

# Climate Resilience Guide

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## Glossary

**Climate change adaptation** (IPCC): the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.

**Climate change mitigation** (IPCC): human intervention to reduce the sources or enhance the sinks of greenhouse gases (GHGs).

**Climate smart programming:** using climate information across timescales (both short term weather and seasonal forecasts, and long term climate projections) in designing and/or adjusting and implementing programmes and operations (IFRC<sup>1</sup>).

**Disaster risk Reduction:** action focusing on preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development as outlined in the Sendai Framework for Disaster Risk Reduction (UNDRR<sup>2</sup>).

**Disaster risk management:** is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses (UNDRR<sup>3</sup>). DRM involves implementing measures and strategies to minimize the likelihood and impact of disasters, and focuses on managing risks throughout all phases of disaster management, including preventing new risks (through sustainable development), reducing existing risks (through DRR), managing residual risks (through preparedness and response).

**Early Warning system:** An integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems and processes that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events (UNDRR<sup>4</sup>). EWS is divided into different pillars: 1. Risk identification, 2. Monitoring, 3. Dissemination and 4. Preparedness.

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<sup>1</sup> A guide to climate-smart programmes and humanitarian operations. 2023 International Federation of Red Cross and Red Crescent Societies (IFRC) and the Red Cross Red Crescent Climate Centre

<sup>2</sup> <https://www.undrr.org/terminology/disaster-risk-reduction>

<sup>3</sup> <https://www.undrr.org/terminology/disaster-risk-management>

<sup>4</sup> <https://www.undrr.org/terminology/early-warning-system>

**Anticipatory action:** A set of actions taken to prevent or mitigate potential disaster impacts before a shock or before acute impacts are felt. The actions are carried out in anticipation of a hazard impact and based on a prediction of how the event will unfold. Anticipatory actions should not be a substitute for longer-term investment in risk reduction and should aim to strengthen people's capacity to manage risks (Anticipation Hub, 2020).

**Preparedness:** The knowledge and capacities developed by governments, response and recovery organizations, communities and people to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters (UNDRR<sup>5</sup>).

## Who is this document for?

The Climate resilience pillar is a relatively new pillar in PIN linked to our RDD strategy 2022-2026. The previous strategy had a stronger focus on climate mainstreaming looking at how to integrate climate analysis within other programmatic sectors and especially: Sustainable livelihoods, Energy, or Resilience.

These different sectors have now been combined and adapted under the CR pillar. Therefore, the CR team wanted to make sure that everybody in PIN can understand what is the CR pillar, what are the key messages and key approaches we want to promote and what are the general concepts behind. This improved understanding should hopefully help PIN staff to better present our work and explain our approaches.

This guidance can be used as a key resource to better understand what the CR pillar is about. It also includes practical tools in annex to be used for assessments and program design.

Our aim is also to make sure that all PIN staff could get the basic theoretical background on climate change, including those who are less familiar with the climate resilience topic, vocabulary and approaches.

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<sup>5</sup> <https://www.undrr.org/terminology/preparedness>



## Introduction

People in Need (PIN) works in countries affected by several and multilayer challenges, which can include: poverty, conflict, inequality (especially related to gender and social inclusion), food and water insecurity, environmental contamination, power imbalances and others.

The climate crisis is already having and will continue to have a major impact on people's lives, livelihoods, and ecosystems. Indeed, the sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) focusses on the occurrence of widespread, adverse impacts of climate change. The increased frequency and intensity of extreme weather events, as well as slow-onset processes cause enormous losses and damages to human and natural systems. If no urgent actions to reduce climate risks are taken immediately, the number of people in need of international humanitarian assistance annually could double by 2050.

The ecological and climate crisis, layered on top of existing vulnerabilities, poses a significant threat to the stability and prosperity of societies, economies, and ecosystems, thereby challenging aspirations for sustainable development and human well-being.

To respond to the climate emergency, we work with people, communities and governments to strengthen their resilience to climate change. Our work embraces a climate justice approach, which recognises the unequal impacts of climate change, especially given that people living in low-income countries are more greatly impacted and most vulnerable, despite being less responsible for emissions of greenhouse gas (GHGs).

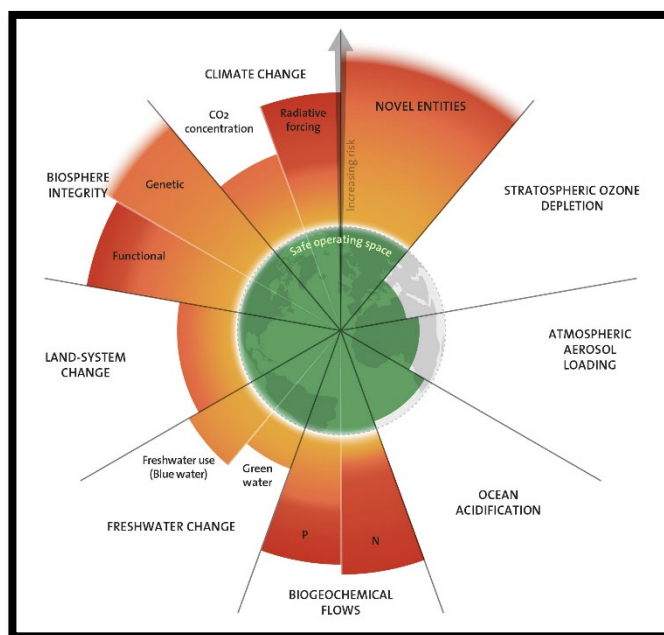
In this context, PIN has developed this guidance to clarify what we understand by climate resilience programming and what are the key themes and principles that we embrace in line with the 2030 Agenda for Sustainable Development, the Paris Agreement under the UN Framework Convention on Climate Change (UNFCCC), and the Sendai Framework for Disaster Risk Reduction.

# 1 Key Messages

- **Climate justice must be at the centre.** We see that the people who suffer the most severe consequences of climate change are often already experiencing poverty, already vulnerable, already marginalised and are more likely to be women and girls. We must stand in solidarity with the most vulnerable and stand in solidarity across generations, as it will be new and future generations who will live with the consequences of the climate decisions we make today.
- **Given PIN's focus on supporting the most vulnerable, we primarily invest in supporting adaptation approaches across our country programmes.** However, a combination of mitigation and adaptation approaches is crucial and these approaches must go hand-in-hand if we are to limit future negative change and build climate resilience. In certain contexts, we may prioritise supporting communities to adapt to climate change, whilst integrating mitigation components to support their future resilience.
- Nature and ecosystem-based solutions such as the greening of arid areas, and restoration and preservation of forests, rainforests, wetlands and other ecosystems should be harnessed.
- Maintaining the status quo is not sustainable. **Our societies must transform and go through deep systemic changes.** We must find ways to change our economic models in order to ensure well-being within planetary limits. To do this, we must change how we: generate and use energy; use land; produce and consume food and goods; manage waste; plan cities; travel; protect wildlife and our environment; and behave in many other areas of our daily life. There is no single and easy solution to climate change and the interconnected environmental problems.
- **Fossil fuels should be phased out** as soon as possible and alternative energy solutions should be promoted and utilised.
- **Our individual responsibility and individual actions are key.** Although individual measures alone will not solve the situation, without involvement on a personal level, political or systemic changes will lack support. The required changes however, go far beyond our consumption patterns. Transformation requires collective action and should be driven by us as informed and active citizens, encouraging our communities, municipalities and governments as well as businesses and other key stakeholders to take action.

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<sup>6</sup> <https://www.stockholmresilience.org/research/planetary-boundaries.html>



**Image 1.** Planetary boundaries – Update 2023<sup>7</sup>

- Despite mitigation and adaptation efforts, **climate change will continue to cause loss and damage**. Countries most responsible for climate change must support those less responsible and most affected, especially LDCs and SIDS. It is a matter of climate justice.
- The issue of **climate change should be considered within the broader framework of planetary boundaries** and other important environmental challenges. Planetary boundaries<sup>6</sup> are a set of nine thresholds identified by scientists that delineate the safe operating space for humanity within Earth's ecological limits. Crossing these boundaries, which include boundaries related to climate change, biodiversity loss, and ocean acidification, risks destabilizing critical environmental systems and could lead to catastrophic environmental changes.

<sup>7</sup> Azote for Stockholm Resilience Centre, based on analysis in Richardson et al 2023

## 2 Problem Description

Addressing climate resilience involves assessing which factors affect the resilience of individuals, communities and ecosystems. These factors can be related to climate change, other environmental stressors such as water or air contamination, soil degradation, etc. or socio-economic stressors.

### 2.1 Understanding climate change and its impact to prioritise actions

The IPCC has significant evidence that the use of fossil fuels, deforestation, and changes in land use have led to an increase in greenhouse gases (GHGs) in the atmosphere, causing the Earth's surface temperature to rise.

The existing proven impacts of climate change include:

- **Rising Temperatures:** Global temperatures are increasing, leading to more frequent and intense heatwaves. This can cause health problems, reduce agricultural productivity, and alter ecosystems.
- **Extreme Weather Events:** Climate change is contributing to more frequent and severe weather events, such as hurricanes, floods, droughts, and wildfires. These events can lead to loss of life, destruction of property, and significant economic losses.
- **Sea-Level Rise:** As polar ice melts and oceans warm, sea levels are rising, threatening coastal communities with increased flooding, erosion, and the loss of habitats.
- **Ocean Acidification:** Increased CO<sub>2</sub> levels are causing oceans to become more acidic, which harms marine life, particularly organisms with calcium carbonate shells or skeletons, such as coral reefs, which are vital to marine biodiversity.
- **Biodiversity Loss:** Changing climates disrupt habitats and ecosystems, leading to species migration, population declines, and even extinction, which reduces biodiversity and alters ecosystems' functioning.
- **Agricultural Disruption:** Changes in temperature, precipitation patterns, and the increased frequency of extreme weather can disrupt farming, leading to reduced crop yields, food insecurity, and higher prices.
- **Health Risks:** Climate change exacerbates health risks by increasing the spread of diseases, worsening air quality, and contributing to malnutrition and heat-related illnesses.
- **Water Scarcity:** Altered rainfall patterns and increased evaporation as a result of higher temperatures contribute to water shortages, and affect drinking water supplies, agriculture, and sanitation.
- **Economic Impacts:** The costs of climate change, including damage to infrastructure, loss of productivity, and the need for adaptation measures, pose significant challenges to economies worldwide, particularly in vulnerable regions.



Moreover, as GHG emissions continue to be emitted and contribute to increased global warming, climate risks and projected impacts are, according to the IPCC, “up to multiple times higher than currently observed (high confidence). Risks and projected adverse impacts and related losses and damages from climate change escalate with every increment of global warming (very high confidence). Climatic and non-climatic risks will increasingly interact, creating compound and cascading risks that are more complex and difficult to manage (high confidence).”<sup>9</sup>

## 2.2 Understanding risks

To ensure our climate resilience programming is based on a sound context analysis, we need to understand both **impacts** and **risks**.

- Climate change **impacts** are the consequences that individuals, communities and ecosystems are already experiencing due to of climate change (see the section above).
- **Risks** are the potential impacts, the potential adverse consequences anticipated to occur in the immediate or medium-term. Risks are defined by a combination of hazard (climatic and non-climatic), vulnerability, exposure and response capacities (see Annex 1 for more details).

Adverse consequences include those that may impact lives, livelihoods, people’s health and wellbeing, as well as economic, social and cultural assets and

investments, infrastructure, services (including ecosystem services), ecosystems and species.

**Our programming must respond to the existing impacts and, at the same time, identify potential risks and develop strategies to reduce them.**

Thanks to a risk assessment, PIN’s interventions can either reduce vulnerabilities (see below), improve response capacities (linked to preparedness planning) or reduce exposure to hazards (for example, through Disaster Risk Reduction and Early Warning Systems). See Annex 1 for more details on Climate risk management.

**Several key resources and climate analyses** are already available online and should be used to inform our climate resilience assessments and programming. The most relevant ones are:

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<sup>9</sup><https://www.ipcc.ch/report/ar6/syr/resources/spm-headline-statements>

- World Bank Climate Risk Country profiles:  
<https://climateknowledgeportal.worldbank.org/country-profiles>
- USAID Climate Change Country Profiles :  
<https://www.usaid.gov/climate/country-profiles>
- Notre Dame Global Adaptation Initiative Ranking is the main reference for ranking countries' vulnerability to climate change:  
<https://gain.nd.edu/our-work/country-index/>
- Projects approved by the Green Climate Fund and by the Adaptation Fund have comprehensive context and climate analysis that can be used.

More sources of information are mentioned in PIN's Gender Equality and Social Inclusion-Sensitive Climate Vulnerability and Resilience Assessment (GESI-Sensitive CVRA) toolkit.

## 2.3 Vulnerability analysis and stressors

People, communities and systems face different problems and stressors beyond those related to climate change, such as: a lack of livelihood sources; barriers to employment, education and professional training; poor access to markets; air contamination; waste management issues; land degradation; failed governance; unequal power structures; social inequities and many others.

All of these challenges contribute to **people, community and system vulnerabilities** and, as such, increase their vulnerability to climate change. At the same time, climate change exacerbates these challenges.

Vulnerability can be defined as the **predisposition to being adversely affected and includes all relevant environmental, physical, technical, social, cultural, economic, institutional, or policy-related factors**. These contribute to, and encompass, a variety of concepts and elements including sensitivity or susceptibility to harm, and/or a lack of capacity to prevent, prepare, respond, cope and/or adapt (IPCC, 2021a).

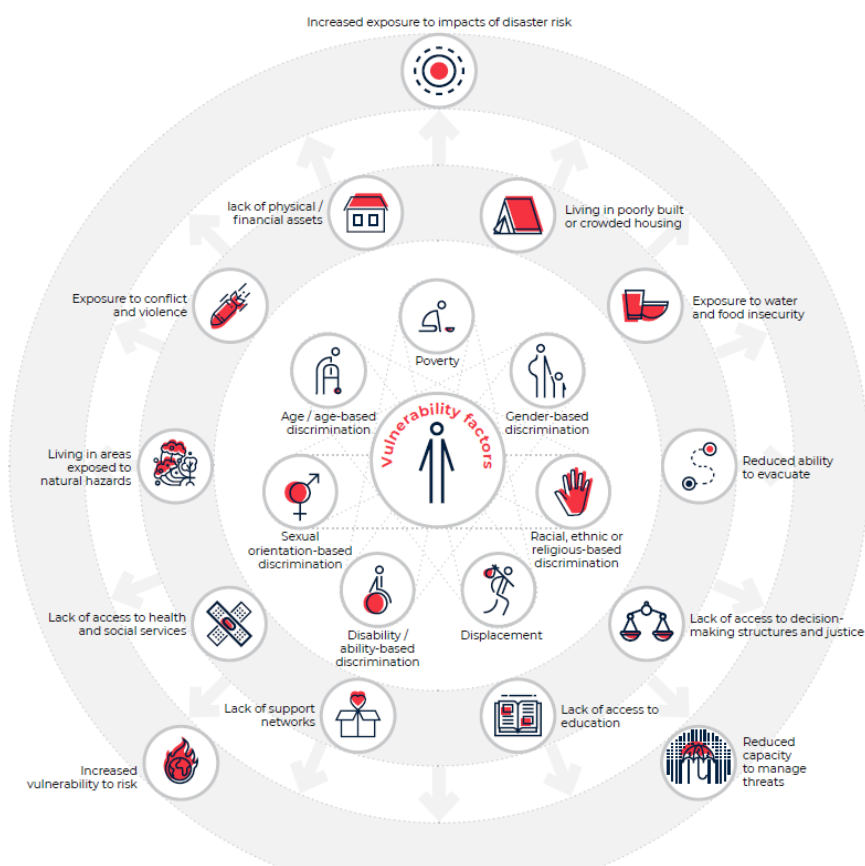
To express vulnerability, we can use the following approach<sup>10</sup>:

**WHO/WHAT** (e.g. individuals, communities, businesses, livelihoods, environment) **might suffer harm because of** **WHAT** (e.g. an extreme climate event, an indirect event like landslide, slow-onset change, other environmental or socio-economic crises) **and WHY** (e.g. low levels of education, residence in poorly constructed housing, no access to health clinics, etc.).

<sup>10</sup> Influenced by: Climate Resilience Framework, ISET International, 2013

This formulation helps to identify who or what is vulnerable (people, groups and systems), what they are vulnerable to, assess why those vulnerabilities exist and what actions need to be taken to address them. A usual cause-effect analysis (as done in problem trees) will deepen the analysis to identify the root causes of these vulnerabilities.

The diagram below shows the main vulnerability factors affecting individuals or a group of individuals: poverty, age, sex, gender, disability, displacement, and discrimination based on race, ethnicity, and/or religion. These factors make certain groups of people structurally and systemically more vulnerable or exposed to hazards, putting them at a higher risk. However, in this framework, PIN also considers the vulnerability of communities and systems, not just the vulnerability of certain individuals or groups.



**Image 2.** Impacts of disasters and climate change on different groups<sup>11</sup>

<sup>11</sup> IFRC (2020). 'Come Heat or High Water: World Disaster Report 2020,' International Federation of Red Cross and Red Crescent Societies, Geneva, Switzerland.

## 3 Climate Resilience Programming

### 3.1 Key principles

PIN adheres to the following key principles and approaches in its climate resilience programming:

#### Locally-led adaptation

Local communities are primarily affected by climate change impacts. However, their and local actors' voices are often not taken into consideration sufficiently when designing adaptation programmes.

PIN adopted the eight principles for Locally-Led Adaptation<sup>12</sup>, recognising the value of local knowledge and expertise in addressing climate risk, focusing on agency rather than only inclusion or participation, and ensuring that local actors on the frontlines of climate change have equitable access to power and resources to build resilience. These principles are aligned with PIN's approach to Locally-Led Action, our cross-cutting priority of Community Empowerment; PIN's Civil Society and Inclusive Governance (CSIG) strategy and our Partnership strategy.

We work with local actors to ensure our projects are locally driven, evidence-based and tailored to the context. We support the facilitation of participatory activities, provide guidance and opportunities for local actors to design actions, and support their agency to develop solutions that are most appropriate for them, and their social and natural environment. Our work encourages social mobilisation and cohesion and we work in true partnership with local communities, civil society, traditional and government leaders, and other stakeholders to ensure that change can last well beyond our involvement.

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<sup>12</sup> <https://www.wri.org/initiatives/locally-led-adaptation/principles-locally-led-adaptation>





## **Climate Vulnerability and Resilience Assessment (CVRA)**

Undertaking a CVRA furthers our understanding of the key vulnerabilities and resilience capacities of the target community in a broader sense, and how climate change has already or may affect them in the future. The assessment involves identifying how climate change can pose additional threats and impacts, but also whether new opportunities might emerge which may reduce existing vulnerabilities and enhance climate resilience. As part of an assessment, not only does scientific evidence have to be considered, but also the traditional knowledge of the community, and others factors related to the education, governance, planning, policies, legislation, and, more broadly, the main socio-economic and environmental dynamics of the target community. Such factors are linked to food systems, nutrition, natural resources management, WASH, income generating activities and livelihoods, markets etc.

PIN has developed a GESI sensitive CVRA toolkit (see Annex 1).

## **Human Rights-Based Approach**

The Human Rights-Based Approach is central to our programming, in line with PIN's Relief and Development Department (RDD) strategy. In 2021, the UN Human Rights Council passed a resolution (resolution 48/13) that recognises access to a healthy and sustainable environment as a universal right. It recognises that climate change threatens the effective enjoyment of a range of human rights, including the right to life, water and sanitation, food, health, housing, culture and development. Moreover, it disproportionately affects indigenous peoples, women, children, people with disabilities, migrants and internally displaced persons. Climate resilience programming should involve both duty bearers (mainly local authorities and government, but in some cases also the private sector) and rights-holders (including citizens, local communities and civil society representatives) in order to strengthen climate resilience and promote local accountability when the adverse impacts of climate change are not sufficiently prevented, mitigated or remedied.

PIN has extensive experience building the capacity of civil society organisations and activists from its CSIG and HRD programming and the integration of these approaches into programmes with climate resilience outcomes can help ensure systemic, sustainable change.

## **Nature based solutions**

Nature-based Solutions (NbS) are important approaches to improve climate resilience and environmental protection. NbS are defined by the International Union for Conservation of Nature (IUCN) as solutions that "address societal challenges through actions to protect, sustainably manage, and restore natural and modified ecosystems, benefiting people and nature at the same time". The

IUCN has identified seven societal challenges that NbS can address: climate change mitigation and adaptation; disaster risk reduction; economic and social development; human health; food security; water security; reversing environmental degradation and biodiversity loss.

We see that in countries where we work, climate change and environmental degradation affects people who rely extensively on natural resources for their lives and livelihoods, exacerbating gender inequalities and disproportionately affecting already vulnerable groups.

### **Examples of Nature-based Solutions**

Mangrove restoration: In coastal areas, climate change is increasing the frequency, intensity and magnitude of extreme weather such as hurricanes, typhoons and coastal storms, and is leading to a rise in sea levels, while environmental degradation is further raising the risk of coastal disasters. Mangrove restoration can reduce the impacts of such events by creating a natural buffer to wind and water flows which helps lower the climate risks to ecosystems and coastal communities. As such, mangrove restoration acts as eco-Disaster Risk Reduction (DRR) and a climate change adaptation solution (Ecosystem-based Adaptation), whilst also preserving biodiversity and removing and stocking carbon.

Landscape planning: Climate change and landscape degradation lead to increased climate risks, such as droughts and floods, food and water insecurity, and ultimately socio-economic and human health issues. By applying landscape planning and management approaches grounded in NbS, such as agro-ecological models, green areas, soil and water conservation, biodiversity preservation for food and nature, etc. we can reverse this process and increase landscapes' health with a positive impact on human wellbeing and livelihoods.

Biochar: The loss of soil productivity due to the climate change-induced intensifications of dry spells/droughts and improper agriculture techniques contribute to further land degradation, ultimately impacting agriculture-based livelihoods. This can also result in a reduction of carbon stocked in the soils as well. Organic waste can be transformed into biochar to be used as a soil amendment. Besides reducing the need of chemical fertilisers, improving soil fertility and helping farmers increase their climate resilience, this helps stock underground the carbon sequestered from the atmosphere (as organic matter), functioning as a NbS for climate mitigation.

More about NbS:

[Nature-based solutions for comprehensive disaster and climate risk management: Toolkit for integrated planning and implementation of disaster risk reduction and climate change adaptation | UNDRR](#)



## **Systemic solutions, including Market System Development (MSD)**

PIN strives to find systemic solutions with our partners for the issues we want to address. Systemic solutions address the root causes of a problem by targeting the interconnected factors and structures sustaining it, rather than just treating symptoms. It takes a holistic approach using a multi stakeholder collaboration across sectors, considering the relationships and dynamics within the entire system. The aim is to create long-term sustainable change by tackling underlying conditions, such as policies, behaviours, or institutional frameworks.

USAID defines a “system” as the interconnected set of actors, elements, relationships, rules, and resources that jointly produce and sustain a particular outcome<sup>13</sup>.

Market System Development (MSD) is a key crosscutting approach embraced by PIN in our programmes and interventions. It is an approach undertaken to create more inclusive, sustainable, and resilient markets, particularly for marginalised or underserved populations. Instead of directly providing goods or services, the MSD approach focuses on understanding and addressing the underlying constraints and opportunities within a market system, such as the relationships, behaviours, and incentives of market actors (producers, consumers, businesses, and governments). Through MSD, PIN facilitates the creation of an enabling environment that supports entrepreneurship, innovation, and contributes to the overall socio-economic development of the communities we serve.

Once a GESI-Sensitive CVRA has identified key areas of focus, a market systems assessment can help design a programme aimed at enabling systemic solutions. This can be complemented with social and behaviour change formative research and a duty bearers/rights holders analysis, where relevant.

## **Social and behaviour change<sup>14</sup> (SBC)**

Effective climate resilience strategies require individuals and communities to modify existing practices or adopt new ones, and the field of SBC offers a systematic approach to better understanding the complex factors which influence these practices. Changing behaviours is not just a matter of changing personal decisions. We need to consider the social, structural, ecological, and environmental contexts in which the barriers and enablers exist. We seek to observe and assess the climate vulnerability of priority groups and influential groups, and prioritise the behaviours that may contribute to their resilience. We identify the relevant social and behavioural determinants using evidence-based formative research, using methods such as the Barrier Analysis, and Trials of Improved Practices (TIPs). Values, beliefs, attitudes, preferences, perceived costs and benefits, perceived social norms, policies, institutions, and other factors interact to influence a behaviour. We directly engage the priority influential groups and relevant stakeholders in developing the SBC strategy.

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<sup>13</sup> <https://www.usaid.gov/sites/default/files/2024-10/Local%20Systems%20Position%20Paper%20vFinal%20508%20Compliant%20%28Digital%29.pdf>

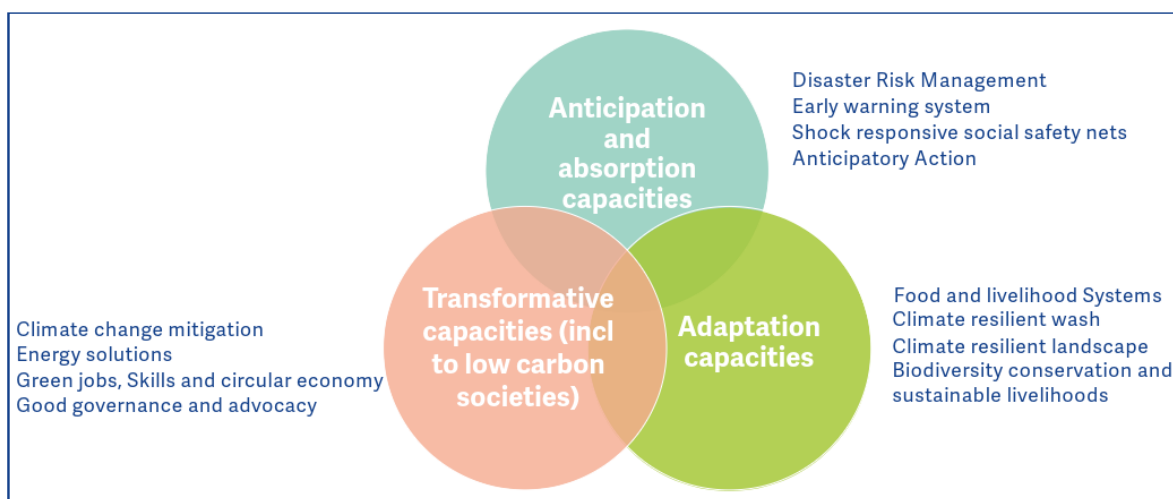
<sup>14</sup> For more guidance: [www.behaviourchange.net](http://www.behaviourchange.net)

## 3.2 PIN Climate Resilience programming

PIN has been working on natural resource management, environmental restoration, agriculture and food security projects for over 20 years. Under the RDD strategy 2022-2026, we combined this range of expertise under the Climate Resilience pillar.

According to the RDD strategy, *PIN's role under the CR pillar is to enhance the resilience of the people vulnerable to a changing climate and environmental degradation by trying to harness solutions that are in line with green growth and circular economy principles, and that reduce greenhouse gas (GHG) emissions and sequester/stock carbon.*

PIN understands Climate resilience<sup>15</sup> as the “*capacity of social-ecological system and its human components (individuals, households, communities) to anticipate and absorb external shocks and stresses (climate change, other environmental and socio-economic factors) while also maintaining the capacity for adaptation, and transformation toward low carbon societies*”.



**Image 3.** Climate Resilience programming

We can improve transformative capacities through good governance and institutional strengthening, skills development, policy shifts, leadership and empowerment, and innovation in technologies and processes.

We also initiate efforts to move towards low-carbon societies, shifting from fossil fuel-dependent economies to sustainable, low-carbon economies. This includes redesigning key sectors such as energy, transport, and food systems to avoid releasing greenhouse gases that damage the climate, and moving towards more sustainable ways of life.

<sup>15</sup> Build on the resilience definition from PIN's Global strategy for Resilience building, 2017



Therefore, when designing climate resilient programming, PIN Country teams should consider in which way they are contributing to anticipate and absorb; adapt to external shocks and stresses and/or promote transformative low carbon development.

Among the different approaches that contributes to resilience building, PIN's Climate Resilience theory of change is focusing on the following key objectives:

- Improve food and livelihood systems
- Improve water access and governance, hygiene and sanitation
- Improve landscape and ecosystem management
- Strengthen green and circular economy including skills development
- Improve access to climate resilient energy solutions
- Increase Disaster Risk management, Disaster Preparedness, Early Warning System and Anticipatory action

These objectives have been declined in the following thematic that represent PIN's Climate resilience key programmatic components:



**Image 4.** PIN's Climate resilience key programmatic components

## 4 Thematic Priorities

### 4.1 Climate resilient food and livelihoods systems

Systemic and participatory approach to food systems and livelihoods to improve food and nutrition security in areas vulnerable to climate change.

A food system is a concept that includes the entirety of actors and interactions throughout the food value chain. These span from input provision and agricultural production (crops, livestock, fish, and other commodities) to transportation, processing, retailing, wholesaling, preparation, consumption, and waste management. Food systems also encompass the supportive policy frameworks and cultural practices related to food.

Food systems play a substantial role in global employment, with agricultural households comprising as much as two-thirds of the population living in extreme poverty worldwide ([UN Food System, 2023](#)). Approximately one-fourth of women employed globally are engaged in agriculture (including forestry and fishing). This is because, in low-income and lower-middle-income, agriculture remains the primary employment sector for women. However, women within this sector often find themselves in informal, low-wage, low-skilled, labour-intensive, and precarious positions.

Healthy diets are intrinsic to the human right to food. They are a precondition for human development and more resilient societies. However, globally, diets are neither sustainable nor healthy. More than one-third of people in the world- about 2.8 billion- could not afford a healthy diet in 2022 ([FAO, 2024](#)). Consequently, addressing malnutrition remains a critical challenge.



Moreover, due to widely adopted unsustainable practices, food systems continue to generate soil, water, and air pollution. Food systems contribute more than one-third of greenhouse gas emissions, as much as 80 per cent of biodiversity loss and account for up to 70 per cent of freshwater use.

Finally, climate change already has and will continue to have an impact on food systems. Climate variability and extreme weather events, such as droughts, floods, and storms, disrupt agricultural production, water availability, and food supply chains. Farmers around the globe are facing changes in seasonal patterns, disruption of production, and increasing food insecurity.

PIN aims to promote climate resilient sustainable food systems that deliver food and nutrition security for all, in ways that support economic development, positive social outcomes and protect the natural environment. Programmes must be designed based on a strong understanding of the causes and explicitly target food and nutrition security outcomes.

Our key approaches to climate-resilient food systems focus on Climate-Smart Agriculture (CSA), agri-value chain development, and nutrition-sensitive programming through Social and Behavioral change approaches.

**Climate-Smart Agriculture**, as defined by FAO, aims at improving climate resilience, and it entails food security and climate change adaptation and mitigation with a market-based perspective.

**A nutrition-sensitive approach** starts with an understanding of the dietary gaps—in particular of women and children—that contribute to poor nutrition outcomes. By supporting household and community efforts to increase and diversify agricultural production, with a focus on foods of high nutritional value, the availability and affordability of these foods can be enhanced locally. Local consumption can be increased by including vulnerable groups and during periods when traditionally there has been a food gap in the market. (for more details, see our flagship Strengthening Food Systems for Nutrition<sup>16</sup>)

Nutrition-sensitive programmes should include a specific measure of food security, dietary or nutrition indicators of children under 2 and pregnant and lactating women: the first 1000 days<sup>17</sup>.

Examples of nutrition sensitive programming include [Chitanda](#) and Omande Win projects in Angola as well as the Quality Diets for Better Health in Ethiopia.

Other key examples on different steps of the food systems include organic fertilizer production through biogas in Zambia, [supporting female cacao farmers in the Philippines](#), [poultry value chain in Cambodia](#), [dairy sector value chain development in Moldova](#), and [food waste in Georgia](#).

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<sup>16</sup> <https://resources.peopleinneed.net/documents/679-strengthening-food-systems-for-nutrition.pdf>

<sup>17</sup> <https://thousanddays.org/why-1000-days/>

## 4.2 Climate resilient WASH

At PIN, we have been working with communities and governments to improve access to water, hygiene, and sanitation (WASH) since 2003. We focus on rural and semi-urban communities as well as institutions such as schools and health centres. Our goal is to ensure sustainable water services for all.

Rather than delivering donations or focusing on the construction and rehabilitation of water delivery schemes and sanitation infrastructure, we build robust WASH systems. **Our work is based on capacity building, education and knowledge transfer.** We provide support to technical education through TVETs, artisans, and operator training. Capacity building of multi-village management bodies and town water utilities is part of our routine programming. Therefore, the focus is on the professionalisation of WASH services.

**Access to safe drinking water is still a challenge** in several part of the world. In Least Developed Countries, only 37,5% of the population has access to safe drinking water<sup>18</sup>. Unreliable water supply or sewerage systems and contaminated or fragile existing water sources are leading to waterborne diseases such as diarrhea, cholera, and typhoid. The problem is further aggravated by **inadequate sanitation facilities** and **poor hygiene practices**. Moreover, **lack of water management** causes unsustainability and thus the efficiency and effectiveness of WASH interventions is at stake.

Women and girls are disproportionately affected by inadequate WASH services, as they often bear the responsibility for collecting water and managing household sanitation. The lack of access to safe and private sanitation facilities can compromise their safety, dignity, and overall well-being

Furthermore, climate change exacerbates water scarcity and variability, affecting the availability and quality of water resources for drinking, sanitation, and hygiene. Increased frequency and intensity of extreme weather events, such as floods and droughts, further strain WASH infrastructure and resilience in vulnerable communities. The IPCC 6<sup>th</sup> assessment report has identified water as one of the main key risks<sup>19</sup>. About 90% of climate impacts are related to water – too much, too little, or too dirty – yet only 3% of climate finance is currently dedicated to the world's water systems.

Our climate-resilient WASH programming tackles the problems mentioned above by considering current and long-term climate risks. This includes investments in:

- Improving access to water and sanitation facilities through infrastructure rehabilitation and maintenance (including skills development)

<sup>18</sup> [WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene \(JMP\) \(2024\)](#)

<sup>19</sup> <https://www.ipcc.ch/report/ar6/wg2/chapter/chapter-16/#16.5.2.4>



- Behaviour change campaigns promoting good hygiene practices,
- Capacity building for local communities and improving local governance and public accountability of WASH services in climate vulnerable areas,
- Policy support that prioritises WASH initiatives in national development agendas,
- Efficient usage and management of the water resource in an integrated manner, including reduction and reuse (reduction of water footprint).
- Nature based Solutions (NbS) and Ecosystem-based Adaptation solutions (EbA) for upstream protection, retention/recharge, watershed/catchment management (results in resilience & downstream water quality increase).

Collaboration between governments, non-governmental organizations, the private sector, and local communities is essential to achieve sustainable improvements in WASH conditions and ensure the health and well-being of populations in developing countries.

Soft measures	Hard measures
<ul style="list-style-type: none"> <li>• <b>Economics</b> (e.g. water tariffs)</li> <li>• <b>Politics</b> (e.g. legislation, regulation and water planning)</li> <li>• <b>Governance</b> (e.g. improved networking among water bodies)</li> <li>• <b>Management</b> (e.g. improved management bodies, protected water catchments and sources, improved catchments quality by removing invasive species or regulating the access, water demand management, IWRM)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Small scale options</b>, e.g. at household or school level, such as rainwater-harvesting systems (RWH), or e.g. off-grid water pumping solutions (solar pumping), enlargement of an existing system with a new waterpoint, reuse of treated wastewater in agriculture, drip irrigation schemes, etc.</li> <li>• <b>Large water systems</b>, e.g. build large water schemes and reservoirs</li> </ul>

**Image 5.** Example: Climate change adaptation on water

### Programming examples:

- *Building resilient WASH systems in Ethiopia through multi-sectoral assistance:* PIN has been active in the WASH sector in Ethiopia since 2004. Based on long-term knowledge and experience, we developed complex multi-sectoral approach to build resilient WASH systems in the country. For more concrete details, please check our [Capability Statement on WASH in Ethiopia](#)
- *Angola: Omande-Win* Integrated Support to the Water and Nutrition Sector in Namibe: We adopted a holistic approach to strengthen food and nutrition resilience and security via interconnected agriculture and WASH components of the population most affected by climate change in Southern Angola
- *Water and sanitation in Syria:* in conflict affected contexts, our nexus approach has contributed to alleviate suffering by improving access to water and sanitation and contributed to climate resilience with sustainable water management practices.



## 4.3 Climate-smart energy solutions

Across the world, access to reliable and affordable energy remains a significant challenge, particularly in rural and remote areas of developing countries. The 2024 Tracking SDG7 Report<sup>20</sup> estimates that 685 million people still lack access to electricity, 80% of whom in Sub-Saharan Africa.

Moreover, up to 2.1 billion people still have no access to clean cooking fuels and technologies, relying instead on traditional biomass sources such as firewood and charcoal or fossil fuels such as coal, which have **harmful impacts on health and drive climate change**.

### Key barriers

Households with low income often have the least access to reliable energy sources and are particularly vulnerable **to energy poverty** and its negative social, environmental and economic impacts. **Inadequate energy infrastructure, financing constraints, policy and regulatory barriers, and technological limitations** further impede progress towards sustainable energy solutions. **Climate change** exacerbates these challenges, increasing the frequency and intensity of extreme weather events, which can disrupt energy systems and exacerbate energy access disparities by increasing the demand for energy for cooling and adaptation measures.

### Sustainable energy for all

Energy access must be at the forefront of efforts to achieve sustainable development and climate resilience, as access to energy is a precondition to climate change resilience. Ensuring universal energy access is essential if we want to achieve sustainable development goals, lift people out of poverty, and build resilient and prosperous communities.

Globally, our work in addressing climate change focuses on **enhancing the resilience of people vulnerable to a changing climate and environmental degradation by trying to harness green solutions that can reduce and help sequester and stock carbon**. Off-grid renewable energy sources such as solar and biogas, improving energy efficiency to reduce household costs, or low carbon and clean energy technologies for cooking are some of the solutions offered by leveraging market-based approaches. This is object of PIN flagship entitled [Climate-Smart Energy Solutions](#).

PIN has more than 15 years of experience enabling access to sustainable energy markets. We support access to clean, reliable, and affordable energy services

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<sup>20</sup> IEA, IRENA, UNSD, World Bank, WHO. 2024. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO).



across a range of different contexts, and see this as one of the key measures in achieving climate resilient development. PIN's energy programming is aimed at supporting both climate change adaptation and mitigation.

The approaches we use are:

- In-depth analysis to understand and address root causes and barriers that prevent the adoption of sustainable energy
- Last mile support to underserved people, e.g. through off-grid renewable energy solutions
- Provision of market-based solutions and private sector engagement by stimulating supply and demand of products and services;
- Drive systemic change that supports the relevant market, government, and civil society actors;
- Promote innovations both technically and financially and play a key role in accelerating the switch to renewable energy.

A portfolio of several past and current initiatives has been created in years, spanning from access to renewable energy solutions (for instance through household [biogas for cooking in Zambia](#), [solar panels installation in Iraqi schools](#), or [household solar off-grid plants in the Philippines](#) and Cambodia), to energy efficient solutions (for instance CHIP - Cooking, Heating, Insulation Package in Mongolia or supporting energy efficiency in buildings in BiH).

Innovations include [solar cooling systems](#) and [solar drying systems](#) in Cambodia, and [smart energy solutions to tackle pollution](#) in Mongolia's capital.





## 4.4 Climate resilient landscapes

In many areas where we work, people's livelihoods depend on their environment and the availability of natural resources. Urban and rural landscapes provide local populations with environmental benefits essential to development and increase resilience to shocks and climate change adaptation.

Deforestation, unsustainable farming and grazing management, urbanisation, infrastructure development, adverse climate conditions, industrial pollution, and improper waste disposal are the leading causes of land degradation and biodiversity loss.

### Impact of land degradation

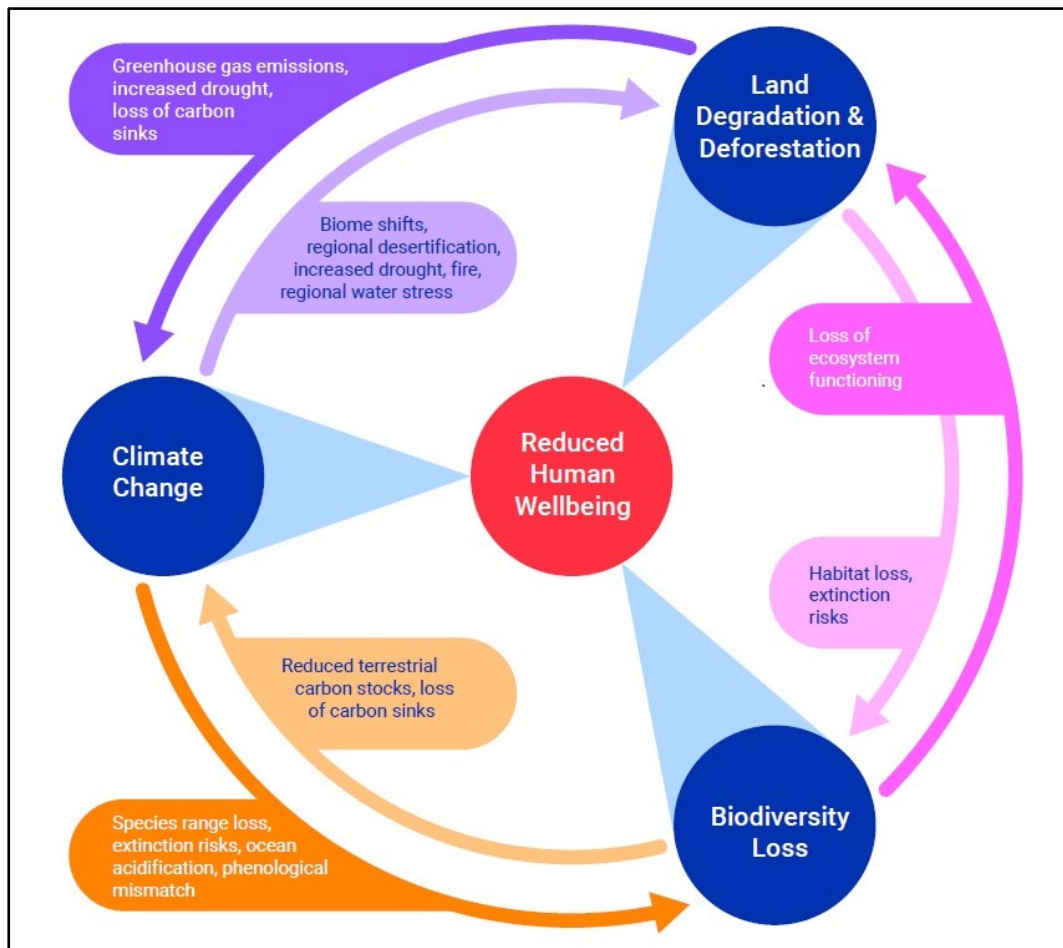
Land degradation leads to reduced agricultural productivity, as the land loses its fertility and structure, resulting in lower crop yields and diminished food production, increased food insecurity and a greater risk of hunger and malnutrition. This process also causes biodiversity loss, destroying habitats and deteriorating soil quality, leading to the extinction of plant and animal species and disrupting ecosystems.

Land degradation disrupts natural water cycles, decreases water retention, and exacerbates droughts and water shortages. Additionally, degraded lands contribute to climate change by releasing stored carbon into the atmosphere, further accelerating global warming.

The economic impacts are also severe, with reduced land productivity and higher rehabilitation costs leading to significant financial losses, particularly for communities dependent on agriculture and natural resources. This degradation often forces people to migrate, causing social and economic displacement, and leading to increased competition for resources in other areas.







**Image 6.** Interactions between climate change, land use and biodiversity<sup>21</sup>

## Our expertise

**Effective landscape management** ensures sustainable use of resources, protects biodiversity, and mitigates the impacts of climate change by preserving ecosystems that regulate water cycles, store carbon, and prevent soil erosion. Additionally, it supports agriculture, safeguards livelihoods, and enhances the overall well-being of communities by promoting a balanced and integrated approach to land use that considers ecological, economic, and social factors.

The **effective technical solutions to landscape management** vary from proven traditional techniques to modern high-tech innovations that should lead primarily to nature-based solutions, thus recovering the natural ecosystem dynamics and functions in cultural landscapes. PIN strives to address the underlining causes along with introducing technical solutions suitable to localities and residing communities.

We also address environmental degradation, climate change-induced landscape variations, and agricultural productivity. Analysing geohazards alongside existing agricultural and livelihood practices is essential in providing a holistic solution to

<sup>21</sup>United Nations Environment Programme (2021). Making Peace with Nature: A scientific blueprint to tackle the climate, biodiversity and pollution emergencies. Nairobi. <https://www.unep.org/resources/making-peace-natureZ>

protect communities from the impacts of natural disasters and enhancing productivity, livelihoods, and food security. Our response within this area engages all key stakeholders, and our approaches include climate-smart agriculture, natural resource management techniques, and biodiversity and environmental conservation.

### **Programming examples:**

Promoting Climate Smart Agriculture in Iraq, Syria and Afghanistan – Building on its experience since its first NRM and Agriculture programming in Afghanistan, PIN developed the series of NRM and agriculture project, which developed its portfolio in agriculture sector, spearheading the topics of community landscape management, agroforestry, reforestation, conservation agriculture and ultimately the topics of Climate Smart Agriculture and Nature based solutions. Recently, PIN applies its experience in promotion and development of the extension services in Climate Smart Agriculture in Iraq and Syria.

Sustainable agriculture and reforestation in Ethiopia: PIN supports Ethiopia through participatory development of productive landscapes and ecological stability of the Dijo-Bilate River Watersheds to address deforestation, erosion, droughts and floods. Support includes most of Productive & Climate-resilient Landscapes flagship components, Participatory Community landscape design, Capacity building of the local authorities, GIS-driven landscape planning and modelling, Behavioral Change Design and Land- access facilitation. More information about the [Flagship Productive and Climate Resilient Landscape available here](#)

[Empowering conservation through community action in Zambia](#): PIN, in partnership with WWF Zambia, aims to address unsustainable practices such as overgrazing, wildfires, and illegal logging for charcoal. This integrated approach promoting Conservation for Sustainable Livelihoods is empowering communities to sustainably co-manage natural resources while facilitating clean energy and alternative livelihoods, we will help communities break this harmful cycle.

## 4.5 Green Jobs, Skills and the Circular Economy

The United Nations Environment Programme (UNEP)<sup>22</sup> defined a green economy as “one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”. It should be low carbon, resource efficient and socially inclusive. While a circular economy supports the transformation and development of the industry and infrastructure towards sustainable consumption and production (SCP). These approaches align with the United Nations’ Sustainable Development Goals, offering a transformative pathway towards sustainable economic growth.

This transition towards sustainable economies will create new jobs in green industries, but skills gap may hinder access to these opportunities, due to a mismatch between the skills gained through education and those demanded by the green sector potentially contributing to unemployment or underemployment. An education and training system must be ready to prepare unemployed youth with the skills needed for this transition to a greener and sustainable economy and provide them with social protection that facilitates the transition to new jobs, contributes to preventing poverty and reduces the vulnerability of households and communities. Among other educational services and training providers, as promoted in the UNESCO Strategy for TVET 2022-2029, TVET institutions will have the opportunity to be a catalyst towards digital and green transformation and sustainable economies.

Our expertise includes supporting MSMEs in the green economy to develop their skills and capacities, to develop their market to create sustainable and decent jobs and to support the private sector in greening their practices using circular economy principles.

Our approach emphasizes **market-driven skills enhancement, collaboration and partnership between educational institutions (especially TVET) and the labor market to ensure trainings align with the skills needed for current and future markets to reduce youth unemployment.** These solutions aim to ensure educational curricula match the evolving labour market demands, in relation to green and circular economy sectors.

To achieve long-term sustainability, **our systemic approach** targets the underlying barriers to development, strengthening the connection between green sectors and vocational education and training. We do so while focusing on inclusion and resilience, poverty reduction, and decent working conditions. Instead of providing direct assistance to a limited number of people, we present sustainable systemic changes that affect local markets on a large scale.

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<sup>22</sup> UNEP (2011), taken from: <https://whygreeneconomy.org/information/unep-green-economy-report/>



PIN sees the economic value chains and vocational education as connected systems that mutually support each other and cannot develop independently. Although some of the PIN projects focus on either skills development or circular economy strengthening, the long-term programs aim to support both systems.

### Programming examples

In Ethiopia, the [LISEC project](#) contributed to developing the circular economy and reducing the environmental impact of the leather industry with transformation of waste in valuable products. Cooperation between the leather sector and TVET colleges was critical to ensure a match between new skills needed in managing waste and related job opportunities

In Mongolia, the [Switch On the Green Economy](#) (SOGE) project supports agri-food and beverage MSMEs and retailers in adopting circular economy practices through a market-based eco- labelling system, capacity building, behaviour change and access to green finance.

### Other examples:

Sarajevo [European best practices in waste management: from the Czech republic - People in Need](#)

Myanmar [Strengthening vocational skills for migrant worker - People in Need](#)

Cambodia AQUA Project - [Streamlining Aquaculture in Cambodia's Vocational Education'](#)



## 4.6 Disaster Risk Management and Early Warning Systems

Disaster risk management (DRM) efforts can contribute to reduce the risk and impact of disasters and build climate resilience. To anticipate and minimise these impacts, we take action before the impact of a disaster. We do so to reduce the risk to communities, mitigate the negative impacts of a disaster, and preserve development gains. We use a risk-informed approach and integrate disaster risk reduction and preparedness in our programming wherever possible.

We have gained experience in the following areas:

- Risk mapping/risk identification using participatory approaches involving local communities and combining both traditional knowledge and scientific data
- Support the development of locally led specific and multi-hazard early warning systems to provide timely alerts and information about hazards, enabling communities to take proactive measures to reduce risks and minimise losses
- Disaster risk reduction initiatives to reduce the likelihood or the scale of a disaster, including constructing climate-resilient infrastructure, sustainable land management practices and ecosystem-based approaches, the restoration and conservation of natural ecosystems (e.g. mangroves, wetlands, forests) that provide critical services such as flood protection, water purification, and carbon sequestration
- Community-based preparedness and contingency planning, including capacity building and support for resource mobilisation among local authorities, civil society, and communities
- Early anticipatory action by assisting ahead of a crisis to help people better anticipate and cope with its impact.
- Social protection and safety nets to help communities recover from climate-related disasters and rebuild their lives, including cash transfers, food assistance, livelihood support, and access to other services such as mental health psychosocial support.

Currently, we implement DRR and preparedness activities in Armenia, Bosnia-Herzegovina, Ethiopia, Nepal, Cambodia, Laos, and the Philippines. We prioritise a community-centred approach, as we can only achieve effective and sustainable results through active community engagement and local knowledge.

Our [PIN Cambodia team has pioneered the early warning system in Southeast Asia](#) since 2013. Its success has inspired countries like the Philippines and Laos PDR. EWS is gaining recognition as a key approach to disaster risk reduction.

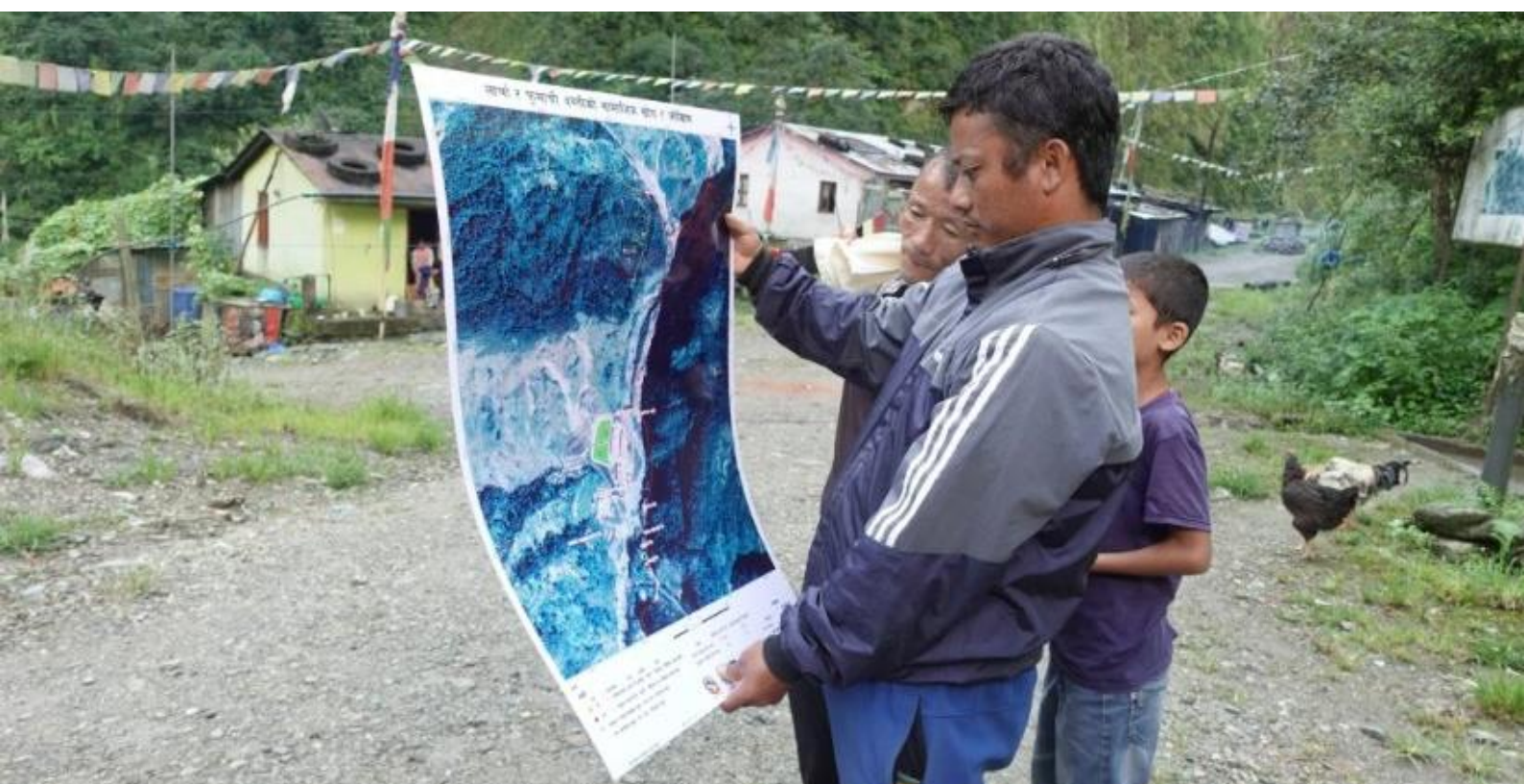


In Nepal, Pratibaddha 2 project focuses on local governance to promote and build local capacities in inclusive disaster preparedness and early actions for households at risk, especially marginalized and indigenous families. It aims to do so by unlocking potential for better preparedness and response at the local government through nature-based solutions, early warning systems, anticipatory actions, and shock responsive social protection.

PIN is an active member of the Anticipation Hub and Risk-Informed Early Action Partnership (REAP), member of the Associated Programme for Flood Management under the World Meteorological Organisation and Global Water Partnership and holds an observer position in the Climate Risk & Early Warning System (CREWS) initiative and is a member of the START network.

### **Climate resilience and social protection**

Social protection can be envisaged as a strategic approach for climate and environmental risk management, addressing the need of climate action and increase of climate resilience. In its initiatives PIN can engage in social protection to 1. Reduce poverty and vulnerability and increase inclusive coping mechanisms ahead of climate-induced shocks; 2. Invest in climate-resilient approaches and solutions in the long-term with transformative and inclusive action at system level; 3. Support disaster preparedness, disaster risk reduction and anticipatory action, as well as response and recovery. For instance, through shock-responsive safety nets the aim is to enhance the reach and vulnerability targeting of social protection schemes in areas prone to climate change-induced shocks and stresses such as droughts, floods and landslides.



## 5 Additional Considerations

### 5.1 Links with ERR and CSIG pillar

Furthermore, Climate resilience pillar is also linked to the other two RDD Strategy Pillars.

**Civil Society and Inclusive governance (CSIG):** CSIG approaches contribute to climate resilience by strengthening the organisational and technical capacities of civil society actors, including civil society organisations, informal civic groups and grassroots activists. Local civil society actors are supported in their pursuit to serve their civic roles in order to directly claim their rights or claim those on behalf of others whose rights have been violated. Rooted in the HRBA understanding that climate resilience issues are all fundamentally human rights issues, climate resilience programming should empower local civil society to hold duty bearers accountable especially for the services they must (progressively and according to the maximum available resources) provide, such as: safe drinking water, land tenure, agriculture support and others. For example, in Ethiopia, PIN works with town water utilities to improve water access and quality through establishing and maintaining the Water Customers Forum, through which local community representatives can directly engage with water providers according to local regulations.

Finally, a strong civil society is fundamental to influencing policy change and its application at national and local levels.

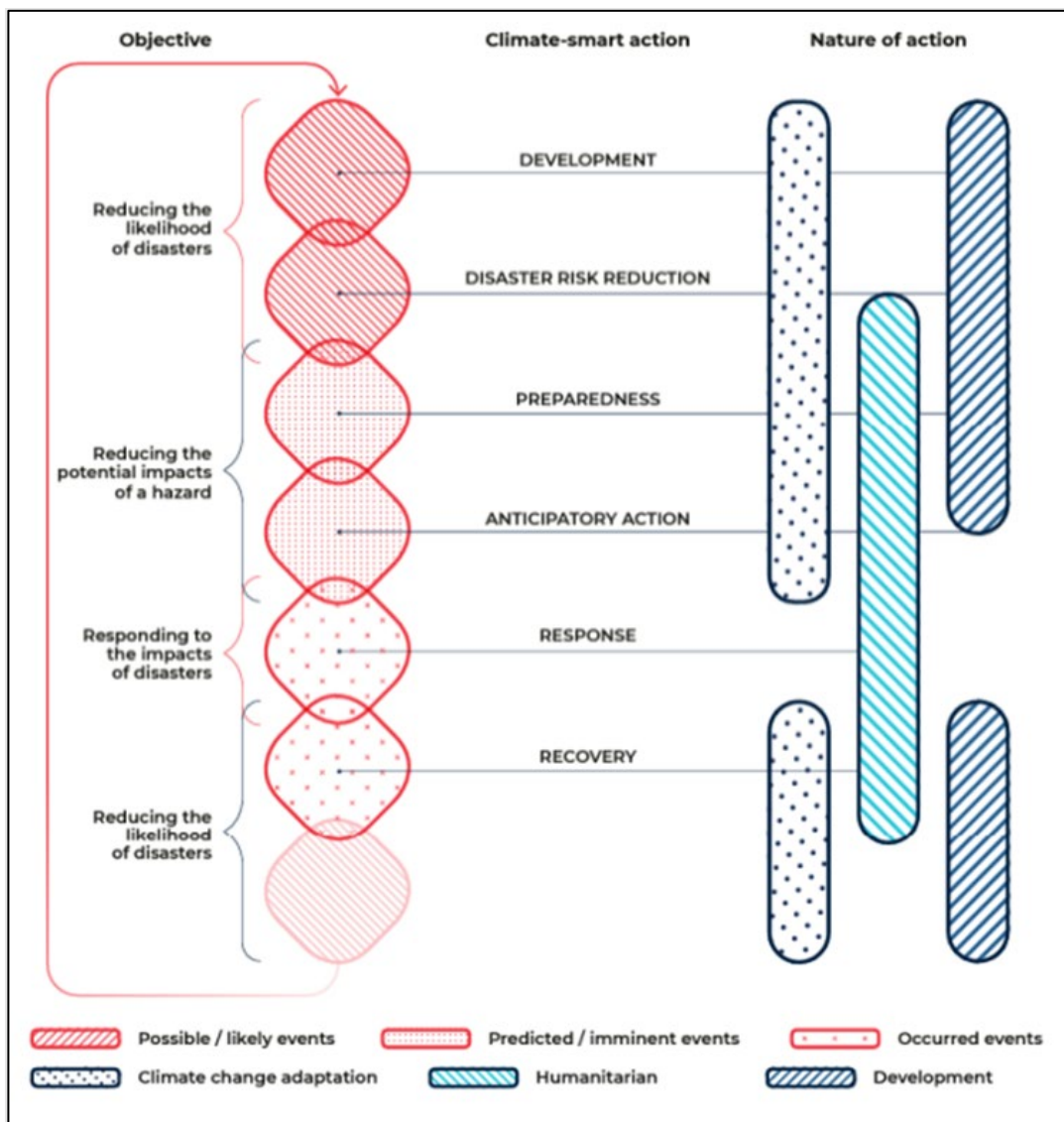
**Emergency response and recovery (ERR):** Climate resilience and ERR are linked through:

- DRR, disaster preparedness, Early Warning Systems (EWS) and anticipatory action: disaster risk management related to weather events are linked to both the CR pillar and ERR pillar. Such interventions also need strong coordination with government actors and longer-term development funding. The response modalities under the Anticipatory Action framework include emergency response activities such as cash and voucher assistance, kits distribution (Non-Food Items, health, etc.).
- Resilience approaches under emergency response, especially with regard to nutrition-sensitive food security programming and emergency wash programming.

The infographic below<sup>23</sup> illustrates the type of climate-smart action required to meet different objectives and the links between humanitarian response, climate change adaptation and development programming. It shows that anticipatory

<sup>23</sup> IFRC (2020). 'Come Heat or High Water: World Disaster Report 2020,' International Federation of Red Cross and Red Crescent Societies, Geneva, Switzerland.

action, depending on its design, while being a humanitarian response can contribute to climate change adaptation and, as a consequence, strengthen resilience.



**Image 7.** Action to reduce the likelihood of hazards becoming disasters

## 5.2 Loss and Damage

Despite adaptation strategies and mitigation efforts to reduce GHG emissions, communities worldwide are already feeling the impacts of climate change either from sudden climate disasters (e.g. droughts, floods, cyclones, heatwaves) or gradual processes (e.g. desertification, sea level rise, loss of biodiversity).

These events result in **losses and damages**, a significant topic in climate change discussions. Estimates suggest annual loss and damage costs associated with climate change will range from \$290 to \$580 billion by 2030. Countries most affected are asking countries most responsible of GHG emissions to pay for these losses and damages. After several years of debate, a Loss and Damage fund was

finally agreed at COP28 in Dubai, called Fund for Responding to Loss and Damage (FRLD), hosted by the World Bank and hosted in the Philippines. However, who should pay, for what and how much is not agreed and it is still a very politically sensitive topic in the climate discussions. In fact, there is no formal definition of Loss and Damage under the UNFCCC.

Nevertheless, we can use the following definition of loss and damage: impacts of climate change that have not been, or cannot be, avoided through mitigation or adaptation efforts.

According to the European Parliament, losses refer to irreversible harm such as loss of land or loss of resources, while damages involve reparable harm such as damages to infrastructure. Losses and damages can occur in human (e.g: loss of livelihoods) as well as natural systems (e.g. loss of biodiversity) and the losses can be economic (income and physical assets) and non-economic (at individual, like lives and health; society, like indigenous knowledge and cultural identity; and environmental level, like biodiversity and ecosystem services)<sup>24</sup>.

The international Paris Agreement on climate change recognized the importance of **"averting, minimizing and addressing"** loss and damage. Averting and minimizing losses and damages can be done through mitigation action to reduce emissions and adaptation measures to protect communities.

The critical component is **how to address loss and damage**, which means how to act and what to do once these losses and damages have already occurred or still occurring (for slow onset disasters).

Addressing loss and damage may include

- rebuilding infrastructures such as homes, roads and bridges, hospitals and schools,
- enabling social protection systems to provide emergency cash transfers
- developing insurance mechanisms such as weather-indexed crop insurance
- support to recover or to establish new livelihoods,
- ecosystem restoration, applying nature-based solutions, and
- ensuring gender-based, human rights, and social inclusion mainstreaming.

Thus, addressing loss and damage can be a combination of emergency, recovery and disaster risk management approaches. Relevant funding can include humanitarian and development donors, as well as insurance mechanisms.

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<sup>24</sup> <https://www.wri.org/insights/loss-damage-climate-change>



PIN Country programs must be aware of Loss and damage discussions in their respective countries, how to respond to it and how to work with communities and government beyond usual emergency response.

Examples of PIN response to address Loss and Damage include:

- water infrastructure rehabilitation in drought affected areas of Ethiopia with ECHO funding
- Cash distribution to people affected by drought
- Relocation of households or communities affected by landslides, due to rain intensification in Nepal
- Livelihood recovery intervention in North West Syria affected by conflict and prolonged drought

### 5.3 Carbon Market

The carbon market is a system designed to reduce GHG emissions, particularly carbon dioxide (CO<sub>2</sub>), by putting a price on carbon emissions.

Carbon markets operate as trading platforms where carbon credits are exchanged (sold and bought). Individuals or companies participate in these markets to compensate their GHG emissions by purchasing carbon credits from entities that either remove or reduce emissions.

Carbon markets are either **compliance** or **voluntary** markets, however PIN focuses only the voluntary market. Compliance markets are regulated by governments or international agreements and are mandatory for entities that are legally required to reduce their carbon emissions (companies and states that must comply with regulations and international agreements).

In voluntary carbon markets (VCM), there is no legal obligation to participate, and the motivation often comes from corporate social responsibility goals, consumer demand, or a desire to demonstrate environmental stewardship.

A few key points on voluntary carbon markets:

- Reductions/removals of emissions are calculated as a difference between a baseline (scenario in absence of the intervention) and the actual emissions afterwards.
- Offsets, and also carbon credits or voluntary/verified carbon units, are the terms commonly used for these mechanisms.
- Carbon credits can be divided into two groups:
  - **Avoidance projects** which avoid emitting GHGs therefore reduce the volume of GHGs being emitted into the atmosphere, include renewable energy or energy efficiency projects, or initiatives which prevent deforestation (like REDD+), as well as soil management practices in farming that limit GHG emissions.
  - **Removal projects** which remove GHGs directly from the atmosphere can include NbS, such as biochar, reforestation and



afforestation projects or wetland management (forestry and farming). They can also be tech-based, such as direct air capture or carbon capture and storage. Removal projects are considered premium as they are more relevant to tackling climate change.

- Each carbon credit represents the reduction, sequestration, or avoidance of one metric tonne of carbon dioxide or its equivalent in other GHGs. Once a credit is utilised to mitigate emissions, it transforms into an offset and is no longer available for trading.
- The price of one carbon credit vary depending on the type of action, the place, market forces, company mechanisms, etc. The range may span from a few USD/tonCO<sub>2</sub>eq to over 20 USD/tonCO<sub>2</sub>eq. Typically tree planting and REDD+ have higher rates, but even other types of solutions like charcoal, biogas, landfill methane can span across a range and reach comparable rates, although normally their average rate is lower.
- Carbon offsetting/credits are certified by an authority/not-for-profit organisation. The certification process may take around two years on average.
- Voluntary Carbon Offsetting, Gold Standard, and Verra are some well-known methodologies for the VCM internationally.
- Countries/companies trade offsets in tonnes of CO<sub>2</sub> equivalent reduced/sequestered through a project/activity. Carbon offsets become therefore a compensation mechanism for a country/company to invest in carbon sequestration or GHG emissions reduction projects.
- Co-benefits of the VCM for communities can be employment/training, increased income increased biodiversity and climate change adaptation.
- Credits with additional and certified non-carbon benefits can be sold at higher rates.
- Further information on the VCM can be found at <https://vcmprimer.org/>.
- For carbon offsetting, the action should be:
  - **Additional** (additionality principle): the reductions achieved by a project are in addition to what would have happened if the project had not been carried out, and the project needs carbon offsetting schemes to achieve this.
  - **Measurable**: emissions must be calculated with scientific rigour, monitored and audited.
  - **Permanent**: emissions reduced must last in time.
  - **Unique**: carbon offsets must be referred to a single tonne of CO<sub>2</sub> equivalent, avoiding double counting.

It is important to note that carbon credits have been widely criticised over the past years. Some critics argue that this mechanism is allowing companies to continue to pollute, to continue their GHG emissions while claiming carbon neutrality using carbon offsetting. The **main objective for companies and organisations must be to reduce drastically their emissions rather than relying on offsetting**.



Moreover, recent investigations have shown that deforestation projects around the globe under the REDD+ mechanism are highly controversial. An article from the Guardian claimed that “more than 90% of rainforest carbon offsets by biggest certifier are worthless”.<sup>25</sup> Another investigation<sup>26</sup> has shown that a company called Blue Carbon LLC, based in the United Arab Emirates (UAE) who hosted the COP28, signed a contract with different African countries, including Liberia who sold one million ha of forest (around 10% of its territory) to this company who will “harvest” and commercialise carbon credits. The company is getting involved in other countries such as Kenya, Tanzania and Zambia. This approach has also raised ethical considerations with regard to the sovereignty of a nation to benefit from carbon offset in its country. Indeed, if carbon credits are claimed by a company or another country, the nation hosting the offsetting projects cannot use them for their carbon balance.

Scientists also argue that carbon markets “overestimate both volumes of carbon removed from the atmosphere and the permanence of these removals<sup>27</sup>” as its main objective is to sell as much credit as possible.

Despite these critics, we are still open to engaging in the carbon market, especially when it comes to carbon removal and high integrity projects (according to standards). Our main priority under the CR pillar is to strengthen the resilience of those most vulnerable to climate change. Thus, our focus should be on carbon credits projects that contribute to strengthen the resilience of communities.

Relevant examples include biochar with pilots in Zambia and Cambodia, and reforestation using a landscape management approach. The main recommendation is to identify an approach or a product that has the potential to be scaled up in order to attract investors and generate enough carbon credit to be financially sustainable. Therefore, a strong market assessment is needed to identify the most relevant approach and the investment needed.

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<sup>25</sup> <https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe>

<sup>26</sup> <https://www.theguardian.com/environment/2023/nov/30/the-new-scramble-for-africa-how-a-uae-sheikh-quietly-made-carbon-deals-for-forests-bigger-than-uk>

<sup>27</sup> <https://www.ft.com/content/f9bead69-7401-44fe-8db9-1c4063ae958c>

## 6 Annex 1: Climate Risk Management

This Annex gives a deeper understanding on climate risk management, **a commonly used approach to identify risks, vulnerabilities and ultimately type of responses possible**. PIN is mainly using the IPCC Risks concept and the GIZ Climate risk management approach.

Defining vulnerability (as described in Section 2 above) is a core element of all CR programming. This Annex goes into more depth on hazard, exposure and risk management which is particularly relevant to include climate risks into all type of programming, including emergency response and recovery.



**Image 8.** Source: IPCC AR6 report

Climate risk is a system perspective that considers both **climatic and non-climatic risk drivers and their interlinks** that lead to adverse consequences.

It is **a systemic framework that aim to anticipate, avoid and prevent all types of climate risks as well as to absorb remaining impacts from extreme weather events and slow-onset changes**. Thereby, it is a combination of:

- Mitigation actions by averting climate risks through the reduction of greenhouse gas emissions;
- Adaptation to minimize climate risks and
- Disaster Risk Management to manage residual climate risks.

Using the IPCC definition, climate risks result from “dynamic interactions among climate-related hazards, the exposure and vulnerability of affected human and ecological systems, and also responses”<sup>28</sup>.

In the sections below, we will explain the following concepts: Vulnerability, Hazard and exposure.

<sup>28</sup> Climate Change 2022: Impacts, Adaptation and Vulnerability. Working Group II Contribution to the IPCC Sixth Assessment Report. Section. 1.2.1

## Hazard mapping (climate and non-climate related)

To properly analyse the vulnerabilities, it is necessary to understand what the different **hazards or threats are to which people are exposed**.

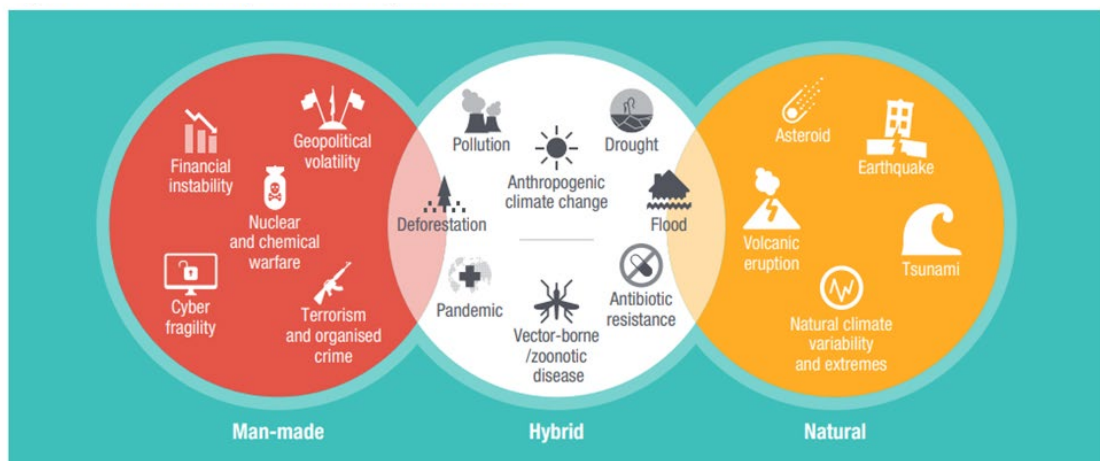
**Climate-related hazards** include any type of extreme weather events (e.g. heatwaves, droughts, extreme precipitation events, storms), as well as climate-related slow-onset processes (e.g. increasing temperatures, increasing aridity, acidification, melting glaciers or rising sea-levels) that trigger adverse consequences for human or ecological systems.

**Non-climate-related hazards** can be classified into geological, environmental, technological, biological, chemical and societal hazards (UNDRR, 2020). They are also mapped and taken into consideration, as they have a relationship to climate-related hazards or contribute to the vulnerability of social-ecological systems.

Non-climate hazards can, for instance:

- be triggered by climate-related hazards (e.g. a heavy rain event can trigger landslides),
- act as an underlying risk driver that increases vulnerability to climate-related hazards (e.g. soil degradation increases vulnerability to droughts; infectious diseases or a pandemic might further increase people's social and economic vulnerability to climate impacts).

The diagram below shows the different types of hazards and threats that can affect people's lives.



Source: © Nadin and Opitz-Stapleton.

**Image 9.** Different types of hazards and threats that can affect people's lives



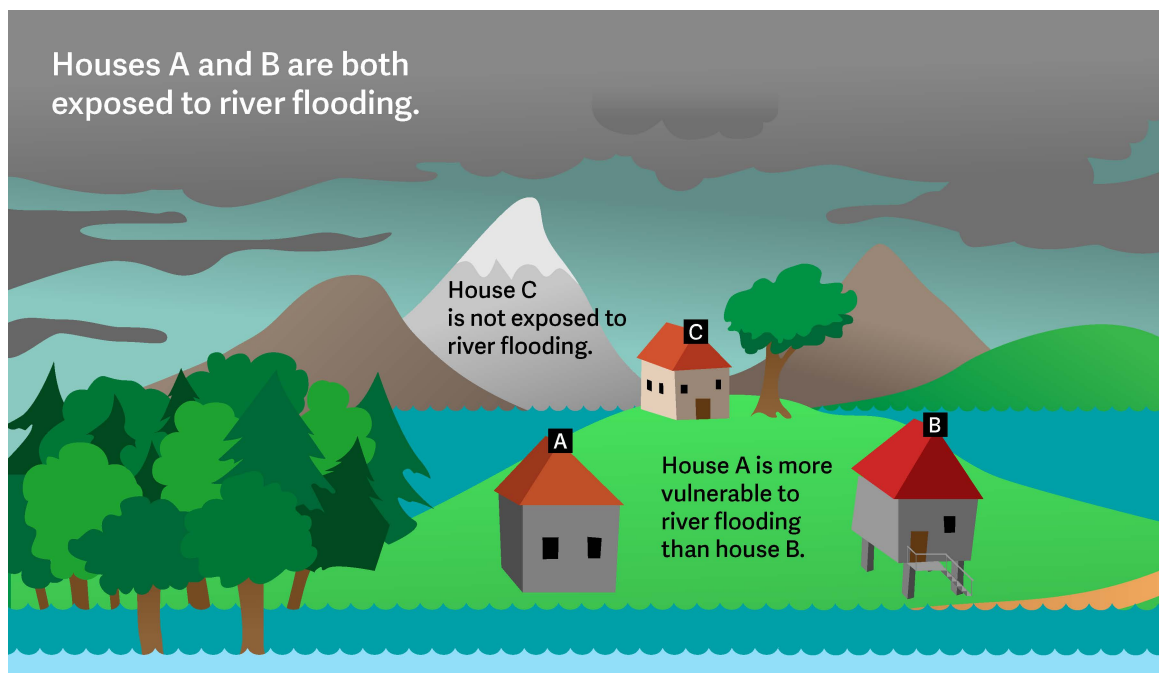
## Exposure

According to the IPCC, exposure is the presence of **people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets** in places and settings that could be adversely affected (IPCC, 2021a).

### Exposure describes:

- exposed systems (e.g. agriculture),
- exposed subsystems (e.g. crop production),
- exposed functions (e.g. food security),
- exposed elements (e.g. maize fields).

Exposure can be described in terms of the degree of exposure. Examples of the degree of exposure include the number of people within a hazard prone area (e.g. a flood plain), the economic values accumulated within a flood plain, or the number and extent of sensitive wetlands within a drought-prone region.



**Image 10:** Actions to reduce exposure may include DRR and EWS

## Vulnerability analysis

Vulnerability is the **predisposition to be adversely affected and includes all relevant environmental, physical, technical, social, cultural, economic, institutional, or policy-related factors**. These contribute to and encompass a variety of concepts and elements, including sensitivity or susceptibility to harm, and/or lack of capacity to prevent, prepare, respond, cope and/or adapt (IPCC, 2021a).

As already explained above, to express vulnerability, we can use the following approach:

**WHO/WHAT** (e.g. individuals, communities, businesses, livelihoods, environment) **might suffer harm because of WHAT** (e.g. extreme climate event, indirect event like landslide, slow-onset change, other environmental or socio-economic crisis) **and WHY** (e.g. low levels of education, live in poorly constructed housing, no access to health clinics).

This formulation helps to identify who or what is vulnerable (people, groups and systems), what they are vulnerable to, assess why those vulnerabilities exist and what actions need to be taken to address them. A usual cause-effect analysis (as done in problem trees) will deepen the analysis to identify the root causes of these vulnerabilities.

## Response capacities (or coping capacities)

Communities and individuals also have capacities to response or cope to climate related impacts. Our assessments should identify their existing response or coping capacities and take them in consideration in the program design, in line with PIN's Locally led action guidance.

Our aim should not only be to reduce vulnerabilities (it is not always possible), it is also about reinforcing existing response or coping capacities. For instance, we cannot reduce the vulnerability of an elderly living with a disability because we won't make them younger but we can reinforce their coping capacities or the ones from the community and structure around them, embracing a more systemic approach.

## Gender Equality and Social Inclusion-Sensitive Climate Vulnerability and Resilience Assessment (GESI-Sensitive CVRA)

Climate change affects women, men and different population groups differently. It is generally acknowledged that women and girls face a heavier burden of domestic work as a result of resource shortages caused by climate change. For instance, in some contexts, women and girls have to walk longer distances to fetch resources and face, as result, increased security issues including harassment and sexual violence. Increasing workloads often result in families withdrawing daughters from schools to help out at home, reducing their life opportunities.

On the other hand, boys may also be taken out of school and sent to earn money to help the family deal with poverty resulting from climate change impacts.

To this end, PIN has designed a toolkit as general guidance on what to assess, and piloted several customised tools in different country programmes. The toolkit is designed to further understanding on how climate risks can differently impact specific groups, and how key factors such as gender and age, as well as gender norms and relations, can create disparities in the access and control of key resources and services. The application of the GESI-Sensitive CVRA is strongly encouraged in all climate resilience interventions, and evidence-based responses have to be designed for not only sensitive but even responsive/ transformative action.

In other cases, even integrating climate change considerations into other vulnerability or needs assessments or other analysis tools may be appropriate, depending on the main strategic focus or intervention (e.g. include climate considerations into certain water management assessments).

## **Risk management and risk-based decision-making approaches**

A risk-based decision process involves generating knowledge about developing trends and evolving threats, risks and opportunities, acting on that knowledge and monitoring and learning from it for future development.

It is a decision-making method that considers the likelihood and potential impact of various risks associated with different choices. It involves identifying, assessing, and prioritising risks, as well as determining appropriate responses or mitigation strategies based on the level of risk. This approach helps individuals or organisations make informed decisions by taking into consideration both the potential benefits and obstacles, whilst focusing on managing and minimising risks to achieve desired outcomes.

This approach is aligned with global frameworks such as the Sendai Framework for Disaster Risk Reduction 2015–2030 which focusses on risks related to human and natural threats.

## **Conclusion**

As presented above, understanding vulnerability factors is essential to influence our programming approach. Risks exist only if people, communities and systems are exposed to hazards (climate and non-climate related). The risk approach helps us to prioritize by identifying who (people, communities or systems) are the most vulnerable and the most exposed to the major hazards. As such, it helps to identify the most relevant programmatic responses.

In a region, different communities may have the same level of vulnerability but are not exposed in the same way to the same hazard. Other communities may be exposed to different hazards with different types of vulnerabilities.

## Climate Change risks identified by the IPCC

The IPCC, in its Sixth Assessment report, has identified the key risks across sectors and regions:

Key risks identified by the IPCC <sup>29</sup>	Scope
<b>Risk to low-lying coastal socio-ecological systems</b>	Risks to ecosystem services, people, livelihoods and key infrastructure in low-lying coastal areas, and associated with a wide range of hazards, including sea level changes, ocean warming and acidification, weather extremes (storms, cyclones), sea ice loss, etc.
<b>Risk to terrestrial and ocean ecosystems</b>	Transformation of terrestrial and ocean/coastal ecosystems, including change in structure and/or functioning, and/or loss of biodiversity.
<b>Risks associated with critical physical infrastructure, networks and services</b>	Systemic risks due to extreme events leading to the breakdown of physical infrastructure and networks providing critical goods and services.
<b>Risk to living standards</b>	Economic impacts across scales, including impacts on gross domestic product (GDP), poverty and livelihoods, as well as the exacerbating effects of impacts on socioeconomic inequality between and within countries.
<b>Risk to human health</b>	Human mortality and morbidity, including heat-related impacts and vector-borne and waterborne diseases.
<b>Risk to food security</b>	Food insecurity and the breakdown of food systems due to climate change effects on land or ocean resources.
<b>Risk to water security</b>	Risk from water-related hazards (floods and droughts) and water quality deterioration. Focus on water scarcity, water-related disasters and risk to indigenous and traditional cultures and ways of life.
<b>Risks to peace and to human mobility</b>	Risks to peace within and among societies from armed conflict as well as risks to low-agency human mobility within and across state borders, including the potential for involuntarily immobile populations.

PIN team can use this IPCC classification to frame their intervention from a climate risk management perspective.

<sup>29</sup> <https://www.ipcc.ch/report/ar6/wg2/chapter/chapter-16/>



## 7 Annex 2. Practical advice for designing strategies and programmes

### Key questions to keep in mind when designing strategies, positioning and programming:

- How can we design a climate resilience strategy and programming for the country programme?
  - Identify the scope of the analysis required, both geographically (country, region or sub regional, urban or rural) and thematically (wash, food systems, energy, etc).
  - Understand what the environmental and climate change risks are in your context/s.
  - Map the key stakeholders (government at different levels, international and regional organisations and platforms, private sector, NGOs, CBOs, etc.) using a stakeholder analysis.
  - Use climate information across timescales when designing and/or adjusting all our programmes and operations. In doing so, programmes and operations ensure that, at a minimum, they do not place people at increased risk in the future, taking in consideration likely future climate extremes and growing vulnerabilities.
  - Conduct a GESI-sensitive CVRA that will inform the design of the strategy/programme/ project.
  - Analyse how these risks can affect your existing programmes and design mitigation strategies to include climate resilience elements.
  - Consider developing specific positioning papers/capability statements.
  - Build on and tailor the experience and expertise of the country programme and programmes globally to design the strategy.
- How to communicate our analysis, lessons learnt or positions?
  - Use simple language
  - Use of the correct terminology is the basis but not sufficient, it is fundamental to show a deep understanding on the matter.
  - Refer to statements and figures and provide evidence collected in-house (through assessments, surveys, regular Monitoring, Evaluation, Accountability & Learning, etc.).
  - Tailor communication and key messages to the audience.

### To analyse key entry points for strategies and programming, it can be useful to analyse:

- Climate change **effects** and **impacts** based on **vulnerabilities, hazards** and **exposure**. How could climate change impact programming? In which sectors (e.g. food security, nutrition, WASH, energy security, economic

stability, ecosystems stability, etc.)? For whom? Where? How are non-climate elements are connected? What are the different vulnerabilities? To what extent can you blame climate change in your situation? Are the impacts only due to climate change, or is climate change exacerbating and amplifying an already jeopardised situation? Contextualise and analyse holistically the background and context, understanding and providing evidence on the extent to which climate change is responsible and what are the other factors.

- **Solutions:** What are the products or approaches that PIN has country or global expertise in, which could be relevant to this context (e.g. relevant to effects, impacts, vulnerabilities and needs)? Do you need new technologies? Or will you leverage behavioural changes mainly? Or enable socio-economic, governance, political, etc. mechanisms? Or a combination of all these? Contextualise the situation to understand what the actual barriers are, and what drivers and solutions can work best to overcome these. How are these responses connected with PIN's global strategy and the existing strategy for the country programme?
- **Positioning opportunities:** Which stakeholders (including donors) should PIN focus on at the country programme? Who/which are the "traditional ones" and which new ones are there to explore? What are the existing and lacking capacities within PIN to materialise potential opportunities (e.g. time, budget, commitment, willingness, networking capacities, mindset, flexibility to access different sources of funding)? What is the level and modality of investment needed? What are the necessary partnerships? What are the opportunities to replicate solutions and scale them up?

## 8 Annex 3. Key resources

### General resources

- PIN Resource Centre: [Climate Change Mitigation and Adaptation](#)
- [QSC on Climate change mainstreaming](#)
- PIN Climate resilience page: : <https://www.peopleinneed.net/what-we-do/humanitarian-aid-and-development/climate-resilience>
- PIN Learning Hub – Climate resilience section: <https://docs.pinf.cz/display/PLH/Climate+Resilience+Pillar>

### Thematic approaches

- [Strengthening Food Systems for Nutrition \(update in progress\)](#)
- [Behaviour Change Toolkit](#)
- [Behaviourchange.net](#)
- [WASH Sector Profile](#)
- [Understanding connection between Water and Climate](#)
- [Climate Smart Energy Solutions](#)
- [Productive & Climate-resilient Landscapes \(PCRL\)](#)
- [Best Practices in NRM in Ethiopia](#)
- [Circular Economy 3-pager](#)
- [MSD good practice guide](#)
- [Guide: Improving Employment Through Market Driven Vocational Education And Training](#)
- [Nature Based Solutions examples at PIN](#)

**Main capability statements** on [PIN sharepoint folder](#)

### External sources

- Care climate and resilience academy : <https://careclimatechange.org/academy/online-courses/>
- Red Cross Climate centre Training Kit : <https://ctk.climatecentre.org/training>
- World Bank Climate change Knowledge portal: <https://climateknowledgeportal.worldbank.org/>

