



Federal Ministry
for Economic Cooperation
and Development

Comprehensive Risk Management

The Approach of German Development Cooperation for Dealing with
Disaster and Climate Risks

BMZ in depth

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Disasters and climate change: risks to sustainable development

RELEVANCE OF DISASTER AND CLIMATE RISKS

All over the world, people, ecosystems and infrastructures are exposed to growing risks from disasters, primarily as a result of extreme weather events (e.g. intense rainfall, flooding and droughts), geophysical events (e.g. earthquakes, volcanic eruptions and tsunamis) and more gradual changes (rising sea levels, ocean acidification and soil degradation).

In the last 30 years, over 70 per cent of the economic damage caused by disasters can be attributed solely to weather-related events. In 2017, the total damage inflicted by disasters reached USD 340 billion – the second-biggest figure to date.¹ Over the last two decades, 4.4 billion people have been affected in some way by extreme events of this kind, whether through injury, losing their homes, needing emergency aid or being driven from their towns and villages. Every year, extreme events cause around 70,000 deaths and drive 26 million people into poverty.²

Severe flooding and storms on the one hand and forest fires and droughts on the other now occur with increasing frequency. The cost in terms of economic damage and loss of human life can be enormous. The scale of this damage is exacerbated by factors such as climate change, population growth, environmental destruction and the expansion of human settlements, industry and agriculture into high-risk areas. Those states which are already worst affected

by fragility, conflict, and violence often lack the capacity to protect their population from such disasters. As a result, people and infrastructure become even more vulnerable and exposed to extreme events.

Developing countries – above all the poorest developing countries and small island states – are particularly vulnerable. According to forecasts, they are likely to suffer the worst effects of climate change. Yet these countries already lack the capacity to adapt, prepare and respond. This combination of factors poses a risk to human life and has the potential to cause severe economic damage, undermining their resilience and potentially reversing previous development gains.

Against this backdrop, it is clear that we need a thorough understanding of and a judicious approach to the diverse risks involved if we are to achieve and consolidate sustainable development.

- 1 Munich Re (2018): A stormy year. TOPICS Geo Natural Catastrophes 2017. https://www.munichre.com/content/dam/assets/munichre/content-pieces/documents/pdf/302-09092_en.pdf
- 2 CRED & UNISDR (2018): Economic Losses, Poverty & Disasters 1998–2017. https://www.unisdr.org/files/61119_credeconomiclosses.pdf

DISASTER RISK MANAGEMENT IN FRAGILE CONTEXTS

➔ *Disasters are neither natural nor conflict-neutral. 2008 Cyclone Nargis in Myanmar, 2010 the earthquake in Haiti, or the displacement of Rohingya refugees into monsoon affected parts of Bangladesh are all examples for disasters that hit areas that are already highly fragile. 58 per cent of disaster deaths occur in the world's 30 most fragile states. The devastation inflicted by a disaster is never just limited to the immediate damage caused by the event. Instead its overall magnitude is determined by how the disaster event interacts with the pre-existing social, economic and political context.*

The most vulnerable people are at the centre of the priorities of German development cooperation when it comes to reaching the sustainable development goals. This also is reflected by Germany's adoption of the internationally recognised principle of "leave no one behind" – a key element of the SDGs. Against this background, disaster risk management applied to fragile contexts has to be given

special attention. Now more than ever as the share of extreme poor people living in fragile contexts has doubled to 41 per cent between 1990 and 2012³.

The German Federal Ministry for Economic Cooperation and Development (BMZ) has taken on a pioneering role in this field, actively designing strategies and approaches in the disaster and conflict nexus. There is an imperative to integrate preventive measures in mid- to long-term planning processes and to develop specific preparedness actions in a conflict sensitive and peace enhancing manner. For this purpose, BMZ builds strong international allies and works together with both multilateral actors, such as GFDRR and UNDRR, and civil society and prominent research institutions, including GNDR and ODI.

- 3 Shepherd et al. (2017): Trends in poverty and inequality and further clustering of developing countries: Challenges and opportunities for development policy. Luxembourg: European Union



In 2015, the German government played an active role in the adoption of four international agendas that act as a guide on the path towards sustainable development. The success of each regulatory mechanism depends crucially on the successful implementation of all the others. For this reason, the UN is making strenuous efforts to coherently link the various issues more effectively at international level. The aim is to factor in as many potential risks as possible when planning development measures while gradually reducing the various risk factors over a longer period.



INTERNATIONAL AGENDAS

AGENDA 2030 / SUSTAINABLE DEVELOPMENT GOALS

The 2030 Agenda for Sustainable Development (2030 Agenda) was adopted by the United Nations in September 2015. It represents the international community's belief that collective action is the only way to tackle global challenges. The Agenda sets out 17 ambitious goals for sustainable development known as the Sustainable Development Goals (SDGs). It follows a coherent approach that balances all three dimensions of sustainability – social, environmental and economic – for the first time. The Agenda is designed to promote social change on a global scale in order to end extreme poverty and hunger, protect the natural systems on which our existence depends and build greater fairness into the globalisation process within a generation. This will involve restructuring our economies and working towards a sustainable society, with systems of production and consumption that focus on the common good and make careful use of the natural resources available to us. The signatories to the 2030 Agenda have committed

themselves to the principle “leave no one behind” while forging a path towards the Sustainable Development Goals.

SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION 2015 – 2030

The main objective of the Sendai Framework, adopted in 2015, is to achieve a significant reduction in disaster risks and to support more effective disaster preparedness as a way of making societies more resilient. To this end, the framework sets out four priorities for action:

1. understanding disaster risk;
2. strengthening disaster risk governance to manage disaster risk;
3. investing in disaster risk reduction for resilience;
4. enhancing disaster preparedness for effective response and to ‘Build Back Better’ in recovery, rehabilitation and reconstruction.

GLOBAL INITIATIVE ON DISASTER RISK MANAGEMENT



The Global Initiative on Disaster Risk Management (GIDRM) makes a targeted contribution to the coherent implementation of the Sendai Framework, the 2030 Agenda, the Paris Agreement and the New Urban Agenda. To this end, it supports the efforts of selected international and national, state and non-state actors to set up and maintain coherent planning, implementation and reporting systems. The main focus of the initiative is on promoting greater practical coherence from the bottom up. Effective national and subnational examples of coherent implementation are presented at meetings of regional bodies and then submitted as regional recommendations to major conferences of the various international agendas, at which point they can be adopted as models of regional good practices.

The project works in two pilot countries, one in the Latin America / Caribbean region and one in the Asia / Pacific regions. While Mexico and the Philippines are both exceptionally vulnerable, they each have the required institutional capacity and a compatible development cooperation portfolio. The initiative's main regional partners are the Latin American Network of National Public Investment Systems and the Asian Regional Consultative Committee on Disaster Management.

The GIDRM builds on the excellent experience of working with national and regional partner organisations in Latin America and Southeast Asia. The contributions to global disaster risk management developed jointly by German and regional players in phase one were supported by BMZ with EUR 16 million. The current phase is being financed with EUR 5 million. Further funding for a third phase of the GIDRM is planned in order to ensure the sustainability of the results achieved.

The UN Office for Disaster Risk Reduction (UNDRR) supports and monitors the implementation of the Sendai Framework and coordinates international efforts in reducing disaster risks. UNDRR convenes the biennial Global Platform on Disaster Risk Reduction, the most prominent international conference for disaster risk management.

PARIS AGREEMENT

The Paris Agreement was adopted in December 2015. It sets out a long-term vision for sustainable, climate-resilient development based on low emissions. As the first globally binding climate treaty, it specifies a target of keeping the increase in average global temperatures (global warming) to well below 2 °C (and if possible 1.5 °C) while strengthening efforts to adapt to climate change. In terms of implementation, the key elements of the Paris Agreement are the Nationally Determined Contributions (NDCs). These provide the crucial impetus needed to keep driving up the level of ambition in the fight against climate change. The NDCs are reviewed every five years. Furthermore, according to Article 7.9 of the Paris Agreement, all parties shall, as appropriate, engage in the formulation and implementation of national adaptation planning processes. The national adaptation plan (NAP) process, for example, has the potential to function as an operational vehicle for NDC implementation of adaptation measures. Many states have followed this invitation and initiated the process, which can under the Paris Rulebook also serve the reporting on adaptation (see page 12).

The Paris Agreement has also sent out a strong and effective signal to investors that flows of capital should be consistent with the goals of low-carbon and climate-resilient development.

NEW URBAN AGENDA

The New Urban Agenda was formally adopted in October 2016. It commits the UN member states to involve cities more widely in their policies and measures and to establish conditions that favour sustainable and integrated urban development. This approach is designed to strengthen the capabilities, financial resources and participation of local stakeholders. The overarching goal is to implement the 2030 Agenda and the Paris Agreement at local level.



It is up to individual countries to implement these international agendas in a coherent form at national and local level. German development cooperation supports its partner countries to establish and maintain a comprehensive disaster and climate risk management system. Only this way an effective and sustainable reduction of risk factors will be achieved.

A photograph showing two men standing on a damaged concrete wall. The wall is cracked and crumbling, with a large section missing, revealing a deep, eroded pit of sand and debris below. The man on the right is wearing a blue polo shirt and dark trousers, with his arms crossed. The man on the left is wearing a light blue polo shirt and light-colored shorts. They are looking out over a tropical landscape with several palm trees and a beach in the background. The sky is blue with some clouds. The overall scene suggests a coastal area affected by erosion or a natural disaster.

Comprehensive Risk Management in German Development Cooperation

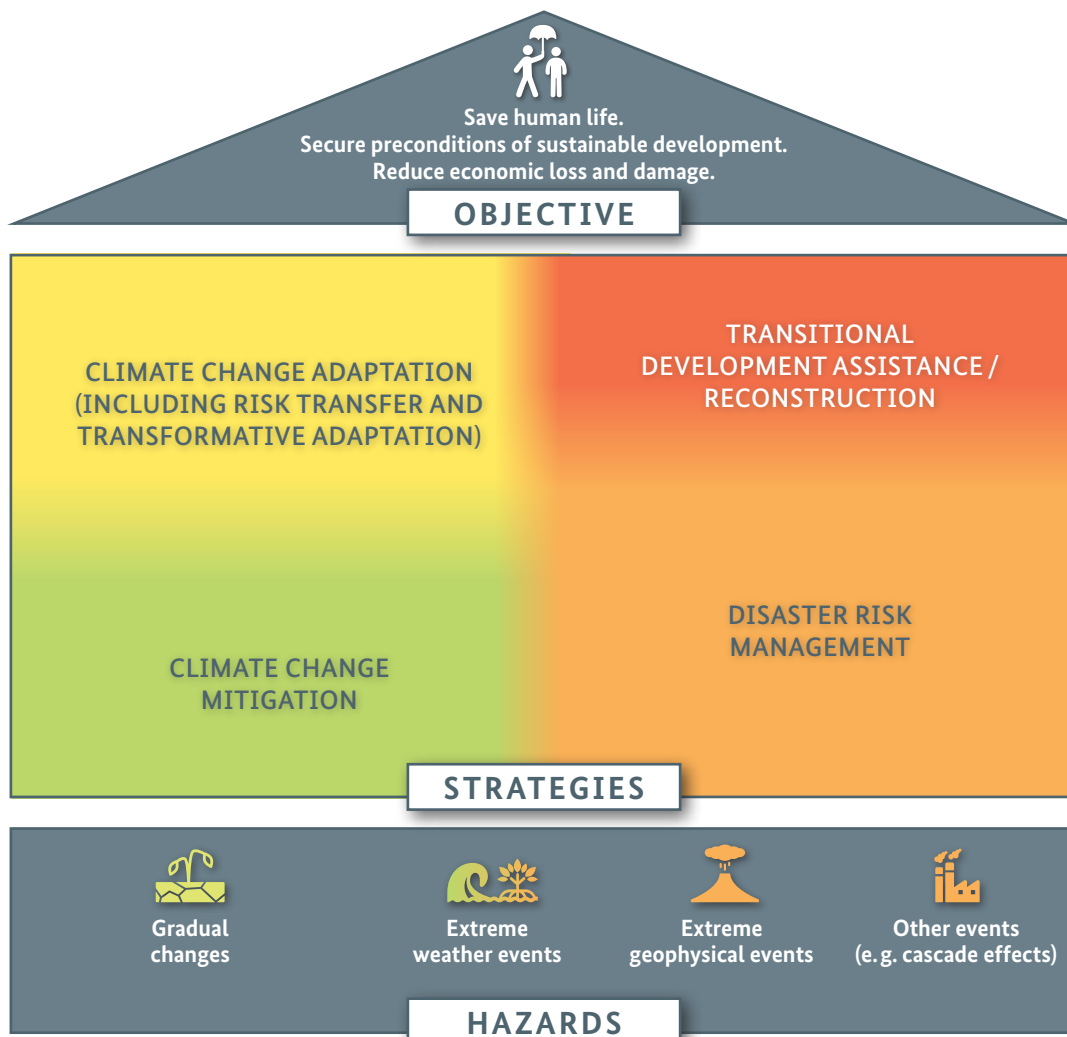
APPROACH TO COMPREHENSIVE RISK MANAGEMENT

Through its comprehensive risk management approach, German development cooperation supports the efforts of its partners to implement the international agendas on sustainable and urban development, climate change mitigation and climate change adaptation and disaster risk management. This approach also helps to make the projects and international partnerships funded by BMZ more effective.

The comprehensive risk management enables individuals, the private sector and both state and non-state actors to factor in various risks when making decisions and on this basis to take appropriate precautions. This can save lives, reduce the scale of economic and environmental damage and protect livelihoods.



Comprehensive risk management involves bringing together strategies and measures to reduce disaster and climate risks. Rather than a series of individual measures, it combines both tried-and-tested and innovative instruments from the fields of climate change mitigation, climate change adaptation, disaster risk management and social protection into a single holistic approach. Transitional development assistance acts as a bridge to humanitarian aid, where the overriding objective is to save lives. Comprehensive risk management also takes account of industrial hazards and biological threats where there is a potential link to extreme events (e.g. a nuclear core meltdown following a tsunami or epidemic outbreaks after severe flooding).

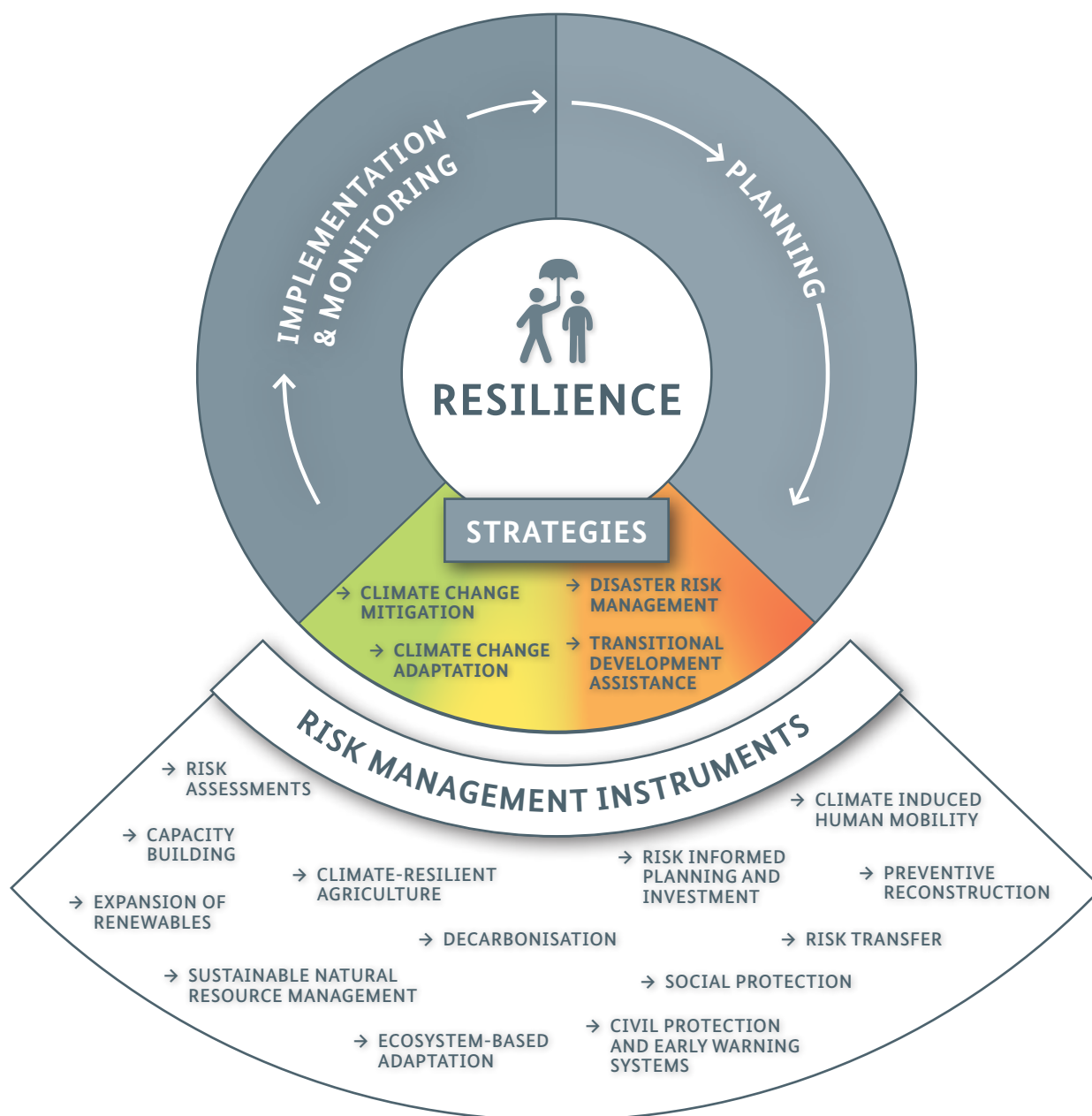


CONCEPTUAL APPROACH OF COMPREHENSIVE RISK MANAGEMENT



COMPREHENSIVE RISK MANAGEMENT – POSSIBLE STRATEGIES AND INSTRUMENTS

Comprehensive risk management is based on a wide range of strategies and instruments. Designated individuals receive specific training and ongoing advice to give them the knowledge and skills needed to combine and apply these instruments in a strategic and professional manner. Other measures to raise awareness and encourage wider involvement are designed to ensure that there is strong support for the issue among policymakers and the public.



COMPREHENSIVE RISK MANAGEMENT INSTRUMENTS

→ CAPACITY-BUILDING

Designated individuals receive specific training and ongoing advice to give them the knowledge and skills needed to combine these instruments of a comprehensive risk management into a coherent, needs-based strategy and apply them in a professional manner. Different skills need to be taught depending on the individual's main tasks and the instruments in question. This may involve acquiring certain technical knowledge, methodological expertise or familiarisation with specific processes, e. g. to ensure that risks are systematically factored into urban development planning. If the objective is to implement comprehensive risk management at local level, the instruments will need to be adapted to the target group. This will require skills in community-based risk management with an emphasis on participatory methods. The effectiveness of any such risk management depends not only on the expertise of those whose role is to implement it but also, crucially, on gaining strong support

for the issue among policymakers and the public. For this reason, all project activities should begin with appropriate measures to raise awareness of the risk management issues. In this context, it may be useful to link up with the first steps in the risk assessment process.

Various modules on disaster risk management have been added to a training course on comprehensive climate risk management produced by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The course demonstrates how adaptation measures and disaster risk management can be integrated into plans, laws and strategies at different levels and by different partners, and how synergies between the various post-2015 agendas can be harnessed. Partners can use the combined training to help them acquire the necessary expertise, develop a coherent approach and initiate a dialogue between the various stakeholder groups.



NATIONAL ADAPTATION PLANS (NAPS) AND PROCESSES



NAP processes involve inter-ministerial consultation on planning at national level. They cover and coordinate the activities of each sector. The goal of a NAP process is to integrate adaptation factors into development planning and into public budgeting and decision-making structures.

It allows government agencies to:

- 1) *identify and prioritise adaptation measures in each sector ('informed decision-making');*
- 2) *take preventive measures; and*
- 3) *plan public investments with due regard for climate risks.*

The Supplementary NAP Guidelines currently being drawn up by UNDRR provide a unique opportunity to extend the comprehensive risk management approach to these key international processes.

Germany has been helping its partner countries to plan and implement their NAP processes ever since 2012 – either directly through long-term or short-term bilateral support or indirectly through international initiatives such as the NAP Global Network and the NAP Global Support Programme. The focus here is on knowledge-sharing mechanisms, technical support and the effective coordination of bilateral donors. To date, 91 countries have initiated a national adaptation process.

→ RISK ASSESSMENTS

Risk assessments form the basis of comprehensive risk management. They help to make appropriate forward looking plans with due regard for the local context. This involves setting up mechanisms to encourage participation among relevant stakeholders and helping key figures in the public and private sectors to make decisions and plan ahead in full knowledge of the associated risks. All comprehensive risk management strategies depend crucially on an awareness and understanding of the potential hazards. Risk assessments therefore perform a vital role and can be used to prioritize risk management measures. In this context, one of the main problems often faced by risk managers is the poor quality or lack of data, especially in rural areas. Risk assessments draw on the available data to identify, model and analyse relevant information. Data can be obtained from technical sources (e.g. geographical information systems) or using participatory methods (e.g. damage mapping by those affected). It is important to factor in both existing and future risks.

Risk assessments are used to establish the probability of occurrence and evaluate the likely scale of climate impacts and disaster events. Risk managers also analyse which factors create risks and which mechanisms are already in place to adapt to and cope with potential disasters. The corresponding risk evaluation highlights any risk management deficits and helps to sharpen awareness of the risks. On this basis, the risk manager can then outline various options for preventing or minimising those risks.

→ RISK-INFORMED PLANNING AND INVESTMENT

Preventive measures to reduce damage need to be planned. There are many ways in which comprehensive risk management can link up with public planning at national and local level. Land-use and development plans that incorporate suitable mechanisms for dealing with risk can help to pave the way for risk-sensitive development. When planning annual budgets, projects should be proposed for funding only if they factor in the potential disaster and climate risks. This is particularly important in the case of infrastructure projects as they will need to be robust enough to withstand not only current but also any future hazards. Above all, the risk situation must be fully assessed in the case of publicly funded critical infrastructure such as hospitals, energy supply networks and administrative buildings. Budget planning should also prioritise investment projects that make a clear contribution in the areas of disaster risk management, climate change mitigation or climate change adaptation. Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs), climate change action plans and civil protection plans all provide valuable information about the measures needed to increase resilience in each sector. By way of example, about 80 per cent of NDCs include climate change adaptation targets. National adaptation planning is regarded as the principal mechanism for operationalising and implementing those targets.



→ ECOSYSTEM-BASED MEASURES

Biodiversity and ecosystems play a vital role in climate change adaptation. One of the key instruments used in this context is eco-disaster risk reduction, which involves the sustainable management, preservation and, where applicable, restoration of ecosystems in order to reduce the overall level of disaster risk while promoting sustainable and resilient development. Well-managed ecosystems such as wetlands, forests and coasts act as natural infrastructure. They reduce exposure to disaster risks and increase socioeconomic resilience, especially among vulnerable groups. In this way, they sustain the livelihoods of local people and provide important natural resources such as building materials, food and water.

→ SUSTAINABLE NATURAL RESOURCE MANAGEMENT

In the agriculture sector, ecological farming methods make a particularly important contribution to risk-reduction efforts by preserving and strengthening intact agricultural ecosystems. Soils provide vital ecosystem services, and measures to protect them in that role are a vital element of resilience-building programmes. Healthy,

well-structured soils are more fertile, less susceptible to wind and water erosion and capable of storing a larger volume of water. Pressure on resources can also be reduced by ensuring that water, fertiliser and energy are used efficiently in response to local conditions.

The systematic management of water catchment areas can help to use the available water resources more effectively and to minimise flood risks. Sustainable forestry practices and the restoration of (woodland) ecosystems, including mangrove forests, offer a crucial opportunity to store greenhouse gases and remove them from the atmosphere. As part of our efforts to mitigate the effects of climate change (and preserve biodiversity), it is vital that we halt the destruction of tropical forests and peatland caused predominantly by the increasing exploitation of land for agriculture. We can also improve soil quality, reduce the risk of erosion and offer better protection against flooding by restoring woodland and using agroforestry methods. In both the agriculture and forestry sectors, sustainable natural resource management boosts productivity and incomes in the long term while also supporting climate change adaptation, making communities more resilient in the face of potential extreme weather events and reducing greenhouse gas emissions.

INSURESILIENCE GLOBAL PARTNERSHIP



The InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions (usually shortened to the 'InsuResilience Global Partnership') was established at the COP23 climate conference in Bonn in 2017 with the goal of protecting livelihoods and incomes. As well as Germany, its membership includes partners from the G20, the V20 (the 'Vulnerable Twenty' group of 49 particularly vulnerable developing countries), international organisations such as UNDP and the World Bank, the private sector, civil society and the research community. The Partnership's members jointly develop and implement innovative financial and insurance solutions with the goal of ensuring that

resources are quickly made available to the poorest and most vulnerable to help them rebuild their lives in the wake of disasters such as droughts, flooding and storms. The Global Partnership is based on the G7's InsuResilience initiative, which was launched in Elmau in 2015 with the aim of insuring 400 million poor and vulnerable people against climate risks by 2020. At the same time, the Global Partnership works to make countries as a whole more resilient and develops new approaches to climate risk financing and insurance. Since 2015, USD 700 million has been made available by donors to implement the InsuResilience initiative. Nearly half this amount has come from Germany.

→ RISK TRANSFER

Risk transfer instruments are used to spread out those risks which affect only certain individuals over a wider group. In terms of social protection mechanisms, for example, risk transfer can simply take the form of an insurance policy that provides rapid financial support in the wake of an extreme event. Insurance programmes might be established to cover potential losses of livestock, crops or dwellings. This minimises the risk of those affected by such extreme events losing their entire livelihood. Risk funds that make cash payouts available in an emergency are another type of transfer mechanism. At the same time, national social protection systems can be set up to systematically minimise financial risks and ensure that 'residual' risks are borne by the wider national risk community (possibly with support from the international community) in line with the principle of solidarity.

→ SOCIAL PROTECTION

Social protection systems guarantee support in the form of:

1. basic protection through e.g. cash, materials, equipment and vouchers or subsidies for food, healthcare and basic needs;
2. contributory social insurance schemes;
3. labour market policy and interventions (both preventive and proactive measures and public employment programmes).

These social protection measures provide greater stability for individuals and households, helping them diversify their sources of income and making them more

ADAPTIVE SOCIAL PROTECTION PROGRAMME



The objective of the World Bank's Sahel Adaptive Social Protection Program (ASPP) is to provide better access to effective social protection systems for those people who are particularly poor and vulnerable. To this end, the UK has set up a multi-donor trust fund at the World Bank with additional support from France and Germany. The German contribution stands at EUR 50 million. With the help of this programme, poor and vulnerable households can become more resilient, mitigate the impact of climate change and other shocks and generate new sources of income. The focus of the ASPP is on building up and expanding capacity in several pilot countries (Senegal, Mali, Chad, Burkina Faso, Niger and Mauritania).

resilient against shocks. Labour market measures such as public employment programmes can also be used to promote climate-resilient agriculture and the sustainable management of natural resources and to facilitate infrastructure projects and reconstruction work. Social protection systems provide a financial and institutional platform that can be used to establish pre-emptive disaster preparedness measures and implement contingency plans, for example by using the same channels for transfers to those affected.



CLIMATE RISK & EARLY WARNING SYSTEMS



The G7 initiative Climate Risk & Early Warning Systems (CREWS) was initiated by France and is supported by Germany. It helps to protect infrastructure and livelihoods in developing countries by supplying the crucial technical components of multi-hazard early warning systems. CREWS facilitates the transmission of early warnings and risk information in relation to extreme weather events. By 2020, the initiative aims to mobilise USD 100 million to fill the current gaps in bilateral and multilateral development programmes. In 2016, Germany contributed EUR 3 million to this total. There are plans for additional funding to support cooperation between CREWS and InsuResilience. The funds are used to finance projects in Africa, the Pacific and the Caribbean. Other projects are currently being prepared in Asia.

→ CIVIL PROTECTION AND EARLY WARNING SYSTEMS

Disaster preparedness includes building up effective protective structures. This requires clear institutional mechanisms and responsibilities governing emergency aid logistics, communications and decision-making. Well-trained personnel and first aiders are another crucial factor. Civil protection plans should be consistent with the actual risks involved and take account of local capacity. Importantly, they should be tested under real conditions. They should also reflect the needs of particularly vulnerable groups, e.g. women, children, frail people and those with disabilities as well as linguistic minorities.

Early warning systems can be included as one element of a civil protection and preparedness strategy. They can help those at risk and the civil protection teams to use the time available before the disaster hits to take appropriate life-saving precautions (e.g. in the case of flooding, storms and tsunamis). Early warning systems consist of three elements: prediction, warning and response. Each of these elements must be efficiently designed and linked to the others.

The hallmarks of effective civil protection are cooperation between the various national and decentralised authorities and organisations and the active involvement of local people, e.g. in simulations and in communication and warning systems. Experience has shown that gender-sensitive early warning systems are more likely to succeed in alerting and protecting all those who are at risk.

BMZ TRANSITIONAL DEVELOPMENT ASSISTANCE – FAST, EFFICIENT AND FLEXIBLE



Transitional development assistance is unique within BMZ's range of development policy instruments. It allows development cooperation agencies to respond quickly and flexibly on the ground in the context of crises, conflicts and disasters. Sustainable crisis management approaches can be integrated into the wider portfolio of disaster response mechanisms at an early stage, thus reducing dependence on short-term aid. The focus is on more effective dovetailing of humanitarian aid, which tends to be of a short-term nature, and longer-term development cooperation approaches. The

overarching objective is to stabilise the livelihoods of those affected by crises and improve their long-term prospects while strengthening local crisis management capacity and therefore making people and institutions more resilient when dealing with the impact and consequences of such crises. Transitional development assistance provides support in four main areas – food security, reconstruction of basic social infrastructure, disaster risk management and the (re) integration of refugees. It is delivered through multi-sectoral approaches, predominantly at local and/or regional level.



→ PREVENTIVE RECONSTRUCTION

When a disaster strikes, the initial priority is to deal with immediate needs (e.g. rescuing and providing for those who are injured). Subsequently, preventive reconstruction measures can be devised on the basis of a risk assessment that reflects both socioeconomic and social conditions, especially in fragile and conflict affected countries. The aim of disaster-preventive reconstruction based on the 'Building Back Better' principle is to restore the livelihoods of those people in the region who have been affected by a

disaster. The scale of the disaster and the lessons learned from it are important considerations in this process. They are incorporated into the reconstruction process through comprehensive risk management measures. One of the ways in which this can be achieved is by integrating risk factors into land-use and development planning in order to ensure, for example, that hospitals and schools are not rebuilt in high-risk zones. Steps can be taken to increase the structural resistance of existing infrastructure and to protect new capital investment by introducing and applying construction standards.

→ CLIMATE CHANGE MITIGATION

The Paris Agreement set a target of keeping global warming to well below 2°C and of pursuing efforts to limit the temperature increase even further to 1.5°C. This can only be achieved if global greenhouse gas emissions begin to fall well before 2030. By this date, we need to cut global greenhouse gas emissions by more than 50 per cent and then reduce them still further to net zero by 2050. This will demand rapid and far-reaching decarbonisation efforts in every sector of the economy and in every area of our lives. Crucially, this involves scaling back and reducing fossil fuel subsidies, implementing energy efficiency measures and developing fossil fuel exit scenarios including the expansion of renewable forms of energy. It is not only our energy systems that need to be decarbonised. We cannot mitigate the effects of climate change properly unless we also reduce emissions in our cities, our transport and mobility systems, the construction industry and agriculture. On top of this, we also need to preserve the world's natural carbon sinks – the oceans, forests and peatland – since they play a vital role in protecting the climate. These areas must be incorporated more extensively into future climate change mitigation strategies.

Climate change mitigation is an important element of comprehensive risk management, because the development path we choose and the scale of global emissions have a major impact on the emergence of gradual changes and occurrences of extreme weather

events. By limiting the rise in temperature, we can significantly reduce climate-related risks to health, livelihoods, food security, water supplies, public security and economic growth and avoid triggering environmental and social tipping points.

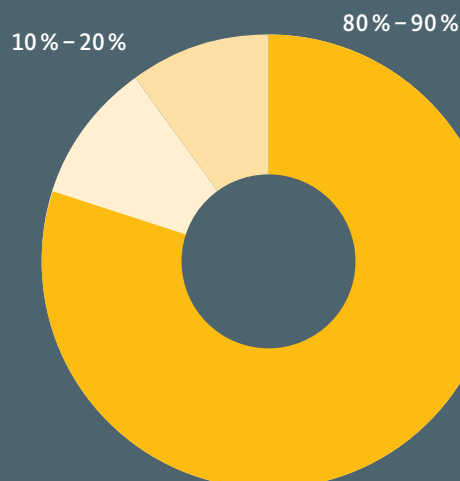
→ CLIMATE INDUCED HUMAN MOBILITY

Both directly and indirectly, climate change can also act as a trigger for 'human mobility' in the form of migration, forced displacement and planned resettlement. In this context, German development cooperation aims to support particularly vulnerable groups, whether they are migrating or (in the case of 'trapped populations') are unable to do so. The guiding principle here is that those groups affected by climate change should be free to make their own migration decisions. This can mean creating better prospects for them if they choose to remain or helping them to migrate, possibly on a temporary basis, so that they can diversify income sources. Planned, voluntary resettlement schemes are only supported in individual cases and backed up by participatory approaches. Above all, vulnerable groups need protection from the impacts of climate change in order to reduce the number of people who are forced to move. When implementing adaptation measures, particular consideration should be given to the livelihoods of those who work in sectors that are at greater risk from climate change, e.g. agriculture, fishing and forestry. Building the resilience of towns and cities is also essential, as it is often here that internal migrants seek refuge.



BMZ helps its partner countries to deal with climate-related risks through a series of measures. These range from emissions reduction and climate change adaptation to disaster risk management and risk transfer. In 2009, the world's industrialised nations agreed to provide USD 100 billion each year from both public and private sources to protect the climate and help developing countries adapt to climate change. BMZ contributes between 80 and 90 per cent of Germany's annual public climate financing. These funds are used to support the efforts of developing countries and emerging economies to mitigate and adapt to climate change. By 2020, BMZ intends to meet the commitment made in 2015 to double the volume of climate financing from EUR 2 billion to EUR 4 billion. In fact, Germany's contribution had already reached EUR 3.65 billion by 2017. The proportion of BMZ climate financing used for adaptation measures has climbed steadily in recent years and in 2017 exceeded EUR 1.2 billion. Germany also plays a key role in the global response by mobilising private capital. In 2017, this generated additional funds of around EUR 3 billion. Between 2015 and 2017, German technical cooperation projects helped approximately 13 million people to deal with the impact of climate change.

BMZ CONTRIBUTES BETWEEN 80 AND 90 PER CENT OF GERMANY'S ANNUAL PUBLIC CLIMATE FINANCING



Examples from our partner countries



German development cooperation works to reduce disaster and climate risks and to promote sustainable development. It does so by forging partnerships at national and local level. To this end, various types of hazards need to be considered, depending on the specific context. Different instruments from the comprehensive risk management portfolio are used accordingly together with the partner countries to approach various risks in an effective and sustainable manner.

PHILIPPINES

MAIN RISKS:

earthquakes, landslides, sea level rise, storms (typhoons), tsunamis, flooding (rivers, coasts, cities), volcanic eruptions, water scarcity and forest fires

INSTRUMENTS:

risk assessments, capacity building, risk-informed planning and investment, civil protection and early warning systems, risk transfer, social protection, climate induced human mobility



Disasters have severely undermined development in the Philippines. Against this background, disaster and climate risks must be systematically factored in and coordinated in all planning processes within every sector and at every level. A number of BMZ-funded projects have been set up to help government bodies establish coherent planning, implementation and reporting processes. By way of example, the Global Initiative on Disaster Risk Management (GIDRM) is working to harmonise risk assessment methods in order to create a shared body of disaster and climate risk data that can be used as the basis for land-use and development

plans at local level. The ‘multi-hazard suitability model’ devised and tested in Cebu helps local authorities to translate scientific data into economic categories that can be used by municipal leaders – directly and without any specific prior knowledge – to inform land-use and investment decisions.

German development cooperation is also involved in local efforts to implement early flood warning systems and extend the cover provided by climate risk insurance schemes funded by the state and private donors. The goal here is to help poor people as well as micro, small and medium-sized enterprises to obtain microinsurance cover and therefore protect their livelihoods against potential losses. Another project has been set up to help the Philippine Government find lasting solutions to the issue of climate induced human mobility. The first step here involves compiling data and producing studies that help gain a better understanding of the phenomenon. These findings will then be used to refine local development and climate change adaptation plans. Targeted capacity-building measures at national and local level support the efforts of government bodies to implement these plans. Disasters also have an impact in the context of internal displacement due to violent conflicts in Mindanao. Germany advises its government partners on effective ways of addressing disaster and climate risks as additional stress factors in situations of forced displacement and integrating preventive measures into regional and local development and disaster risk management plans.

VIET NAM

MAIN RISKS:

extreme heat, landslides, sea level rise, storms (typhoons), flooding (rivers, coasts, cities) and forest fires

INSTRUMENTS:

risk assessments, civil protection and early warning systems, sustainable natural resource management, climate change mitigation



BMZ supports the efforts of several medium-sized coastal cities in Viet Nam to reduce the risks associated with sea level rise and increasing extreme weather events. The focus here is on coastal protection and restoring the mangrove forests in the Mekong Delta. In conjunction with contingency and evacuation plans drawn up together with the local population, local early warning systems ensure that people can leave the area in good time. Special training is given to communities in the upper catchment area of the river and in the delta region. As part of wider efforts to protect the climate, BMZ-funded projects also promote wind power as an alternative source of energy to coal and gas.

PAKISTAN



MAIN RISKS:

extreme heat, landslides, storms (cyclones), flooding (rivers, coasts, cities), water scarcity and forest fires

INSTRUMENTS:

capacity building, risk assessments, risk-informed planning and investment, civil protection and early warning systems

In Pakistan, German development cooperation is helping the civil protection authority in the province of Khyber Pakhtunkhwa to establish the structural and technical foundations of a preventive disaster risk management system. The project's focus is on preparing evidence-based hazard and risk assessments and developing guidelines on how to apply the findings. As well as supporting infrastructure measures designed to reduce the level of risk, the project conducts activities to raise public awareness of the main threats and actively involves local people in disaster risk management. The impact of climate change is already being felt in Pakistan. As such, efforts to increase community resilience also represent progress in the field of climate change adaptation.



CHAD



MAIN RISKS:

extreme heat,
flooding (rivers, cities),
water scarcity, forest fires
and desertification

INSTRUMENTS:

capacity-building,
risk assessments,
risk-informed planning
and investment,
sustainable natural
resource management

Chad is at risk from drought and flooding and consequently from food insecurity. The difficulties involved in distributing and using scarce resources are exacerbated by a volatile security situation, the country's general fragility and its poor infrastructure. In turn, these factors create further potential for conflict. With a view to increasing resilience among rural populations, German development cooperation also supports efforts to build up local risk management systems. This involves setting up local bodies, helping them to implement activities and awareness-raising campaigns that reduce the level of risk and advising on effective ways of compiling and sharing climate change information. These interventions take the form of decentralised projects conducted at local and cross-border level together with the Lake Chad Basin Commission. Germany also supports the development and implementation of strategies and cultivation methods adapted to the changing climate that boost the resilience of local people.

ETHIOPIA



MAIN RISKS:

extreme heat,
drought and
flooding
(rivers, cities)

INSTRUMENTS:

capacity building,
risk-informed planning
and investment, civil protection
and early warning systems, sustainable
natural resource management

Ethiopia is also badly affected by drought and flooding. These regularly cause economic damage, crop losses and migratory flows. German development cooperation supports Ethiopia's efforts to make itself more resilient in the face of droughts, for example by restoring degraded water catchment areas in dry lowland regions. Capacity-building measures designed, for example, to preserve soil and water help local people and the relevant institutions to prepare for extreme weather events. With German support, Ethiopia has coped relatively well with the latest drought, which has caused a food crisis in East and Southern Africa since 2015 / 2016. BMZ is currently working with the Potsdam Institute for Climate Impact Research (PIK) on a study that will provide scientific backing for climate risk assessments and climate change adaptation strategies.

MALAWI



MAIN RISKS:

extreme heat,
flooding (rivers, cities) and
water scarcity

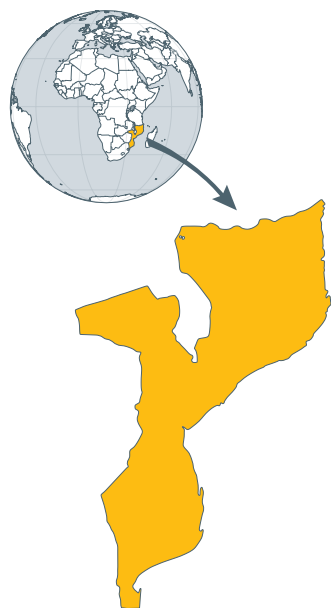
INSTRUMENTS:

social protection, sustainable
natural resource management,
risk-informed planning and
investment, capacity building

Malawi is subject to major climatic fluctuations, and even the usual seasonal variations can have fatal consequences. Around 40 per cent of the entire population had to rely on emergency aid during the 2015 / 2016 drought, which was triggered by the El Niño phenomenon. Germany is supporting Malawi's efforts to combine climate change adaptation and mitigation measures (e.g. water catchment area management and afforestation) with other activities to strengthen shock response programmes (e.g. extending social protection cover). In close collaboration with the Ministry of Finance, Economic Planning & Development, they are also working towards the longer-term objective of poverty reduction by strengthening the administration's management and coordination expertise (standardising various sub-programmes operated under the National Social Support Policy) and developing a harmonised financing mechanism to facilitate the rapid and effective roll-out of payments.



MOZAMBIQUE



MAIN RISKS:

extreme heat,
storms (cyclones),
flooding (rivers, coasts,
cities) and forest fires

INSTRUMENTS:

capacity building,
risk assessments,
civil protection and early warning systems,
sustainable natural resource management

Mozambique suffers regularly from extreme events. It was recently hit by Cyclone Idai, which left a massive trail of destruction affecting several millions of people, especially in the country's eastern city Beira. Mozambique's agricultural sector is heavily dependent on the rains, and various conflicts exacerbate the risk posed by extreme weather. At institutional level, German development cooperation is helping people in the Rio Buzi catchment area to build up their institutional civil protection capacity, advising on adaptation measures and supporting the efforts of the regional water authority to establish a comprehensive disaster early warning system. The priorities here include setting up and operating an automated measuring network, improving the current system of sharing meteorological data and introducing suitably adapted communication mechanisms to provide early warning of extreme weather events. Together with the World Bank and the Global Risk Financing Facility, BMZ also supports risk transfer mechanisms designed to help the most vulnerable. The programme aims to strengthen the national disaster risk management system in order to speed up disaster response times and increase the resilience of those local authorities, households and infrastructures which are most at risk.



MEXICO



MAIN RISKS:

earthquakes, extreme heat, landslides, storms (cyclones), tsunamis, flooding (rivers, coasts, cities), volcanic eruptions, water scarcity and forest fires

INSTRUMENTS:

capacity building, risk assessments, risk-informed planning and investment



In Mexico, German development cooperation is helping the Office of the Presidency to integrate the targets set out in the Sendai Framework into the country's national sustainability strategy. In addition, the Global Initiative on Disaster Risk Management (GIDRM) is supporting the efforts of the Mexican Ministry of Finance to factor disaster risks and climate adaptation needs more systematically into its internal procedures when preparing and evaluating public investment projects. One of the priorities here is to establish methods and processes for selecting those infrastructure projects which require a more thorough disaster risk assessment on account of their risk profile. The other priority

is to examine how best to support risk-reduction and climate change adaptation measures within the selected investment projects. The level of disaster risk is particularly high in the case of Mexico's transport infrastructure, especially its roads. Against this backdrop, throughout the initial planning stage for major investment projects, German development cooperation advises the administration on effective methods of determining the probability and potential costs of disasters and of incorporating the findings into its economic assessments for each project. This approach can be used to make the entire road infrastructure more resilient.

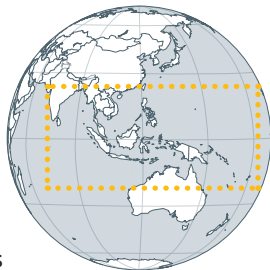




PACIFIC

MAIN RISKS:

earthquakes, landslides, sea level rise, storms (cyclones), tsunamis, flooding (rivers, coasts, cities), volcanic eruptions



INSTRUMENTS:

risk assessments, risk-informed planning and investment, sustainable natural resource management, expansion of renewables

German development cooperation is helping the governments of the Pacific island states to draw up and implement their Nationally Determined Contributions (NDCs) under the Paris Agreement and advising on climate change adaptation policies and strategies to prepare the most important sectors of their economies for future climate events. The focus is on those sectors most at risk from climate change, i.e. agriculture,

tourism, fishing, water, and health. The current priorities are biodiversity preservation, reforestation programmes, land-use planning, the development of locally tailored insurance products to protect against climate risks and support for renewable energy. The first-ever framework for resilient development in the Pacific combines climate change adaptation measures with disaster risk management. The framework includes strategic guidelines to help national and local decision-makers, the private sector, civil society and regional organisations plan and implement integrated climate risk management approaches. In turn, this makes it possible to harness synergies and use resources more efficiently. In line with projected impact scenarios, various approaches to climate-induced migration are being piloted, the emphasis being on transparent, participatory and needs-based resettlement. The focus of training is on methods and strategies for evaluating climate risks and on comprehensive climate risk management. These activities are designed to raise awareness among Germany's partners in the Pacific region so that they can go on to implement their own adaptation measures.





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