World Vision®
Hope and a future for all children

CLIMATE CHANGE, HUNGER AND CHILDREN'S FUTURES

A dangerously under-discussed consequence of climate change

CONTENTS

Key messages

- Climate change poses a direct threat to access nutritious food, causing people in lower-economic countries to face an increasing risk of famine and starvation.
- An increase in extreme weather events has seen food insecurity increase for the first time in over a decade, undoing all progress made since 2005.
- If current trends continue the risk of famine in the Global South will continue to exponentially rise, with children suffering the most.

Key statistics

- 928 million people were "Severely Food Insecure" in 2020
- 12% of the world's population is at increasing risk of famine
- 26% of the world's children were affected by malnutrition in 2020
- 50% increase of stunting in children is expected by 2050
- 45% of death in children under five years old is related to malnutrition

INTRODUCTION

Nomundari, Climate Change Youth Activist from Mongolia:

> **"Climate change is not a trend; it is a serious issue."**

"Every year in my country there are disease outbreaks from contaminated food or water, and children, especially young ones, die.

"This problem is real, and we are in a crisis. If we don't start treating it as such, and acting in the right way, children's futures are destined for doom."

Climate change continues to pose the biggest threat to the future of this planet, and the impact it has on access to food and nutrition represents the most shocking and immediate consequence on children around the world.

Climate change directly increases the risk of starvation as extreme weather events disrupt farming, destroy livelihoods, interrupt food supply chains, and displace communities.

Food insecurity overwhelmingly affects those parts of the world which are the least culpable for climate damage, and the consequences impact young children most of all, with problems such as malnutrition and stunted development impacting them for the rest of their lives.

Without the unified international support to make clear and effective changes to protect the climate, the risk of starvation will continue to rise.

Children did not create this problem, but they will inherit the consequences of our inaction.

We owe them better.

This report considers the link between climate change and the risk of starvation, discusses the long-term consequences of malnutrition on children and communities, and gives those children a medium to discuss what they need from global leaders.

Andrew Morley, CEO of World Vision International: "Climate change is a devastating threat for the most vulnerable girls and boys around the world – not in the future, but right now. Every day, it is causing children to go hungry and become malnourished, forcing families from their homes, decimating livelihoods and creating conflict. It is heart-breaking that children have contributed least to climate change – yet are suffering its effects most severely.

"We are listening to these children, and they tell us clearly that we must act now to protect the planet for future generations. This means bold and immediate action – and we must all play our part."

Nick Dyer, the UK's Special Envoy for Famine Prevention: "Food scarcity and hunger impacts everything, from a community's security, to their ability to trade, and, most alarmingly, physical development in children.

"As the UK's special envoy for famine prevention, I have seen some of the worst impacts that an unstable climate can have on a community's access to ample nutritious food. But I have also witnessed the great capacity communities have, when empowered with the right opportunities, to regrow and to develop. We can support this process, and we all stand to benefit from it."

TOP LEFT: Mohamud, 10, in Somalia. Drought and hunger cause his classmates to miss school. © 2021 Gwayi Patrick / World Vision

THE CLIMATE PROBLEM

Link between climate change and hunger

In August 2021, the Intergovernmental Panel on Climate Change (IPCC) released a report which proved to be an indictment on broken promises and state inaction, confirming that global warming of between 1.5°C and 2°C will be exceeded during the 21st century unless immediate action is taken.[1]

Hunger constitutes one of the most significant areas of World Vision's work, and the scale of the problem is increasing exponentially in tandem with climate change. For many of the communities World Vision works with, extreme weather events threaten their agricultural production and as such, their food security and livelihoods. The frequency and intensity of these disruptions is increasing as the knock-on effects of a rising global temperatures continue to mount.

Since 2020 alone, the countries where World Vision works have seen a number of events linked to climate change which are severely impacting access to nutritious food. These include:

1. The largest swarms of locusts seen for more than 10 years. These swarms, which are especially prevalent in East Africa, destroy huge quantities of crops, as well as stored food, greatly depleting supplies, and quickly pushing communities to the brink of starvation.[2]
2. Flooding and drought are becoming an increasingly prevalent issue as climate change further intensifies the water cycle in farming communities.[3] Flooding leads to destroyed crops and ruined farmlands which further reduces the ability to rebuild.

Furthermore, this has a direct correlation to community displacement as families must look further afield to meet their basic needs. However, the displacement of communities has a longer-term effect on the robustness of local agriculture, further promoting the extended risk of food insecurity. Less food and water also leads to increased numbers of dead livestock which can devastate families for whom livestock are their main source of income and nutrition.

In 2020, nearly two months of heavy rains and flooding left a trail of destruction across Sudan's 18 states, devastating more than 875,000 people, more than half of them children. Families' livelihoods were decimated as livestock and crops were damaged or swept away. Children faced a greater risk of food insecurity and exposure to disease and illnesses. At the time, about 9.6 million people were facing food insecurity and in need of food assistance.[4]

3. Cyclones can increase in frequency and severity as a consequence of unstable weather systems, exacerbated by climate change. These cyclones can destroy homes, infrastructure, crops, and livelihoods, further contributing to increased food insecurity and hunger for children. In the last three years, more than 2.8 million people in Southern African countries have been impacted by devastating cyclones.[5]

[1] ipcc.ch/report/ar6/wg1/#FullReport

[2] worldvision.ca/stories/disaster-relief/locust-swarms-devastate-east-africa | hir.harvard.edu/locust-swarms-and-climate-changeafrica

[3] ipcc.ch/2021/08/09/ar6-wg1-20210809-pr

[4] wvi.org/stories/sudan/world-vision-launches-response-appeal-reach-50000-people-affected-floods-across-sudan

[5] wvi.org/emergencies/cyclone-idai-emergency-response | worldvision.org.uk/about/blogs/cyclone-fani-appeal

4. Climate variability, particularly temperature increases, rainfall variability, and changes in CO2 levels impact agricultural production. Food production becomes unreliable, and, for communities which live below the poverty line, it can be impossible to find the resources to fill the gaps.[6] There is also evidence that the level of nutrients in the soil can be impacted by these conditions.[7]

Tenema and Tejan, Climate Change Youth Activists from Sierra Leone: "We have advocated many times about hunger on the radio and national platforms. Climate change is increasing the cost of living in Sierra Leone, and communities and families are finding it increasingly difficult to buy healthy food.

"Some families are engaged in small scale farming to meet their needs, but these are vulnerable to the impacts of climate change."

Visualising the problem

Whilst economically wealthier countries produce a vast majority of greenhouse gas emissions, the effects of climate change and extreme weather events disproportionately impact low-income countries and the world's poorest communities.

For communities in economically poorer countries, a high dependency on local agricultural output poses a high risk of devastation from the effects of extreme weather events. A failed crop can have immediate consequences on local trade and long-term harm limiting access to nutritious food.

In 2020, more than 7 million people across six countries in East Africa have been pushed to very edge of starvation, with many experiencing catastrophic levels of hunger, a phase marked by critical acute malnutrition, starvation, destitution, and death. If things worsen, up to 26 million people who are already classified at 'crisis level' could slip deeper into hunger emergency.[8]

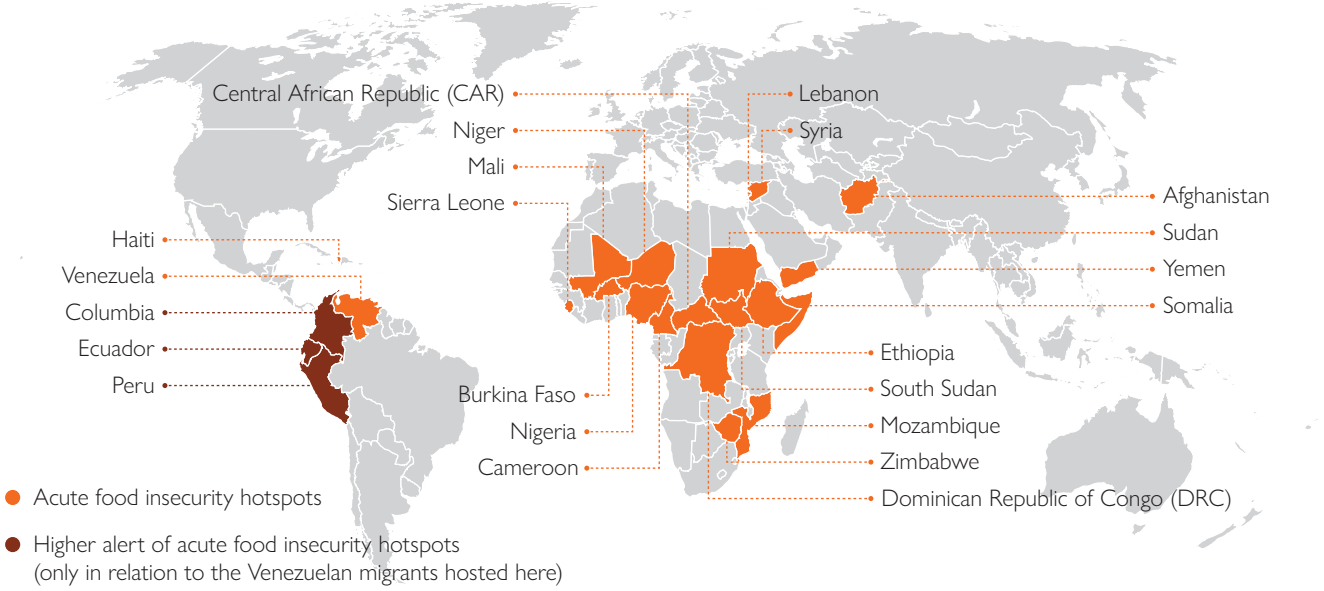

FIGURE 1: Map of acute food insecurity hot spots. Source: FAO and WFP – conforms to United Nation's World Map, October 2020

[6]academia.edu/31824077/Impacts_of_Climate_Variability_and_Soil_Fertility_Management_Strategies_on_Maize_Grain_Yield_on_Ferrralsols_in_Coastal_Western_Africa

[7]fao.org/3/w5183e/w5183e05.htm

[8]wvi.org/newsroom/hunger-crisis/seven-million-people-risk-starvation-across-six-countries-east-africa

Food shocks can come externally or internally. But, external drivers of food insecurity, such as extreme weather and drought, often exacerbate internal drivers, such as low productivity and inefficient food supply chains. Furthermore, as the effects of climate change deplete agriculture and food production, this also has an impact on livestock.

In a report issued in late July, the United Nation's Food and Agriculture Organization (FAO) and the UN World Food Programme (WFP) identified 23 'hunger hotspots' which, over the coming months, are expected to face worsening levels of acute food insecurity, with the climate crisis being a significant factor in driving up levels of hunger.[9]

Most of these countries are lower-economic countries which have had very minimal impact on the climate.

This exposes the nature of the problem: that these countries are suffering the consequences of a global disaster they did not cause.

In 2018, Madagascar contributed just 0.06% of global Green House Gas emissions, yet it is currently facing what could be the world's first famine in modern history caused by climate change, with food insecurity affecting an estimated 1.14 million people.[10]

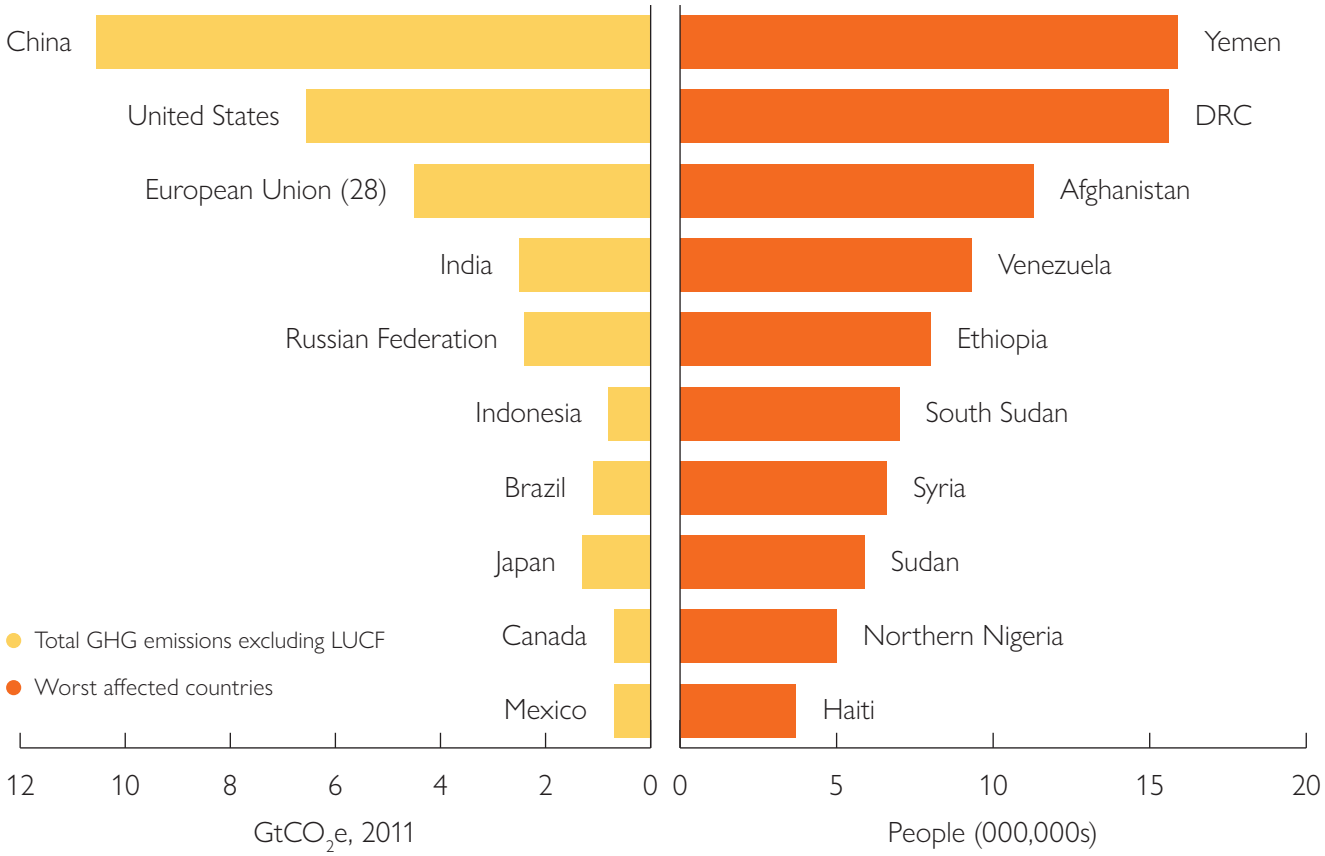

FIGURE 2: The top 10 polluters and the top 10 countries with the highest amount of people that face acute food insecurity.
Source: climateknowledgeportal.worldbank.org

[9]Conflict, COVID, climate crisis, likely to fuel acute food insecurity in 23 'hunger hotspots' (2021, July 30) UN News. news.un.org/en/story/2021/07/1096812; WFP and FAO. (2021).
Hunger Hotspots. FAO-WFP early warnings on acute food insecurity: August to November 2021 outlook. Rome. wfp.org/publications/hunger-hotspots-fao-wfp-early-warnings-acute-food-insecurity-august-november-2021

[10]*Madagascar's hungry 'holding on for dear life', WFP chief warns* – UN News. news.un.org/en/story/2021/06/1094632

The shocking statistics[11]

- Close to 12% of the global population was severely food insecure in 2020, representing 928 million people – 148 million more than in 2019.
- Undernourishment increased 1.5% in 2020 – 9.9% of the world's population.
- Compared with 2019, about 46 million more people in Africa, 57 million more people in Asia, and about 14 million more people in Latin America and the Caribbean were affected by hunger in 2020.
- While the global prevalence of moderate or severe food insecurity has been slowly on the rise since 2014, the estimated increase in 2020 was equal to that of the previous five years combined.
- Nearly one in three people in the world (2.37 billion) did not have access to adequate food in 2020 – an increase of almost 320 million people in just one year.

Over the past five years, the numbers of people facing hunger crises has risen steadily for the first time in decades. This is due, in part, to the consequences of climate change limiting access to healthy food. Assuming this continues, World Vision predicts that more than 300 million people could face food insecurity by 2030.[12]

> **Climate change is the biggest looming disaster in the history of mankind.**
>
> Tenema and Tejan, Climate Change Youth Activists from Sierra Leone: "Children are physically more vulnerable to the direct effects of extreme heat, drought, and natural disasters.
>
> "The World Health Organization estimates that children suffer more than 80% of the illness and mortality attributable to climate change."

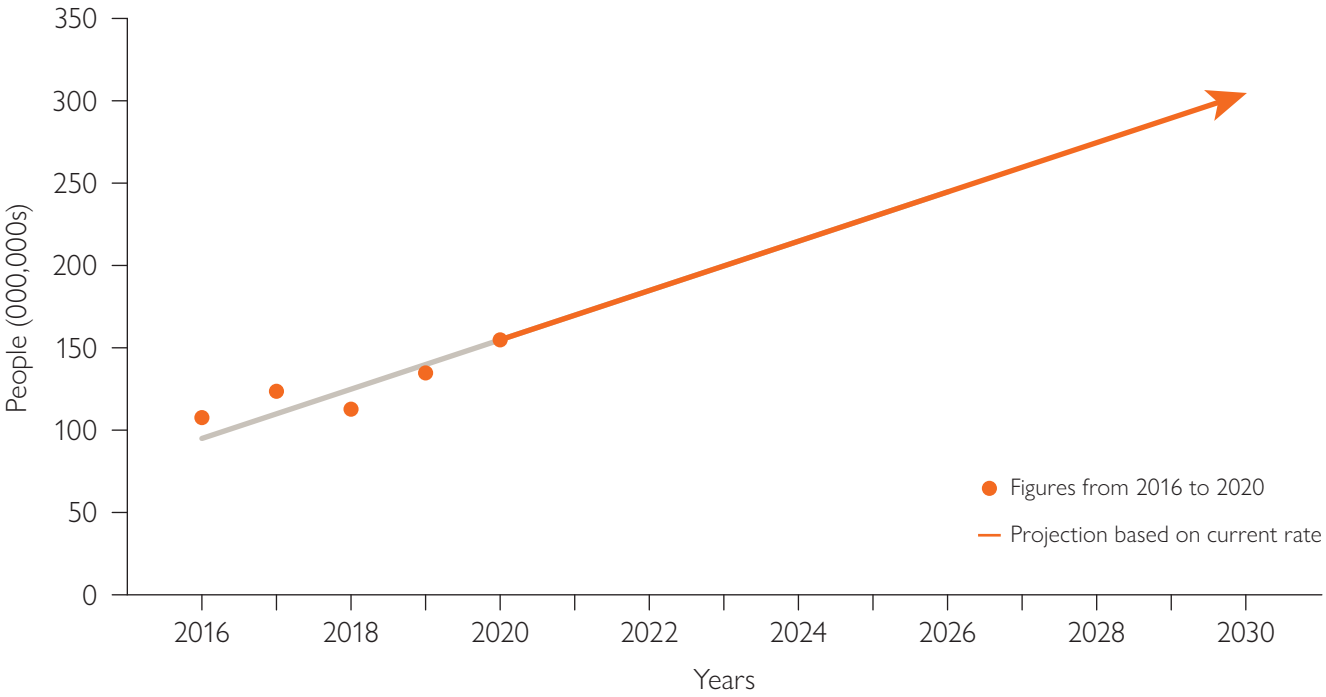

FIGURE 3: Number of people in crises levels of food insecurity – IPC 3 or above. This projection shows the risks posed by insufficient activity to fix the conditions exacerbating food insecurity, including conflict, migration, and climate change. Source: Global Report on Food Crises (2016 – 2020)

[11]FAO, IFAD, UNICEF, WFP and WHO. (2020). In Brief to The State of Food Security and Nutrition in the World 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all. Rome, FAO. doi.org/10.4060/cb5409en

[12]*Global Report on Food Crises* – 2021, World Food Programme. wfp.org/publications/global-report-food-crises-2021

HUNGER AND CHILDREN'S LIVES

Hunger is a children's crisis. Half of all people who died in 2011's famine in Somalia were children under the age of five.

Levels of malnutrition are constantly increasing, with 149.2 million children under five years of age affected by stunting and 45.4 million suffering from wasting. Food insecurity is one of the most significant underlying factors of malnutrition and in a recent report on the global state of food security and nutrition, the world's top five United Nations food security bodies identified malnutrition in all its forms as a global challenge. UNICEF estimated that in 2020, more than 200 million children's lives were at risk due to the effects of malnutrition.[13]

Globally, deaths related to climate change are expected to reach 250,000 per year by 2030, at an annual cost of up to $4 billion.[14] Causal pathways are diverse, including death due to extreme heat, increasing disaster events, shifting infectious disease patterns, ambient air pollution, and critically, extreme malnutrition. Children are most at risk to these consequences.

For young children, undernutrition poses significant health risks, with effects which will last for their entire lives. As the effects of climate change challenge agricultural production, deplete food supplies, and damage livestock, people will turn to more desperate solutions for sustenance, often at the expense of food quality. Meals consisting of as little as bread made from oil and flour are dangerously low on important nutrients such as zinc, iron, and protein. For children, this has the effect of worsening their capacity for human biological nutrient absorption.[15] This means that a relatively short period of time without nutritional food can drastically impact long-term health.

For young children, any period without adequate nutrition can have life-long consequences on their physical and cognitive development.

> Around 45% of deaths among children under five years of age are linked to undernutrition. These mostly occur in low- and middle-income countries.[16]

Chronic hunger, malnutrition, and micronutrient deficiencies can often lead to stunting and wasting which not only weakens children's bodies but lead to lifelong consequences including poor physical development of the skeleton, the muscular system, and even the brain. This can further lead to long-term learning difficulties.

When a child's physical and cognitive development is damaged, so are their education and economic prospects, further limiting their capacity to contribute to their society's opportunities. This creates a vicious cycle of poverty and hunger which risks worsening with every generation.

[13]fao.org/documents/card/en/c/ca9692en

[14]WHO. 2018. Climate change and health. Universal access link located at: who.int/en/news-room/fact-sheets/detail/climate-change-and-health. 3 August 2020.

[15]Obid, IFPRI. 2015.

[16]who.int/news-room/fact-sheets/detail/malnutrition

The long-term physiological consequences of food insecurity

WASTING

Low weight-for-height is known as wasting, usually indicates recent and severe weight loss, because a person has not had enough food to eat and/or they have had an infectious disease, such as diarrhoea, which has caused them to lose weight. A young child who is moderately or severely wasted has an increased risk of death, but treatment is possible.

STUNTING

Low height-for-age is known as stunting. It is the result of chronic or recurrent undernutrition, usually associated with poor socioeconomic conditions, poor maternal health and nutrition, frequent illness, and/or inappropriate infant and young child feeding and care in early life. Stunting holds children back from reaching their physical and cognitive potential.

MALNUTRITION IN THE FIRST 1,000 DAYS

From the start of a woman's pregnancy until her child's second birthday is an extremely important period for a child's development.[17] This 1,000-day window is a critical time for structural brain and body development. Good maternal nutrition is essential. Pregnant or breastfeeding mothers who can't access the right nutrients are more likely to have children with compromised brain development.

Worldwide, Africa and Asia account for more than nine out of ten of all children suffering from stunting and wasting.

Countries will not be able to break out of poverty and sustain economic advances without ensuring that their populations are adequately nourished. Undernutrition reduces a county's economic advancement because of direct productivity losses, losses via poorer cognition, and losses via reduced schooling.[18] This compounds generation-upon-generation. Designing climate change solutions which are child-centred is the only way to sustainably and meaningfully tackle these challenges.

Beto (left) is only six months old and is extremely malnourished. His mother is 32 years old. She became unable able to feed him when her breastmilk was not enough for to meet his growing nutritional needs. Providing healthy food for Beto's growth proved impossible, and he quickly became unwell. Fortunately for Beto, his mother took him for help, and he started to receive treatment. The Ready to Use Therapeutic Food that Beto is receiving is a donation from Food for Famine Society through World Vision Canada.

LEFT: Beto, 6 months, from Angola.

[17] thelancet.com/pb/assets/raw/Lancet/stories/series/nutrition-eng.pdf
[18] thelancet.com/pb/assets/raw/Lancet/stories/series/nutrition-eng.pdf

A SOLUTION IN NATURE

It is essential that global temperatures are prevented from increasing beyond 1.5° above pre-industrial levels. This is imperative if we intend to stop the damages of climate change from getting worse.

The impacts of climate change are often compounded by environmental degradation and agricultural techniques that are not suited to changing conditions. When working with farmers and communities which are adapting to climate change, it is important to work with nature to restore degraded ecosystems and improve soil quality.

World Vision is a proponent for Farmer Managed Natural Regeneration as one long-term solution for communities which are struggling with food scarcity.

For many smallholder farmers, the increasing frequency of both droughts and floods is making agricultural production harder than ever. Furthermore, the use of chemical inputs to improve crop yields is usually too expensive and only amounts to a short-term fix as the use of such chemicals tend to reduce soil fertility in the longer term, pushing onto future generations a further deepened risk of starvation. Nature based solutions offer more sustainable plans for restoring ecosystems and improving soil fertility without the need for significant financial outlays.

Using nature-base solutions to protect, restore, and manage ecosystems can provide many benefits for the biodiversity of an agricultural area.[19] What's more, nature-base solutions can also often be low cost and simple to implement.

Farmer Managed Natural Regeneration (FMNR) is a rapid, low cost, and easily replicated approach to restoring and improving agricultural, forested, and pasture lands. FMNR is based on encouraging the systematic re-growth of existing trees or self-sown seeds. World Vision's FMNR programmes teach communities the best methods for pruning and maintaining forestry to encourage fast and healthy growth, improving the local environment, reducing flood risks, and improving soil fertility.

Farmer Managed Natural Regeneration

Ruth, FMNR Youth Champion, Kenya: "Malnutrition affects children because there is not plenty of food, so farmers have adopted FMNR as a solution. It is easy to practice. Our rivers are starting to fill up, and people in my community have planted crops which help to feed their children."

Through FMNR, communities are supported in managing their own agricultural regeneration. This further empowers local communities to build long-term plans for the sustainability of their agriculture, creating benefits for generations to come.

Restoring trees and forests also helps to promote biodiversity and improves soil quality, promoting the production of healthy crop yields. Improved soil quality increases water retention in the soil which in turn, reduces the risk of flooding and drought, as the soil is better able to absorb and hold more water.

Lilian Dodzo, National Director of World Vision Kenya: "The challenges relating to food insecurity must be tackled in a variety of ways, from reducing greenhouse gas emissions, increasing access to markets, and reducing the risks of climate related disasters.

Nature-based solutions have a role in all of these. To be effective, FMNR requires significant early investment, but the long-lasting benefits will be cheaper in the long run, and empowering to local communities."

[19] *What are Nature Based Solutions?* naturebasedsolutionsinitiative.org/what-are-nature-based-solutions

Naaman's story

Passing on natural resource management skills; one generation to another.

Naaman, a 13-year-old boy from Nyatike in Western Kenya, asked his neighbour about his flourishing farm. The neighbour was able to pass down the knowledge of FMNR which he had gained through World Vision's "Regreening Africa" project.

Naaman has since been applying these new skills to his family's own farm, which has produced transformative results.

"I began practicing FMNR in August 2019 when I was in grade six and have continued doing so up till now," said Naaman.

"I have seen our trees grow bigger and we also get fruit to eat such as guava, avocado and other local wild fruits," he said.

Naaman's interest in FMNR piqued further interest from his local community and sharing these skills has amounted to an increased yield of maize harvest compared to previous years.

Pamela, Naaman's mother and maize farmer, attributes the good harvest to better management of her farm. She says that she will now be in a better position to feed her six children and ensure they all go to school as she will be earning additional income.

"I used to try and get casual jobs at the local gold mines, which are at times not safe and have a lot of health hazards. But now I work around my house joining Naaman in taking care of our trees," she said.

When children such as Naaman are mentored and given opportunities to meaningfully participate in solutions, positive outcomes are experienced for their families and communities. Passing on natural resource management skills such as FMNR from one generation to another will contribute to the uptake of FMNR by many more people within a community, producing long-term benefits as these skills are passed from generation-to-generation.

ABOVE LEFT: Naaman, 13, with his mother Pamela in Kenya holding their recent maize harvest. ABOVE RIGHT: Naaman's neighbour Peter, a Farmer Managed Natural Regeneration (FMNR) champion, who taught him and his family sustainable farming techniques.

POLICY ASKS

World Vision wants to see ambitious outcomes and commitments from COP26, that go much further than previous COPs. We are looking to the UK Government for strong leadership to take the steps necessary to drastically reduce greenhouse gas emissions, to provide far more effective and accessible finance for the most vulnerable countries and ensure that the voices and needs of children are heard by decision makers at local, national and global levels.

CLIMATE CHANGE IS A JUSTICE ISSUE

Climate justice represents the interdependence of human rights, development and climate action. We see climate justice as an approach that places children at the centre of the climate crisis and brings about good solutions for people and the planet by upholding their rights. Our Christian faith leads us to believe every person is created in God's image and deserves life in all its fullness.

CLIMATE CHANGE IS A THREAT MULTIPLIER

It exacerbates the impacts of conflict and economic shocks and disproportionately affects the most vulnerable children, in particular those living in urban informal settlements, fragile and developing contexts, despite being the least responsible for it.

CLIMATE CHANGE IS HAVING SEVERE HUMANITARIAN CONSEQUENCES

More frequent and severe natural hazards are amplifying already high levels of humanitarian need globally, through the destruction of livelihoods, reduced access to essential public services and displacement.

In the light of this, World Vision wants to see the following outcomes from COP26:

1. Governments should take the lead on ambitious climate action, to limit global temperature increase to 1.5°C.
2. Governments should invest more climate finance in programmes that protect and restore environmental assets in order to support vulnerable communities' food security and livelihoods, and also to help mitigate climate change, in line with the United Nations Decade of Ecosystem Restoration.
3. Governments should include measures to prevent hunger crises and address food insecurity as a cornerstone of its engagement at COP26.
4. Governments should include children and young people as key stakeholders and interest groups in their policy and decision making during and after COP26. This will encourage other countries to engage children and young people meaningfully in decision making on climate and environment policies and issues.

COMMENTS FROM CHILDREN

Nomundari, Climate Change Youth Activist from Mongolia:

> **"In my opinion, the solutions to big problems are always simple, yet making a move and actually doing it takes a lot."**

"I think it's because of two reasons:

1. "Habits. As a people, we need to change our daily habits such as turning off the extra electricity that we're not using.
2. "Reluctance to act. For world leaders, my recommendation would be, not just hearing others, but also doing something with all the ideas and the solutions you already have."

Ruth, FMNR Youth Champion, Kenya: "Governments should give direct support to people in small communities. We need quality facilities to tackle problems caused by malnutrition as well as the right funding to help prevent hunger. Government should give funds to support youth programmes on climate change.

"It is very important that governments invest in youth led climate mitigation programmes, including FMNR programmes. Governments must consider young people a priority as we can enhance awareness of the impacts of climate change in our communities, including methods of mitigation and adaptation so that we can become more self-sufficient."

Tenema and Tejan, Climate Change Youth Activists from Sierra Leone: "We think that governments and partners should give more supports to Environmental Protection Agencies in terms of technologies, equipment, and the development of effective weather forecast stations.

"Government and NGOs should create platforms where children are empowered to be climate ambassadors to collaborate with Environmental Protection Agencies, especially at community levels, such as in schools and homes.

"We are calling on developed countries to aid developing countries by supporting, sharing new approaches and ideas on climate impact, sending climate experts to train and teach geologists in developing countries, and support countries affected by climate change."

FINAL WORD

Andrew Morley, CEO of World Vision International: "The UN warns that 41 million people in 43 countries are currently on the very edge of famine and face starvation. 'Famine' is not a word people use often or lightly. But millions of children are at risk of extreme hunger.

"Failure to secure global political agreement to address climate change means more children will face the threat of famine. It is scandalous that, when children have contributed least to climate change, they are suffering its effects most severely."

Across Kenya, drought has left 3.5 million people in need of urgent humanitarian assistance.

World Vision is responding – providing clean water, food aid and nutrition services to those affected by drought – but the needs are overwhelming.

ABOVE / FRONT COVER: Siblings Steven, Gladys, Lona and Frank. Their mother Rhoda, a farmer, lost her 50 goats and crops before they could be harvested during this year's drought in Northern Kenya. The only way the family earns money is by cutting this dried-up grass, wrapping it in bundles and selling it to neighbours who have sustained a few goats.


Children did not create this problem, but they will inherit the consequences of our inaction.
We owe them better.

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At World Vision, our focus is on helping the most vulnerable children, in the most dangerous places, overcome poverty and injustice. Inspired by our Christian faith, we've worked together with communities, partners, local leaders and governments, for over 70 years, so that children – of all faiths and none – are empowered to experience fullness of life.