



Norwegian Ministry
of Foreign Affairs

Strategy

Climate change, hunger and vulnerability

Strategy for climate change adaptation, disaster risk
reduction and the fight against hunger



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Foreword

Climate change, with its devastating impacts on people, the environment and economic development, is one of the greatest threats facing humanity. The communities that are most vulnerable and have the least resources are being hit the hardest. Climate change adaptation and disaster risk reduction are essential to achieving the UN Sustainable Development Goals. Climate action and sustainable development are intrinsically linked, and the Government will therefore align its efforts in these areas.

The Government has identified climate change adaptation as a priority area in Norwegian development policy. We will step up our efforts, and we know that time is of the essence. While it is vital to reduce emissions, priority must also be given to increasing support for climate change adaptation and disaster risk reduction in development cooperation and global climate action. Climate-resilient development is needed across the world and developing countries must be given support to achieve this.

It is clear that there is a widening gap between what is being done and what needs to be done to safeguard the futures of countries that are vulnerable to climate change, particularly those with the lowest incomes. Increased support for climate change adaptation is one of the key demands from developing countries in the international climate negotiations.

At the climate summit in Glasgow (COP26) in November 2021, Norway pledged to double its climate finance to developing countries by 2026. This includes a commitment to at least triple funding for climate change adaptation, in line with the Paris Agreement, which states that the provision of financial resources should aim to achieve a balance between mitigation and adaptation.

We have already laid the groundwork for a scaled-up adaptation effort. This strategy will provide the framework for our climate adaptation measures in light of the threefold increase in funding for this area.

The strategy was launched in 2021, and its implementation will be continued, with the possibility to make

adjustments, if necessary. This strategy is also relevant in terms of both Norway's security and global security, which are inextricably linked.

The number of people affected by hunger and food insecurity worldwide has increased as a result of the COVID-19 pandemic and Russia's war against Ukraine. This at a time when climate change is leading to more extreme weather events that are having a severe impact on food production. The catastrophic consequences are already clearly evident.

High priority will therefore be given to both climate-resilient food production and efforts to prevent food-related crises. Activities carried out under the Government's strategy for promoting food security in development policy will be closely coordinated with efforts under this strategy. Climate action, in particular climate change adaptation, will be a key element of the implementation of the food security strategy and the effort to achieve the goal of increased food security at the local and national level.

It will be crucial to work closely with the target groups to find effective solutions, combat inequality and ensure the inclusion of the most vulnerable groups – women, children and young people, and people with disabilities.

The issue of loss and damage associated with climate change impacts has risen steadily higher on the international climate agenda. Developing countries are calling for support to alleviate the impacts of climate change, such as when communities are hit by extreme weather events, harvests are destroyed by drought, or people are forced to abandon their homes because of rising sea levels. Under this strategy, we will intensify our efforts to prevent and address loss and damage associated with climate change.

Resources are limited and humanitarian needs are increasing. Where possible, we need to take preventive action to avert crises or minimise their impacts. We must enhance coordination between humanitarian action and long-term development efforts, both in our own development cooperation and in an international

context. Our aim is to promote more sustainable solutions and reduce future humanitarian needs.

We will also support the work being done in multi-lateral forums and organisations to establish norms and standards as a foundation for coherent action based on knowledge.

Our efforts are already well under way, and we look forward to working with our highly competent partners to build more climate-resilient societies.



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Introduction

Climate change adaptation involves understanding the impacts of climate change and implementing action to prevent or reduce potential damage on the one hand and, on the other, making the most of the opportunities that climate change might bring.⁷

This strategy lays the foundation for intensified Norwegian efforts to assist vulnerable societies in adapting to climate change. The strategy identifies priority focus areas and tools for enhancing climate change adaptation, including disaster risk reduction and the fight against hunger. The work carried out under this strategy will be based on an integrated approach.

¹ Based on Norwegian Environment Agency website, information on climate change adaptation (in Norwegian only) <https://www.miljodirektoratet.no/myndigheter/klimaarbeid/klimatilpasning>. See also UNFCCC. Adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change. <https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/what-do-adaptation-to-climate-change-and-climate-resilience-mean>

Most countries in sub-Saharan Africa are low-income countries or among the world's least developed countries and have few resources available for tackling climate change. These countries rank very high on the Global Hunger Index, and at the same time a large proportion of their populations depend on agriculture for their livelihoods. More frequent extreme weather events such as drought, flooding and cyclones combined with very rapid population growth are exacerbating the problems these countries are facing. In several regions, such as the Sahel and the Horn of Africa, the situation is further compounded by conflict and instability. Together, climate change and conflict create a mutually reinforcing negative spiral.

South and Southeast Asia are also experiencing more frequent extreme weather events. Millions of people are affected by floods during the monsoon season, and this leads to landslides causing widespread damage. The cyclones that hit the coastal areas are increasing in frequency and intensity, submerging villages and crops. In the Himalaya region, floods and landslides are having an ever greater impact on densely populated areas and large areas of agricultural land. In addition, the glaciers, which are an important source of water outside the monsoon season, are melting, and this places limitations

on agriculture and industry. Two billion people depend on the water that flows downstream from the major mountain rivers.

Small island developing states (SIDS) are particularly vulnerable to climate change. Extreme weather events, which have become increasingly frequent and severe, can wipe out entire communities and place enormous strain on economies. Some disasters cause such widespread devastation that countries need aid even though they are not classified as developing countries. Natural disasters can lead to a downward spiral of poverty and debt. In addition, the rising sea level is threatening to submerge coastal communities and entire island communities.

Extreme weather events, such as drought, flooding and hurricanes, often affect women far more severely than men due to differences in their socially constructed roles and responsibilities.² Women are more likely to die than men during a disaster, and twice to four times as many people with disabilities lose their lives during disasters than people without disabilities.³ In addition, these groups are more vulnerable to abuse in the aftermath of disasters. Many indigenous groups live in areas that are under great climate pressure, for example in rainforests and SIDS. Indigenous groups manage, and often have rights and traditional claims to, large areas of land with resources and ecosystems that they take good care of. Consideration of the needs of vulnerable groups such as people with disabilities, disparities in the situations of women and men, and indigenous peoples' traditional knowledge will therefore be integrated into Norway's efforts. Norway will work to safeguard the rights of indigenous groups and local communities, including small-scale producers, as stewards of resources and ecosystems. In addition, Norway will promote the participation of young people in the efforts to address climate change, and to ensure that their voices are heard. Young people have a key role to play in ensuring that climate change is high on the agenda and in demanding action.

The UN member states have adopted a number of global frameworks to govern efforts to promote sustainable development and combat poverty. The major challenges the world is facing can only be addressed through international cooperation. The United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement under the

Convention provide the overarching, global and normative framework for climate change action, including adaptation efforts. The Sendai Framework for Disaster Risk Reduction seeks to reduce the risk of natural and man-made disasters. The 2030 Agenda and the Sustainable Development Goals and the Addis Ababa Action Agenda on financing for development provide the global normative framework for fighting poverty and promoting sustainable development. The UN Convention on Biological Diversity (CBD) sets out the global framework for the conservation and sustainable use of biodiversity. These global frameworks provide a roadmap and compass to help us navigate the challenges we are facing.

This strategy is linked to *Norway's Humanitarian Strategy*. It follows up a priority area in the work to prevent humanitarian emergencies, with a focus on climate-related crises. Most natural disasters today are related to climate change.⁴ Disaster risk reduction and emergency preparedness efforts can also increase resilience to natural disasters that are not caused by climate change, such as earthquakes and tsunamis. This strategy must also be seen in close conjunction with the Government's action plan on sustainable food systems in the context of Norwegian foreign and development policy. Other relevant policy documents include the strategic framework for Norway's engagement in conflict prevention, stabilisation and resilience building in countries and regions affected by conflict and fragility (Norwegian only), the Strategy for Norway's efforts in the Sahel region, the white paper *Digital transformation and development policy* (Meld. St. 11 (2019–2020), summary only in English), the white paper *The place of the oceans in Norway's foreign and development policy* (Meld. St. 22 (2016–2017) and the Norwegian Government's updated ocean strategy *Blue Opportunities* (2019).

² <https://www.undp.org/content/dam/undp/library/gender/Gender%20and%20Environment/PB3-AP-Gender-and-disaster-risk-reduction.pdf>

³ Norges Handikapforbund: <https://nhf.no/arbeidet-vart/internasjonalt-bistandsarbeid/katastrofe-og-nodhjelpsarbeid/>

⁴ Centre for Research on the Epidemiology of Disasters (CRED) 2019

The 2030 Agenda and the Sustainable Development Goals (SDGs) serve as a guide for the Government's policy. The Agenda provides the normative framework for international cooperation to promote sustainable development based on the principle of leaving no one behind. It sets out that each country has an independent responsibility to work to reach the SDGs. The 2030 Agenda presents a coherent picture of what is needed to achieve positive and sustainable social development. It is our main guide for addressing the causes of persistent poverty and inequality, and for combating climate change and adapting to its impacts. SDG 2 on hunger and SDG 13 on climate change are the most relevant of the SDGs for this strategy, but the strategy is also intended to play a part in reaching many of the other SDGs.

The **Paris Agreement** was adopted in 2015. It is the first global agreement on climate change that is legally binding on nearly all the world's countries. The Agreement established a framework for strengthening global efforts to prevent dangerous climate change. It also seeks to enhance the ability of countries to adapt to inevitable future climate change impacts, and to support them in these efforts. Under the Paris Agreement, all countries are required to submit nationally determined contributions (NDCs) every five years. Each revised NDC is to show progress from the previous one and reflect the country's highest level of ambition. The global response to climate change will thus be strengthened over time with the aim of keeping global warming to well below 2°C above pre-industrial levels, and working to limit the temperature rise to 1.5°C.

The **Sendai Framework for Disaster Risk Reduction 2015-2030** was adopted in 2015 as the global framework for preventing, and building resilience to, natural and man-made disasters. It provides a set of agreed global targets and indicators for disaster risk reduction that countries are to work towards. One of the targets to be achieved by 2020 was to substantially increase the number of countries with national and local disaster risk reduction strategies. International efforts to implement the Sendai Framework are led by the United Nations Office for Disaster Risk Reduction (UNDRR).

The **UN Convention on Biological Diversity (CBD)** was adopted in 1992 to promote the conservation and sustainable use of biological diversity. The Convention is also intended to ensure equal access and equitable sharing of the benefits arising out of the utilisation of genetic resources. Resilient ecosystems deliver vital services, including providing protection against extreme weather. The post-2020 global biodiversity framework, which is intended to strengthen implementation of the Convention, is due to be adopted at the Conference of the Parties to the CBD in 2021.

The **Addis Ababa Action Agenda (AAAA)** was adopted in 2015 and is a global framework for financing development in line with the 2030 Agenda. The AAAA focuses on areas such as natural resource management, investment, trade, debt management, taxation systems, anti-corruption and efforts to combat illicit financial flows. The AAAA emphasises the importance of knowledge, technology, innovation and capacity building. Each country has an independent responsibility to mobilise and use resources to promote sustainable development, but international cooperation is essential. Aid can provide only a small proportion of the overall resources needed to achieve the SDGs, but it can play an important role if used strategically and as a catalyst to mobilise other forms of financing.



Global trends and challenges

There are a number of megatrends that are changing the world and having a fundamental impact on the natural resource base and on people's lives.

The world's population is expected to double during the 50-year period 1975–2025, from 4 billion to over 8 billion.⁵ According to UN projections, the global population will reach close to 10 billion in 2050. Africa's population is expected to increase from approximately 1.3 billion today to around 2.5 billion by 2050.⁶ In a world where more than 690⁷ million people do not have enough to eat, the global demand for food is expected to rise by up to 50 % by 2050 as a result of population growth and changing dietary habits. Population growth increases pressure on the environment, the Earth's resources, water and the global climate.

Global warming has exceeded 1°C above pre-industrial levels. The various scenarios for global temperature increases developed by the Intergovernmental Panel on

Climate Change (IPCC) indicate that changes in living conditions will be more dramatic the higher the global mean temperature becomes. Changes in climatic conditions will affect people's living conditions in all countries, even if the world achieves the goal set out in the Paris Agreement to limit global warming to well below 2°C and preferably to 1.5 °C, compared to pre-industrial levels. By 2030, global emissions need to be 25 % lower than in 2018 if we are to achieve the 2°C target, or 55 % lower to achieve the 1.5°C target.⁸

Global warming is putting **pressure on ecosystems**. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) estimates that one million of the world's species are threatened with extinction, and the UN Food and Agriculture Organization (FAO) has documented that many plant and animal species that are vital to food security will be lost. Land-use change is the greatest single threat to biodiversity. More frequent and longer periods of drought, intense rainfall and a warmer climate are making it difficult to increase agricultural productivity.

⁵ UN Population Division. World Population Prospects 2019.

⁶ UN Population Division. World Population Prospects 2019. Medium-variant projection.

⁷ <http://www.fao.org/3/ca9692en/online/ca9692en.html>

⁸ UNEP Emission Gap Report 2019

Low productivity and soil depletion are forcing farmers to use new areas of land, resulting in increased deforestation and pressure on ecosystems. Close to 80 % of global deforestation is due to agricultural production. Large-scale agriculture and monocultures are key drivers of deforestation. Much of the forest that is being lost is valuable tropical rainforest. In addition, ecosystems are being threatened by increased soil erosion and land degradation, water scarcity, ocean acidification, and rising sea temperatures and sea levels.

Climate change is increasing the risk of spread of disease and major global health challenges such as pandemics and malnutrition. The UN Environment Programme (UNEP) has highlighted climate change and environmental degradation as key drivers of emerging infectious disease outbreaks, such as the COVID-19 pandemic. According to the World Health Organization (WHO), climate change is expected to cause approximately 250 000 additional deaths per year after 2030 , from malnutrition, malaria, diarrhoea and heat stress. The direct damage costs to health are estimated to be between USD 2-4 billion per year. Vulnerable people and countries will be most severely affected because they are the least able to cope with the challenges.

Climate change and more frequent climate-related disasters have led to a rise in **involuntary migration and forced displacement** of entire communities both within countries and across national borders. Climate change will increasingly drive migration between regions, and the pressure on Europe is expected to be particularly pronounced. The World Bank has estimated that unless urgent climate action is taken, over 140 million people in sub-Saharan Africa, South Asia and Latin America could be internally displaced due to climate related hazards

As a result of **urbanisation**, more than half of the world's population, live in cities, and by 2050 this number is expected to double to 7 billion. This trend will be most prominent in Africa, and the way urbanisation is addressed will be important in terms of achieving the Sustainable Development Goals (SDGs).

These megatrends are compounding the impacts of other challenges that are already affecting the **welfare, economy, peace and security** of countries worldwide. The risk of these factors leading to instability and conflict is particularly high in states where governance is weak, resources are scarce, and crisis preparedness and response and long-term adaptation capacity are inadequate. Climate change adaptation and disaster

risk reduction can help to reduce the potential for conflict, particularly at the local level. In conflict-affected areas such as the Sahel and the Horn of Africa, the situation is particularly challenging because the conflicts exacerbate climate-related crises and food insecurity, and at the same time make it difficult to implement climate and environmental measures. In other words, the crises are mutually reinforcing. The links between climate change and security are receiving increasing attention on the global security agenda and in the African Union's Peace and Security Council. There are also growing calls for the development of comprehensive and integrated conflict analyses as a basis for more coherent and coordinated response.

The Global Risks Report 2020, published by the World Economic Forum, identifies extreme weather, climate action failure, natural disasters, biodiversity loss and human-made environmental disasters as the top five global risks in terms of likelihood. According to the report, climate action failure, weapons of mass destruction, biodiversity loss, extreme weather and water crises are the top five global risks in terms of impact on society. Climate action failure is considered the highest risk.

The **COVID-19 pandemic** came on top of these global trends and challenges. It has had worldwide impacts, but it is the most vulnerable groups that have been most severely affected.

At the same time, there are also a number of positive megatrends that are enhancing human capacity to address global challenges. The **digital revolution and technological advances** are creating good opportunities for sharing knowledge and experience, developing innovative solutions, building better infrastructure, promoting conservation and sustainable use of natural resources and broadening engagement in the global effort needed to mitigate and adapt to climate change.



Objective: reduced climate change vulnerability and hunger in developing countries

The fundamental aim of climate change adaptation is for countries and societies to develop adaptation solutions and implement action to prevent and reduce vulnerability to the adverse effects of climate change that are already happening and to increase resilience to anticipated future impacts, and also to benefit from opportunities associated with climate change.⁹ In this strategy, the term 'vulnerability' is used when referring to individuals, communities and countries that for varying reasons are particularly exposed to the impacts of climate change. Poverty, geographical location, governance challenges, the economic situation, conflicts and crises all affect the degree of climate change vulnerability.

Norway's support for climate change adaptation is intended to assist developing countries in their efforts to achieve the Sustainable Development Goals by

improving their adaptive capacity to climate change and their capacity for disaster risk reduction and for dealing with climate-related and natural disasters. This funding is also intended to support efforts to end hunger, achieve food security, improve nutrition and promote sustainable food systems based on agriculture, aquaculture and fisheries. It is to be used to benefit the poorest and most vulnerable groups, with a particular focus on countries identified as partner countries in Norway's development cooperation and vulnerable small island developing states. Funding provided by Norway will be used to assist countries in developing and implementing national adaptation plans. The support will also be used to promote the incorporation of climate change adaptation measures in policies, strategies and plans in line with national priorities. In the long term, the overall objective is to reduce climate change vulnerability and hunger in developing countries.

⁹ Mainly based on UNFCCC



Focus areas

Climate change affects all sectors of society, and for this reason, climate change and environment has been defined as a cross-cutting issue in Norwegian development policy. All projects receiving funding from Norway must have assessed the project's potential adverse impacts on greenhouse gas emissions or climate change vulnerability. In addition, risk analyses carried out by development actors should, where relevant, consider the project's degree of resilience to climate-related risks, for example flooding, drought or extreme weather events.

As well as integrating consideration of environmental and climate issues into all funding decisions, Norway will strengthen efforts in areas that are regarded as key for building resilient societies that are able to adapt to climate change. Priority will be given to promoting sustainable and climate-smart food production and food security. The Paris Agreement underscores the need to seek a balance between adaptation and mitigation when providing funding. This strategy is part of Norway's efforts to achieve this. At the same time, there are often synergies between adaptation and mitigation, and one and the same project can promote both. Norway will maintain a particular focus on areas where it can provide added value in the form of

knowledge and experience. Norway's efforts are to be knowledge-based and built on existing and new research. Providing support for the development and improvement of data, statistics, indicators and analysis, in collaboration with relevant partners, will be a priority, as will reporting on results achieved through joint activities. Research, innovation and technological development will be important for promoting progress, more effective solutions and better results in all focus areas. Knowledge sharing and competence building will be crucial elements of Norway's support. Ocean-related efforts will be closely aligned with the UN Decade of Ocean Science for Sustainable Development (2021–2030).

The implementation of this strategy will be an integral part of other Norwegian development and foreign policy initiatives. Efforts in the various focus areas are to be viewed in conjunction with one another to ensure an integrated approach and promote synergies, as well as to help developing countries avoid the 'sectoral trap' and work towards a cross-sectoral approach. Support provided by Norway will also be coordinated with support from other donors.

Norway is a major donor to global education. Efforts to promote climate change adaptation and disaster risk reduction must be underpinned by knowledge and understanding of climate change, vulnerability and food security. New school buildings must be constructed to withstand extreme weather so that they can provide a safe gathering place for people when needed. School meals schemes are needed to provide pupils with nutritious food, improve learning potential and prevent hunger and malnutrition. This is particularly critical when communities are affected by extreme weather events that disrupt food production. Global health is another priority area in Norwegian development policy. The development of health systems aimed at achieving universal health coverage is an important area in this context. This involves strengthening primary health services and enhancing access to medicines and vaccines. The COVID-19 pandemic has highlighted the importance of this as a component of disaster risk reduction. These efforts also help to increase the resilience of people in vulnerable and poor countries to climate change. Norway has supported efforts relating to climate change and health for several years through the World Health Organization, with an emphasis on increasing knowledge of the health-related impacts of climate change and possible adaptation strategies.

Extreme weather events can have a devastating impact on the livelihoods and economies of small island states whose gross national income (GNI) per capita is too high for them to be eligible for official development assistance (ODA). Norway wishes to preserve the integrity of the concept of ODA, but has pointed out on several occasions in the OECD Development Assistance Committee (DAC) that small island states regardless of their income level, are particularly vulnerable to the impacts of extreme weather. Norway is therefore working in the OECD/DAC to adapt the ODA rules so that limited humanitarian assistance to small island states following onset crisis can qualify as ODA even though the country concerned is not on the DAC list of ODA recipients.

The Government will:

- base Norway's efforts on the principle of leaving no one behind, by giving priority to at-risk and particularly vulnerable groups;
- promote the development and implementation of national climate change adaptation plans, and strengthen the knowledge base for action

by providing support for research, technological development and innovation and actively encouraging the participation of Norwegian and international research groups;

- work in the OECD/DAC to adapt the ODA rules so that limited humanitarian assistance to small island states following weather-related crisis events can qualify as ODA even if the country concerned is not on the DAC list of ODA recipients.



4.1 Early warning systems and climate services

Early warning systems for dangerous weather events are crucial to be able to implement early action and risk reduction measures that can save lives and assets.

Climate services are intended to provide reliable, relevant and easily understood weather and climate information for various sectors and end users, and to equip them with a sound basis for making decisions on climate change adaptation and disaster risk reduction. Early warnings of weather events such as drought, flooding and hurricanes, combined with early estimates of the damage potential, are an important means of limiting damage. Thus, climate services may help to diminish the impacts of climate change on people, animals and crops. They can also help to prevent and reduce the spread of disease (e.g. malaria and water-borne diseases such as cholera) and of pests that destroy agricultural crops.

The desert locust upsurge that started at the end of 2019 in conflict-affected countries in the Middle East has spread to both South Asia and Africa. According to scientists, the outbreak began as a result of extreme rainfall and flooding, with subsequent excessive

Yr (yr.no) is Norway's online weather service. It provides high-quality weather forecasts for more than 10 million places around the world, and is therefore a widely used digital resource far beyond Norway's borders. The Norwegian Meteorological Institute has an open, user-oriented data policy, and the data used as the basis for the weather forecasts on Yr are available free of charge and are easy to access. Yr is not the exclusive owner of the data, and as a general rule, anyone who wishes to do so can use the data directly in their own digital solutions. Many developing countries need better and more readily accessible weather forecasts. There is therefore much to be gained by making the data and software on which Yr is based even more openly available for integration into other national weather forecasting systems and services. The Meteorological Institute is investigating how best to expand the use of their open weather data as a digital public good in African countries, and in the long term elsewhere, so that national weather forecasts can be made more accurate and reliable. Pilot projects involving close cooperation between the Meteorological Institute and other countries' national weather forecasting services will be carried out with a view to developing an approach and methodology that can be used more widely.

The Norwegian Meteorological Institute is assisting Bangladesh, Vietnam and Myanmar to build capacity in their national services in order to improve weather forecasting. Capacity-building efforts have involved training meteorologists and providing access to free weather forecasting software developed by Norway, and have led to the modernisation of weather forecasting services to include better weather models and high-quality forecasting tools. The Meteorological Institute has, for example, developed a data visualisation tool that makes it possible to analyse all types of meteorological data using the same interface. This cooperation also provides the national weather forecasting services with access free of charge to global weather data from the European Centre for Medium-Range Weather Forecasts, which enables them to make more accurate forecasts.

vegetation growth, which allowed the locust population to explode.¹⁰ In addition, monitoring and control are more difficult to implement when outbreaks of insects or other animals that damage crops occur in conflict-affected areas.

Better monitoring systems, combined with weather and climate data, are crucial in preventing agricultural disasters caused by pests such as locusts. Climate change may exacerbate the problems, making such systems even more important.

Fisheries and aquaculture are vital for many low-income communities and are already being badly affected by climate change. To increase the resilience of these industries, it is important to support the development of weather and climate services, and to improve access to them and promote their use.

The development of early warning and climate services is an ongoing process, and Norway is already supporting a number of projects. These include support for the development and operation of early warning systems and for development of the necessary capacity to respond to warnings. Systems for early warning of climate-related events involve authorities, national meteorological and hydrological services and local communities. Access to data together with skills and capacity to analyze and make use of the data is a prerequisite. Dealing with the cross-border challenges resulting from climate change also requires regions or states and countries to share data. This can be politically challenging in cases where there is no established culture for sharing data. Inviting countries to cooperate and experience the benefits of sharing in practice can ensure that work in this field also yields political benefits and strengthens cooperation between countries.

Norway can offer leading expertise in climate services and early warning systems. Norwegian technological solutions and digital public goods should be shared with countries that are exposed to natural hazards.

The Government will:

- support the development of effective weather and climate services as a basis for making decisions relating to climate change adaptation and disaster risk reduction, including for the agriculture, fisheries and aquaculture sectors;

¹⁰ <https://www.worldbank.org/en/topic/the-world-bank-group-and-the-desert-locust-outbreak>

- contribute to improving data and statistics for assessing the impacts of climate change and to disseminating knowledge about the impacts of climate change and how they can be addressed;
- assist in developing national and regional emergency plans and systems and in building the capacity needed to respond to weather- and climate-related early warnings.



4.2 Nature-based solutions

Nature is the first line of defence against climate-related disasters and other impacts of climate change. Nature-based solutions are actions that use conservation measures, sustainable use and the restoration and establishment of ecosystems and ecosystem services to address major social issues such as adaptation to climate change, disaster risk reduction and the fight against hunger. Sustainable environmental management is a vital basis for achieving the goals of this strategy, and often has triple benefits in the form of carbon uptake, conservation of biodiversity and climate change adaptation. Nature-based solutions must be introduced in ways that protect the interests of indigenous peoples and local communities as managers of natural resources and ecosystems.

Nature-based solutions for climate change adaptation support the delivery of ecosystem services such as local climate regulation, for example through the conservation and sustainable use of agricultural soils, forests, 'blue forests'¹¹ and wetlands. In many countries, and particularly for vulnerable coastal and island communities, the best nature-based solutions

¹¹ Marine vegetation, including mangrove forests and seagrass meadows.

for disaster risk reduction are the conservation of mangrove forests and coral reefs so that they can provide protection against storm damage and flooding. Establishing marine protected areas and other area-based management measures can be important as a way of building up stocks of fish and shellfish, in the fight against hunger, and for climate change adaptation and disaster risk reduction. Sustainable management of important marine ecosystems such as coral reefs, seagrass meadows, mangrove forests and kelp forests is vital, for example in maintaining feeding areas for coastal fish species and shellfish

Key actions to sustain food production include preventing soil erosion and improving soil fertility, for example by maintaining vegetation cover. Sustainable management of agricultural soils and farming methods that improve soil health and structure also make it possible to increase production and reduce the risk of and damage caused by flooding and drought. Actions of this kind are often low-cost and low-risk and can have beneficial social effects and help to maintain ecosystems we all depend on. Action is being taken to implement nature-based solutions for carbon fixation in marine ecosystems as a means of preventing ocean acidification and promoting sustainable harvesting of seafood. Climate change adaptation measures in this category include cultivating seaweed and kelp and establishing or re-establishing marine vegetation.

The International Climate and Forest Initiative is one of Norway's largest contributions to international climate action. Its aim is to reduce greenhouse gas emissions from deforestation and forest degradation in developing countries. Forests are also an important source of food and provide ecosystem services such as clean water and protection against drought and erosion, factors that have important implications for climate change adaptation, disaster risk reduction and food security. The importance of coordinating land-use management of food production and forest land is becoming increasingly apparent. This is important for climate change mitigation and adaptation alike, and can be a tool for reducing poverty. Wetlands are also important carbon pools, and wetland conservation is therefore included in the Climate and Forest Initiative.

The High-level Panel for a Sustainable Ocean Economy launched its ocean action agenda and a set of recommendations on 3 December 2020. The recommendations will be used in implementing this strategy. As expressed by the Ocean Panel; 'Marine and coastal ecosystems not only sequester and store vast amounts of CO₂ but also protect coasts and communities

Nature-based solutions can be used to enhance adaptation to climate change, promote disaster risk reduction and combat hunger. In Madagascar, for example, WWF is working with local people and coastal communities on planting of new mangroves and conservation of existing mangrove ecosystems. Healthy mangrove forests protect coastal communities against wave action and storms. They act as a physical barrier against the impacts of climate change, which are already affecting these communities. They prevent salt water from reaching crops and drinking water, and provide habitat for fish, crabs and shrimps, which in turn provide a source of income for people living along the coast. In addition, mangrove forests absorb and store carbon.

from climate impacts. They provide food, economic, medicinal and recreation opportunities, habitat and a range of ecosystem functions to support human well-being. An integrated approach that is climate-smart and focuses on nature-based solutions, integrating well-managed marine protected areas and other effective area-based conservation measures, alongside sustainable infrastructure development, will be vital to protect coastal communities and marine habitats.' The Panel's goal is that by 2030, 'marine and coastal ecosystems are healthy, resilient and productive, and nature-based solutions are key elements in developing coastal infrastructure.'

The Government will:

- work to promote sustainable land-use management, safeguard the rights of local people, and contribute to forest and landscape restoration in combination with climate-smart agriculture and nature-based solutions;
- support the conservation of 'blue forests' in order to avoid the loss of marine life and coastal erosion and reduce vulnerability to weather extremes and flooding;
- promote knowledge-based, sustainable ocean management to ensure conservation of marine ecosystems and sustainable use of marine resources, including area-based conservation tools such as marine protected areas;

- strengthen coordination between the International Climate and Forest Initiative and the action plan on sustainable food systems.



4.3 Climate-resilient food production

Poverty, climate change, war and conflict have resulted in a steady rise in the number of people living in food insecurity or with limited access to food since 2014, and some 690 million people are going hungry at present. In spring 2020, the World Food Programme published its fourth annual *Global Report on Food Crises*. The report described a worsening situation, and one that is likely to deteriorate as a result of the COVID-19 pandemic. There is a risk that the number of people facing acute food insecurity will double from 135 to 265 million people.¹²

Most of the world's poorest people depend directly or indirectly on agriculture for their livelihoods, and investing in the food-producing sectors is considered to be a very effective way of reducing poverty. In sub-Saharan Africa, 70 to 80 % of the population are employed in agriculture, largely as small-scale farmers. In Norway's partner countries in Asia, the figure is 60 to 70 %.

Through the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and the FAO Commission on Genetic Resources for Food and Agriculture, the countries of the world have agreed on common goals and commitments relating to the conservation of genetic resources.

¹² <https://www.wfp.org/news/covid-19-will-double-number-people-facing-food-crises-unless-swift-action-taken>

Initiatives to better equip small-scale food producers and their local communities to deal with natural hazards and other adverse impacts of climate change are an important part of adaptation to climate change. In 2019, the Norwegian Government published an action plan on sustainable food systems 2019-2023.¹³ The plan lists key action points for making food production sustainable and climate-resilient. These include increasing access to appropriate technology, increasing small-scale producers' knowledge of and access to necessary inputs, reducing food waste, and conservation of biodiversity. The action plan also highlights market access, raising incomes and value creation. Other important action points mentioned include forecast-based financing ahead of extreme weather events¹⁴ and further development of weather and climate services. These action points are in particular targeted towards reducing hunger, which is also one of the goals of this strategy. The COVID-19 pandemic has increased the threat to food security, and the Government is scaling up action to combat hunger in response.

Sustainable use of land is a key factor in reducing greenhouse gas emissions, adapting to climate change and reducing the loss of biodiversity. To achieve sustainable intensification of food production, it is essential to conserve biodiversity and reverse ongoing soil degradation. Improving access to climate-resilient seed and enhancing the genetic diversity of food plants are important tools in climate change adaptation in agriculture, as they provide ways of increasing the resistance of crops to disease and making agriculture more climate-resilient. This includes the establishment of local seed-banks to maintain rapid access to climate-resilient seed in emergencies. It is also crucially important to develop new knowledge about cultivation techniques that are adapted to conservation tillage and that retain vegetation cover for a larger part of the year. Land rights issues must be addressed to ensure that farmers have a long-term interest in soil conservation.

Norway's new Agriculture for Development programme will include technical cooperation, which among other things will support the implementation of this strategy. The programme is being established under Norad. One area of technical cooperation in agriculture is improving animal health. Studies have shown that there may be links between climate change and diseases that are transmitted from animals to humans

¹³ Food, People and the Environment - The Government's action plan on sustainable food systems in the context of Norwegian foreign and development policy (https://www.regjeringen.no/en/dokumenter/sustainablefood_actionplan/id2661208/).

¹⁴ See the text box on forecast-based financing in chapter 4.5

(zoonotic diseases). Pilot projects in this field are being developed in Malawi and Ethiopia with the Norwegian Veterinary Institute as the Norwegian partner. Development cooperation in the field of agriculture will also promote the use of digital tools to improve data and knowledge about plant health, irrigation and fertilisation. A pilot project on plant health has been established in Malawi through further expansion of the ongoing cooperation between the Norwegian Institute of Bioeconomy Research and FAO.

Climate change is having major impacts on water resources. Higher rainfall, erosion, flooding and extreme drought all threaten food production and add to food insecurity. Water resource management plays a key role in efforts to increase food production in a changing climate. A body of knowledge has already been developed that should be made available to small-scale farmers, and further knowledge development is needed in addition. Solutions include methods of collecting rainwater for use in food production and systems for avoiding erosion and soil loss during extreme rainfall. Without better management of the available water resources, other measures to increase food production and reduce hunger will not succeed. Water resource management will therefore be an integral part of Norwegian efforts to make food production climate-resilient.

The role of the oceans for food security will also be more important in the future. In its report *The Future of Food from the Sea*, the Ocean Panel concluded that it would be possible to harvest and produce several times more food from the oceans than is the case today. Fisheries and aquaculture can be managed to ensure the continued availability of fish, but many developing countries lack the necessary expertise and capacity to integrate measures for fisheries and agriculture into their national adaptation plans. Norway's Fish for Development programme assists developing countries in addressing these challenges. However, the oceans are also under threat from climate change,¹⁵ pollution and overexploitation of resources (such as overfishing, illegal, unreported and unregulated fishing (IUU fishing) and fisheries crime). These factors could result in declining production and smaller catches in wild fisheries, for example because of changes in the migration patterns of marine species as the oceans warm. The Government has increased funding for ocean-related measures that are relevant to climate change adaptation and sustainable ocean-based food systems.

¹⁵ <https://www.ipcc.ch/srocc/home/>

The oceans have a vital role to play in achieving many of the SDGs, and offer huge potential for meeting the world's need for resources. Norway is playing a leading role in international efforts to give better protection to the marine environment and increase production sustainably. Integrated, ecosystem-based ocean management will be a vital basis for maintaining clean, healthy and productive oceans for future generations. The Government has launched the Oceans for Development programme to promote sustainable ocean management in selected partner countries. Specific measures such as conservation of marine vegetation ('blue forests') and marine protection can also play an important role in the effort to improve climate change adaptation, disaster risk reduction and food security.

The Government will:

- encourage good farming practices that also promote better soil quality and soil health and sustainable use of agricultural areas in the long term;
- support water resource management in selected countries and areas as part of support for food production;
- step up work on plant and animal breeding and management of genetic diversity to enable small-scale food producers to learn more about and have access to a wider range of varieties, breeds and species as a basis for climate-resilient food production;
- improve advisory services, plant and animal health, and veterinary services;
- improve fisheries management and integrated ocean management in partner countries, for example through the Fish for Development and Oceans for Development programmes;
- promote innovation and digitalisation that can boost climate-smart productivity in agriculture, fisheries and aquaculture in developing countries.



4.4 Infrastructure

High-quality infrastructure is essential to the functioning of modern-day society. In many countries, including most developing countries, infrastructure has not been designed to withstand the growing pressures of climate change. In low and middle-income countries, infrastructure disruptions cost households and businesses approximately USD 390 billion annually.¹⁶ Asia is particularly vulnerable to extreme weather events due to its large rivers, floodplains and ground conditions. In addition, population density is high in areas that are vulnerable to natural hazards. A resilient infrastructure landscape is therefore vital. In Africa, rapid population growth means that by 2025, there will be 100 African cities with more than one million inhabitants,¹⁷ and resilient urban infrastructure must be developed if these cities are to be able to adapt to climate change. In several countries in sub-Saharan Africa and small island developing states, up to 90 % of the infrastructure has been damaged or destroyed by extreme weather. This affects everyone in these countries, but it is the poorest who suffer the most. They often live in areas where infrastructure is already weak and where it can take a long time to repair damage. This includes damage to houses and other buildings such as hospitals and schools, and to water and sanitation facilities, energy systems, and transport and telecommunications infrastructure. Greater volumes of water and more severe floods can overload urban drainage systems that may already be outdated or not adequately developed. Damage to roads and transport systems can prevent people from being able to reach their workplace, or make it more difficult to transport food from farms to the table. As a result of climate change, small island states have already experienced the

¹⁶ <https://www.gfdr.org/en/lifelines>

¹⁷ <https://www.weforum.org/agenda/2018/06/Africa-urbanization-cities-double-population-2050-4%20ways-thrive/>

The cyclones that hit Mozambique in 2019 caused enormous devastation that will affect the country for a long time to come. The UN has estimated that the reconstruction costs will exceed USD 3 billion. Norway is a key partner for Mozambique in the area of energy. The cyclones caused significant damage to energy-related infrastructure, with far-reaching consequences for social development and people's lives. Norway has allocated NOK 193 million to Mozambique for climate-resilient reconstruction of energy-related infrastructure in and around the city of Beira. This funding includes support for the reconstruction of transmission lines and transformer stations to secure the supply of electricity to e.g. water pumps, irrigation systems, hospitals, treatment centres and street lighting.

destruction of ports and other infrastructure due to rising sea levels or stronger hurricanes.

This destruction of infrastructure can be prevented, and investing in climate-resilient infrastructure yields substantial benefits. In its *Lifelines* report,¹⁸ the World Bank has estimated that every US dollar spent on disaster risk reduction in the form of investment in resilient infrastructure saves 4 US dollars in post-disaster reconstruction costs. The report shows that combining infrastructure development with nature-based solutions can reduce costs and lead to more resilient and sustainable infrastructure solutions that can provide protection against flooding, coastal erosion and extreme weather events. The planting of vegetation and conservation of coral reefs and mangrove forests are examples of effective nature-based solutions. In addition, the conservation of wetlands and river deltas can reduce flooding.

Norway provides support through regional and global funds and organisations to programmes that seek to increase the resilience of critical infrastructure in countries that are vulnerable to climate change both through the development of new infrastructure and the reconstruction or rehabilitation of existing facilities (in line with the 'build back better' principle). These efforts are important for building sustainable societies.

The Government will:

- increase support for key regional and global funds and organisations that are working to promote climate-resilient infrastructure and to incorporate climate resilience considerations into planning processes, regulatory frameworks and infrastructure projects;
- work to ensure that infrastructure facilities developed under projects supported by Norway are designed to be climate-resilient and that nature-based solutions are considered where relevant.



4.5 Innovative development financing mechanisms

Innovative development financing mechanisms are defined by the OECD as financing instruments that build on and expand the use of traditional financing sources (e.g. insurance schemes) to include new recipient groups and/or introduce new approaches to known challenges (e.g. forecast-based financing, which uses forecast information about extreme weather events to trigger the release of funding) or that attract new market actors.

When used as part of an integrated approach to risk management and disaster risk reduction, these financing mechanisms can help protect people, livelihoods, business activities, infrastructure and public finances by facilitating more rapid response and reconstruction. For these mechanisms to be effective, preparedness plans must be drawn up in advance in which roles, responsibilities and actions for implementation and follow-up are clearly defined.

¹⁸ <https://www.gfdrr.org/en/lifelines>

Disaster risk reduction efforts, no matter how well designed, will never prevent all disasters. When a natural disaster occurs, it is important to enable those affected to resume their normal lives as quickly as possible. Priority should be given to ensuring a rapid response, providing effective assistance and reaching the most vulnerable people. While this is a difficult task for all countries, developing countries face the greatest challenges in this context. People and communities with limited resources either cannot afford, or do not have access to, insurance coverage that can alleviate the effects of a disaster. For this reason, financing and insurance mechanisms have been developed that are also available to developing countries and can promote rapid reconstruction. The Caribbean Catastrophe Risk Insurance Facility and the African Risk Capacity are two examples. However, to succeed in reaching the poorest and most vulnerable groups, these mechanisms need to be refined and new ones developed.

Innovative financing mechanisms are also being developed to facilitate anticipatory action to prevent extreme events from becoming disasters. Effective early warning systems make it possible to detect impending disasters. There have been promising results from projects where specific forecast thresholds have been used to trigger the release of financial resources for the implementation of early actions in line with preparedness plans. The World Food Programme is working to promote this approach with support from Norway (see fact box). This is an area that needs to be further developed and strengthened.

There is general agreement at the international level that effective, predictable financing mechanisms are a vital element of disaster risk reduction. The InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions has been established to coordinate and further refine innovative development financing mechanisms as part of disaster risk management in developing countries. Including the poorest and most vulnerable people is one of its stated aims. The partnership, which was launched at the UN Climate Change Conference in 2017, brings together countries, civil society, international organisations, the private sector, and academia, and there are now more than 70 partners.

The development of insurance mechanisms targeting the fisheries, aquaculture and agriculture sectors with a focus on small-scale farmers and fishermen will be assessed in conjunction with efforts implemented under Norway's action plan on sustainable food systems. The aim is to prevent crop failure and poor

Forecast-based financing is an innovative financing mechanism located in the interface between development efforts and humanitarian response. It involves financing early action, risk reduction and preparedness efforts before an anticipated weather event occurs. Funds are disbursed on the basis of reliable weather forecasts and risk assessments with pre-defined threshold values, such as volume of rainfall, that trigger the release of funds. The actions to be implemented are also predetermined and are designed to minimise loss and damage and reduce the need for humanitarian assistance in the event of an extreme weather event. Action taken is to be in line with national priorities and based on existing knowledge and coordination mechanisms. Norway has supported the work of the World Food Programme to develop this concept for several years and is now providing support for further testing, implementation and development of this method. WFP attaches great importance to national capacity building and cooperates with national meteorological and hydrological services on strengthening forecasting expertise and integrating early warning systems into national emergency preparedness and response plans.

harvests from creating a downward spiral of poverty resulting in the need for lifesaving emergency relief.

The Government will:

- support the development and implementation of financing mechanisms targeting vulnerable countries and groups that facilitate the disbursement of funding when an extreme weather event warning is issued, in order to mitigate the adverse impacts, including forecast-based financing of actions to alleviate the situation for vulnerable food producers and other vulnerable groups;
- promote financing mechanisms, such as insurance and (flexible) social security schemes that ensure rapid, predictable disbursement of funds to vulnerable groups in the wake of an extreme event.



Climate change and security

Climate change is an increasingly prominent feature of the risk landscape in many countries. The impacts of climate change compound the root causes of conflict, exacerbate ongoing conflicts, and pose a direct existential threat to certain countries. Climate change is often described as a threat multiplier. Existing research¹⁹ on the security policy aspects of climate change points towards an increased risk of conflicts over scarce natural resources such as water, food and land. Competition for scarce natural resources is often a trigger for migration, and climate change is intensifying this trend in many areas.

Climate change will exacerbate existing threats in particular in the countries that are most vulnerable in terms of natural resources and environmental risks and countries with the least-developed crisis management mechanisms. People affected by conflict are among those most vulnerable to natural hazards, and it is often difficult to implement efforts to reduce the vulnerability of this group due to possible security policy implications.

¹⁹ https://berlin-climate-security-conference.de/sites/berlin-climate-security-conference.de/files/documents/10_insights_on_climate_impacts_and_peace_key_facts.pdf

Priority should be given to efforts to reduce both vulnerability to natural hazards and the risk of conflict. Climate change adaptation projects could be used to encourage cooperation between groups in a conflict and could therefore help to build trust and address challenges.

As the white paper *Setting the course for Norwegian foreign and security policy* (Meld. St. 36 (2016-2017)) points out, climate change affects Norway's security. Climate change is not a security threat in the traditional sense, but it can exacerbate other challenges that are already having an impact on stability, peace and security, thus heightening the overall level of risk. Moving forward, it will be important to develop a systematic approach for detecting and managing the increased risks of instability, insecurity and conflict resulting from climate change and for understanding how these risks undermine the ability to prevent, address and resolve conflicts. Support for the Climate Security Mechanism, a partnership between the UN Department of Political and Peacebuilding Affairs, the UN Development Programme and the UN Environment Programme, combined with efforts to strengthen capacity at regional level, and the appointment of a special envoy for climate and security in the UN, will be vital in this context.

Climate change and security has been identified as one of four priority areas for Norway's membership of the UN Security Council in the period 2021–2022. Norway will work to strengthen the Security Council's ability to prevent, deal with and resolve climate-related threats to international peace and security.

The Government will:

- seek to strengthen knowledge, capacity, and the information and analysis base in order to promote the integration of climate-related security risks and climate-related threats into decision-making processes in e.g. the Security Council and the African Union;
- promote the use of scenario analysis as a tool for highlighting the potential for future conflicts as a result of climate-related security risks in particularly vulnerable countries and regions, as a basis for preventive diplomacy;
- work to strengthen the Security Council's ability to prevent, deal with and resolve climate-related threats to international peace and security.



Interaction between humanitarian efforts and long-term development assistance

Effective disaster risk reduction and preparedness are the key to reducing future humanitarian needs. The overall aim is to avoid or limit the impact of humanitarian crises. At the same time, it is vital to ensure close coordination between humanitarian efforts and long-term development assistance. An integrated approach that is continuously adapted and refined to reduce vulnerability and build resilience is essential.²⁰

This applies in particular to Norway's development cooperation in areas affected by war and conflict, for example parts of the Sahel region and the Horn of Africa. In these areas, support for climate-resilient agriculture, for instance, can increase food security, employment and value creation, as referred to in

Norway's Sahel strategy.²¹ In contexts such as this, climate change adaptation can form part of an integrated approach to build resilience in the countries in the region, and thus also reduce the need for humanitarian assistance in the future.

Achieving an integrated approach will require better coordination between humanitarian and long-term development actors in the planning and implementation of activities and programmes. It is vital that this takes place both at country level and in global forums. Norway will actively promote such efforts at the international level and when providing support.

Forecast-based financing (see box in chapter 4.5) is one of the tools that can be used to bridge the gap between

²⁰ Norway's Humanitarian Strategy: https://www.regjeringen.no/en/dokumenter/humstrategi_2018/id2608151/

²¹ Strategy for Norway's efforts in the Sahel region 2021–2025: <https://www.regjeringen.no/en/historical-archive/solbergs-government/andre-dokumenter/ud/2021/strategy-for-norways-efforts-in-the-sahel-region-20212025/id2863044/>

humanitarian response and long-term development efforts. The UN Emergency Relief Coordinator is seeking to establish systems that will make it easier to finance action before a crisis develops, based on the best available forecasts. Major humanitarian and long-term development actors are involved in this work. Norway is providing support for pilot projects and mechanisms that are designed to promote broader information-sharing, rapid decision-making and predictable financing prior to a disaster strikes. The aim is to establish cost-effective mechanisms that can save lives and reduce human suffering in the wake of natural disasters.

The UN has established a global system for detecting and responding rapidly to impending famines. The Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP) have been jointly tasked with this work. Both organisations have a dual mandate for humanitarian and development activities and are therefore well positioned at the interface between humanitarian response and long-term development. WFP has developed a digital hunger map that combines food security data with data on weather/climate conditions, conflict, vegetation, nutrition and the economy to provide early warning of acute food insecurity situations. HungerMap Live monitors the situation in more than 90 countries and uses artificial intelligence to improve the accuracy of the forecasts. FAO is also involved in global monitoring activities to reduce food insecurity risks. This includes monitoring and responding to outbreaks of plant and animal diseases and monitoring global food markets.

Technological advances and a systematic focus on humanitarian innovation can strengthen disaster risk reduction efforts and help reduce future humanitarian needs. The term 'humanitarian innovation' refers to new products, forms of cooperation or other solutions that are measurably better than those that are in use today, because they improve effectiveness or quality. Innovative solutions may also significantly reduce costs. Examples include digital information and early warning systems in the agriculture sector that can increase resilience to natural hazards, innovative satellite technology that produces rapid information and analyses regarding actual conditions on the ground during humanitarian crises, and solar-powered energy solutions in camps for displaced people. There is a need to promote cooperation on innovation through closer collaboration between humanitarian and development actors and between the humanitarian sector and the private sector.

In particular, new and innovative approaches are needed to address the environmental and climate-related aspects of humanitarian efforts. Humanitarian disasters and humanitarian operations put pressure on the environment and natural resources; for example, refugees and displaced people are often dependent on wood or charcoal for cooking. This can lead to conflicts over resources with the local population and to forest degradation in areas around camps for displaced people. Planning humanitarian operations from a short-term perspective may often result in the use of costly and more polluting solutions, for example the use of diesel generators. The Government will promote greater use of environmentally sound energy solutions, new technology and innovation, with a view to minimising the negative impacts of humanitarian response on the climate and environment.

Once a disaster has occurred, the recovery and reconstruction phase is critical in reducing the risk of a new disaster. Better tools are needed to ensure that reconstruction efforts are building resilience and enhancing coordination of humanitarian and long-term development assistance. The possibility that a similar event could happen again must be taken into consideration as part of the post-disaster reconstruction process, and a long-term perspective is vital. This will often involve activities that go far beyond the scope of humanitarian funding. Better coordination between the various actors is therefore crucial. Long-term development actors must be willing to invest funds in reconstruction, and during this phase, there is a need for flexibility and greater tolerance of risk in long-term development efforts.

Coordination of humanitarian and long-term development efforts is also important in the context of involuntary migration, which throughout history has been one of the adaptation strategies people have used to cope with environmental and climatic changes. Efforts to promote climate change adaptation, disaster risk reduction and the fight against hunger are intended to reduce migration due to climate change. At the same time, it is important to strengthen mechanisms for facilitating temporary accommodation and rapid return or for providing new permanent accommodation in situations where people are forced to move. People who have been forced to leave their homes are in a vulnerable situation and are entitled to assistance and protection, in line with universal human rights standards.

Humanitarian action can also promote long-term disaster risk reduction. In Cox's Bazar in Bangladesh, a joint project carried out by the International Organization for Migration (IOM), the World Food Programme (WFP) and the Food and Agriculture Organization of the United Nations (FAO), together with a number of other aid organisations, is seeking to reduce the adverse environmental impacts of emergency relief. Nearly one million people from Rakhine state in Myanmar have sought refuge in this poor agricultural area. Under the project, households in the refugee camp and the nearby host community have been provided with cooking stoves that use gas, thus lessening the need for people to collect firewood for cooking and helping to prevent further deforestation. Just two years after the project was launched, a study has shown that the need for firewood for cooking has been reduced by 80 % among refugees and 53 % among the host community. The project also includes reforestation activities to prevent soil erosion and reduce the risk of landslides. By contributing to creating more robust ecosystems, the project is building resilience to future disasters.

- require Norway's partners to choose sustainable and more environmentally friendly solutions in their humanitarian operations.

The Government will:

- facilitate close coordination of humanitarian action and long-term development efforts, and actively promote an integrated approach, including at the international level;
- work to prevent famines and crises relating to food security by strengthening early warning mechanisms and by providing financial support when a crisis warning has been issued;
- give priority to innovation and new ways of working that can reduce future humanitarian needs and lead to better and more effective assistance for people affected by crisis;
- work to prevent and deal with climate-related migration by providing support to relevant organisations;
- work to ensure that environmental and climate-related considerations are better integrated into all stages of humanitarian response;



Role of the private sector

Close cooperation between the private and public sectors is essential to provide the business sector with the right framework conditions for environmentally sound and climate-friendly investment. Cooperation of this kind can be difficult to achieve in many developing countries where the capacity of the public sector is limited, in particular in sub-Saharan Africa and the least developed countries.

Analysis of climate-related risks is becoming a more integral part of the basis for investment decisions taken by private and public investors as well as for the financial sector. The development of climate-resilient investment projects will be increasingly important in order to attract public funding and private financing capital, not least in developing countries that are vulnerable to climate change. The world's leading credit rating agencies and asset management companies attach growing importance to integrating climate-related risks into their assessment of the ability of companies and authorities to repay loans. Reliable information, and good scenario planning and stress testing for climate-related risks will be essential for ensuring that investments are climate-resilient.

The private sector can develop new climate technology and innovative business models that promote economic growth and welfare in developing countries and at the same time help these countries to meet their adaptation and mitigation targets, in line with the Paris Agreement. In the least developed countries, the private sector consists largely of small companies, small-scale farmers and fishermen. Efforts to enhance climate resilience targeted towards these groups will therefore strengthen the private sector while also yielding positive results in terms of reducing poverty and combating hunger.

A sustainable and profitable private sector is essential for enabling poorer groups and countries to tackle climate change. Economic growth gives the authorities greater room for manoeuvre, and people with jobs and income are better equipped to cope with the impacts of climate change. In countries that are vulnerable to climate change, there is a significant need to expand cooperation between the private and public sectors in order to establish technical requirements for climate-resilient investment, for example in the construction industry, and to put in place mechanisms to ensure compliance with regulations. The insurance industry will also have a strong interest in ensuring respect for

technical requirements, and verification of compliance with these requirements, in connection with investments.

Investors are required to act responsibly and give adequate consideration to environmental concerns, human rights and good governance. The OECD Guidelines for Multinational Enterprises²² provide recommendations on responsible business conduct covering topics such as human rights, environment, anti-corruption and other areas of business ethics. Implementation of the Guidelines by the business sector promotes accountability and resilience throughout supply chains. In countries that are grappling with widespread corruption, the development of effective control regimes will be of great importance, also in terms of addressing climate issues.

Norfund, the Norwegian Investment Fund for developing countries, is Norway's most important tool for promoting investment in developing countries, and gives priority to investments in the least developed countries and sub-Saharan Africa. Norfund seeks to create secure jobs and enhance food security through investments in agriculture and industry. In 2020, Norfund presented its new Climate Position, which focuses on building resilience to climate change, reducing emissions and addressing climate-related risks. One important topic will be how to build resilience to climate shocks in the areas of the portfolio that are most vulnerable, for example agriculture. Relevant tools in this context include systematic mapping of climate change vulnerability and technical assistance for disaster risk reduction and competence building in areas such as climate-smart agriculture and the development of climate change strategies, for example under Norfund's instrument for technical business support. These tools can be used to promote more climate-resilient investments, which are both commercially viable and can play a part in enhancing food security, creating sustainable jobs and reducing vulnerability.

Projects that receive funding under the grant schemes administered by the Norwegian Agency for Development Cooperation (Norad) to support private sector development in developing countries are required to give adequate consideration to climate change and the environment. This applies to all projects supported under the Enterprise Development for Jobs and

Cooperation on Framework Conditions/Strategic Partnerships grant schemes.

The Government will:

- work to ensure that greater consideration is given to climate-related risks in investment decision-making, through various partnerships to promote sustainable business development in developing countries;
- support cooperation between the private sector and the authorities to promote the incorporation of climate-related risks into investment decision-making, particularly in developing countries that are vulnerable to climate change.

²² The 2011 OECD Guidelines for Multinational Enterprises on responsible business conduct set out good practice for all companies, including domestic enterprises. The UN Guiding Principles on Business and Human Rights have been incorporated into the OECD Guidelines. See also Norway's 2015 National Action Plan for the implementation of the UN Guiding Principles.



Digital transformation and innovation

While some 4.4 billion people worldwide use the internet, there are still 3.3 billion people, primarily in Southeast Asia and sub-Saharan Africa, who are not internet users. Digitalisation has the potential to change the lives of billions of people through improved digital skills and increased internet access and use in developing countries.

Achieving the Sustainable Development Goals by 2030 will not be possible without the use of digital tools. One of the aims of Norwegian development policy is to ensure that all developing countries are able to benefit from the opportunities that digital technology provides (see the white paper *Digital transformation and development policy* (Meld. St. 11 (2019-2020), summary only in English)²³. Research, innovation, technological development and better data are crucial in the efforts to improve climate and environmental monitoring as a basis for climate change adaptation and disaster risk reduction. Norway's efforts aim to remove barriers to access, regulation, digital competence and inclusion in

²³ https://www.regjeringen.no/en/dokumenter/meldst11_summary/id2699502/

developing countries. There are enormous potential benefits to be gained from the application of digital solutions to enhance the sustainability and resilience of food systems in the face of climate change and climate related disasters.

Good examples in this context include more open access to accurate weather and climate forecasts so that this information is available to more small-scale farmers and fishermen, for instance through Norwegian technology (the online weather service Yr), or the application developed by Telenor and Yara for use in Thailand that employs satellite data from the EU's Sentinel programme to help farmers inspect and monitor their crops. Satellite monitoring of sea areas is also important for combating illegal, unreported and unregulated fishing and for monitoring marine pollution and fish stocks.

One of our goals is to enable developing countries to benefit from the opportunities offered by digital technology. Digital tools can play an important part in the efforts to ensure that no one is left behind. These

Digital forecasting systems that combine weather data with data on pests, fungi and diseases affecting agriculture make it possible to implement carefully targeted, cost-effective measures that can increase food security and promote better plant health in the face of climate change. More unpredictable weather conditions can cause plant stress, and these systems can play a key role in preventing the unnecessary use of pesticides and mineral fertilisers and reducing crop yield losses. Norway supports cooperation between the Norwegian Institute of Bioeconomy Research (NIBIO) and the Food and Agriculture Organization of the United Nations (FAO) on combating pests in developing countries using a digital forecasting and information service (VIPS). This Norwegian-developed service is being adapted to local conditions in a number of African countries in collaboration with the global research partnership CGIAR,³⁰ local universities and national weather forecasting services. The service also provides advice on pest management and measures to minimise the impacts of pests.

tools can be used to spread information and knowledge about possible solutions and available financing to marginalised groups and communities that are vulnerable to climate change. Digital technology can help to better equip these groups to deal with climate-related and environmental challenges and natural hazards.

24 The Consultative Group on International Agricultural Research

Partners

Norway's support to promote climate change adaptation and disaster risk reduction and combat hunger is provided through multilateral, regional and bilateral partners, the private sector, the research and development sector, and civil society organisations. Some of this funding therefore goes towards global normative efforts and some of it is allocated to priority regions or countries, vulnerable groups and local communities. Norway plans to maintain this flexibility and the opportunity it provides to target support strategically. At the same time, Norway's choice of partners will be influenced by the focus on sub-Saharan Africa and the small island developing states. Consideration will be given to stepping up efforts through partner organisations with which Norway already has established cooperation, and that work in areas and with target groups of relevance to the priorities of this strategy. Priority will be given to organisations that work to strengthen national cooperation and deliver results by promoting effective coordination between various actors and activities, and between relevant global and regional frameworks. Good management and national ownership will be vital to the success of projects and programmes, regardless of the choice of partner.

UN organisations and the multilateral development banks will continue to be the main partners for Norwegian support. This will help to ensure an integrated approach and maintain Norway's influence in the UN organisations that play an important normative role at the global level and the multilateral development banks, as well as facilitate donor coordination that has the potential to minimise transaction costs and encourage more effective development cooperation. This is also important given the pressure being placed on the multilateral system. Increased, more streamlined multilateral cooperation is essential to achieve climate targets and combat hunger.

The UN Food Systems Summit 2021 is being convened as part of the Decade of Action to achieve the Sustainable Development Goals by 2030. The COVID-19 pandemic has heightened awareness of the need for sustainable and resilient food systems and value chains from production to consumption in order to safeguard global food security. Norway will participate actively in

the preparations for the summit, with a view to strengthening the global effort to fight hunger, improve nutrition and enhance food security within the limits of the Earth's carrying capacity.

The World Food Programme (WFP), the UN Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development (IFAD), the UN Environment Programme (UNEP) and the UN Development Programme (UNDP) are among Norway's most important UN partners in the area of climate change adaptation, disaster risk reduction and the fight against hunger. FAO and UNEP are leading global actors and play a key role in normative work. Within their respective mandates, all these UN organisations contribute to global plans, standards, monitoring and knowledge development, as well as implementation at country level. The UN Committee on World Food Security (CFS) is the foremost international platform for cooperation on food security. Its members include UN member states and private sector as well as civil society organisations. The CFS bases its recommendations on reports from the High Level Panel of Experts (HLPE) on food security and nutrition and other relevant UN organisations.

The International Treaty on Plant Genetic Resources for Food and Agriculture has a benefit-sharing fund that provides direct support for the development of climate-resilient and biodiverse seeds for small-scale farmers.

The World Meteorological Organization (WMO) is a leading provider of expertise on the delivery of weather and climate forecasts and warnings, nationally and locally, together with its member institutions in each individual country,

The financial mechanisms established under the UN Framework Convention on Climate Change (UNFCCC) are of crucial importance. The Green Climate Fund (GCF) is a key partner for Norwegian multilateral funding for climate change adaptation. Norway doubled its contribution to GCF for the period 2020–2023 in the last replenishment round. Half of GCF's funding is set aside for climate change adaptation, and nearly 70 % of this is allocated to the world's least developed countries. In addition, 16 % of GCF's support goes to small island

developing states. The Adaptation Fund and the Global Environment Facility (GEF) will be two other important actors in this context. Norway will also provide support to the Global Center on Adaptation.

In the efforts to implement the Sendai Framework for Disaster Risk Reduction, the United Nations Office for Disaster Risk Reduction (UNDRR) and the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR) will be key partners. In the area of health, the World Health Organization (WHO) plays a normative role and provides concrete support for countries to help them integrate climate change adaptation into health-related activities.

The multilateral development banks are leading providers of climate finance and have set ambitious targets in this area. They have established funds and programmes that serve as effective arenas for the development of strategies and priorities. The World Bank is to invest USD 200 billion in climate change action in the period 2021–2025. This makes the World Bank the largest international provider of climate finance. A total of 35 % of World Bank Group financing will have climate co-benefits and should be equally distributed between adaptation and mitigation.

Through its participation on the boards of key programmes and funds, Norway will promote climate and development relevant policy guidelines and priorities. Planning and reporting must reflect coherence between the Sustainable Development Goals (SDGs), the Paris Agreement and the Sendai Framework .

The impacts of climate change transcend national borders. Regional efforts may often be effective and lead to collaboration between countries that might otherwise not have cooperated. Norway will continue to support regional organisations that encourage such cooperation, promote learning across national borders and at the same time deliver results. The establishment of new regional partnerships will also be considered.

The African Union (AU) plays a central role in cooperation with Africa. Climate change adaptation, disaster risk reduction and the fight against hunger are high priorities on the AU agenda. In 2018, Norway signed a new framework agreement with the AU that identifies sustainable development and job creation as one of three priority areas for cooperation. Norwegian support in this area has been targeted in particular towards the development and implementation of the AU's blue economy strategy. Norway will also continue efforts to strengthen the partnership between the UN and the AU through the

Group of Friends of UN-AU Partnership. The mandate of the Group of Friends includes following up the SDGs, and climate change adaptation is key in this regard. African regional organisations such as IGAD, ECOWAS, COMESA and SADC are part of the AU structure, which is steadily increasing its activities in both climate-resilient agriculture and the blue economy. These organisations may be relevant as partners in areas where they are giving priority to this work. The same applies to the UN Economic Commission for Africa (UNECA) and the African Climate Policy Centre (ACPC).

Climate change adaptation, disaster risk reduction and the fight against hunger are key aspects of **Norway's bilateral cooperation with partner countries**. These are countries where Norway seeks to foster an integrated approach to development and deeper foreign and development policy cooperation. Where possible, it will be constructive to further develop cooperation with the countries' own institutions. It may also be appropriate to work in partnership with civil society organisations in addition to the authorities. Support provided through multilateral organisations will also encompass activities in partner countries.

Civil society organisations are essential partners for Norway in these countries. These organisations help to ensure that funding allocated to selected areas reaches the target group at the local level as well as the most vulnerable groups. Many Norwegian NGOs have extensive local knowledge and experience from work in the strategy's priority areas. They also have their own youth organisations and can help to promote the participation of young people. This will be important to ensure that young people in partner countries are included in climate change adaptation efforts. It is important that civil society activities are in line with national and local adaptation plans.

Private sector partners can provide more than just funding; they can also contribute knowledge and technologies that others do not have. Partnerships between humanitarian actors and the private sector can drive the development and scaling up of relevant technology and new solutions, and thus have a greater impact than either of the partners could have achieved alone. The Government has established the Humanitarian Innovation Programme (HIPNorway) in order to enhance coordination between humanitarian organisations and the private sector, and to build valuable innovation partnerships to promote a greener humanitarian response, i.e. humanitarian innovation that strengthens the environmental and climate-related aspects of humanitarian efforts.



Implementation

Implementation of the strategy will be a joint effort by a range of Norwegian actors including the Ministry of Foreign Affairs and the diplomatic and consular missions, the Ministry of Climate and Environment, the Ministry of Agriculture and Food, the Ministry of Justice and Public Security, and Norad and Norfund. The policy guidelines set out in the strategy are to be reflected in budgets, annual work plans and allocation letters, and in the implementation of the associated activities. Relevant departments and sections in the ministries and other government agencies and in the missions abroad will be responsible for implementing the strategy under their own budgets in their respective areas of responsibility. The strategy also sets the direction for support to civil society efforts and private sector investment.

As well as stepping up its own efforts to promote climate change adaptation, disaster risk reduction and food security, Norway will work proactively to put these areas, and the links between climate change and security, on the agenda in relevant forums in which we are represented. The Ministry of Foreign Affairs and Norad will assess the status of the strategy's implementation in 2023.

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