European Commission

Accelerating the Transition to a Climate Prepared and Resilient Europe

Interim report of the Mission Board for Adaptation to Climate Change, including Societal transformation

Independent Expert Report

Research and Innovation

Accelerating the Transition to a Climate Prepared and Resilient Europe
Interim report of the Mission Board for Adaptation to Climate Change, including Societal Transformation

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EUROPEAN COMMISSION

Accelerating the Transition to a Climate Prepared and Resilient Europe

Interim report of the Mission Board for Adaptation to Climate Change, including Societal Transformation

This document is an interim report of the Mission Board's progress towards the definition of a Mission in the area of Adaptation to climate change including societal transformation. The draft Mission outline presented will be the basis for further discussion and consultation, including with European citizens, resulting in adjustments and refinements for the Mission Board's final advice.

Directorate-General for Research and Innovation
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ACCELERATING THE TRANSITION TO A CLIMATE PREPARED AND RESILIENT EUROPE

1 Vision

In a world of increasing and mutually reinforcing climate disruptions and socio-economic and environmental challenges, the vision of this Mission is to turn the urgent challenge of adapting to climate change into an opportunity to make Europe more resilient, climate prepared and fair. By 2030, the Mission will:

1. ***Prepare Europe to deal with climate disruptions****, and assist all citizens, communities and regions in better understanding, preparing for and managing climate risks such as heatwaves, forest fires, droughts, floods, storms and diseases;*

2. ***Accelerate the transition to the future we want****, supporting 200 European communities and regions in co-creating a vision and innovation pathways, as well as developing solutions and enabling conditions for transformative adaptation within safe planetary boundaries;*

3. ***Build deep resilience*** *by* ***scaling up actionable solutions triggering societal transformations*** *through 100 deep demonstrations of resilience across a number of European communities and regions.*

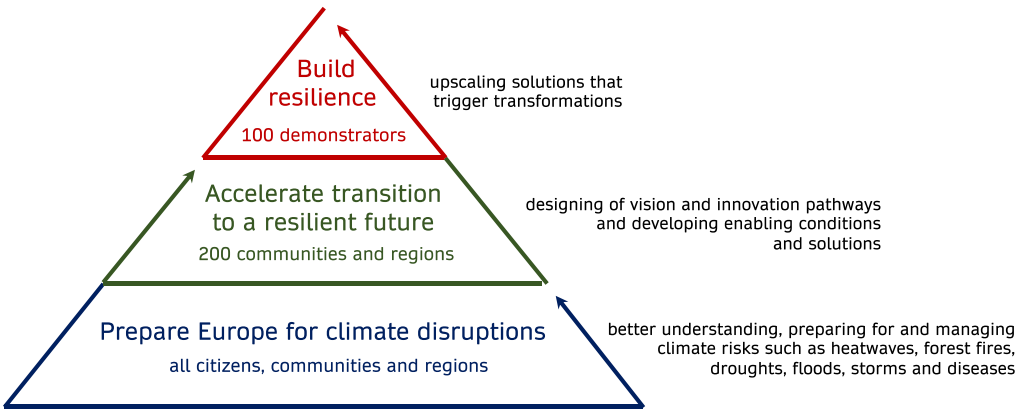

Figure 1. The vision and objectives of the Mission

2 The Mission explained

2.1 The need for the Mission

The global climate crisis is an existential threat[1] to the world as we know it. Without a radical abatement of greenhouse gasses, global warming will reach and exceed 3-4 degrees before the end the century. We cannot continue in this trajectory without the risk of unleashing unstoppable planetary forces with huge socio-economic consequences. Climate change has already made some weather and climate extremes more frequent and severe. The COVID-19 pandemic has taught a lesson about how closely environmental, societal and human health are connected. What we have lived through and still will is a mild foretaste of the shocks that climate change may and will cause in the future. But we can break the vicious circle of living on environmental debt and restore planetary health.

The pandemic's emergency has showed unambiguously how important it is to act early upon warnings and in a coordinated way. It has shown us how compound risks affect most those who are already vulnerable, and how existing disparities across Europe are reinforced. But we have also learned that rapid change is possible and that solidarity and social cohesion matters. Now, more than ever before, the European Union needs to stand by its citizens and its common values and maintain its role as a global leader. Principles of solidarity and intergenerational justice, which have permeated public health care choices during the pandemic emergency, need to be given equal weight in choices regarding environmental restoration, conservation and climate change. This time, we need to protect all, and in particular, our youth.

The European Green Deal traces a pathway to climate change neutrality and sustainable development, stimulated by immense investments in green technologies and innovation. It includes the first EU Climate Law with a legally binding target of net zero greenhouse gas emissions by 2050. It also includes a new and revised EU Adaptation Strategy. The EU has been an early pioneer on climate change adaptation. The 2013 EU Adaptation strategy created impact at scale by mainstreaming adaptation into policies and funding instruments. The EU Member States have adopted comprehensive adaptation strategies and plans. The EU made sizeable investments in making cutting-edge climate risk information accessible, usable and useful. The new EU Adaptation Strategy will be even more ambitious in terms of better knowledge, better climate risk management, and better solutions.

This Mission will enable resilience and societal transformations and accelerate both the post-COVID recovery and adaptation to climate change. It will show that it is possible to 'build back better' as climate adaptation has positive and wide-reaching effects on societies. By working together and combining impactful research and innovation, inclusive community engagement, green financial transition and coherent policy reforms, the Mission

[1] EUCO 23/19. European Council meeting (17 and 18 October 2019) – Conclusions

will develop and deploy actionable solutions whose scale and magnitude of impact could not be otherwise achieved. It will test and scale-up innovations, promote European cross-border value creation, and generate new insights feeding back to policy review and agenda setting at European and national levels.

2.2 The objectives of the Mission

The **Mission will accelerate the transition to a climate prepared, more resilient, and fair Europe**. Working with citizens, communities and regions[2], the Mission will focus on transformative adaptation, resilience forging, and green innovation. All of which will be enabled by investments, capacity building, knowledge creation, inclusive governance, sustainable business innovation and partnerships in and between regions and communities.

By 2030, the Mission will:

1. **Prepare Europe to deal with climate disruptions**, assisting citizens, communities and regions in better understanding, preparing for and managing climate risks such as heatwaves, forest fires, droughts, floods, storms, and diseases.

   Awareness, accessible and relevant knowledge as well as reinforced planning are vital to being better prepared for these climate risks. To prepare communities and regions for climate disruptions the Mission will:

- foster a better understanding of climate risk exposure, providing access to fast track climate risk assessments and strengthening existing early warning systems;

- facilitate the adoption of climate risk management and community-based emergency plans; and

- ensure that community infrastructure is safe and essential services operable and accessible under critical conditions.

   Target: By 2030, all local administrative units (LAU) and regions (NUTS) will have access to climate risk profiles and enhanced early warning systems for all relevant risks, will have adopted comprehensive climate risk management plans, and will have community infrastructure and services that are safe and operable and accessible under critical conditions

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[2] Communities are groups of people with social ties, shared values or interests, engaged in joint action. A community may refer to a group of people acting together remotely, e.g. a supply chain, or an innovation alliance. Regions reflect the political, jurisdictional and administrative divisions, or cultural and historical cohesiveness and functional interdependencies, including across borders. They are also foundations of economic, social and territorial cohesion.

2. **Accelerate the transition to the future we want**, supporting 200 European communities and regions, selected to reflect the diversity in climate and approaches to addressing climate risk in Europe, in co-creating a vision, innovation pathways and enabling conditions for transformative adaptation within safe planetary boundaries.

   Only with deep-rooted system innovations in production, consumption, social behaviour and lifestyles will it be possible to achieve healthy, equitable and prosperous lives. To accelerate such transition, the Mission will support citizens, communities and regions, to:

   - design vision and objectives, and build consensus around transformative social change enshrined in a community resilience contract;
   - co-create adaptation pathways, and define possible courses of policy and innovation actions to deliver on the vision, resulting in a portfolio brief for action;
   - co-design and test actionable solutions, and share learning within and across the communities and regions; and
   - create favourable conditions for societal transformations.

   Target: By 2030, 200 European communities and regions will have developed their own transformative vision; co-created adaptation pathways; co-designed and tested actionable solutions; and created favourable conditions for societal transformations.

3. **Build deep resilience**, **scaling up actionable solutions triggering societal transformations** through 100 deep demonstrations[3] of resilience across a number of European communities and regions.

   In the deep demonstrations, the Mission will scale up multiplicative actionable solutions to build resilience in a systemic approach. Mobilising funds and programmes across the EU and Member States, the Mission will:

   - create impact at scale, building of resilience in single regions and communities focusing on key community systems. Those systems would be chosen based on their potential impacts, diversity and complementarity, as well as their geographic distributions;
   - create cross-border value, building of resilience and shared value creation across cross-border health systems and services, cross-border natural and cultural heritage, cross-border knowledge and innovation, and cross-border business and value chains; and

[3] Reflecting the Climate KIC's valuable experience with their so-called Deep Demonstrations: https://www.climate-kic.org/wp-content/uploads/2019/10/191029_EIT_Climate-KIC_FundingNetZero_Double.pdf

- foster systemic and citizen-centred co-evaluation, measuring progress made, assessing what has been accomplished and communicating the processes and outcomes.

Target: By 2030, 100 deep demonstrations have scaled-up actionable solutions that have triggered societal transformation, building deeper resilience.

2.3 The approach of the Mission

As we are responding to the COVID-19 pandemic and the ensuing unprecedented economic crisis, we need to ensure that Europe is swiftly prepared for similar disruptions caused by looming climate risks. In the long term, the Mission focuses on social transformations and a transition to a climate resilient Europe. The vision of a climate resilient Europe is understood to include three fundamental and interrelated dimensions that shall guide the Mission as overall principles: (i) the resilience of environmental systems with a commitment to sustainability, climate neutrality and to do no harm, (ii) the resilience of social and economic systems with a commitment to equity, social justice and to leave no one behind, and (iii) the resilience of the political systems, with a commitment to shared values, solidarity and to be united in diversity.

The Mission employs a system approach to risk management and resilience building, moving away from piecemeal sectorial and linear cause and effect. Social innovation ultimately aims at a systemic change that pervades all parts of socio-ecological systems and entails interaction of culture, behaviour, business practice and policy. The Mission's Framework for societal transformation embraces social and cultural changes towards preventing and adapting to risks that are caused or amplified by climate change. It leads the way for building new norms, practices and habits that preserve environment and make societies less vulnerable. Opportunities for change are catalysed through deep learning that is assisted by, and not for, learning communities.

The Mission will stimulate major innovations **in closely interdependent key community systems** that are most affected by climate impacts and that are also central to resilience building and sustainable growth. Therefore, the mission will focus on:

- **Regenerating community and social infrastructure**: Communities with performing social infrastructure, including schools and libraries, hospitals and shelters, parks and social housing, and facilities providing transport, energy and other basic services, are more resilient to environmental and human-made risks and shocks, and more prone to social innovation. Social infrastructure can be transformative and support individual and community empowerment, knowledge and culture sharing, social cohesion, and life-long learning. However, in many places this infrastructure is underdeveloped, degraded or not adequately climate proofed. The Mission will foster regenerating public spaces and community facilities for inclusive, healthy and climate-resilient neighbourhoods.

- **Protecting human health and wellbeing**: Climate risks are affecting health and wellbeing of European citizens. Health risks include morbidity and mortality from for example heatwaves, forest fires, storms, floods but also from air pollution, illnesses from food, vector- and water-borne infectious diseases, and mental health impacts including trauma related to extreme events as well as distress, anxiety and feelings of disempowerment. Also, climate risks have the potential to exacerbate long term chronic illnesses such as respiratory, cardiovascular and endocrine diseases and cancer, further increasing existing health inequalities in society. The Mission will help communities to stay healthy in a changing climate including with planning, early-warning and surveillance systems.

- **Restoring nature, biodiversity and ecosystems services**: The loss of nature threatens livelihoods, health and wellbeing, and long-term viability of communities. Climate change accelerates environmental deterioration, which may in turn further amplify climate change and exacerbate impacts of climate risks. Ecosystem degradation is disproportionately felt by the poor, presenting an obstacle to poverty alleviation and sustainable development. Nature-based solutions provide means for mitigating climate risks and boosting societal resilience, locally or regionally, stimulate innovation, and produce multiple co-benefits, including for people's health. To harness the power of nature for climate resilience the Mission will boost nature-based solutions and green-blue multipurpose infrastructure investments in ecosystems.

- **Rethinking water management**: As a result of climate change, millions of people and many water-intense industries in Europe will be short of sufficient water every so often and many regions will suffer from chronic water stress and accelerated desertification. At the same time, intense rainfalls will become more regular, increasing the frequency and severity of inland and coastal floods, which are already now among the costliest climate change-related hazards in the EU. These challenges will not be effectively addressed without a step change improvement in sustainable water resource management and adequate protection against water-related risks. Embracing these new water realities, the Mission will foster innovations towards smart, reliable, and efficient access to water and reduced vulnerability to water-related risks.

- **Reviving rural landscapes and sustainable food systems**: Rural landscapes are an expression of the European cultural heritage and reflect how local communities have adapted to and transformed the natural environment to produce food, fibre, raw materials and renewable energy from agricultural crops, forests, and aquatic bodies or fisheries. The diversity and resilience of productive landscapes and sustainable livelihoods are undermined by climate risks, non-sustainable agricultural practices, migration to urban areas and urban sprawl, etc. The Mission will support the transition to a resilient food system, mindful of the interrelations between human and ecosystem health, supply chains, sustainable consumption, and cultural heritage.

Dealing with complex systems, it is not possible to know beforehand which solutions will deliver on the envisaged transformative change. **Creating favourable conditions for this change to happen** is therefore a central task of the Mission, which includes:

- **Providing access to data, knowledge, digital services and actionable solutions:** Data and knowledge are critical for better understanding and managing climate risks, enhancing adaptive capacities and supporting transformative innovations towards a more climate resilient society. Building on available data services and capacities, the Mission will mobilise research and innovation to improve the knowledge base at regional and local level, unlock the benefits of the digital transformation for and within the regions and communities. The Mission will also facilitate the co-production of data and knowledge and the co-design of climate services and solutions with citizens and stakeholders to improve the local relevance of data, usability of digital services and practicability of solutions.

- **Facilitating inclusive and deliberative governance processes designing fair transitions**: The success of this Mission will depend on engagement of stakeholders, from civil society organisations, to business communities, professional organisations, industries, and citizens. The Mission will spur social, institutional and cultural change employing deliberation and co-design and co-production of solutions. It will encourage inclusive and participatory processes to engage citizens and stakeholders, foster social learning and culture of civic engagement, develop capacities and capabilities, and provide mechanisms ensuring a just transition, securing support for those that are most vulnerable to climate change, as well as those that may be most negatively affected by the transition.

- **Strengthening local economies and the mobilisation of resources needed for the transition**: The resilience and adaptive capacities of communities and regions depend on, among others, how well their economies perform. Transformative innovations need to address financial and economic vulnerability as well as the underlying drivers of inequality and poverty. The Mission will work with regions and communities to renew and restore local economies in a sustainable manner centred on collective wellbeing and local resilience, develop financial risk strategies against damage and losses from extreme climate events to close the climate protection gap, and support the selected regions and communities in crowding-in and mobilising multiple forms and sources of funding and finance.

- **Coordinating processes for shared learning and more coherent policy making**: Alignment across various regional, national and European actions on climate adaptation, disaster risk reduction and sustainable development will be essential for accomplishing societal transformation. The Mission is to build and benefit from synergies with other European and national policies and programmes, and innovation hubs. To ensure coherent policy making by better coordination and shared learning the Mission will propose a coordination mechanism across regions and communities enrolled

in the Mission and elaborate on structures and processes that allow coordination across different levels of governance.

3 The portfolio of the Mission

3.1 Prepare Europe

While we are recovering from the unprecedented health emergency and economic recession, we need to make sure that we are prepared for the shocks and disruptions that climate change may and will cause in the next future. A recovery guided by the ambition to build back better will need to enhance resilience, cohesion, and economic stability.

The first objective of the Mission will be to raise the bar on safety and security of the key community systems and ensure continuity of essential community services under all-hazard conditions. The aim of the Mission is that, **by 2030, all local administrative units (LAU) and regions (NUTS) will have access to climate risk profiles and enhanced early warning systems for all relevant risks, will have adopted comprehensive climate risk management plans, and will have community infrastructure and services that are safe and operable and accessible under critical conditions**.

The Mission will enable citizens, communities and regions to better prepare for the shocks and disruptions that climate change may and will cause in the next future, by:

- fostering a better understanding of the climate risk exposure;
- facilitating the adoption of climate risk management and community-based emergency plans; and
- ensuring that social infrastructure is safe and essential services operable and accessible under critical conditions.

To foster a better understanding of the climate risk exposure the Mission will support communities and regions by:

- **improving of availability, accessibility and usability of climate risk knowledge and digital knowledge services** to be used to formulate local reasons for concern and reveal gaps in local risk management capacities and capabilities. The Mission will build upon existing capacities and stimulate use and exploitation of available data and services, and help to overcome legal and technical barriers to data sharing and improving data availability, quality and interoperability;
- **providing access to fast track climate risk assessments** build upon cutting-edge climate and environmental information from the Copernicus Programme, Galileo and other services clearinghouses and datahubs such as the Climate-Adapt and the Disaster Risk Management Knowledge Centre;

- **mobilising research and innovation to address knowledge needs**, including but not limited to new generation of Earth system models with better and more granular resolution of connective events and better capacity and skills of seasonal to decadal climate prediction; assessment of compound and cascading risks, indirect and intangible losses, spill-over effects and propagation of risks across value chains, social and ecological networks; social and cultural processes that shape how risks and uncertainties are perceived and responded to; and nexus of health, environment and climate change;

- **supporting adjustments of existing early warning systems** to take into account the changing patterns of climate extremes and ensure a rapid response protecting people at high risk such as children, senior citizens, people with chronic diseases, socially disadvantaged groups; and developing robust epidemiological surveillance and modelling tools.

To facilitate the adoption of climate risk management and community-based emergency plans the Mission will support communities and regions by:

- **providing training, assistance, and equipment to understand, make sense of and respond to climate risks** threatening the safety of lives and social infrastructure, reliability of lifeline networks, performance of public services, viability of local livelihoods, and conservation status of natural community environment;

- **guiding the formulation of comprehensive climate risk management plans** along a single framework for managing fast-onset climate extremes such as floods and storms and gradual changes such as desertification and sea level rise; and based on inclusive and deliberative processes, making transparent and accountable how risks are prioritised and managed, and how the vulnerable, disadvantaged and marginalised are protected,

- **incentivising rigorous monitoring and evaluation of the progress made on reducing risk and adapting to global warming,** driven by consistent reporting schemes feeding into a periodic European stocktaking exercise and providing input for the next cycle of climate risks' assessment and management.

To ensure that community and social infrastructure is safe and essential services operable and accessible under critical conditions, the Mission will support community and regions in:

- **closing the climate protection gap**, by designing comprehensive financial risk protection strategies against damage and losses from extreme climate events and building financial resilience**;**

- **mobilising funds available for the renovation wave** to retrofit and climate-proof public buildings and social housing, making them resource and energy efficient, healthy and compliant with principles of circular economy.

3.2 Accelerate the transition

This objective of the Mission is to accelerate the transition to a resilient Europe, prepare the ground for deep-rooted system innovations, and equip regions and communities to jumpstart on their transition. The Mission will support regions and communities to co-create their own visions for the transition and transformative pathways, and to develop and test the enabling conditions and solutions needed.

Working closely with local and regional networks of actors[4], **the aim of the Mission is to have 200 communities and regions that will have prepared the ground for the deep-rooted system innovations and societal transformations, by 2030**, having:

- designed their own vision and objectives;
- co-created adaptation pathways;
- co-designed and tested actionable solutions; and
- created favourable conditions for transformations.

To design a vision and decide on a community resilience contract, the Mission will support the regions and communities in:

- **defining their vision and objectives for systemic change**: The systems to focus on and a vision of structural change to work towards will need to be identified and agreed on, taking into account existing programmes, strategies and commitments at regional, national and European level, in particular those related to the European Green Deal, and the Recovery for the Next Generation EU (see Annex 1 on relevant programmes, strategies and commitments at European level);
- **developing governance structures that facilitate inclusive and deliberative processes to steer and support the transition**: Building on what exists, appropriate structures, methods and practices will be developed and employed to meaningfully engage citizens and stakeholders throughout all phases of the transition, fostering an inclusive culture of civic engagement and empowering sustainable self-determination;
- **formulating a community resilience contract**, reflecting the common will to work together on an innovation portfolio focused on catalysing radical transformation of systems, as well as a joint understanding and agreement as to relevant actors, shared objectives, outcomes, needs, time frames and ways of working.

[4] Such as the community-led local development (CLLD) network, Climate KIC, JPI Climate or Urban agenda

To co-create adaptation pathways, the Mission will support the regions and communities in:

- **defining adaptation pathways**, outlining the field for innovation action and which innovations to deploy, which leverage points to address and how to test breakthrough possibilities. The Mission will create space for deliberation of hypotheses, design principles, choice, exploration and discovery of new possibilities and unexpected approaches. Each pathway would result in a portfolio brief for one or more alternatives or complementary strategies, taking into account trade-offs and uncertainties, social and intergenerational justice principles, and enabling ambitious short term and long-term perspectives.

- **mapping the needs and opportunities for systems innovation and existing or emerging solutions**: Focusing on the transformational potential in each of the key systems and enabling conditions, the Mission will provide horizon-scanning of potentially relevant innovations and solutions (see Annex 1 for concrete potential innovation needs and opportunities addressing each of the key systems and enabling conditions).

- **modelling possible futures**: Partner regions and communities will be assisted in scenario building and modelling needed to develop and monitor own context-specific adaptation pathways, visualising possible futures.

To co-design and test actionable solutions for transformations, the Mission will support the regions and communities in:

- **orchestrating a portfolio of innovations**: The testing of transformative innovations and actionable solutions according to the adaptation pathways chosen is the core and engine of the Mission approach. The Mission will facilitate a dynamic portfolio management that will encourage a diversity of innovation projects to ensure a spread of learning and connectivity helping to identify effective leverage points, multiplier effects and integrated solutions, as well as to learn about obstacles and barriers to innovation.

- **facilitating the co-design of solutions**: To improve the relevance of data and knowledge, usability of digital services and practicability of solutions, the Mission will require citizens and stakeholders to be engaged in co-production of data and knowledge and the co-design of climate services and actionable solutions, including through citizen science. Doing so better, citizens and stakeholders will jointly explore the available evidence and state of knowledge, leading to a better understanding and possibly reconciliation of the differences in their views and value judgements.

- **developing structures that facilitate shared learning**: To enable shared learning and synergies, the Mission will develop and establish opportunities to collaborate and exchange insights and lessons learned amongst the participating regions and communities and relevant public and private sectors. Another part of this mechanism will be the twinning approach bringing together innovation leaders with modest performers.

To create favourable conditions, the Mission will support the regions and communities in:

- **developing skills and capacities in support of the transition**: Skills and capacities will be fostered to improve and acquire new skills that are necessary to retain the benefits of the transition. The European Social Fund+ will play an important role in helping Europe's workforce acquire the skills they need to transfer from declining sectors to growing sectors and to adapt to new processes.

- **providing strategies and mechanisms to ensure a just transition**: Adequate strategies and mechanisms will be developed to manage structural changes that emerge during the transformations and to resolve tensions, and redistributive and intergenerational social conflicts undermining the transition in a fair manner. The Just Transition Fund will be leveraged to support the re-skilling of workers and create opportunities for small-medium enterprises.

- **building healthy and sustainable local economies**: Plans will be developed to renew and restore local economies in a sustainable manner centred on collective wellbeing and local resilience, including the strengthening of plural forms of business entrepreneurship, new forms of social enterprises and community owned small-medium enterprises (SMEs), and more dense local supply chains that are more resilient to shocks in the system.

- **mobilising sustainable funds and finances**: Guidance and support will be provided to crowd-in and mobilise multiple forms and sources of funding and finance. This includes EU funds and programmes, as well as support from the European Investment Bank, the European Bank for Reconstruction and Development and the European Innovation Council. National and regional funds, as well as progressive Green Procurement policies and environmental taxation should also play a role, as well as research how insurance and other financial instruments can be harnessed for protection and regeneration of ecosystems and the regulating services these provide.

- **developing digital infrastructure:** To unlock the benefits of the digital transition, the Mission will tap into efforts accelerating investments in Europe's 'Gigabit Connectivity' to strengthen the regions' digital infrastructure and networks. Concerning digital technologies and services the Mission will link to the '*Digital Education Action Plan*' and the reinforced '*Skills Agenda*' to strengthen digital literacy throughout society.

- **developing governance structures that facilitate coordination for coherent policy making**: Choices made in support of societal transformations in various regions will need to be upheld or made possible at various levels of governance, from local to European. Adhering to the principle of subsidiarity the Mission will propose mechanisms to ensure close coordination and coherent application across various governance levels, for example to exploit the complementary use of the European funds.

3.3 Build deep resilience

Deep demonstrations are on-the-ground examples of thoroughgoing societal transformations accomplished on a larger scale, with verifiable impacts, and based upon citizen engagement. The successful demonstration projects will have regenerated the key community systems, with the **key performance indicators** in Annex 1 serving as a guidance, and built conditions for spreading innovation and social change to other regions and communities.

By 2030, 100 deep demonstrations have scaled-up actionable solutions that have triggered societal transformation, building deeper resilience.

The Mission will focus on:

- Creating impact at scale, by scaling-up innovations designed and successfully tested in pilot accelerators,
- Creating cross-border value, promoting cross-border partnerships and shared value creation,
- Fostering systemic co-evaluation, by measuring and evaluating impact and fostering deep learning.

To create the impact at scale, the Mission will

- select the most promising accelerators, based on a thorough review of their potential impacts, diversity and complementarity, as well as their geographic distributions, and assist them in achieving and amplifying their outcomes,
- further enhance capacities and capabilities of the chosen demonstrators by innovative coaching, peer review, knowledge transfer and twinning through every step of their transformation pathways,
- assist demonstrators to implement the designed actionable solutions, to mobilise and tailor European and national funding, to respond to encountered challenges and barriers, as well as to exploit new opportunities.

To create cross-border value, the Mission will focus on

- cross-border **health systems and services**. Cross-border health care is enshrined in the European Treaty and may include transfer, movement or exchange of individuals, services and resources, to compensate for gaps in regional healthcare provision. Building upon the potential identified in the recent assessment studies[5], as well as responses to COVID-19 pandemic[6],

[5] Include references to 2018-2019 EC commissioned studies on cross-border health care.

the demonstrators will explore potential and emerging innovations in cross-border healthcare and social care.

- cross-border **natural and cultural heritage**. Europe is rich of cultures, traditions and land-use practices, twisting together cultural and natural heritage and playing a vital role for identity and community membership. Building upon and jointly contributing to the EU Biodiversity Strategy for 2030[7] and the New European Agenda for Culture[8], the demonstrator will upscale cross-border innovations such as the European Green Belt, and contribute to preserving natural and cultural capitals and strengthen regional cohesion.

- cross-border **knowledge and innovation**. Regional innovation scoreboard[9] offers a detailed breakdown of the structural differences that underpin the performance of European regions in terms of innovation economic, business and socio-demographic structure differences between regions. It also shows that cross-border regional spill overs of research of research and innovation have positive effects up to certain distance but are overall limited. The demonstrators will explore new ways of cross-border collaborative innovation between businesses, industry, and research organisations.

- cross-border **business and value chains**. The demonstrators will forge resilience by exploring new and enhancing existing value chains by competitive collaboration across borders and sectors.

To foster systemic and citizen-centred co-evaluation with multiple purposes such as tracing progress made, assessing what has been accomplished, and communicating the processes and outcomes, the Mission will

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[6] Guidelines on EU Emergency Assistance in Healthcare - Communication from the Commission - Guidelines on EU Emergency Assistance on Cross-Border Cooperation in Healthcare related to the COVID-19 crisis (2020/C 111 I/01)]

[7] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - EU Biodiversity Strategy for 2030 - Bringing nature back into our lives. COM(2020) 380 final

[8] Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions - A New European Agenda for Culture {SWD(2018) 167 final} COM(2018) 267 final

[9] The regional innovation scoreboard (RIS) is a regional extension of the European innovation scoreboard, assessing the innovation performance of European regions on a limited number of indicators.

https://ec.europa.eu/growth/industry/policy/innovation/regional_en

- provide feedbacks on whether the transformative vision and targets have been accomplished and to what extent they contributed to building resilience to climate change. Peer review and standardised proxies of performance will help to assess the performance.

- enable new information and lessons learned to feed back to policy review and agenda setting at European and national levels. It will shed light on whether policy goals and targets are still appropriate or need to be adjusted to accommodate new knowledge and lessons learnt in the experience to real-life challenges.

- help to identify knowledge and innovation gaps, and design mechanism to convey knowledge generated through Horizon Europe and various other innovation platforms. Adaptation planning is often based on conditional, uncertain or an otherwise incomplete understanding of changing climate risks. Thus, a systemic evaluation will continuously improve existing knowledge on climate change impacts and vulnerability, and help to identify key challenges, opportunities and remaining knowledge gaps.

4 Annexes

Annex 1: Relevant programmes, strategies and commitments at European level

[to be developed for the final version of the document]

Annex 2: Innovation needs and opportunities for each key system and enabling condition

[to be developed for the final version of the document]

Annex 3: Key performance criteria

To renovate safe, inclusive, and climate-resilient social infrastructure and neighbourhoods, the partner regions and communities will:

- **invest in making community infrastructure safe, resilient and climate-proof**,
- **ensure access to social infrastructure for all** and making residential areas attractive, resilient and sustainable neighbourhoods and communities.
- **renovate public buildings and social housing,** making them energy efficient, healthy and compliant with principles of circular economy**,**

To save lives and improve wellbeing, the partner regions and communities will:

- adopt health plans and adequate response to address all relevant hazards and integrate projected climate risks into health preparedness systems, capacity building and research,
- establish enhanced early warning systems to ensure a rapid response from health services, and protect people at high risk such as children, senior citizens, people with chronic diseases, socially disadvantaged groups,
- develop robust epidemiological surveillance and modelling tools for assessing and predicting impact of extreme events and disasters associated with climate change including impacts on mental health.

To put nature on a path to recovery for the benefit of climate, people, and the planet, the partner regions and communities will:

- **halt land degradation and restore at least 30% of the most degraded ecosystems across land and sea** with a high potential for

climate adaptation and mitigation and control spread of invasive alien species and pathogens that may affect ecosystems, plant, animal and public health,

- **designate multi-layered, high quality and well-connected green and blue infrastructure networks** [square root of region's area] of land and water ecosystems, protected areas and nature-based solutions, that remove [at least x ton/10% of regional] GHG emissions and demonstrably decrease climate risks;

- **adapt the regions' forests to climate change** and restoring natural habitats to favourable conservation status (with respect to structure, function and native species composition). Solutions will favour close-to-nature forestry practices, capacity of forests as carbon sinks and their resilience to wildfire and other climate risks.

To foster innovations towards smart, reliable, and efficient access to water and reduced vulnerability to water-related risks, the partner regions and communities will:

- **realise transparent water balances and accounts, and adjust water allocations across environmental and human uses to long-term water availability**,

- **adopt inclusive, forward looking and climate risk-informed water planning and management processes**, foster adoption of digital water technologies, and make equitable and ecologically sound water sharing agreement and strategies across borders and during drought-driven shortages and floods,

- **identify and reduce water efficiency gaps and protection gaps** by at least 50% by 2030**,** in regions under water stress, now or in the future, and for water bodies at risk of failing to achieve good ecological status.

To shift to diversified and nature-friendly farming, and sustainable consumption, the partner regions will:

- **endorse strategies for climate neutrality and resilience**, by adopting conservative agronomic practices, precision farming, agroecological and technological innovation, sustainable fishing and aquaculture practices, sustainable business model innovation and diversification, and financial protection,

- **strengthen environmental stewardship** by increasing the area of high nature value farmland, organic farming, and nature-based solutions to control soil erosion, pollution, pest and diseases,

- **promoting shifts to sustainable consumption**, and increased consumption of regionally produced, seasonal and healthy agricultural products, reduced meat consumption, farm-to-school programmes reconnecting students' experience from rural life with their food habits.

Annex 4: Engagement with citizens and stakeholders

[to be further developed for the final version of the document]

Stakeholder engagement activities that have taken place in the past few months:

- COP25 event in Madrid (Spain, December 2019),
- Horizon Europe Mission Café (Austria, February 2020), and
- Missions Event on Climate adaptation and Cities (Italy, Milan, 5 February 2020),
- Online event with European Youth Forum (28 May 2020)

Given the situation with the COVID spread, the Mission is planning a series of online events, including two events will be planned in the coming months with Spain and Slovakia respectively.

There were a few engagement activities planned by Member States, now on-hold due to the COVID outbreak: World Café Event on Climate Change and Societal Transformation (Belgium, April 2020), Leuven Festival (Belgium, May 2020), and Croatian Presidency event on the Mission on Adaptation to Climate Change (Croatia, May 2020).

Annex 5: Evidence

[to be developed for the final version of the document]

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In a world of increasing and mutually reinforcing climate disruptions and socio-economic and environmental challenges, **the vision of this Mission is to turn the urgent challenge of adapting to climate change into an opportunity to make Europe more resilient, climate prepared and fair**. By 2030, the Mission will:

1. **Prepare Europe to deal with climate disruptions**, and assist all citizens, communities and regions in better understanding, preparing for and managing climate risks such as heatwaves, forest fires, droughts, floods, storms and diseases;

2. **Accelerate the transition to the future we want**, supporting 200 European communities and regions in co-creating a vision and innovation pathways, as well as developing solutions and enabling conditions for transformative adaptation within safe planetary boundaries;

3. **Build deep resilience** by **scaling up actionable solutions triggering societal transformations** through 100 deep demonstrations of resilience across a number of European communities and regions.

Studies and reports

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