Rationale, approach and added value of Key Type of Measures for adaptation to climate change

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1 Introduction

By April 2020, all EU Member States (MS) had at least one national adaptation policy framework officially adopted (EEA, 2020). In almost all Member States, this adaptation policy process started with the development of a National Adaptation Strategy (NAS), followed by a National Adaptation Plan (NAP). Both NASs and NAPs cover a broad range of adaptation options and measures that, while often targeting the same vulnerable systems and problems, are highly heterogeneous in the way they are organized, labelled and described across Member States. Examples of this heterogeneity can be found in naming and taxonomies, the approaches to assessing and describing impacts and vulnerabilities, structural organization, the definition of the sectors that are addressed, and the level of detail regarding definition of implementation steps and instruments, among other dimensions.

In turn, this creates difficulties in developing an EU-wide common monitoring and reporting scheme and hinders comparative studies, knowledge transfer and cooperation across countries. To tackle these challenges the European Topic Centre on Climate Change Impacts, Vulnerability and Adaptation (ETC/CCA) developed a common framework and reporting approach that allows for clustering of adaptation options and measures across Member States, to enhance comparability and to ease reporting procedures under the Energy Union Governance Regulation (EU, 2018) and Implementing Act (EC, 2020). Such an approach also allows better comparisons and assessments at the EU level.

Additionally, this approach is expected to provide a benefit to the further development of the European Climate Adaptation Platform Climate-ADAPT ([1]), since it can be applied to the categorization of the various adaptation options that are presented there. This enables users to quickly find information on relevant actions as well as to trace them back to NAS/NAP documents, when available.

This document presents the work carried out by the ETC/CCA and suggests a common EU framework and reporting approach for climate change adaptation in the form of Key Type of Measures (KTMs). It follows approaches that have been considered as useful in other EU policy areas.

2 State of the art and point of departure

A scoping paper on KTMs was prepared by the ETC/CCA in 2019, which provided an overview of possible ways of how “adaptation options and measures could be clustered and possibly compared between Member States” (see Annex 1 Options for adaptation KTMs).

The concept of KTMs was initially developed in 2012 to simplify reporting under the Water Framework Directive (WFD). The 2010 (EC, 2019) reporting by Member States showed many differences and interpretations of the requirements and was therefore further developed in 2014. Additionally, KTMs were later developed for reporting under the EU Floods Directive (EU, 2007) and the Marine Strategy Framework Directive (EU, 2008). Within the Rural Development Policy ([2]), a similar approach is used and measures are codified and divided in main and sub-measures; Member States are obliged to use a KTM codification to report progress on implementation and budgetary spending.

([1]) https://climate-adapt.eea.europa.eu/

([2]) Regulation (EU) No 1305/2013 or Regulation (EU) No 1303/2013 are coded under Commission Implementing Regulation (EU) No 808/2014 of 17 July 2014 laying down rules for the application of Regulation (EU) No 1305/2013 of the European Parliament and of the Council on support for rural development by the European Agricultural Fund for Rural Development (EAFRD).

Ongoing efforts related to the development of adaptation KTMs are also connected with the current (and future) implementation of the EU Strategy on Adaptation to Climate Change (EC, 2013). Under this policy framework, there is a clear interest arising from the Evaluation of the EU Adaptation Strategy (EC, 2018b) that the Climate-ADAPT platform further improves the way and format used to present available adaptation information ([3]). Climate-ADAPT work carried out in 2019, and partly in 2020, was geared towards improving how currently available adaptation options and measures are presented, and towards including additional information that aims at providing inspiration to adaptation practitioners across regions, countries and administrative levels. To that end, KTMs have been proposed as a useful approach.

Within Climate-ADAPT, adaptation options and measures are currently described using three categories: (i) grey, (ii) green and (iii) soft. Grey measures refer to technological and engineering solutions to improve adaptation of territories, infrastructures and people. Green measures are based on ecosystem-based (or nature-based) approaches and make use of the multiple services provided by natural ecosystems to improve resilience and adaptive capacity. Finally, soft measures (non-infrastructural) include policy, legal, social, management and financial measures that can alter human behavior and styles of governance, contributing to improving adaptation capacity and to increasing awareness about climate change.

Additionally, Climate-ADAPT organizes available adaptation options along the categorization (IPCC, 2014) of the 5th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR5), namely:

- Institutional: Economic options
- Institutional: Government policies and programmes
- Institutional: Law and regulations
- Social: Behavioural
- Social: Educational options
- Social: Informational
- Structural and physical: Ecosystem-based adaptation options
- Structural and physical: Engineering and built environment options
- Structural and physical: Service options
- Structural and physical: Technological options

The IPCC AR5 terminology defines “adaptation options” as: “The array of strategies and measures that are available and appropriate for addressing adaptation needs. They include a wide range of actions that can be categorized as structural, institutional, or social”. (IPCC, 2014)

In line with this definition, but adapted to the heterogeneous terminology used across Member States, within this report, the authors refer to “adaptation options and measures” as “the array of adaptation strategies, actions, options and measures that are available and appropriate for addressing adaptation needs”.

([3]) https://climate-adapt.eea.europa.eu/knowledge/adaptation-information/adaptation-measures

3 Rationale for developing KTMs for adaptation reporting

3.1 Why harmonize adaptation reporting?

One of the main expected advantages of KTMs for adaptation is the improvement of the quality of reporting, both in terms of the user/reporter experience and of the reporting output data itself. In turn, more harmonized reporting and clearer outputs are expected to support the enhancement of adaptation planning and monitoring at the EU level and consequently at the Member State level.

Expected benefits of this approach include, for example, mutual learning, cross-fertilization and inspiration across Member States. The creation of comparable monitoring data across Member States allows for the advancement of comparative reviews, research and knowledge transmission on the transnational and European scale. It also allows for the identification areas where adaptation efforts are less developed. Lessons learned have the potential to inspire revision of NASs/NAPs, including e.g. more operational and verifiable definitions of adaptation goals, options and measures, thus contributing to evaluation of adaptation policies and assurance of their effectiveness, efficiency and equity in the longer term. At the same time, the diminution of time spent on reporting and greater ease of reporting with clearer and more homogenous procedures reduces the efforts required by Member States and allows for more efficient data processing at the EU level.

3.2 Why develop KTMs for adaptation reporting?

The main rationale behind current efforts to develop KTMs is the pursuit of a clear and effective reporting approach that can be systematically applied to adaptation options and measures described in NASs and NAPs, or in other adaptation-related policies at sectoral or sub-national territorial/administrative levels. It also need to be stressed, that national and regional “catalogues of measures and options” are structured in different ways due to countries governance structures, relevance of sectors and themes linked to priorities, its decentralized implementation and through the promotion of mainstreaming. However, experiences in other reporting areas have shown that the EU reporting requirements modify the existing structures in the long term.

3.3 Lessons from the past

Results of existing reporting schemes using KTMs in various other policy areas such as water, floods and rural development offer valuable lessons on how adaptation options and measures at the Member State level can be reported and how to support data processing and comparison at the EU level. However, a general lesson learned is that only meaningful information will be reported in a voluntary reporting scheme if an added value for the reporting authority such as for Member State representatives is given.

Additionally, national adaptation actions have already undergone a first trial reporting period between 2015 and 2019, based on the reporting requirements for EU Member States (MS) detailed in the Article 15 of the Monitoring Mechanism Regulation (MMR) (EU, 2013). This experience offers additional insight into reporting needs and challenges, with the added benefit of being directly related to adaptation as a reporting matter. Existing documents such as the adaptation preparedness scoreboard country fiche (EC, 2018a), which were used in the evaluation of the EU adaptation strategy, have also been reviewed to extract lessons on how this policy area has been reporting its advances.

Finally, factual in-person accounts of how the Members States have been dealing with these reporting requirements (including mitigation efforts) have also been considered in this work. Such accounts have been retrieved in multiple instances, including for example, meetings of the Working Group 6 on Adaptation, EIONET events such as its annual workshop on Climate Impacts, Vulnerabilities and Adaptation ([4]), and other science-practice conferences and seminars across Europe ([5]).

The objective here is not to be extensive in detailing the challenges associated with this type of reporting, but rather to provide a quick overview of previous experiences. To that end, some of the key lessons to be highlighted include:

- Many adaptation actions are occurring, but they are not being labelled as adaptation, e.g. sustainable agriculture or natural hazard management, because of reporting difficulties in detecting them, i.e. due to monitoring difficulties (autonomous adaptation, implicit adaptation, adaptation 'under cover').
- What constitutes adaptation is highly context-dependent, since whether or not a certain action has positive adaptation outcomes depends on specific vulnerabilities and the way options and measures are put into practice, which can both be highly variable across and within countries.
- Only meaningful information will be reported in a voluntary reporting scheme if an added value for the reporting authority such as for Member State representatives is given.
- Adaptation options and measures as part of NASs and/or NAPs are extremely heterogeneous in terms of details and scope and can be highly influenced by, e.g., the dimension of a country, its governance and administrative set up, and its science-practice interfaces.
- Reporting without any detailed specifications and guidelines results in a diverse set of information and different levels of detail, often rendering the collected information incomparable and partly not used once the reporting is made.
- Reporting requirements are continuously developing as adaptation policies (e.g. NAS, NAP, sectoral adaptation policies) evolve.
- European reporting requirements for adaptation were revised in response to the adoption of the Energy Union Governance Regulation (EU, 2018), presenting an opportunity to improve the overview of adaptation occurring at the Member State level and to aggregate, as far as possible, reporting efforts at the European scale.

On this last lesson it is important to mention that the upcoming reporting requirement under the Implementing Act (EC, 2020) for adaptation: "*Annex I, Information on national adaptation actions pursuant to Article 4*" (under heading 3.3) focuses on "*summaries of national strategies, policies, plans and efforts, with a focus on goals and objectives, foreseen actions, budget and timeline*" and (under heading 4.2) on the "*state of play of the implementation of measures planned"*(referring to points 3.3 to 3.6), *"including an overview of the subnational level and the disbursement of funding to increase climate resilience"*.
Heading 4.2 is also closely linked to "*Table 1 – Classification of climate-related hazards*", and is where additional opportunities for improving the reporting approach, such as the ones presented by the use of KTMs, could in principle be applied.

([4]) https://forum.eionet.europa.eu/nrc-climate-change-adaptation/library/workshops-meetings/
([5]) See for example the European Climate Change Adaptation conference: https://www.ecca2019.eu/

3.4 How to develop KTMS for adaptation reporting? – Options appraisal

Based on all previous reporting experiences, there is a clear indication of the need to streamline the reporting exercise in order to use a more consistent approach across Member States. This needs to be taken into account considering the new electronic reporting tools foreseen under ReportNet 3.0 ([6]).
At the European level, it is expected that the reported information on KTMs can be used to gain a more detailed overview on adaptation practices in the EU Member States and thus allow for the derivation of additional information on the progress of the implementation of the EU Adaptation Strategy, also identifying gaps of action. Additionally, the outcomes from these reporting procedures will assist the European Commission to better track the expenditures on adaptation at the national level and to identify further needs from Member States for support, e.g. in terms of knowledge provision and capacity building. Furthermore, the reporting will also be used to present information to the European Parliament, Council and general public, but also to relevant international bodies ([7]).

On the national level, the outcomes from the KTM reporting can provide Member States with a valuable source of information about what their counterparts are doing in the area, potentially serving as inspiration and increasing the potential for collaboration between and across scales. In addition, lessons learned from the KTM reporting can help Member States to peruse more targeted support needs and to identify key areas of knowledge and experience sharing with other countries.

Finally, a harmonized adaptation reporting (using KTMS as a taxonomy for measures) can assist Member States in setting up or further progressing their own internal reporting processes, thus better adjusting requests from the EU-level and the need to collect targeted information at the sub-national (local and regional) level.

Within the ETC/CCA scoping paper three options for adaptation KTMs and links to existing systems were put forward, namely (for more details see Annex 1 Options for adaptation KTMs):

- Option 1: Use the IPCC AR5 categories system.
- Option 2: Develop a completely new EU categories system.
- Option 3: Use the IPCC AR5 categories system as the basis for a more detailed new EU system, linking various attributes together.

All three options were analyzed considering international reporting obligations, but also existing EU obligations in other EU policies, such as water, marine and agriculture.

It should be noted that none of the options for KTM systems is able to completely address the complex and integrated nature of adaptation actions and their heterogeneity across countries and regions. Several adaptation options and measures can, in principle, fall within multiple categories and be described using multiple specifications. For example, the setup of food storage and preservation facilities often combines physical, technical and economic measures, and while the adoption of a policy can be described in its own category, often its implementation requires actions to be inscribed in different categories.

Additionally, it is clear that the overall success of adaptation KTMs as a reporting tool will not only strongly depend on the willingness of Member States to provide relevant information, but also on the proper design of the reporting system used to collect that information.

([6]) In 2018, the EEA has initiated Reportnet 3.0 project to promote and modernise eReporting with the latest IT solutions. This modern reporting infrastructure will stepwise integrate data flows under the EU environmental legislation, taking into account national capabilities and provide a platform that supports new types of data (e.g. Copernicus, citizen science) and data from an extended group of stakeholders. Reportnet 3.0 will act as a central hub through which all e-Reporting activities handled by the EEA with Eionet and other partners will be performed.
([7]) The adaptation reporting is for example in line with the reporting arrangements agreed upon under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement.

4 Development of KTMs for adaptation

4.1 Choice of approach

Based on the advantages and disadvantages of the three options presented in the previous chapter, 'option 3' was seen as the most relevant way forward and chosen for further development in 2020. The main strength of option 3 is that it combines being in line with the IPCC classification together with allowing for a more tailored approach at the EU level. Another advantage is that the upcoming new reporting systems under the Energy Union Governance regulation provide the possibility to integrate existing adaptation options into the KTM system more easily (see Figure 1: Process of developing KTMs for adaptation reporting (under the Energy Union Governance Regulation).

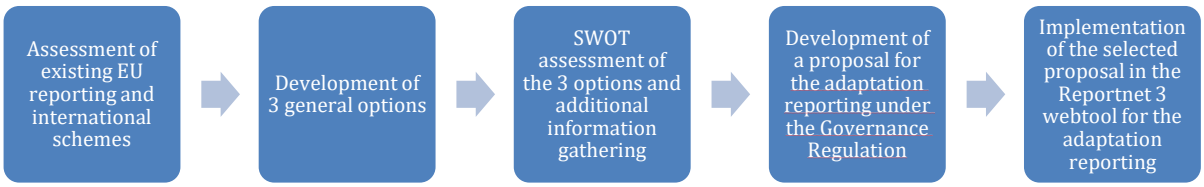

Figure 1: Process of developing KTMs for adaptation reporting (under the Energy Union Governance Regulation)

4.2 Progress on KTMs development in 2020

A typology of KTMs based on the IPCC categorization and connected to existing reporting experiences has been developed and a more detailed set of specifications describing KTMs defined. To this end, different sources of information were scrutinized and considered in the steps for developing KTMs (see Box 1: Progress on KTMs development in 2020).

Box 1: Progress on KTMs development in 2020

- The contents of the 2019 scoping paper from option 3 were further developed.
- Experience from previous reporting among Member States under the MMR was investigated.
- The IPCC AR5 "adaptation needs and options" classification system (where an illustrative list of examples is provided) was taken into account as important input.
- Different NASs and NAPs ([8]) were screened in order to get a fresh perspective on the diversity of adaptation measures.
- Diverse sub-national efforts like climate change adaptation in Portugal (Marreiros, 2019) and KLAR! Climate Change Adaptation Model Regions for Austria ([9]) were scrutinized and considered.
- International efforts like e.g. the typology of adaptation options financed by the Global Environment Facility (GEF) ([10]) were reviewed and taken into account.
- The reporting scheme established in the climate mitigation field (PaM – Policies and Measures) was assessed and potential for structural similarities has been capitalised on.

([8]) https://climate-adapt.eea.europa.eu/countries-regions/countries
([9]) https://klar-anpassungsregionen.at/
([10]) https://www.sciencedirect.com/science/article/pii/S0959378014000065

One important consideration relates to the reporting system in place in the climate change mitigation field. There, so-called PaMs (Policies and Measures) are established, and their reporting follows a certain structure, which has been assessed in more detail (see Annex 2 Potential structural synergies between climate change mitigation Policies and Measures and adaptation Key Type Measures). Comparing the PaMs approach with the categorization of adaptation options and measures shows that there are structural similarities.

The further development of the KTM system needs to be seen as an open and iterative learning process that will need further improvement during subsequent reporting cycles under the Governance Regulation.

5 Proposal for adaptation KTMs and further steps

The outcomes of the development steps are the following five Key Type Measures:

- A: Governance and Institutional
- B: Economic and Finance
- C: Physical and Technological
- D: Nature Based Solutions and Ecosystem-based Approaches
- E: Knowledge and Behavioural change

In order to support Member State representatives in the categorization, adaptation measures have been first divided into the five main categories listed above (KTMs, from A to E) and then further structured into related sub-categories (Sub-KTMs; cf. bullet points A1-E2) and specifications for each Sub-KTM (see Table 1: KTMs, Sub-KTMs and Specifications), namely:

As stated above, no KTM system will be able to fully address the complex and integrated nature of adaptation and of its reporting needs. Also, the proposed taxonomic scheme does not completely remove the difficulty that several adaptation options and measures can, in principle, fall within multiple categories and be described using multiple attributes. It will be up to the Member States to select the one that fits most.

In order to support representatives of EU Member States on reporting KTMs, illustrative examples of KTMs, sub-KTMs, specifications and more details regarding the adaptation measure/action are provided (see Annex 3 Illustrative examples of Key Type Measures, Sub-Key Type Measures and Specifications).

However, at this stage KTMs constitute a positive approach to support Member States' reporting efforts, to help identify information gaps and to serve as inspiration and a source of learning within and across MS.

In 2021, it is envisaged to take the following further steps on developing KTMs (see Box 2: Further steps on KTMs development in 2021):

Box 2: Further steps on KTMs development in 2021

- Collecting KTMs, sub-KTMs and specifications as voluntarily reported by EEA member countries (making the reported information available)
- Assessing the provided and collected information (what can be learned from the process and from the content)
- Deriving recommendations for contributing to mutual learning
- Suggesting changes for the 2023 Adaptation reporting (both in terms of process and content)

Table 1: KTMs, Sub-KTMs and Specifications

KTM	Sub-KTM	Specifications
A: Governance and Institutional	**A1: Policy instruments**	• Creation / revision of policies • Creation / revision of (implementing) regulations
	A2: Management and planning	• Mainstreaming adaptation into other sectors • Creation / revision of technical rules, codes and standards
	A3: Coordination, cooperation and networks	• Creation / revision of ministerial coordination formats • Creation / revision of stakeholder networks
B: Economic and Finance	**B1: Financing and incentive instruments**	• Creation / revision of incentive mechanisms • Creation / revision of funding schemes
	B2: Insurance and risk sharing instruments	• Creation / revision of insurance schemes and products • Creation / revision of contingency funds for emergencies
C: Physical and Technological	**C1: Grey options**	• New physical infrastructure(s) • Rehabilitation, upgrade and / or replacement of physical infrastructure(s)
	C2: Technological options	• Early warning systems • Hazard / risk mapping • Service / process applications
D: Nature Based Solutions and Ecosystem-based Approaches	**D1: Green options**	• Creation of new / improvement of exiting green infrastructure • Natural and/or semi-natural land-use management
	D2: Blue options	• Creation of new / improvement of existing blue infrastructure • Natural and / or semi-natural water and marine areas management
E: Knowledge and Behavioural change	**E1: Information and awareness raising**	• Research and innovation • Communication and dissemination • Decision support tools and databases
	E2: Capacity building, empowering and lifestyle practices	• Identification and sharing of good practices • Training and knowledge transfer • Reporting on lifestyle practices and behaviours

In addition to this ETC/CCA Technical Report, practical instruction will be made available as part of the support to Member States authorities responsible for the Adaptation Reporting under the EU Governance Regulation which supports them, when providing voluntary information on KTMs.

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Annex 1 Options for adaptation KTMs

Option 1: Use the IPCC system from AR 5

Description: The European Commission asks Member States to report in accordance with the IPCC system in AR 5 (see above). The modification made would be:

- A coding system that is applied in order to ease the electronic reporting.
- Request for reporting on additional attributes, such as i) EU and national budget spent; ii) area covered or number of projects applied; iii) date when the measure became/becomes effective; iv) sector in which the measure is implemented; v) information of the effects of the measures.

Link with other measure categorization systems: The existing KTM systems in the EU could easily be introduced as examples in the existing IPCC system, showing the links between the different policy areas.

Strengths and weaknesses: The main strength of this approach is that the IPCC system is accepted as a worldwide "standard" and if non-EU countries would report accordingly to it some kind of comparison on the global level would be possible in addition to EU internal assessments.

The main weakness is that the IPCC system is rather broad in its categories and accumulates a wide set of measures under each category. Based on the experience made within existing EU KTM reporting it can be assumed that Member States will report very generally (not completing all information related to the above-mentioned attributes making it difficult to understand what the reported measure would achieve. For example, depending on the details Member States report it might not allow sector specific assessments (e.g. technological measures can range from agricultural measure to infrastructure measures in the water sector).

Option 2: Develop an individual EU system

Description: The EU develops its own system that is based on existing reporting requirements, bundling existing reporting requirements related to adaptation and complimenting the system with new requirements in those adaptation areas where no appropriate reporting systems exist.

Link with other measure categorization systems: Seize and build upon exiting KTM systems in the EU.

Strengths and weaknesses: The main advantage is that such a system could extract data from existing reporting information sets, reducing the reporting burden in Member States. Developing a new system has also the advantage that it can be tailor made to the needs of the EU (e.g. allowing more detailed information in relation to the progress within Member States but also in relation to the announced second EU adaptation strategy). Specifications related to the KTMs could be developed in a way that they allow for a good and detailed assessment (assuming that Member States report the information), which can be used for evidence-based policy making.

The main weakness is that developing such a system and agreeing on it with the Member States will be a time and resource consuming process. Member States might block certain developments arguing with the administrative burden and extensive costs. It might also be the case that policy areas that are not within the EU competence might not be included as part of the KTM system.

Option 3: Use the IPCC system as a basis for a more detailed EU system that links various attributes together

Description: The EU will refine the IPCC system by adding more sub-categories to each category and adding a detailed set of attributes as presented under option 1.

Link with other measure categorization systems: The existing KTM systems in the EU could easily be introduced as examples in the existing IPCC system, showing the links between the different policy areas.

Strengths and weaknesses: The main strength is that such an approach combines the fact that reporting could be in line with the IPCC classification while at the same time allowing for a more tailored approach at the lower level consistent with EU internal needs. The development of the system can be done in several cycles. Certain measures with a high importance will be tailored first (e.g. technical measures related to Structural funds) and those with a lower priority can be considered at a later stage also allowing for learning from earlier cycles. Another advantage is that existing reporting systems and KTMs can be integrated more easily.

The main weakness is that Member States might also block the refining of certain KTMs with the argument of administrative burden.

Annex 2 Potential structural synergies between climate change mitigation Policies and Measures and adaptation Key Type Measures

In the field of Climate Change Mitigation, the term PaMs (Policies and Measures) is well established. Based on the definition of the UNFCCC ([11]), policies and measures (PaMs) refer to "(…) the steps taken or to be taken by countries to reduce greenhouse-gas emissions under the UNFCCC and the Kyoto Protocol. Some possible policies and measures are listed in the Protocol and could offer opportunities for intergovernmental cooperation."
The European Commission Implementing Act (EC, 2020) (ANNEX XXIV – Reporting on national policies and measures pursuant to Article 37, Table 1: sectors, gases and types of policy instruments) provides the structure for the reporting of PaMs by EU Member States from 2021 onwards. The simplified structure of the upcoming reporting (see Table 1 in Annex XXIV) is presented below:

- PaM number
- Name of policy or measure
- Single or grouped policy or measure
- In case of a grouped policy or measure, which single policies or measures does it cover
- Geographical coverage
- Sector(s) affected
- GHG(s) affected
- Objective
- Quantified objective
- Short description
- Assessment of the contribution of the policy or measure to the achievement of the long-term strategy referred to in Article 15 Regulation (EU) 2018/1999
- Type of policy Instrument
- Union policies, which resulted in the implementation of the PAM
    - Union policy
    - Other
- Status of implementation
- Implementation period
    - Start
    - Finish
- Projections scenario in which the PaM is included
- Entities responsible for implementing the policy
    - Type
    - Name
- Indicators used to monitor and evaluate progress over time
- Description
    - Year
    - Value
- Reference to assessments and underpinning technical reports
- General comments

([11]) https://unfccc.int/process-and-meetings/the-convention/glossary-of-climate-change-acronyms-and-terms#p

There are structural similarities between the climate change mitigation PaMs and the adaptation KTMs. Both affect a wide range of economic sectors and societal domains and for many nationally defined measures in the different sectors, related EU policies are in place. The way measures are grouped is different across countries e.g. due to specific governance structures in place (so there is a shared responsibility between the entities responsible for the implementation of different measures involving others than the organization for the coordination of the adaptation policies). Ultimately, both PaMs and KTMS refer to specific objectives, but for adaptation, these will be mainly qualitative (and so will be several indicators to measure adaptation progress, see (ETC/CCA, 2018)).

When looking at the development of KTMs, sub-KTMs and specifications, the categorization of adaptation measures or actions follows a similar structural approach (e.g. the measure description, sector affected, status of the measure), which is highlighted in yellow:

- Title of measure or action
- KTM
- Sub-KTM
- Specification
- Measure or action description
- Climate threat(s)
- Sector(s) affected
- Status of measure or action
- Administrative level
- Costs of implementing the measure or action
- References/Examples
- additional (*to be further developed)*
    - *additional file*
    - *implementation period,*
    - *effectiveness or efficiency,*
    - *Increase of resilience,*
    - *increase of adaptive capacity*

Annex 3 Illustrative examples of Key Type Measures, Sub-Key Type Measures and Specifications

The following table provides illustrative examples of KTMs, Sub-KTMs and Specifications how to fill in the optional reporting.

Illustrative examples of filling in KTMs, sub-KTMs, specifications and more details regarding the adaptation measure or action

Title of the measure or action	KTM	Sub-KTM	specification	Measure or action description	Climate threat(s)	Sector(s) affected	Status of measure or action	Administration level	Costs of implementing the measure or action	References/ Examples	Upload additional files
Forest strategy	Part A: Governance and Institutional	Part A1: Policy	Creation / revision of policies	*Country A* has created a new law that requires forest owners to develop an adaptation strategy to ensure land slide prevention and to increase biodiversity	all	Forestry	implemented/completed (measure has been implemented)	National	5.000.000.- €	web link	
Nature conservation plan	Part A: Governance and Institutional	Part A2: Management and Planning	Mainstreaming adaptation into other sectors	The nature conservation plan has been revised, considers climate risks and includes adaptation elements	Heat stress; drought and soil degradation	biodiversity (including ecosystem-based approaches); water management; rural development	being implemented (measure is currently being implemented)	National	n/a	web link	Nature conservation plan (pdf)
Interministerial Working Group	Part A: Governance and Institutional	Part A3: Coordination, cooperation and networks	Creation / revision of ministerial coordination formats	An interministerial working group is in place that discusses NAS and NAP as well as its implementation, monitoring and evaluation, headed by the ministry in charge of NAS coordination	All	All	ongoing	National	n/a	web link	Protocols, when publicly available

Title of the measure or action	KTM	Sub-KTM	specification	Measure or action description	Climate threat(s)	Sector(s) affected	Status of measure or action	Administration level	Costs of implementing the measure or action	References/ Examples	Upload additional files
Health funding scheme	Part B: Economic and Financing	B1: Financing and incentive instruments	Creation / Revision of incentive mechanisms (e.g. sectoral),	The current national funding scheme for *xy* is now subject to a climate proofing assessment. Results are expected by 2022	all	Public health	studies ongoing (research is being done)	National	n/a	web link	
Climate Risk insurance	Part B: Economic and Financing	B2: Insurance and risk sharing instruments	Creation / revision of insurance schemes and products	The current agricultural insurance product portfolio is extended with an index insurance on agricultural drought	Water scarcity and drought	Agriculture	being implemented (measure is currently being implemented)	National / Private sector	n/a	web link	
Mandatory insurance scheme for farmers	Part B: Economic and Financing	B2: Insurance and risk sharing instruments	Creation / revision of insurance schemes and products	Mandatory insurance scheme for farmers against natural catastrophes	all	Agriculture	Implemented	Private sector / National	n/A	web link	
Increasing of dykes height	Part C: Physical and Technological Approaches	C1: Grey options	New physical infrastructure	Several coastal and inland dykes will be increased by 0.5/1m	Floods	Water management	planned	National	50.000.000,.€/year		
Multi-hazard early warning system	Part C: Physical and Technological Approaches	C2: Technological options	Multi-hazard early warning	Existing early warning systems and new ones (e.g. for vector-borne diseases) are integrated in a multi-hazard early warning system	heat	health	planned	National	20.000.-€/year	web link	

Title of the measure or action	KTM	Sub-KTM	specification	Measure or action description	Climate threat(s)	Sector(s) affected	Status of measure or action	Administration level	Costs of implementing the measure or action	References/ Examples	Upload additional files
Fire hazard management in mountain forest	Part D: Nature Based Solutions and Ecosystem-based Approaches	D1: Green options	Natural and/or semi-natural land-use management	Improvement of mountain forests and its infrastructure to access the area in case of forest (wild) fire	Wildfire	Forestry	Planned	Regional	5.000.000.-€/year		
Increase of marine protected areas	Part D: Nature Based Solutions and Ecosystem-based Approaches	D2: Blue options	Natural and/or semi-natural water and marine areas management	Increase of marine protected area by *xy* km²	ocean acidification	marine and fisheries	Planned	National	n/a		
Research funding program on climate change adaptation	Part E: Knowledge and Behavioural Change	E1: Information and awareness raising	Research and innovation	Adaptation research funding program	all	all	Ongoing	National (involvement of international partners possible)	4.500.000.-€/year	web link	
Training on adaptation for spatial planners	Part E: Knowledge and Behavioural Change	E2: Capacity building, empowering and lifestyle practices	Training and knowledge transfer	Mandatory Training for all spatial planners in administration on adaptation	all	Land use planning	Ongoing	National / Regional	10.000.-€/year	web link	

Note: all information from column 'Measures or action description' up to column 'References/Examples' for illustration purposes only. Country A stands for a non-specified country and xy for a non-defined value.

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