



**CLIMATE
ACTION NOW:
SUMMARY FOR
POLICYMAKERS**

**UNFCCC TECHNICAL
EXAMINATION
PROCESSES 2016-2020**



United Nations
Climate Change

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United Nations Framework
Convention on Climate Change,
the Kyoto Protocol and the Paris
Agreement

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For further information contact:

Main office

UNFCCC secretariat
UN Campus
Platz der Vereinten Nationen 1
53113 Bonn
Germany

Telephone +49. 228. 815-10 00

Telefax +49. 228. 815-19 99

Email secretariat@unfccc.int

Website: <https://unfccc.int>

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FOREWORD BY THE EXECUTIVE SECRETARY



PATRICIA ESPINOSA

EXECUTIVE SECRETARY OF THE UN FRAMEWORK
CONVENTION ON CLIMATE CHANGE

Time is running out to put the world on the path toward a more sustainable, resilient and low-emissions world to prevent our planet's temperature from reaching disastrous levels. There is a yawning gap between what needs to be done and what has been pledged to date in national climate action plans under the Paris Agreement.

To create the change needed toward a more sustainable, resilient and low-emission future, it is critical that policies are swiftly put in place now so technologies can develop, mature, become commercialized and deployed at scale, and economic actors can

move faster towards a low-emission and sustainable world.

This 2020 Summary for Policymakers zooms in on areas with major potential to shift the needle on climate - sustainable low emission housing and building solutions and enhancing adaptation action through education and training, and public and youth participation.

As the following Summary for Policymakers outlines, we have the knowledge and the technology to enable the necessary climate action in the coming years.

This knowledge and technology must be supported and enabled by clear and ambitious national policies aligned with the objective of the Convention and the aim and long-term goals of the Paris Agreement.

We need cooperation between Parties, including support to developing countries, to identify and implement best practice and share experience with implementation.

Governments, with the support of the UN Climate Change secretariat, have laid the foundations for deeper and more inclusive participation in climate action including through the Marrakech Partnership for Global Climate Action.

Meanwhile, collaboration with non-Party stakeholders has become crucial to ensure the alignment of policy signals and the mobilization of private finance for ambitious climate action. And it is clear that all stakeholders and not least women, youth and indigenous peoples have a special role to play.

I urge Parties to look closely at the policy conclusions contained in this summary of the 2020 Technical Examination Processes and to consider how at COP26 Glasgow we can rise to the challenge and ensure that the ambition gap is urgently closed in all areas of climate action.

FOREWORD BY THE CHAIRS OF THE SUBSIDIARY BODIES



MARIANNE KARLSEN

CHAIR OF THE SUBSIDIARY BODY FOR IMPLEMENTATION



TOSI MPANU-MPANU

CHAIR OF THE SUBSIDIARY BODY FOR SCIENTIFIC
AND TECHNOLOGICAL ADVICE

Since its inception ten years ago, the technical examination process (TEP) under the UNFCCC has evolved significantly, and has done so in a way that reflects the broader changes in the multilateral climate process and in global efforts to address climate change. In 2015, Parties to the UNFCCC resolved to strengthen the existing technical examination process on mitigation (TEP-M) and establish a parallel technical examination process on adaptation (TEP-A). From 2016 to 2020, these processes were jointly organized by the Subsidiary Body for Implementation and the Subsidiary Body for Scientific and Technological Advice.

The TEP-A was established with the objective of helping Parties and practitioners to identify solutions for enhanced climate change adaptation knowledge and implementation. The TEP-M was established to explore high-potential mitigation policies and practices, and technologies to increase the ambition for mitigation action. For several years, these processes have gathered Parties, technical experts, and other stakeholders to examine various themes in the areas of adaptation and mitigation. We have been continually impressed by the caliber, diversity, enthusiasm, and knowledge of the participants, as well as the ingenuity and insightfulness of the outputs they created together.

Indeed, to deliver on our climate change ambition as an international community, and as the TEPs have exemplified, we need to engage all stakeholders, from governments at all levels, industry, communities to civil society. The UNFCCC TEPs have been an important pillar of this effort, and have provided Parties and non-Party stakeholders with an annual platform to identify options for addressing climate change with the purpose of helping close the pre-2020 ambition gap and setting the course for action beyond 2020. Ultimately, what the TEPs accomplished would not have been possible without the active participation and enthusiasm of policy makers, experts, and

organizations from around the world and we are looking forward to seeing these types of discussions continue and flourish, building on the outcomes of this process.

As we conclude the TEPs, we would like to use this opportunity to encourage policymakers to review the Technical Papers and Summaries for Policymakers that have been published as part of the process over the years and to integrate the recommendations into their work. This Summary for Policymakers, which highlights the outputs of the process in 2020 and recalls the key messages from 2016-2019, is an excellent starting point.

INTRODUCTION

2020 marked the final year of the UNFCCC's parallel TEPs on Mitigation and Adaptation, which have been operating since 2014 and 2016 respectively. Since their inception, both processes have convened Parties, non-governmental organizations, United Nations organizations, constituted bodies, academics, youth, private sector organizations, climate funds, and other stakeholders on an annual basis through technical expert meetings (TEMs) to share good practices, discuss policies and strategies, and find opportunities to accelerate near-term climate action.

The final year of the TEPs coincided with the global COVID-19 pandemic, forcing the TEMs—as with other events and processes under the

UNFCCC and beyond—to proceed using virtual tools. While this shift brought with it well known limitations, it also created various opportunities to invite new voices into the processes and explore new modes of engaging stakeholders. For example, the virtual TEMs in 2020 were attended by stakeholders from around the world who may not otherwise have been able to join the meetings on the margins of UNFCCC conferences in Bonn, Germany, such as students or private sector organizations. Additionally, for the first time under the TEP-A, two competitions were held to encourage children and youth to share their visions for a resilient future and their adaptation solutions.¹

¹ More information on the Youth Policy Case Competition is available at <http://tep-a.org/casecompetition/>; more information on the Adaptation Visual Art Competition is available at <http://tep-a.org/artcompetition/>.

The 2020 technical expert meetings on mitigation (TEMs-M) were dedicated to the topic of “Human settlements: sustainable low-emission housing and building solutions. Technologies and design for buildings, housing and construction.” Under this overarching topic, sessions of the TEM-M explored cool buildings for all, mobilizing the value chain towards circular economy, and developing pathways for moving to scale.

In 2020, the technical expert meetings on adaptation (TEMs-A) focused on “Education and training, public participation and youth to enhance adaptation action.” Workshops and panel discussions held as part of the TEM-A delved into areas such as enhancing climate adaptation action across sectors through education and training, the ways in which youth engagement and public participation can bolster adaptation and resilience building, and the role of youth in facilitating a just, green, and resilient recovery from the COVID-19 pandemic.

This Summary for Policymakers distills some of the key messages, recommendations, and insights that emerged from the 2020 TEMs.

It aims to help policymakers identify opportunities to adopt policies, practices, and strategies to scale up their mitigation and adaptation action.

It also concludes the series of six Summaries for Policymakers that have been published since 2015.² Taken together, this series provides a wealth of good practices and action-oriented ideas across a wide range of topics tailored to policymakers. It captures the years-long collective effort of governments and other stakeholders from around the world to share experiences, pinpoint options for scalable and replicable climate action, and communicate opportunities for collaboration, with the aim of catalyzing urgent action to reduce greenhouse gas emissions and adapt to the impacts of climate change. Covering mitigation topics ranging from circular economies to off-grid and decentralized energy solutions in the agri-food chain, and adaptation topics ranging from integrating adaptation with related international frameworks to adaptation finance including the private sector, the Summaries for Policymakers offer timely and insightful overviews of various entry points for climate action.

2 <https://unfccc.int/resource/climateaction2020/spm/spm-archive/index.html>

A photograph of a house with solar panels on its roof, surrounded by lush greenery and a clear blue sky. The house has a dark grey tiled roof with several solar panels installed. The background shows a hillside with trees and a clear blue sky. The foreground is filled with various green plants and trees.

HUMAN SETTLEMENTS: SUSTAINABLE LOW EMISSION HOUSING AND BUILDING SOLUTIONS

© PHOTO BY VIVINT SOLAR/UNSPALSH

CHALLENGES

Reducing emissions from buildings is a critical part of the response to the climate emergency. The building sector, including the construction of buildings, is responsible for over one third of global final energy consumption. Moreover, in energy consumption terms, 60% of energy in the building sector is from residential buildings. Mitigating these emissions is difficult due to the continued growth in housing globally and the rapid increase in global urbanization.

Energy demand also continues to rise as a result of improved access to energy and energy-consuming devices, coupled with continually increasing growth. Moreover, the energy needed for air conditioning is likely to triple by 2050.

This increasing demand has the potential to drive up greenhouse gas emissions, thereby exacerbating the issue whose impacts it is intended to address. Further, the efficiency of cooling systems can vary widely, and the majority are held to low standards. Deploying business-as-usual cooling solutions to meet the inevitable increase in cooling demand will worsen the climate crisis.

Additionally, there are social challenges that are intertwined with current approaches to and trends in housing and building solutions. An estimated 1.1 billion people rely on low-quality fuels or lack access to basic services. Rising energy costs and falling household incomes contribute to an inability to adequately or cleanly heat or cool homes in around 40% of the population in some countries. In developing countries, energy poverty is linked to an estimated four billion deaths per year from exposure to indoor air pollution from burning low-quality fuels.

Further, replicating and scaling up sustainable low emission housing

and building solutions face several barriers that can block progress and lock-in suboptimal solutions to housing needs.

These barriers can exist in the areas of technology, market, end-user demand, design, construction, building regulations and operation, and can be grouped into four broad categories:

- Economic barriers: costs including high upfront costs of materials, systems or products; a lack of funds or access to finance; shorter-term payback expectations and investment horizons than those typically required for low emission building and deep energy retrofits; and market availability of low emission options.
- Educational and informational barriers: awareness of subsidies and benefits of low emission housing to education regarding the performance of state-of-the-art technology.
- Institutional barriers: lack of relevant legislation, complex or inadequate regulatory procedures and poor enforcement of regulations; misplaced or opposing regulation or subsidies; split or poorly aligned incentives; fragmented market and institutional structures; and more.
- Social/cultural barriers: perception and behaviours of individuals and communities in a given place due to social and cultural practices, a lack of interest and undervaluing of energy efficiency, risk aversion, and reluctance to buy or trust used products or materials.

Given long lifetime of buildings, ranging from 30 to 100 years for modern homes or even more in

some areas, when buildings are built or refurbished with sub-optimal materials or systems, the lock-in effect of unrealized energy and carbon savings will last for a long period of

time because building characteristics such as size, configuration and orientation have a significant impact on energy consumption and resultant CO₂ emissions.



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SOLUTIONS

Housing and building examples from different regions and climates around the world demonstrate good practices related to design, performance, and policy, and can inform or inspire further action on the part of individuals, businesses, communities, and policymakers.

Several mitigation approaches should be considered to reduce the energy and resultant GHG emissions from the housing sector. The over-arching approach is to (1) reduce energy demand as much as possible through the selection and construction of the materials, such as passive design, urban green infrastructure, green roofs and green walls, (2) actively manage and reduce demand through selection and intelligent use of systems and appliances, including

efficient air conditioners, thermostats for demand management; and (3) generate energy with renewable systems, particularly distributed renewable energy such as solar thermal and PV.

Beyond operational energy and emissions, the whole life cycle of a building can be addressed through building materials and construction techniques. For example, lightweight building construction (e.g. timber frame) tends to be lower in embodied energy than heavyweight construction (e.g. concrete). Certain design principles or actions—such as building less, building light, building wise, building low carbon—can also contribute to reducing embodied emissions. Additionally, indigenous approaches to housing construction

can be beneficial in providing knowledge of how to passively build for the local climate and use materials including co-housing or communal living, verandas and traditional shading methods, and compact building techniques. Modern construction techniques also provide useful strategies such as the modular construction approach, in which a building's modularized components are prefabricated offsite for rapid assembly onsite, and design for deconstruction or design for disassembly.

Furthermore, advanced technology in design, construction and evaluation, such as Internet of things (IoT), GIS, can be used as an organization framework for cities to manage groups including builder's cooperatives.

Policymakers can deploy various policy instruments to help overcome the barriers outlined above and promote mitigation solutions. In general, tackling the existing building stock with deep energy retrofits to meet a zero- or near zero- emissions standard will be a focus in developed countries; in many developing countries, by contrast, there should be a focus on the fast pace of new construction meeting housing needs.

Currently, mandatory building energy codes with rating and disclosure packaged with appliance standards are the most cost-efficient policies with the greatest positive impact. Mandatory building energy codes address barriers by establishing a new baseline while energy rating and disclosure creates market awareness. The cost effectiveness of building codes can be weakened when compliance mechanisms are not in place. One method of compliance can be through energy performance labelling. Energy labelling based on measured performance data will help address the barriers of uncertainty of investment, lack of awareness of savings potential and lack of interest or trust in low emission housing.

Other policy options identified include:

- *Control and/or regulatory policy:* mandatory disclosure of energy performance or benchmarks, energy efficiency standards for appliances and systems, adopting and enforcing product quality control standards to increase uptake of renewable systems, programmes to phase out inefficient appliances and systems, and procurement regulations to guide circular economy practices.
- *Financial and/or fiscal policy:* financial incentives (grants, rebates, subsidies, preferential loans, tax incentives and tax exemptions) for energy efficient buildings, decentralized renewable technologies, and research and development; energy efficiency obligations that require obligated parties, such as energy utilities, to meet energy savings targets and put in place obligations to allocate money to energy efficiency, renewable energy, and/or low-income assistance programmes; measures to support renewable energy supply and price stability.
- *Education, information and awareness:* information and awareness campaigns or information centres; professional training, vocational education, and multi-skilling initiatives; initiating dwelling energy labelling to raise public awareness and inform relevant actors of dwelling potential; and more.
- *Market-based measures:* energy efficiency labelling and certificates, institutional financial support of innovative solutions, and the development of rules and guidelines on the declaration and labelling of recycled building materials.

- *Voluntary action:* voluntary green building verification, voluntary certification and labelling programs, and voluntary and

negotiated agreements to reach emissions reduction in a given sector or company.

KEY MESSAGES AND RECOMMENDATIONS

Incorporate low-emission housing policy instruments into a wider policy package:

- Each of the policy measures listed above have advantages and limitations, as well as ideal target groups and specific operational mechanisms as they are generally designed to overcome specific barriers. Because no single policy instrument alone can capture the full potential for all aspects of low emission housing, housing energy-related policies need to be integrated as part of a policy package strategies. The sum of policy ‘mixtures’ or ‘packages’ are greater than their parts. Beyond focusing on simply the dwelling level, integrated urban planning and land-use policies offer potential for more emission reductions and multiple

co-benefits on the dwelling and district and city levels.

- Ambitious policy targets focusing on zero emissions / net-zero energy provide the greatest long-term financial returns on investment in all global regions after 2030. Such a return on investment, including lower operational costs, needs to be demonstrated to overcome barriers like concern for upfront cost. In order to drive the housing market in this direction, policymakers need to work on affordability of low emission housing, market availability of materials and technology, lack of awareness on return on investment potential, split incentives, and lack of skilled workers to build these homes.

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Ambitious policy targets focusing on zero emissions / net-zero energy provide the greatest long-term financial returns on investment in all global regions after 2030.

Co-benefits and synergies towards achieving the Sustainable Development Goals:

- Mitigating greenhouse gas emissions from housing can yield a host of co-benefits in a variety of domains. This includes reducing energy poverty, improving human health through better indoor and outdoor air quality and reducing urban heat island effect, contribute to create local jobs and the post Covid-19 green recovery, help implement a circular economy, and adapting homes for a changing climate.

Many of these corollary benefits, in turn, contribute to the achievement of several of the Sustainable Development Goals.

As with the case of adaptation action discussed below, community participation is also beneficial in advancing low emission housing and building solutions. Community participation can provide education and builds skills in the low emissions construction industry; it also helps create a sense of ownership within the community over related processes.





**ENHANCING
ADAPTATION
ACTION THROUGH
EDUCATION
AND TRAINING,
AND PUBLIC
AND YOUTH
PARTICIPATION**

© PHOTO BY SCOTT WEBB/UNSPALSH

CHALLENGES

Education and training, alongside public and youth participation, are key to enabling effective and inclusive adaptation to climate change. Education and training are needed to help people understand the changing climate and develop the skills to act on that knowledge, to minimize risk and vulnerability and boost their adaptive capacity and resilience. To ensure that all individuals and communities are equipped to adapt to the impacts of climate change, education and training initiatives must be both widespread and tailored to local contexts and individual circumstances; this requires significant investments of time and resources to design and deliver related programmes and activities. Additionally, efforts to accelerate adaptation and the transition to low-carbon and climate resilient societies are likely to necessitate significant additional training for workers across industries to remedy current and future skills shortages that threaten to stand in the way of mitigating and adapting to climate change through the rapid deployment of new technologies.

Although public participation is widely recognized as integral to inclusive and effective adaptation planning and action, it is not a straightforward process. Public participation in climate change policy often faces implementation challenges and may not always result in better policy outcomes; this may be the case, for example, when stakeholders have divergent or conflicting preferences or do not regard climate change as a priority. Current practices for

engaging the public in adaptation often lead to outcomes that are counterproductive to advancing adaptation and nature-based solutions, such as when citizens use public participation mechanisms to contest the consideration of adaptation action and nature-based solutions (typically on the basis of personal interests that conflict with proposed measures), or when citizens fail to intervene when adaptation and nature-based solutions are neglected in planning processes. There are a range of barriers on the part of both governments—such as a lack of supporting policies and planning tools or a lack of financial and human resources—and citizens—such as resistance to change or lack of environmental awareness—that are often at play in current approaches to citizen engagement. Additionally, despite progress in broadening participation in adaptation and climate action more broadly, disparities persist in terms of which segments of the population are actively making use of the opportunities provided by these participation mechanisms.

Although young people are eager to contribute to adaptation solutions, they face a number of significant challenges in making meaningful contributions to adaptation planning and action. These include institutional barriers—such as a lack of platform and recognition as key contributors, tokenism, insufficient transparency and excessive bureaucracy, and lack of access to general and climate-specific education—and capacity barriers relating to limited technical or organizational knowledge or limited financial capacity.

SOLUTIONS

Formal education includes education that takes place at schools and training institutions as part of the education system; non-formal education is organized education outside the formal education system, such as that offered by community groups or other organizations; and informal education encompasses the lifelong acquisition of skills, knowledge, values, and so on, from friends, family and general day-to-day experience. There are a variety of steps that can be taken to integrate climate change adaptation in the formal education system, ranging from integrating adaptation in the local context into curricula and supporting extracurricular activities that focus on adaptation to training teachers on adaptation-related topics and developing adaptation plans for schools. Government institutions, NGOs, the private sector and others

can contribute to enhancing the role of informal education on adaptation by, for example, incorporating information and resources on adaptation into media campaigns, radio programmes, theatre and music, and conferences. This helps adaptation information to reach those not part of the education system, including adults and children who are out of school.

Context-specific training can help boost adaptive capacity in a more tailored manner. Training programmes targeted at different sectors (e.g. agriculture, water resources, transportation, infrastructure) and different actors (e.g. government officials, business representatives, youth, educators) can help individuals with different vulnerabilities to better understand and react to their own circumstances.



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In addition, upskilling (i.e. building on skills in a given area or role) and reskilling (i.e. building skills in a new area or role) can help tackle skills shortages and respond to emerging employer needs related to adaptation and mitigation.

Despite the various challenges, meaningfully engaging the public in adaptation planning and action can help to ensure that adaptation interventions reach and meet the needs of those who are most vulnerable to the impacts of climate change. To move away from superficial practices and towards meaningful engagement, policymakers and practitioners must consider methods for better engaging with unorganized publics in adaptation planning and action. One important step in this regard is redistributing expertise in decision-making structures by admitting all participants as experts in their own capacity. Related to this, those designing public participation mechanisms can take advantage of stakeholders' varied expertise and leverage their potential to catalyse change across a range of domains. For example, adaptation policymakers and practitioners can tap into the rich knowledge of the private sector for designing and implementing

adaptation plans and actions and boosting public awareness of adaptation. Incorporating established groups throughout the adaptation planning process, such as faith-based organizations, women's organizations, indigenous groups, universities, and professional groups, can also help enhance effective participation and boost the implementation of chosen adaptation measures. Finally, there are approaches to adaptation that are participatory and inclusive by design, including community-based adaptation and locally led adaptation, which help shift power to local people so that they can have a hand in deciding their adaptation actions.

Barriers and challenges notwithstanding, young people are continuing to find ways to actively contribute to adaptation planning and action. Governments are also increasingly recognizing the potential of young people to drive progress towards adaptation, and are finding ways to facilitate their active participation in related processes. Youth engagement in adaptation efforts can take the form of, among other modalities, advocacy, decision-making and on-the-ground action, and can be facilitated in various ways, including through awareness-raising and training, capacity-building and

empowerment. For effective youth engagement, it is critical to ensure that youth are not perceived or portrayed as a homogenous group with universal values, perspectives and priorities. The development, implementation and review of adaptation plans and policies offer ample opportunity for engaging youth and other stakeholders.

Youth engagement in the national adaptation plan (NAP) and nationally determined contribution (NDC) processes is particularly worthwhile; engagement in these processes can include identifying adaptation-related priorities and options during the planning stage, and using skills and expertise to implement identified measures.

KEY MESSAGES AND RECOMMENDATIONS³

Enhancing adaptation action through education and training:

- Formal, non-formal and informal education play important and complementary roles in enhancing adaptation knowledge and action for people of all ages throughout society. Policymakers can identify opportunities to incorporate climate change and adaptation into science and social science curricula, promote related extracurricular activities, and foster connections between ministries of environment and education. This can help to improve, in particular, formal education on adaptation. Implementing these approaches requires training programmes for teachers, buy-in from both teachers and schools, and budget stability.
- Innovative approaches to adaptation education, such as games-based education, may help to engage younger children in the complex and sometimes overwhelming topic of climate change adaptation. Policymakers

can support the development of such approaches and champion their use.

- Specialized training programmes are vital for equipping vulnerable individuals with knowledge specific to their circumstances that they can use for decision-making on adaptation and safeguarding their health, livelihoods and productivity. Going forward, training initiatives for upskilling and reskilling could play an important role in facilitating the transition to a climate-resilient economy and ensuring that the workforce has the skills necessary for designing and implementing adaptation solutions. Policymakers across all levels of government can work with educational institutions and other stakeholders to boost the development and accessibility of such training initiatives.

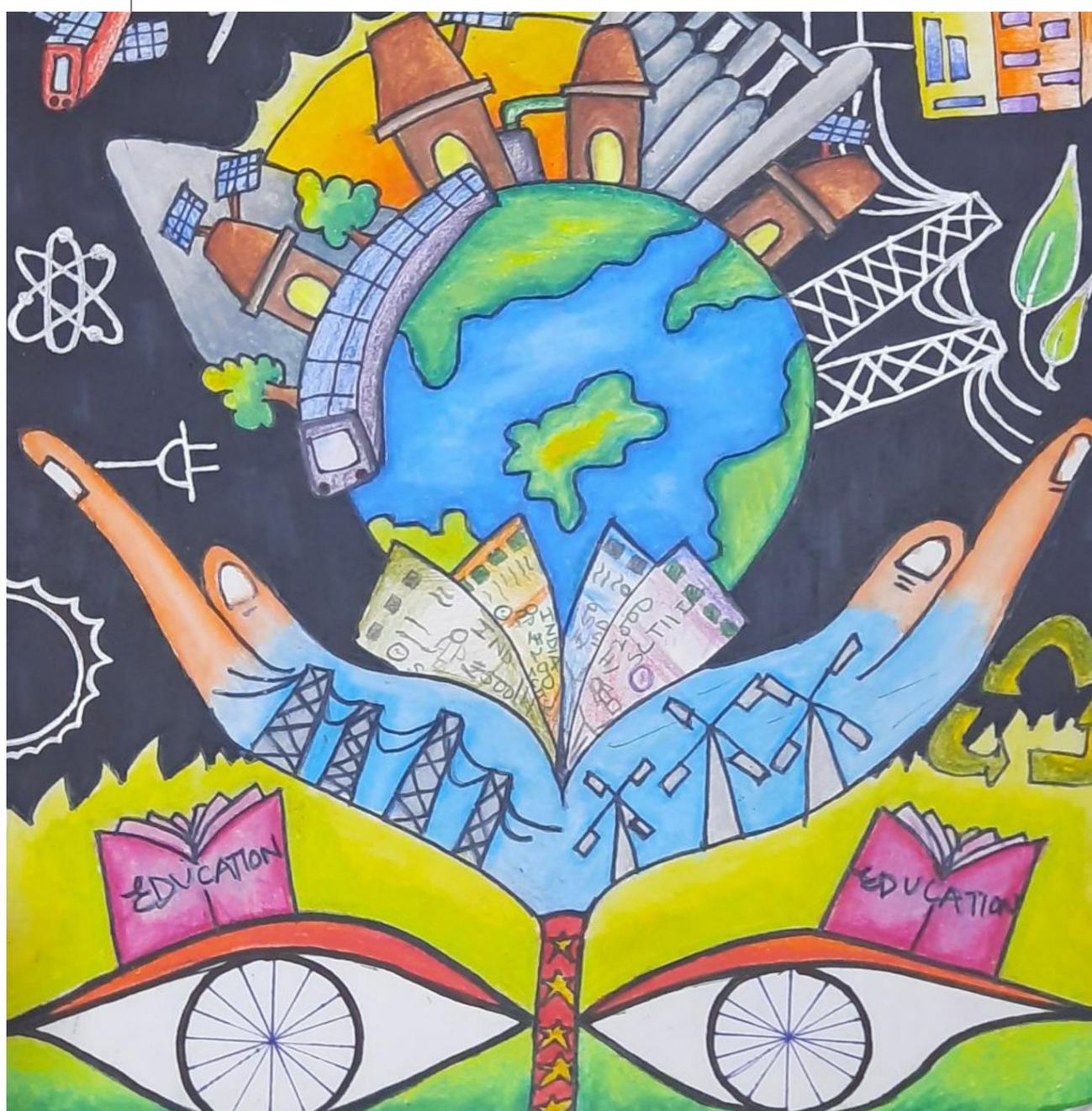
Enhancing adaptation action through public participation:

- Policymakers and government leaders can send a clear message

³ Further details on these recommendations are available in the technical paper emerging from the 2020 TEP-A, available at http://bit.ly/TEPA_TP2020, and the series of policy briefs developed for the process in 2020, available at <http://tep-a.org/policy-briefs/>.

that participation and engagement are central to adaptation, and that investment in participation should be prioritized, by making a high-level commitment to inclusive and participatory adaptation planning and/or implementation at the outset of the process.

- Governments can help to broaden the reach of public participation efforts and engage more people in learning about and taking part in adaptation planning and action by leveraging existing organizations and platforms, including faith-based organizations, women's organizations and indigenous groups.
- Gender-sensitive public participation in adaptation is essential to avoid exacerbating existing inequalities and to ensure all individuals and communities have the opportunity to shape a resilient future for themselves. Governments can take advantage of various entry points, and deploy tools and activities throughout the process to support a gender-sensitive approach to adaptation planning and action.



A photograph of two large wind turbines standing on a rolling green hillside. The sky is filled with soft, white clouds. In the background, there are more hills and mountains under a hazy sky. The overall scene is bright and natural.

OVERALL KEY TAKE-AWAYS AND RECOMMENDATIONS FROM 2016-2020

MITIGATION

Designing policy framework to scale up good practices:

- The technical examination process identified many examples of policy options, mitigation actions and cost-effective technologies with potential of replication and scaling up. Indeed, while good policies and practices exist, they need to be expanded to achieve the scale of mitigation required for the Paris Agreement Goals. Governments can support the scaling up of mitigation actions by introducing and updating a coherent mix of policy instruments.
- Cross-sectoral partnerships are key to ensure that policy frameworks deliver in practice. Governments can work with private sectors to create a policy and regulatory environment that enables effective public-private partnerships to take advantage of technologies that are already available.
- Further, a coherent policy framework combined with public finance (e.g. by supporting proven solutions with preferential loans and tax benefits), can facilitate the drive for private investment. This in turn could provide the right conditions to reach the scale needed by ensuring predictability and reduced investment risk.
- Building confidence among end-users and enabling uptake of technologies and practices are important to achieve the scale needed. The greater uptake of technology and practices require further awareness raising, capacity-building and public support tailored to local circumstances and each thematic area.

- With appropriate policy frameworks and application of good practices identified during the technical examination process, significant scale of GHGs emissions mitigation could be achieved across sectors such as buildings, agriculture, renewable energy supply, industry, waste, transport and land use.

Seizing the opportunities for sustainable development through mitigation actions:

- Political, technical, economic and capacity-related challenges still hamper the implementation of good practices, leaving untapped mitigation potential. Yet, there are many opportunities to overcome such barriers that can bring multiple co-benefits.
- In many cases, climate action can assist in achieving social, economic and environmentally sustainable development co-benefits, such as cost savings, poverty reduction, job creation, increased access to electricity, improved public health, air quality, biodiversity and climate resilience. However, careful planning is needed to ensure complementarity, avoid duplication and capitalize on the various capacities of the actors involved.
- To leverage these co-benefits, proper assessment, effective communication, and accessible data of co-benefits will allow prioritization and decision-making that will maximize sustainable development outcomes and positive climate impacts.

Ensuring effective governance for policy implementation and stakeholder engagement:

- Effective mitigation policies often require integrated policy planning across ministerial and administrative silos. To be successful, mitigation policies and actions should be aligned with national development priorities, overall political context and local circumstances. Integration of multiple objectives and drivers into the design of mitigation

policies will be a key for successful implementation.

- Collaboration is key in the policy process from designing governance frameworks, implementing set policies, and assessing their effectiveness. As such, involving all levels of government, from national ministries to local authorities, in the process and collaborate with relevant stakeholders, including business community, civil society, local communities and development partners.

ADAPTATION

With its focus on enhancing adaptation action through education and training, and public and youth participation, the TEP-A in 2020 served as an apt conclusion to the five-year process. It highlighted how society can be mobilized and better equipped to enhance adaptation action, making clear the importance of strong commitment to active and meaningful public and youth participation, and the role of education and training in preparing individuals and communities to more effectively participate in adaptation action. The messages and recommendations that resulted in 2020 are not only valuable in their own right, but can be combined with the insights and recommendations from the previous four years in order to shape adaptation planning and implementation efforts that are more inclusive, effective, and sustainable in the long-term.

This section revisits some of these key messages and recommendations from the TEP-A as a whole. The full

set of recommendations, along with related background, case studies, and technical analyses, are available in the corresponding Technical Papers⁴ and Summaries for Policymakers⁵.

Adaptation finance, including in relation to the private sector:

- To catalyze adaptation finance at scale, governments need to align domestic expenditure and budgetary plans with climate action. In so doing, it is key that governments develop and implement holistic, robust and iterative national adaptation planning processes and set guidelines and regulations that incentivize adaptation investment.
- The process of formulating and implementing NAPs offers the opportunity to identify and make use of suitable sources of finance, develop project proposals and create overarching financing strategies to support adaptation.

4 Available at <http://tep-a.org/technical-paper/>

5 Available at <http://tep-a.org/summary-for-policymakers/>

- The public sector plays an important role in unlocking and scaling up private sector adaptation finance. Public guarantees and financial incentives can de-risk adaptation investments and provide incentives to ensure finance is flowing in the appropriate spaces. Governments can also impose requirements for the private sector to invest in adaptation efforts relevant to their businesses, such as by using laws and regulations to ensure that sectors invest in adaptation efforts for the ecosystems and communities on which their businesses depend.



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Enhancing adaptation planning in relation to vulnerable ecosystems, communities and groups:

- Adaptation is an iterative process in which local decisions have the potential to shape future national planning, while national systems often guide local decisions and projects. It is important for local work to inform national processes. Harmonized local and national policies are more likely to yield cohesive and effective adaptation plans.
- Ecosystem-based planning approaches can be cheaper and more effective than hard infrastructure measures for adaptation and can deliver additional benefits for people and conservation. These can complement 'grey' or 'infrastructural' approaches.
- Integrating gender perspectives into planning frameworks involves the consideration of comprehensive elements such as where people live, what resources they have access to, and their ethnicity, decision-making power and rights.
- Adaptation planning processes are not an end in themselves but a means to catalyse action

and investment at the local and national level. Effective planning not only provides the opportunity to identify the most vulnerable groups, communities and ecosystems, as well as associated needs and concrete policy options, but also enables capacity-building, helps to establish buy-in and contributes to the effective implementation of adaptation measures.

Integrating climate change adaptation with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction 2015-2030:

- Integrating adaptation with the SDGs and the Sendai Framework can be very beneficial for building resilience comprehensively across societies. While maintaining the autonomy of each of the frameworks, improved coherence of action to implement the three frameworks can save money and time, enhance efficiency and further enable adaptation action.
- There are many opportunities to support further policy integration between adaptation, sustainable development and disaster risk reduction, owing in part to the common themes, scopes and objectives of the three global agendas. Actors, including state and non-state, operating across multiple sectors and scales ranging from local to global, can facilitate policy coherence, and vulnerable people and communities can benefit from and initiate effective bottom-up, locally driven solutions that contribute to multiple policy outcomes.
- The process to formulate and implement NAPs can effectively support the implementation of enhanced adaptation action and the development of integrated

approaches to adaptation, sustainable development and disaster risk reduction, thanks in part to its demonstrated success as a planning instrument, the resources available for its support, and its iterative nature and flexible, nationally driven format.

Enhancing adaptation actions and supporting their implementation: reducing vulnerability and mainstreaming adaptation:

- Dialogue between policymakers/ decision makers and the scientific community provides an opportunity to undertake more targeted assessments and make more effective and informed adaptation decisions. Such dialogue can address challenges related to the availability and interpretation of scientific data, uncertainties of climate scenarios and the development of adaptation decision support tools.
- Financial resources, technology development and transfer and capacity-building are essential for scaling up adaptation efforts. For many developing countries, financial, technological and capacity-building support is critical. It is crucial to explore new opportunities to mobilize additional support to developing country Parties, in particular financial support, so that they may address their adaptation needs.
- Emerging monitoring and evaluation frameworks provide opportunities to learn about the adequacy, effectiveness and efficiency of adaptation efforts and support. Monitoring and evaluation also supports the learning processes by reviewing good practices and lessons learned, including lessons learned from failed actions.



LOOKING AHEAD

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ADAPTATION COMMITTEE



ALESSANDRA GOBBI
CO-CHAIR OF THE ADAPTATION COMMITTEE



CECILIA DA SILVA BERNARDO
CO-CHAIR OF THE ADAPTATION COMMITTEE

Established in 2010, the Adaptation Committee is the global voice on adaptation, working to drive forward coherent UNFCCC action on adaptation around the world by providing expert guidance, enhancing outreach, and supporting the implementation of the Paris Agreement by addressing crucial adaptation issues.

In 2015, Parties entrusted the Adaptation Committee with the responsibility to conduct the TEP-A. This has helped the Adaptation Committee to identify areas where further technical work can be beneficial to Parties and non-Party stakeholders carrying out adaptation action. It has also strengthened partnerships with experts and organizations working to support climate change adaptation across the globe.

And, as the world steps up its action on climate change adaptation, together with our colleagues in the other UNFCCC constituted bodies, we endeavor to carry forward the technical work stemming from the TEP-A, and build on the excellent progress made throughout its five years. With a wide range of tools and significant convening power at our disposal, we are confident that we can sustain, and even bolster, the momentum created by the TEP-A, and further advance the technical work and action on adaptation.

In fact, we have already started to build on and scale up the technical work of the TEP-A. For example, the 2019 TEP-A highlighted the importance of developing and implementing robust and iterative national adaptation planning processes

that engage the private sector and integrate gender considerations. This is crucial to enable countries to catalyse large-scale finance for adaptation that addresses the needs of the most vulnerable. We thus have devoted space in our periodic Adaptation Finance Bulletin to spotlight information and resources on the private sector and gender considerations in the realm of adaptation finance. We will continue to further expand on this work throughout our workplan, for instance, in our ongoing activities related to navigating the landscape of support for the process to formulate and implement NAPs.

The Adaptation Committee will also seek and enhance further opportunities to mobilize a vast network of partners to close enduring adaptation knowledge gaps, thereby paving the way for enhancing urgent adaptation action. This builds upon the solid foundation laid by the TEP-A. One way in which the

Adaptation Committee will do this is through the regular advice provided, since 2019, to the Nairobi work programme on opportunities to, among other things, better align the work of the programme with that of relevant bodies, workstreams and institutional arrangements under the UNFCCC.

On behalf of the Adaptation Committee, we would like to extend our sincere gratitude to all those who have helped make the TEP-A a success, including the Chairs of the Subsidiary Bodies and the High-Level Climate Champions, the volunteer expert organizations, constituted bodies, youth representatives, civil society organizations, and other experts and participants who contributed their time and expertise. We look forward to working with you all once again soon to continue our shared efforts to adapt to the impacts of climate change and build a resilient future.

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As the world steps up its action on climate change adaptation, together with our colleagues in the other UNFCCC constituted bodies, we endeavor to carry forward the technical work stemming from the TEP-A, and build on the excellent progress made throughout its five years.

TECHNOLOGY EXECUTIVE COMMITTEE



STEPHEN MINAS

THE CHAIR OF THE TECHNOLOGY EXECUTIVE COMMITTEE



MAREER M HUSNY

VICE CHAIR OF THE TECHNOLOGY EXECUTIVE COMMITTEE

The TEC is the policy component of the Technology Mechanism established by the Parties to the UNFCCC in 2010. In 2015 the Technology Mechanism was strengthened further by Parties through new mandates to serve the Paris Agreement and to support enhanced action in pre-2020 implementation and ambition. Since its inception, the work of the TEC has focused on supporting Parties and non-Party stakeholders in accelerating the development and transfer of climate technologies, producing policy recommendations in a broad range of both mitigation and adaptation climate technology areas, from agriculture, water, renewable energy and energy efficiency to cross cutting issues such as south-south cooperation, climate technology finance, innovation,

enabling environments, and technology needs assessment.

In supporting and enhancing pre-2020 actions, since 2015 the TEC has engaged actively in the technical examination processes, in particular in identifying ways to scale up the uptake of climate technologies to support countries' actions on mitigation and adaptation.

Our engagements transpired at different levels. We provided inputs to the Adaptation Committee in relation to its work on technical examination process on adaptation. We also submitted recommendations to the High-level Champions, the Chairs of the subsidiary bodies and the secretariat on potential topics for technical expert meetings on mitigation, as well as provided inputs

to Parties during the assessment of the TEP to improve its effectiveness.

We convened a number of regional technical expert meetings in conjunction with the UNFCCC regional climate weeks, highlighting scalable technology solutions on various topics ranging from circular economy, waste-to-energy, to climate-smart cooling, and recommending policies and means to accelerate the implementation of technology solutions in these areas. In doing so have we mobilized the engagement of members of the Marrakech Partnership on Global Climate Action, the CTCN network, regional collaboration centers, Parties and other key stakeholders.

Beyond that, the TEC analyzed the policy options emanating from the TEPs and explored how to take these policy options forward to facilitate and support Parties in their implementation. In 2017 for example, we took the TEP policy options on energy efficiency and worked further, focusing on industrial energy efficiency and material substitution in carbon-intensive sectors, having a deeper dialogue with experts, resulting in a policy brief and recommendations to Parties in this area. We also took success stories and lessons learned explored

during the technical expert meetings to inform our current joint work with the CTCN on how to stimulate technology uptake to support the implementation of NDCs.

Looking ahead, we see our role in continuing our engagements with Parties and non-Party stakeholders to accelerate the deployment of innovative solutions and new technologies that can help countries achieve the goals of the Paris Agreement. In this context, we see value in continuing to bring together a range of actors to share information on success stories, opportunities and challenges of various solutions and to provide common platforms to enhance cooperation. In particular we have seen the benefits of having conversations at the regional level, which have enabled us to focus on the needs and the solutions applicable for countries in particular regions.

On behalf of the TEC, we would like to express our appreciation to all partner organizations, representatives of observer organizations, and experts which have engaged in the work of the TEC in this area. The TEC stands ready to contribute through our technology work to realize the transformational changes envisioned in the Paris Agreement as guided by Parties.

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HIGH-LEVEL CHAMPIONS



GONZALO MUÑOZ

HIGH-LEVEL CHAMPION, COP 25 PRESIDENCY, CHILE



NIGEL TOPPING

HIGH-LEVEL CHAMPION, COP 26 PRESIDENCY,
UNITED KINGDOM

The Technical Examination Processes (TEPs) have been a pioneering framework for bringing climate action and non-Party stakeholders into the UNFCCC process since 2011. The lessons learned along the way have laid the foundation for the recognition of the important role that non-Party stakeholders, the Marrakech Partnership for Global Climate Action, and we, the High-Level Champions, play in accelerating action and ambition.

All High-Level Champions have been fully engaged to make the TEPs a successful process and have made concerted efforts to take forward the outcomes of the technical expert meetings into the work of the Marrakech Partnership. The topics that our predecessors identified in 2018 remain very much relevant to our cross-sectoral approach today and helped shape the Marrakech

Partnership Climate Action Pathways.⁶ Our role as Champions, first and foremost, remains supporting Parties in their efforts to enhance climate action. As such, supporting policymakers by providing a range of policy options and solutions, as the TEPs have done, is something we will continue to build on in an improved Marrakech Partnership for enhancing ambition.⁷ We remain committed to strengthen the collaboration between Parties and non-Party stakeholders by bringing them together around transformational solutions towards the implementation of NDCs, NAPs and long-term strategies, enabling stakeholders to take bold action in a continuous ambition loop. The Climate Action Pathways will help normalize the idea of a systems transformation approach and provide blueprints for this collaboration. To catalyze near-term action as the TEPs also prioritized, we have derived

6 https://unfccc.int/climate-action/marrakech-partnership/reporting-and-tracking/climate_action_pathways

7 https://unfccc.int/sites/default/files/resource/Improving_MP_Design_April2021_o.pdf

breakthroughs from these pathways that pinpoint specific tipping points in each sector to converge stakeholders over the next five years towards 2030⁸. We will also continue to support the constituted bodies when requested, recommending sectoral and innovative approaches and connecting them with non-Party stakeholders relevant for their work.

Encouraging regional expert meetings and leveraging expert organizations, key elements that Parties emphasized at COP 23, will be a core part of making the Marrakech Partnership as inclusive as possible, enhancing regional engagement and helping developing countries. The Implementation Labs that we have initiated at the Regional Climate Weeks this year builds on the success of the regional technical expert meetings by inviting Parties and non-Party stakeholders to take deeper dives and explore how to unlock a sustainable transition in specific sectors. With respect to leveraging expert organizations, the Marrakech Partnership is only as strong as the coalitions and initiatives that are part of it. We will continue to mobilize, under one broad umbrella, ambitious coalitions and initiatives, shining a light on their work and supporting them where they need it most – avoiding duplication and utilizing their unique characteristics to maximize collective impact.

Last but not least, the most important takeaway from the TEPs is how

critical it is to address adaptation and resilience. We have taken heed of this lesson and launched the Race to Resilience to catalyze an exponential change in global ambition and action for climate resilience, with the overall goal to mobilize non-Party stakeholders to build the resilience of 4 billion people and ensure that the voices of front-line communities are heard. This is the sibling campaign to the Race to Zero that rallies non-Party stakeholders to commit and deliver net zero emissions as soon as possible and to take immediate action to halve emissions globally by 2030. To help mobilize resources for both these efforts, we are also supporting the Glasgow Finance Alliance for Net-Zero, which recently launched a workstream to mobilize private capital for climate solutions in emerging markets and developing countries.

As the TEPs have demonstrated, it is clear we need to deliver a step-change on how we collaborate in order to achieve our collective goals under the Paris Agreement. We would like to thank the Chairs of the Subsidiary Bodies, the Adaptation Committee, the Technology Executive Committee, the Climate Technology Centre and Network and all stakeholders involved in designing and delivering the TEPs over the last 10 years. We are committed to build on this legacy to start the next 10 years and this decisive decade - with a sense of urgency, ambition and transformational action.

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We are committed to build on this legacy to start the next 10 years and this decisive decade - with a sense of urgency, ambition and transformational action.

8 <https://racetozero.unfccc.int/wp-content/uploads/2021/07/2030-Breakthroughs-Upgrading-Our-Systems-Together.pdf>



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