an explicit link of the needs identified in the NAP with the national research programme[28], or the GICC), a 2013 mid-term evaluation of implementation of the NAP[29] stated that, despite a significant shortfall in the funding initially expected, 94% of the research actions identified in the

[27] See : https://www.ecologique-solidaire.gouv.fr/sites/default/files/ONERC_Rapport_2012_OutreMer_WEB.pdf

[28] Stratégie nationale pour la recherche et l'innovation

[29] *Évaluation à mi-parcours du Plan national d'adaptation au changement climatique*, ONERC 2013

'research' section of the NAP had already been funded[30]. Similar figures were reported for other knowledge gathering actions identified as a priority in other NAP sections. This is evidence that knowledge gaps are identified and funding is mobilised to address them (also through the identification of new co-financing partners). The 2015 evaluation of the NAP identifies new knowledge gaps and makes recommendations, directed at specific government ministries, to address them.

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

Since July 2012, there is free access to the latest French high-resolution climate simulations and data (projections, parameters, indices) provided by the "Drias – les futurs du climat" website, which aims at providing climate services in France.

The ONERC collects and disseminates information on the risks of climate change. Reports are available on the site of the Ministry for Ecological and Inclusive Transition.

The NAP mentions (p.50) the goal to develop a website to spread recent scientific information on climate change. The Wiklimat platform was developed within the framework of the national adaptation plan to climate change. It was established in 2013. The website contains information on initiatives regarding climate adaptation. Different stakeholders can share their experiences and realisations. The information on the website is structured according to sectoral fields (agriculture, biodiversity, energy, forestry, etc.), environments (forests, sea, cities, etc.), on territories (international, Europe, outermost regions, French regions) and on stakeholders (state, communities, associations, private sector, etc.)[31].

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

A partnership between the national education ministry and Météo-France led to the creation of a website about the atmosphere, the climate and its evolution, in support of education programs in primary school, middle school and high school[32].

The French Environment and Energy Management Agency (ADEME) provides advice and expertise on climate change mitigation and adaptation to businesses, local authorities and

[30] For instance, the National Forest Plan fosters research on adaptation solutions. Similar research is also conducted in fisheries and aquaculture.
[31] See http://wiklimat.developpement-durable.gouv.fr/index.php/Portail:Wiklimat
[32] See http://education.meteofrance.fr/, (MEDTL, 2011, p. 52) (Météo-France, 2017b)

communities, government bodies and the public at large. ADEME supports research and innovation and sets up communication campaigns to inform the public and raise awareness[33].

In addition, the current NAP mentions that the strategy on jobs in the green economy has to take the impact of climate adaptation in different sectors into account. Detailed work on the development of the new plan included a focus on employment and training issues, and detailed recommendations on socio-economic impacts (as part of the recommendations of stakeholder working groups published in July 2017). It emphasised the need for a detailed analysis of training requirements.

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

Some progress under the current NAP has been made in all 17 of the sectors for which actions and measures were identified[34]. For example, the project "Climator" assessed the impacts of climate change on agriculture in France from 2007 until 2010 and was carried out by 7 institutes and organisations. The project was financed by the National Research Agency (ANR). Estimations were done at 13 sites representative for France. The work of Climator consists of analyses of possible impacts according to different hypotheses about the climate in the future. Prospective models were created on a biotechnological level[35]. Local strategies for the management of the risk of flooding have been developed as well as coastal Risk Prevention Programs (PPR) that function as climate adaptation measures.

The evaluation of the NAP notes that an intended study to identify the industrial sectors or touristic sectors most vulnerable to climate change or to indicate opportunities, has not in fact been carried out. Sectoral vulnerability assessment is now a priority foreseen in the second NAP.

Work on the development of the new NAP has included a comprehensive cross-sectoral analysis of needs, culminating in the publication of recommendations from stakeholder groups in July 2017, referred to above.

[33] See http://www.ademe.fr/en/about-ademe

[34] Health; water resources; biodiversity; natural risks; agriculture; forestry; fisheries and aquaculture; energy and industry; infrastructure and transport; planning and the built environment; tourism; publicity; training and education; research; finance and insurance; coastal areas; mountain areas.

[35] See Institut National de la Recherche Agronomique : Projet Climator http://w3.avignon.inra.fr/projet_climator/

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

Research was carried out in 2009 to identify sectoral costs and benefits of adaptation action[36]. The 2015 evaluation of the NAP notes the need for further work to identify costs and benefits of adaptation measures in different sectors. However, a stakeholders' consultation, which took place from June 2016 to July 2017, prioritised 33 recommendations grouped in six major domains.

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

Several adaptation measures related to disaster risk reduction are being implemented. More specifically, the French NAS mentions reducing risk inequalities among its four objectives and as one of the four transversal approaches. This notion was translated into the first NAP, which included a dedicated section on natural hazards (28 measures out of 240). These measures are structured around five main areas: i) developing knowledge in sensitive areas, ii) developing observations, iii) a flagship measure on sea level rise; generalising vigilance and alert mechanisms; iv) integrating climate change impacts on natural hazards in urban management; and v) reducing vulnerability and increasing resilience and adaptation to climate change. The second NAP will also contain a "resilience and prevention" domain.

The first NAP included 28 measures related to dealing with natural hazard. Information tools have been developed and practices by professionals on their assessment of natural hazard risks have been reviewed. An iterative process is intended to ensure tools are timely adapted.

Both climate adaptation and disaster risk management have clear structures at national and regional levels. Cooperation between the two is to some extent guaranteed by the role of Prefects in the hierarchy of both.

France has a detailed mechanism for disaster risk management, based on the publication of plans at the level of each département setting out how the response to a range of risks will be organised ("L'organisation de la réponse de sécurité civile"). These include the identification of key climate-related risks (heatwaves, floods, etc), and the impact of climate change is taken into account in their identification, and in the plans themselves. In addition, a specific plan for reducing flood risks (PPRI) is prepared in zones at risk of flooding, with a process for ensuring that it is informed by developments in climate modelling. A national strategy for managing flood risks ("stratégie nationale de gestion des risques d'inondation") was adopted

[36] Ministère de l'Ecologie, de l'Energie, du Développement Durable et de la Mer : *Changement climatique : Coûts des impacts et pistes d'adaptation*. http://www.ecologique-solidaire.gouv.fr/sites/default/files/ONERC_rapport_Climate%20change_Costs%20of%20impacts%20and%20lines%20of%20adaptation_ENG.pdf

in 2014[37], with a focus on the need to identify increased risks as a result of the impacts of climate change.

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 cost of implementing the NAP has been estimated at EUR 171 million, excluding governmental staff costs. The budget of EUR 171 million aimed to finance all the activities in the NAP, including sectoral, transversal and territorial actions. A total of EUR 391 million for future investments has contributed partially to climate adaptation. The financing of the Plan against Drought and the Fast Submersion Plan contributed with another EUR 500 million for the period 2011-2016 to the adaptation needs. However, the final assessment was not able to conclude on the level of actual financial commitment, given the partial coverage of the financial monitoring.

The second NAP is still under consideration, but it is foreseen that the Specialised Commission of the National Committee for Ecological Transition (CNTE) will regularly monitor the budget allocation and execution.

In France, adaptation is also indirectly promoted via the State's role on insurance markets. The State acts as reinsurer of last resort. Moreover, insurers are directly involved in funding risk prevention policies. Levies collected by private insurers contribute to financing state-sponsored preventive action (via the so-called Barnier Fund[38]), such as relocating high-risk assets, risk reduction investments by individuals, and risk assessment and risk management undertakings by local authorities.

France allocated the second-highest level of funding from EU Structural and Investment Funds to Thematic Objective 5 "Promoting climate change adaptation, risk prevention and management", with a total of EUR4866m, the bulk of it from rural development funds.

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**

[37] "Stratégie nationale de gestion des risques d'inondation", Ministère de l'Écologie, du Développement durable et de l'Énergie, 2014 ; https://www.ecologique-solidaire.gouv.fr/sites/default/files/2014_Strategie_nationale_gestion_risques_inondations.pdf

[38] See : http://www.doubs.gouv.fr/Politiques-publiques/Amenagement-du-territoire-Construction-Logement-et-Transports/Financement-des-projets-d-investissement/Fonds-de-prevention-des-riques-naturels-majeurs

Directive 2014/52 on Environmental Impact Assessment (EIA) has been implemented in France by a regulation from 2016[39]. The national legislation requirements are expressed in terms of the need to assess the impact of projects and, in the case of the Strategic Environmental Assessment (SEA) Directive, plans and programmes on the climate. The requirement to address climate impacts is not, however, further specified in order to consider adaptation needs. A guide to climate vulnerability assessment in the national EIA framework is under consideration.

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

Yes / No

Some future risks are being considered in current French disaster risk management plans. Risk is considered in coastal planning through the July 2011 guidelines for storm-surge risk zoning, including future sea-level rise. The projected increase in frequency and intensity of heat waves is included in the "Heatwave Plan" at national and local levels. Similarly, the national strategy for managing flood risks (see Indicator 6c above) identifies increased risk of extreme weather events and the impacts of sea-level rise as key drivers for increased preparedness.

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

Yes / No

The first NAP covered urban planning, coasts and mountain areas. The 2013 mid-term evaluation suggested that the integration of adaptation considerations into key land use and urban planning as well as in coastal and mountain areas was progressing satisfactorily. At the regional and local level, the SRADDET (SRCAE) and the PCAET (PCET) continue to promote the inclusion of adaptation policy in local spatial/urban planning.

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 NAS mentions recommendations regarding agriculture, energy and industry, the transport sector, buildings and habitats, tourism, banks and insurance. The first NAP focused on ensuring that adaptation was mainstreamed in various sectoral policies, with actions and measures listed in 17 sectoral fiches. The sectoral coverage of the NAP was extensive. Adaptation actions were mentioned in relation to agriculture, forestry, fisheries, aquaculture, energy, industry, transport, infrastructure, buildings, and tourism. The 2015 evaluation

[39] Ordonnance no 2016-1058 du 3 août 2016 relative à la modification des règles applicables à l'évaluation environnementale des projets, plans et programmes

suggested that the integration of adaptation considerations into resource management policies is progressing satisfactorily in biodiversity, forestry and agriculture. Some initial steps have also been taken to integrate adaptation into water management cycles, as SDAGEs are revised, including some achievements in specific river basins. As noted above, the recommendations published for the revised NAP in July 2017 include detailed assessment of a wide range of sectoral policy needs.

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

Yes / **No**

The French system has a long history of investigating the role of insurance in risk management, and includes a public mechanism to avoid social exclusion and adverse-selection phenomena in the natural catastrophe insurance market: the Bureau Central de Tarification. It provides insurance to those that cannot obtain it through regular market venues, for either availability or affordability reasons. No indication of other types of public-private cooperation for the financing of adaptation action could be found.

The reinforcement of insurance as a tool to face climate change was one of the objectives of first the NAP, together with the provision of other incentives for investments. The mid-term evaluation of 2013, however, concluded that it was too early to consider that insurance objectives had been met, given the complexity of the issue, and noted that there were significant works still to be implemented to introduce the consideration of resilience to climate change into public investments, and to identify financial resources to finance adaptation. The 2015 evaluation addresses (p.83) the trade-off between solidarity and incentives to adaptation action, notes that new mechanisms have been introduced in the forestry sector to remove some climate risks from solidarity mechanisms and encourage private insurance, in order to improve incentives to action, and suggests that this should be adopted more widely.

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 first NAP sets out lists of actions organised by 17 sectors[40], together with lists of horizontal actions, European and international actions, and for governance actions. Specific sectoral strategies on adaptation were not envisaged, although in many cases, broader sectoral strategies have included a focus on climate adaptation. Most actions and measures have been implemented under the first NAP covering the period 2011-2015; fewer than 10% were abandoned, due to lack of budget or human resource, or because they were no longer relevant. A total of 24 actions were abandoned, relating mostly to biodiversity, forestry,

[40] See footnote 6

research and, especially, financing and insurance (nine actions)[41]. The second NAP is being developed and is now expected to be published around the middle of 2018.

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

Yes / **No**

Regional and local governments are not directly involved in implementing the NAP. One of the first NAP actions included reporting about the consistency of national and regional strategies (i.e. *a posteriori*), instead of identifying cooperation and coordination mechanisms to build adaptation strategies that are territorially consistent (*a priori*). Regional administrations were mentioned as partners of the NAP. For local administrations, the provision of guidance was mostly considered. A dedicated set of measures in the NAP focused on reinforcing the coherence of adaptation action at the subnational level. It mostly consisted of the provision of guidance and development of the framework for additional coordination. The second NAP is intended to reinforce the vertical integration mechanisms. However, it should be noted that climate adaptation mechanisms are built into a wide range of specific policy instruments relevant to adaptation, as detailed in Indicator 1c above.

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

Ademe produced guidelines to support the assessment of climate impacts in major projects and programmes. Some measures are planned, and some have been progressed, but they cannot be considered as implemented.

Regarding infrastructure, France has reviewed design codes and infrastructure standards in the transport sector that are related to climate variables. France is also developing a methodology for assessing the vulnerability of French airports to climate change. A guide looking at transport networks in general is under development. A network of infrastructure managers has been established that meets regularly and exchanges experience.

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

Yes / **No**

The 2015 evaluation document (p.43) mentions that there is a lack of involvement of territorial communities in NAP implementation and too little involvement of professional sectors. The evaluation indicated that the first NAP was mostly implemented by the state and its organisms and focused on national measures. However, preparation and revision of the

[41] See footnote 4

NAP and the NAS are based on a fully participatory process, and the evaluation called for a deepening of the existing processes. A special body has been created as an Advisory Council and will monitor NAP implementation – see Indicator 1b above. France has a highly developed system of stakeholder engagement on environmental issues, based on Chapter 1 of the national Environment Law (Code de l'environnement), which sets out detailed requirements for public and stakeholder engagement in the development of plans, such as the NAP.

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

An annual report on the achievements of the NAP was foreseen in the plan. This annual follow-up is coordinated by ONERC. At the end of 2011, there was a first meeting between the actors in charge of the different themes to discuss the implementation of the plan. A first synthesis of the implementation of the NAP was presented in 2012 at the National Committee of Sustainable Development and the Grenelle of the Environment (CNDDGE), followed by a dossier on progress published in 2013[42]. The progress statements did not provide detailed or aggregate information on the finance made available for implementation.

The General Council for the Environment and Sustainable Development (or Conseil général de l'environnement et du développement durable,CGEDD) evaluated implementation of the NAP in 2015. The report includes quantitative and qualitative information. Around 80% of the actions and 75% of measures of the NAP were achieved according to the evaluation.[43]

As noted in relation to Indicator 1b above, improvements to the process of monitoring implementation are being put in place for the revised NAP.

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

Yes / No

The implementation of the first NAP in different sectors is presented in the central evaluation report (see Indicator 10a). The report indicates the amount of actions per theme that were implemented, delayed or cancelled. In addition, the overall implementation per theme and sector is briefly discussed as poorly, partially or strongly implemented.

[42] ONERC, Dossier d'avancement du 1er Plan national d'adaptation au changement climatique après 2 années de mise en œuvre (2013) : https://www.ecologique-solidaire.gouv.fr/sites/default/files/ONERC_PointAvancement_2ans_2013.pdf

[43] See footnote 2

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

Yes / **No**

Cooperation with local and regional administrations on monitoring adaptation action seems quite limited. In the absence of a multilevel governance system for adaptation, a procedure for collecting information on actions carried out below the national level does not exist. As part of the 'governance' actions in the development of the revised NAP, some studies, such as the 2015 evaluation report, have focused on assessing the coherence between national and territorial approaches to climate adaptation. This included the publication of a fiche elaborating the NAP to action at lower territorial levels, which also formed part of the stakeholder recommendations in 2017. This includes stakeholder recommendations for improved coherence, and the creation of regional adaptation committees. The second NAP is intended to address this weakness, but at this moment, the process is under construction.

11. Evaluation

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

Yes / No

The first NAP, covering a four-year period from 2011 to 2015, was planned to be evaluated at the midway stage, in 2013, with a full evaluation carried out in 2015 with a view to its revision and updating. As noted above, the NAP was evaluated in 2015. As set out in Section B1 above, a process for revising the NAP, and producing a new NAP, is under way. The second NAP is planned to be validated during the first anniversary of the Climate Plan in July 2018.

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

Yes / No

The different stakeholders were not involved systematically in the follow-up of the implementation or evaluation of the first NAP, but have been comprehensively involved in preparation of the new NAP (and hence the review of the first NAP). The first NAP defined that the General Director of Energy and Climate had to chair an evaluation committee together with stakeholders such as representatives of the administration in charge of the implementation of the NAP, national and local representatives and scientists. Annual meetings on the implementation and evaluation were foreseen. This committee was not, however, created, and instead the National Council on the Ecological Transition acted as the monitoring and evaluation committee.

Stakeholders have been actively participating in the preparatory work leading to the updated NAP. A special body has been created as an Advisory Council that will monitor the NAP implementation progress.

Based on the available information, it can be concluded that stakeholders are involved in the evaluation of the NAP.

SUMMARY TABLE

Adaptation Preparedness Scoreboard		
No.	**Indicator**	**Met?**
Step A: Preparing the ground for adaptation		
1 Coordination structure		
1a	A central administration body officially in charge of adaptation policy making	**Yes** / No
1b	Horizontal (i.e. sectoral) coordination mechanisms exist within the governance system, with division of responsibilities	**Yes** / In progress / No
1c	Vertical (i.e. across levels of administration) coordination mechanisms exist within the governance system, enabling lower levels of administration to influence policy making.	**Yes** / In progress / No
2 Stakeholders' involvement in policy development		
2a	A dedicated process is in place to facilitate stakeholders' involvement in the preparation of adaptation policies	**Yes** / No
2b	Transboundary cooperation is planned to address common challenges with relevant countries	**Yes** / No
Step 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
3b	Scenarios and projections are used to assess the economic, social and environmental impacts of climate change, taking into account geographical specificities and best available science (e.g. in response to revised IPCC assessments)	**Yes** / In progress / No
3c	Sound climate risks/vulnerability assessments for priority vulnerable sectors are undertaken to support adaptation decision making.	**Yes** / In progress / No
3d	Climate risks/vulnerability assessments take transboundary risks into account, when relevant	Yes / **In progress** / No
4 Knowledge gaps		

Adaptation Preparedness Scoreboard		
No.	**Indicator**	**Met?**
4a	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		
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 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	**Yes** / No

Adaptation Preparedness Scoreboard		
No.	**Indicator**	**Met?**
	maritime spatial planning policies take into account the impacts of climate change	
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
8e	Adaptation is mainstreamed in insurance or alternative policy instruments, where relevant, to provide incentives for investments in risk prevention	Yes / **No**
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
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 Monitoring and reporting		
10a	NAS/NAP implementation is monitored and the results of the monitoring are disseminated	**Yes** / No
10b	The integration of climate change adaptation in sectoral policies is monitored and the results of the monitoring are disseminated	**Yes** / No
10c	Regional-, sub-national or local action is monitored and the results of the monitoring are disseminated	Yes / **No**
11 Evaluation		
11a	A periodic review of the national adaptation strategy and action plans is planned	**Yes** / No
11b	Stakeholders are involved in the assessment, evaluation and review of national adaptation policy	**Yes** / No