



Food and Agriculture
Organization of the
United Nations

La Niña

Anticipatory Action and Response Plan

September–December 2024

Mitigating the expected impacts of La Niña-induced climate extremes
on agriculture and food security



The increased likelihood of extreme weather events linked to La Niña calls for anticipatory actions to mitigate the impact on vulnerable people in the countries most at risk.

Summary

The 2023–2024 El Niño – one of the strongest on record – significantly impacted over 60 million people globally with extreme weather events, including droughts, heatwaves and floods. Southern Africa faced devastating droughts, while the Horn of Africa experienced severe flooding after years of drought. El Niño also worsened food insecurity in vulnerable regions like Central America and Southeast Asia. Before these hazards could materialize, the Food and Agriculture Organization of the United Nations (FAO), in close coordination with governments and partners, initiated anticipatory actions in 24 at-risk countries, followed by emergency response efforts in some of the hardest-hit areas. These interventions were guided by FAO's [El Niño Anticipatory Action and Response Plan](#). Approximately 1.7 million vulnerable farmers received protection ahead of threats linked to El Niño.

Following the 2023–2024 El Niño event and the current El Niño Southern Oscillation (ENSO) neutral state, La Niña (ENSO cool phase) is anticipated to develop between September and November, with probabilities ranging from 55 to 71 percent, and is expected to persist through January to March 2025. Resulting from below-average subsurface ocean temperatures and easterly wind anomalies, La Niña can increase the likelihood of extreme weather and climate hazards such as droughts, floods, excessive rainfall and cyclones. These early warnings signal the need for anticipatory action to help vulnerable farming communities mitigate the potential effects of La Niña, especially in regions where the compounded effects from the 2023–2024 El Niño event and La Niña might materialize.

La Niña-induced climate extremes can have severe consequences on food security, particularly when approximately 282 million people are already facing acute food insecurity worldwide and urgently require assistance.¹ Many countries experiencing humanitarian crises risk being further affected by La Niña, which could exacerbate food insecurity, increase human suffering and result in further economic losses.

La Niña is a natural climate phenomenon, in which surface waters of the central and eastern Pacific become unusually cool and cause changes in weather patterns around the world.

La Niña re-occurs every 2-7 years and typically lasts 9-12 months.

Its unique slow onset, periodic pattern and lead-times of prediction make it possible to design anticipatory interventions and prepare for emergency response a few months in advance.

The current La Niña immediately follows a strong El Niño year which brought the opposite extremes to affected countries, including severe drought in Southern Africa.

The previous La Niña event – the 2020–2023 triple-dip^a – included record-setting tropical cyclone activity in the North Atlantic Ocean and severe droughts in regions such as the Horn of Africa. Given these historical events, there is an urgent need to prepare for the upcoming La Niña event to mitigate its potential consequences on vulnerable populations.

Changes in precipitation patterns and prolonged dry periods brought on by La Niña can threaten agricultural productivity and rural livelihoods. While increased rainfall can benefit agriculture by boosting crop yields and replenishing groundwater levels, excessive rainfall can lead to flooding, resulting in soil erosion, and damaged crops, infrastructure and homes. Conversely, La Niña-induced dry conditions can lead to water scarcity, posing risks for small-scale producers already impacted by climate hazards. Implementing anticipatory actions at scale is imperative to minimize and prevent loss and damage to crops, livestock, water, land and infrastructure, safeguarding food security and mitigating impacts on local communities and economies. FAO's cost-effectiveness studies show that every USD 1 invested in anticipatory action can create a return for farming families of more than USD 7 in avoided disaster impacts on agricultural production and assets.

FAO's La Niña Anticipatory Action and Response Plan requires USD 318 million to deliver immediate support to the most at-risk and affected populations, reaching approximately 10.5 million people through the end of 2024.

The Plan aims to:

1. **Protect vulnerable people from La Niña-induced disaster impacts through anticipatory actions**, such as helping fishers protect their boats ahead of storms, reinforcing river embankments ahead of floods, distributing drought-tolerant seeds to small-scale farmers and protecting livestock health.
2. **Capitalize on the positive spillover effects of La Niña and offset losses**, for example by supplying seeds to flood-affected farmers so they can plant and regain a harvest as flood waters recede.
3. **Deliver early response where La Niña causes devastation**, including through prepositioning the most time-sensitive supplies such as veterinary medicines, seeds and water bladders, while providing cash to severely affected families to meet their most immediate needs.

FAO's Plan currently prioritizes actions in 39 countries at highest risk of La Niña impacts across Africa, Asia and the Pacific, and Latin America and the Caribbean, based on the analysis of historical impacts of La Niña, latest seasonal forecasts, agricultural seasonality and current vulnerabilities of populations at risk. The triggers for anticipatory action have already been reached in some countries in the Greater Horn of Africa and Latin America.

^a ENSO typically oscillates between three phases: (i) El Niño (warming of sea surface temperatures in the central and eastern Pacific); (ii) La Niña (cooling of these waters); and (iii) a neutral phase. A triple-dip ENSO event refers to a rare occurrence whereby the La Niña phase of the ENSO persists for three consecutive years.

Context

ENSO is a naturally occurring pattern of climate variability (alternating between El Niño and La Niña episodes). It occurs every two to seven years and has a major influence on weather patterns over many parts of the world, driving extreme weather events including drought, flooding and storms.

The 2023–2024 El Niño event, which helped fuel a spike in global temperatures and extreme weather around the world has [officially ended in May 2024](#) and we are currently in a neutral phase which will likely transition to La Niña conditions. According to the Climate Prediction Center's [official Probabilistic ENSO Forecast](#) issued in September, there is a 71 percent chance of La Niña onset in September–November 2024, which is expected to persist through January–March 2025. Similarly, the World Meteorological Organization Global Producing Centres of Long-Range Forecasts suggest a possible La Niña transition during the same period, with a probability of around 55 percent.²

The 2023–2024 El Niño was one of the strongest on record, affecting over 60 million people worldwide with severe droughts, heatwaves, wildfires and floods. Southern Africa experienced devastating droughts, while the Horn of Africa faced historic flooding following years of drought, severely impacting millions in Somalia, Ethiopia and Kenya. El Niño's effects also extended to Central America and Southeast Asia, worsening food insecurity in already vulnerable regions. Before such hazards materialized, FAO – in close coordination with governments and partners – launched anticipatory actions in 24 countries at risk, followed by emergency response interventions in some of the most affected areas. FAO's El Niño Anticipatory Action and Response Plan – launched in August and updated in October 2023 – prioritized countries and activities aimed at mitigating the effects of the phenomenon on agriculture and food security. Such interventions, funded by SFERA, the Central Emergency Response Fund (CERF) and other bilateral contributions, helped vulnerable rural communities maintain local food production and safeguard food security despite the hazards.

With a La Niña event likely to follow, bringing contrasting weather patterns that could further exacerbate the crisis, it is crucial to begin planning support for vulnerable farmers. Mitigation efforts are needed to help them cope with the compounded impacts of both El Niño and La Niña, especially in areas where the situation is already dire. Despite El Niño peaking in early 2024, its effects, coupled with the potential onset of La Niña, are expected to continue threatening food security throughout the year and beyond. It is crucial to start supporting vulnerable farmers mitigate the negative effects of La Niña, especially in areas where such effects would exacerbate the previous and ongoing impacts of El Niño.

As La Niña approaches, the expected trends and impacts on global food security include altered rainfall patterns, with an increased risk of heavy rainfall and flooding in some regions and drought in others. Specifically, Southern Africa, Latin America and the Caribbean, parts of East Africa, and West Africa and the Sahel may anticipate above-average rainfall, benefiting crop production but heightening the risk of flooding.

In contrast, the Horn of Africa and Southwest Asia could face drier conditions during crucial cropping seasons. Southeast Asia and the Pacific may experience increased cyclone activity and potential disruptions to agriculture. Past La Niña events, such as the 2020–2023 triple-dip event, have had devastating consequences, including record-setting tropical cyclone activity in the North Atlantic Ocean and severe droughts in regions like the Horn of Africa. Despite La Niña's influence, it is essential to consider other climate drivers for accurate seasonal outlooks and to address the variability in regional impacts. Additional details on La Niña's effects on the agriculture sector are provided by [FAO's Global Information and Early Warning System](#).

Given these anticipated impacts, there is an urgent need for the humanitarian community to prepare for this La Niña event to mitigate its potential consequences on vulnerable populations.

FAO has developed anticipatory action protocols, and is part of inter-agency anticipatory action frameworks in many of the countries historically affected by ENSO, and where food insecurity is a major concern. In close coordination with governments and other key partners, FAO is planning anticipatory action interventions and emergency response to mitigate the impact of this forecast event on agriculture and food security.

Objectives

FAO's La Niña Anticipatory Action and Response Plan aims to protect the food security and livelihoods of rural communities at high risk of La Niña impacts through the end of 2024. The activities proposed under this Plan cover two critical time windows: (i) acting ahead of the forecast shocks to prevent their impacts; and (ii) delivering immediate assistance where devastation from La Niña could not be avoided. The Plan's overarching aims are to:

1. **Protect people from La Niña-induced disaster impacts through anticipatory actions**, such as helping fishers protect their boats ahead of storms, reinforcing river embankments ahead of floods, distributing drought-tolerant seeds to small-scale farmers and protecting livestock health.
2. **Capitalize on the positive spillover effects of La Niña and offset losses**, for example by supplying seeds to flood-affected farmers so they can plant and regain a harvest as flood waters recede.
3. **Deliver early response where La Niña causes devastation**, including through prepositioning the most time-sensitive supplies such as veterinary medicines, seeds and water bladders, while providing cash to severely affected families to meet their most immediate needs.

Geographic coverage

FAO's Plan currently prioritizes actions in 39 countries across Africa, Asia and the Pacific, and Latin America and the Caribbean. The countries were identified by assessing historical impacts of La Niña and considering key factors such as latest seasonal climate forecasts, agricultural seasonality and current vulnerabilities.^b

Region	Below-normal rainfall	Above-normal rainfall
Asia and the Pacific		Bangladesh, the Lao People's Democratic Republic, Nepal, Pakistan, Papua New Guinea, the Philippines, Timor-Leste and Viet Nam
Greater Horn of Africa	Ethiopia (eastern), Kenya, Uganda and Somalia	Djibouti, Eritrea, Ethiopia (western), South Sudan and the Sudan
Southern Africa		Angola, Madagascar, Malawi, Mozambique, Zambia and Zimbabwe
Latin America and the Caribbean	The Plurinational State of Bolivia and Ecuador	Colombia, Cuba, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Nicaragua and the Bolivarian Republic of Venezuela
West Africa and the Sahel		Burkina Faso, Cameroon, Chad, Mali, the Niger and Nigeria

Countries where the impact of La Niña is expected to occur after the period covered by available climate forecasts were not included in the Plan. Importantly, this not supposed to be an exhaustive list of all the countries at risk of being affected by La Niña-induced hazards. The list focuses specifically on countries where FAO plans to support actions to reduce expected humanitarian impacts. As new forecasts become available, the country coverage of the Plan will be updated accordingly.

^b To identify priority countries at high risk of La Niña impact during the second half of 2024, the following steps were taken: (i) the International Research Institute for Climate and Society (IRI) La Niña and rainfall map was used to list the countries historically impacted by La Niña and outline when La Niña historically shifts rainfall patterns in those countries (months) and how (dry/wet); (ii) seasonal climate forecasts for June–December were applied as a filter, with countries facing normal conditions removed from the list (the main sources used include global forecast models, such as IRI Seasonal Climate Forecast and European Centre for Medium-Range Weather Forecasts, as well as regional and national seasonal climate forecasts when available); (iii) agricultural seasonality was analysed to determine which seasons will potentially be affected during the outlook period; and (iv) current humanitarian needs were taken into account.

Funding needs and modalities

La Niña impacts will unfold in different places, at different times, with varying intensity and impact. The Plan urgently requires USD 318 million to implement short-term interventions in response to the evolving forecasts and needs. Flexible funding is sought to the greatest extent possible, channelled to FAO's SFERA funding mechanism.

Funds are needed most immediately to carry out anticipatory actions in time.

The triggers for anticipatory action have already been reached in parts of the Greater Horn of Africa and in Latin America. FAO is ready to immediately initiate anticipatory actions in prioritized countries in these regions thanks to flexible funding from donors such as Belgium, Germany, Norway, and the United Kingdom of Great Britain and Northern Ireland. In other countries, FAO has advanced preparations to ensure activities can start quickly once triggers are reached.

The Plan is risk-based and forward-looking. There is an unavoidable level of uncertainty with regards to the actual occurrence of the forecast hazards. For this reason, the activities are planned following a no-regrets approach, whereby vulnerable families are expected to benefit from FAO's support even if the forecast hazards do not materialize as expected. An adaptive approach will be used to ensure that resources are re-allocated where they are most needed to prevent and mitigate the effects of La Niña across the world. The Plan will be updated on a regular basis to reflect latest developments and new forecasts.

Priority actions by region

Greater Horn of Africa

Context

Historically, localized areas of the Greater Horn of Africa tend to experience wetter-than-average conditions in northern parts of the region between July and September and drier-than-normal conditions from November to March in central/southern parts during La Niña events.

The March–May 2024 seasonal rains reportedly concluded with largely above-average rainfall across the region, except in bimodal areas of South Sudan and Uganda, which continue to experience cumulatively below-average rainfall. This has benefited crop production in all areas between April and June and has led to the restoration of rangelands after the long drought experienced in 2022 and 2023.

Seasonal forecast

Global climate prediction centres forecast a transition from ENSO neutral to La Niña phase in September–November 2024, while current seasonal forecasts indicate a high likelihood of above-average rainfall across the region between July and September.

Thus, the northern part of East Africa (unimodal South Sudan, Sudan and kiremt-receiving^c areas of Ethiopia) is highly likely to receive above-average rainfall during the June–September rainy season.

Additionally, the record-high water levels in Lake Victoria and the Nile River Basin prompted the release of large volumes of water from the Jinja dam in early May. Combined with the forecast of La Niña-induced above-average rainfall, this volume of water in the White Nile is expected to further aggravate already anticipated severe flooding downstream in South Sudan, as well as in the Sudan, during the June–September rainy season.

On the other hand, the Intergovernmental Authority on Development (IGAD) Climate Prediction and Applications Centre (ICPAC) October–December 2024 forecast (short deyr rainy season) predicts drier-than-normal conditions in the eastern part of the Greater Horn of Africa. Southern Ethiopia, Somalia, eastern Kenya and parts of the United Republic of Tanzania are expected to receive below-normal rainfall, with southern Ethiopia and central/northern Somalia facing the highest chances of dryness. Close monitoring of seasonal forecasts closer to the start of the season should provide more information.

^c Kiremt is the main rainy season in Ethiopia, typically lasting from June to September. These rains primarily affect the central, western and northern regions of Ethiopia.

Expected impact on agriculture and food security

La Niña-induced above-average rainfall during July–September could continue to support the recovery from the multiple seasons' drought, improving crop and livestock production. However, such rains can also result in heavy rainfall episodes, flooding and landslides especially in eastern Ethiopia, South Sudan, the Sudan and southern Uganda.

Later in the year, La Niña-induced dry conditions might affect parts of the region, potentially threatening the performance of the short deyr rainy season. The La Niña-induced prolonged drought in the Horn of Africa between 2020 and 2022 was among the worst in decades, leaving millions of people food-insecure and malnourished, and having devastating impacts on their livelihood assets and capacities.

Planned activities



FAO requires
USD 153.2 million



to assist
6.4 million people

FAO is ready to launch anticipatory actions for floods and drought in at-risk countries benefiting from its previous experience over the past season. However, additional financial support is needed to ensure appropriate action at scale. Immediate support should include unconditional cash and animal health interventions to limit the spread of flood-induced diseases in flood-prone areas and the distribution of drought-tolerant seeds and water management training for drought-prone areas. In areas where floods will not be averted and crops will be partially or totally destroyed, the residual soil moisture from the receding flooding will still allow farmers to secure a harvest if supported for immediate replanting and with the necessary tools and equipment to protect the harvest.

Priority actions for floods:

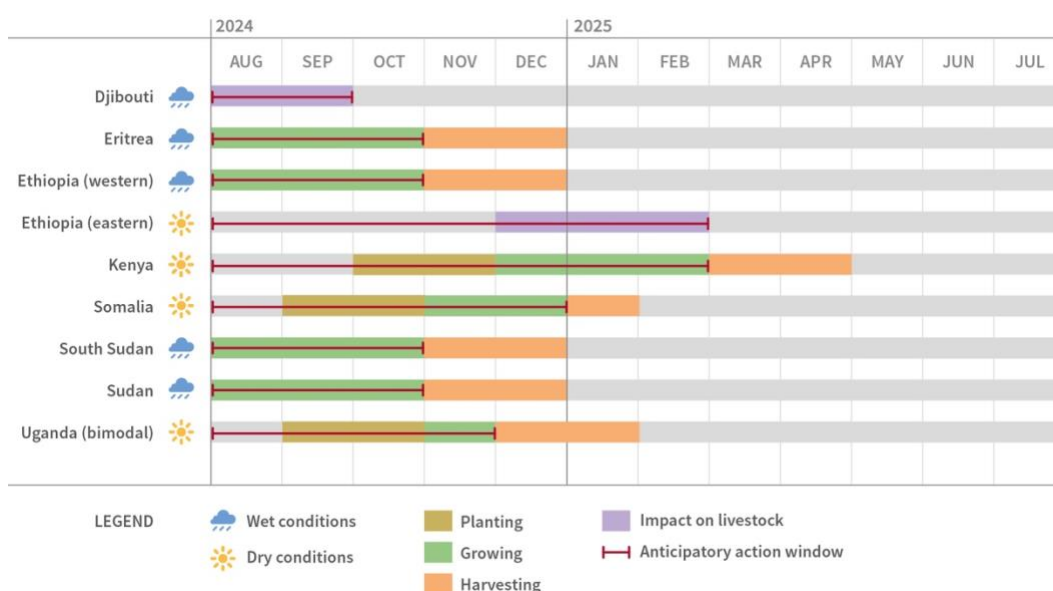
- Provide unconditional cash transfers to the most vulnerable households to support their activities to prepare for and cope with the impact of floods.
- Deliver animal health interventions to reduce the risk of flood-induced disease outbreaks and parasites such as medicines, vaccinations and surveillance.
- Distribute seeds for rapid replanting using the receding floodwater, and hermetic bags and tools to help farmers safely store their harvest.

Priority actions for drought:

- Disseminate early warnings and agricultural advisories widely to ensure farmers are aware of appropriate risk management options to minimize crop, livestock and other livelihood losses.
- Increase water access and availability by establishing communal rainwater harvesting and storage systems and rehabilitating water points.

- Provide unconditional cash transfers, farming inputs including drought-tolerant short-cycle crop seeds (cereals and legumes) and vegetable seeds, small irrigation kits and training in water management.
- Protect animal health and productivity, through livestock disease monitoring, vaccination and treatment, community watering points, distribution of feed and drought-tolerant fodder seed, as well as poultry and small ruminants where appropriate.

Figure 2. Greater Horn of Africa priority countries seasonal calendar



Source: FAO. 2024. Internal document. Rome.

Southern Africa

Context

The cereal harvest of the main season in the region has concluded, but crop production prospects have been negatively impacted by a prolonged El Niño-induced drought. Food security is threatened as millions of households rely heavily on these staple crops. The main agricultural season has ended in southern Africa, and aggregate cereal production in 2024 is estimated at below the five-year average.³ Most countries in the region, except for Madagascar and the United Republic of Tanzania, will experience below-average staple production. The drought has also deteriorated rangeland conditions and led to significant livestock deaths.

La Niña is associated with wetter-than-normal conditions in the region between November and March. These patterns could support the recovery from the ongoing drought conditions, improving crop and livestock production. However, such rains can also result in heavy rainfall episodes, flooding and landslides.

Seasonal forecast

Current long-range seasonal forecasts indicate likely above-normal rainfall during the October–December period in parts of Angola, Botswana, Mozambique and Zimbabwe. Some models also suggest increased chances of below-normal rainfall in parts of Angola, Madagascar and Namibia. Between November and May, parts of the region, especially the coastal countries of Madagascar and Mozambique, are historically struck by cyclones, increasing the risk of flooding. The outlook for the upcoming cyclone season is expected later in October, which will provide further information on the associated risks.

Expected impact on agriculture and food security

In Southern Africa, La Niña-induced impacts would coincide with the main agricultural season between October 2024 and March 2025, and could have dire consequences especially in countries and areas that are showing very high levels of vulnerability and food insecurity because of the ongoing drought impacts. Excessive rainfall and subsequent flooding can further damage crops and infrastructure, while high rainfall may benefit locust breeding and increase the threat of pest outbreaks.

In case there is a higher-than-normal probability of increased cyclone activity in the southwest Indian Ocean during the upcoming cyclone season, increased likelihood of landfalls and heavy rainfall in Madagascar and Mozambique could be observed. Cyclones can cause substantial losses of food supplies, posing a serious threat to food security. Losses of stored grains and damage to standing crops can lead to shortfalls in food supplies, particularly during the lean season.

Planned activities



FAO requires
USD 42.8 million



to assist
1.1 million people

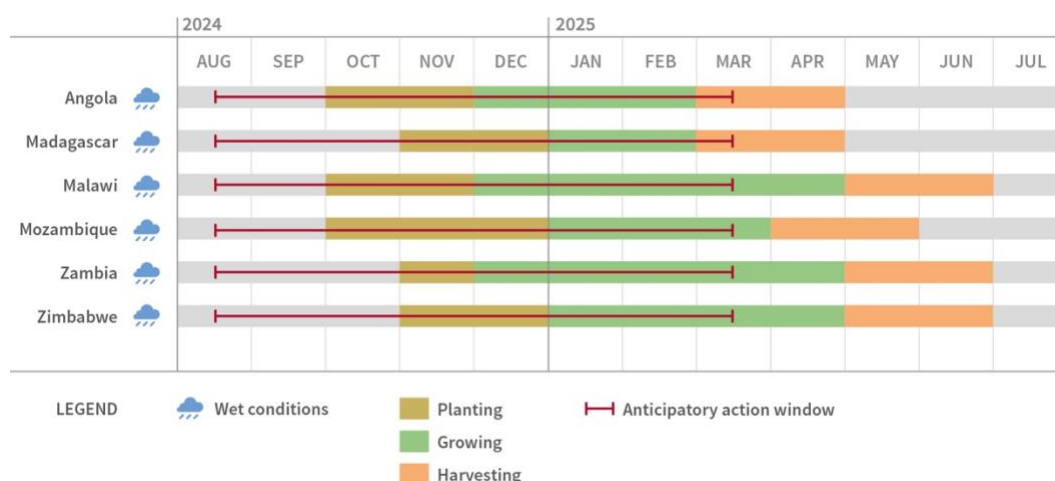
FAO will work with partners to ensure that early warnings and related agricultural advisories are disseminated to at-risk communities, and that anticipatory actions are implemented to protect the livelihoods of the most vulnerable people ahead of the forecast events. Anticipatory actions will contribute to protect agricultural production and vulnerable households' assets in the face of flooding through for example unconditional cash and animal health interventions to limit the spread of flood-induced diseases.

FAO is ready to launch anticipatory actions in the prioritized countries. However, the resources mobilized are not enough. Urgent additional support is required to ensure the following actions can be implemented at the required scale and coverage in 2024/25.

Priority actions for floods and cyclones:

- Disseminate early warnings and agricultural advisories to ensure farmers and communities are aware of the risks and appropriate risk management options to minimize crop, livestock and other livelihood losses.
- Distribute hermetic bags and tools to help farmers safely store their harvest and promote early harvesting of crops where appropriate to enable rapid replanting using the receding floodwater.
- Deliver animal health interventions such as vaccinations to reduce the risk of flood-induced disease outbreaks and parasites, and protect community fisheries resources and aquaculture assets and provide fishing kits.
- Provide unconditional cash transfers, vouchers, cash+ (cash transfers plus seeds to support off-season production) combined with small-scale irrigation, water harvesting and soil conservation.

Figure 3. Southern Africa priority countries seasonal calendar



Source: FAO. 2024. *Internal document*. Rome.

Asia and the Pacific

Context

In much of Southeast Asia and the Pacific, La Niña typically brings wetter-than-normal conditions during June–December period. While typhoons can form throughout the year in Southeast Asia, they are most common between May and October. However, La Niña can alter this pattern, potentially causing typhoons to develop at different times. During these events, typhoons are less frequent, but studies are showing they can be more powerful and intensify closer to landfall.

Conversely, in the North Pacific Islands (Palau, the Federated States of Micronesia, the Marshall Islands, Kiribati and Tuvalu) La Niña is associated with prolonged dry periods, usually from June to the following April. In the 2023–2024 El Niño, the North Pacific,

namely the Federated States of Micronesia and the Marshall Islands declared drought emergencies, which is atypical of the phenomenon. Therefore, if dry conditions persist, it could be another year of water and agriculture constraints. Conversely, the South Pacific countries (Samoa through to Solomon Islands) are commonly wetter. Across the North and South Pacific, tropical cyclones are commonly below-average due to the strong shear winds.

In Southwest Asia and the Levant, La Niña events have been known to lead to above-normal rainfall in most of India and southeast Pakistan between June and October, as well as a reduction in rainfall from January through May in an area encompassing Afghanistan and extending through northern Pakistan and the Islamic Republic of Iran, as well as the southeastern tip of Iraq.

Seasonal forecast

For June–December 2024, models predict an increased chance of above-normal rainfall over the equatorial region, with below-normal rainfall predicted for much of the southern maritime continent region in June–August. In Pakistan, forecasts indicate an increased probability of above-normal rainfall in line with historical impacts of La Niña. In Bangladesh, flooding in the Haor and Jamuna River areas has already commenced as of June–July 2024, sparking the need for anticipatory action (waterproof drum and livestock feed distribution), funded by the Directorate-General for European Civil Protection and Humanitarian Aid Operations through the FAO Pilot Programmatic Partnership, and CERF. High alert for flooding should remain until the end of September, and such monitoring should further extend to Nepal.

In Afghanistan and the Islamic Republic of Iran, forecasts show below-average precipitation from September onward. These countries are not yet prioritized in this Plan, because the effects of La Niña are expected to start from January 2025. However, they should remain on watch: indeed, rainfall deficits and above-average temperatures at the end of this year may limit snowpack accumulation, leading to water deficits for irrigation in 2025. Such conditions, combined with potential La Niña-induced rainfall deficits in early 2025, can be a telling sign of potential drought to come.

In Southeast Asia, the 2023–2024 El Niño has caused dry conditions or drought in areas of Cambodia, the Lao People’s Democratic Republic, the Philippines, Timor-Leste and Viet Nam. With forecasts predicting above-average rainfall, it is crucial to understand the strong relationship between floods and droughts. When heavy rain follows extended dry periods, the soil cannot absorb the water quickly, leading to shallow absorption. This runoff increases the risk of flooding.

In Papua New Guinea, particularly in the Western Province along the Fly River, above-average rainfall is currently being experienced, although the dry season should begin soon. After dry conditions in late 2023, a similar drought-flood dynamic should be considered in anticipatory action and emergency planning as heavy rains continue, especially in the west.

Expected impact on agriculture and food security

In Timor-Leste, La Niña conditions will overlap with the maize and rice cropping season and the lean season (November–February), bringing above-average rains that may benefit crop production, which comes off the back of a below-average season. The main maize crop was harvested in April 2024, while the paddy crop harvest is ongoing and will conclude in July. However, the production of both crops is expected to be well below the five-year average, mainly due to low sowings caused by El Niño-induced dry weather from October 2023 to January 2024. However, while the rains may help with this deficit, they also pose risks, including flooding, crop damage, and losses to food stocks, livestock and fishing equipment, which could negatively impact rice and maize planting, yields and the fisheries sector.

In Papua New Guinea, excessive rainfall can support the growth of staple crops such as sago, sweet potatoes and taro. Fresh water access is particularly important for sago production. However, many crops are grown near riverbanks, and rising water levels and heavy rainfall could lead to crop destruction, soil erosion and increased prevalence of crop diseases, threatening food security. Over 85 percent of the population relies on subsistence living, and if farming plots near villages are destroyed, many families retreat to the bush to search for food, relying on wild animals and plants.

In Southeast Asia (the Lao People's Democratic Republic, the Philippines and Viet Nam), the increased rainfall associated with La Niña can benefit crop production by providing ample water for irrigation and improving soil moisture. However, the excessive rainfall often leads to flooding, which can cause severe damage to agricultural lands, crops and infrastructure. Flooding can erode soil, wash away seeds and young plants, and destroy mature crops ready for harvest. Additionally, La Niña conditions can disrupt rice planting and harvesting schedules, leading to reduced yields and crop losses. Waterlogged fields can become unworkable, delaying planting and affecting the growth of crops such as rice, corn and vegetables. The high humidity and persistent wet conditions also promote the spread of crop diseases and pests, further threatening agricultural productivity. The relationship between typhoons and Southeast Asia remains understudied, but some suggest the rapid intensification of typhoons is more likely during these episodes.

Increased rainfall likely to affect southwest Pakistan can boost maize crop yields, but excessive rain and flooding can damage crops and reduce agricultural productivity. This was evident during the La Niña episode in 2022, when flooding resulted in approximately 11.8 million people experiencing high levels of acute food insecurity.¹ Crops accounted for 82 percent of the total damage and losses in the sector, followed by livestock with 17 percent. Millions of hectares of agricultural land were damaged, and thousands of livestock perished.⁴ FAO has an anticipatory action protocol in place for floods in Sindh province.

Bangladesh faces similar challenges and is already experiencing flood impacts. The situation is projected to deteriorate between April and October 2024 due to expected extreme weather events such as cyclones and flooding. Household access to food is expected to worsen during this period due to high food prices and projected climatic shocks, leaving the most food-insecure people extremely vulnerable.

The number of people in Integrated Food Security Phase Classification (IPC) Phase 3 or above is likely to increase to 16.5 million (22 percent of the analysed population).⁵

Planned activities

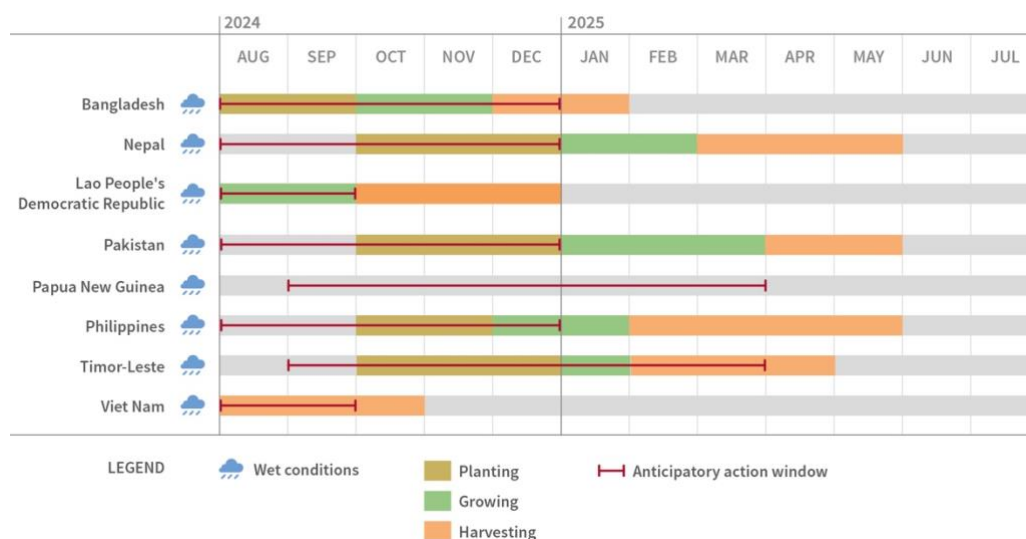


FAO urgently requires funding to expand and strengthen anticipatory action efforts in the prioritized countries. Additionally, it seeks support for rapid response interventions to assist families affected by disasters. Powerful cyclones and floods can swiftly devastate livelihoods and assets. The funds will be used to implement a range of activities tailored to each country's context, comprising both anticipatory action and rapid response measures.

Priority actions for floods/cyclones:

- Disseminate early warning messages with agricultural advisories, such as early harvesting or moving of equipment. Ensure messages are gender- and socially inclusive through their communication and receiving modalities.
- Distribute seed/feed storage silos or hermetic bags, as well as cash assistance, including multipurpose cash, to ensure access to food and support transport and other basic needs.
- Evacuate livestock to safe areas in collaboration with the government, providing feed and medicine in these focal areas; and protect fisheries assets, including through the distribution of equipment for boats such as watertight drums, to keep fishing gear safe.
- Support women groups through cash for work to ensure early crop harvests and set up floating gardens.
- Implement cash for work after cyclones, to help rebuild markets; carry out animal restocking; and support boat repair and fishing gear replacement.

Figure 4. Asia and the Pacific priority countries seasonal calendar



Note: No specific cropping season is indicated for Papua New Guinea, as the planting of root crops (e.g. taro, cassava, kumara) is continuous and rotational.

Source: FAO. 2024. *Internal document*. Rome.

Latin America and the Caribbean

Context

La Niña often leads to above-average rainfall in the northern part of South America, Central America and the Caribbean islands. This can result in flooding, tropical cyclones and landslides (particularly in mountainous regions). In 2023, El Niño conditions led to prolonged droughts and water shortages in the Central American Dry Corridor, the Plurinational State of Bolivia, the Bolivarian Republic of Venezuela and Colombia, alongside intense rainfall and flooding along the coasts of Ecuador, Peru and the inland of the Plurinational State of Bolivia. FAO has implemented anticipatory actions ahead of El Niño-induced hazards in most of the areas at risk, to support the most vulnerable farming families. Emergency response interventions are still ongoing in some areas. The climate impacts of La Niña in Latin America and the Caribbean would occur within a context of food insecurity, with 41 million people undernourished in the region in 2023⁶ and 19.7 million people facing high levels of acute food insecurity, including 1.64 million people classified in Emergency (IPC Phase 4) in Haiti.¹ La Niña impacts can further compound the situation if severe flooding and cyclones are experienced.

Seasonal forecast

The latest forecasts point to above-normal precipitation over northern South America (Colombia, the Bolivarian Republic of Venezuela), Central America (El Salvador, Guatemala, Honduras, Nicaragua), and the Caribbean (Cuba, Haiti, the Dominican Republic), consistent with La Niña impacts. Forecasts also indicate that below-normal

rainfall is expected in northwestern Ecuador and the Plurinational State of Bolivia. High tropical cyclone impact probabilities are forecast in Central America and the Caribbean.

Expected impact on agriculture and food security

While increased rainfall can be beneficial for agriculture in some areas, promoting good crop yields, it can also lead to severe flooding, waterlogged soils, crop diseases and difficulties in harvesting, which may adversely affect agricultural productivity. Tropical cyclones can have a severe impact on crop cultivation, animal mortality and fishing assets/equipment. Furthermore, La Niña can affect marine ecosystems and fisheries. It may lead to changes in ocean currents and fish distribution, impacting fishing activities and the livelihoods of coastal communities dependent on fisheries.

In the Plurinational State of Bolivia, El Niño-induced drought in 2023–2024 affected about 550 000 households, causing damage to more than 80 000 hectares of cultivated land area, especially in the western parts.⁷ The country also experienced heavy rains and flooding in inland areas. La Niña is expected to bring drought in the Chaco and inter-Andean valley regions, affecting livestock production during the dry season due to reduced availability of water and fodder, and negatively impacting the production of summer crops. Such effects would threaten the food security of the region's population, especially family farming households.

In Colombia, during La Niña in 2021–2023, more than 2 million hectares of crops and pastures and more than 6 million heads of livestock were affected, with damages and losses amounting to about USD 2.15 billion in the agriculture sector.⁸ According to the government, the highest prevalence of food insecurity is found in departments that have been historically most affected by La Niña such as Arauca, Bolívar, Cesar, Chocó, Córdoba, La Guajira, Putumayo and Sucre. The expected impacts of La Niña-induced floods would come on top of severe negative impacts of El Niño-induced drought in 2023 and early 2024.

In Ecuador, abnormally dry conditions in the central and southern coastal areas may affect the harvest of maize, cocoa, rice, vegetables and the development stage of bananas. Additionally, the water scarcity may impact livestock and fishing activities. This may result in reduced household food reserves among vulnerable farming households, difficulties in accessing safe food and water, and consequent increase in the number of food-insecure households.

In the Dry Corridor (El Salvador, Guatemala, Honduras and Nicaragua), flooding and tropical cyclones may have an impact on crop production in the postrera season, increase animal disease and mortality, destroy fishing boats and equipment, and reduce the demand for agricultural labour. Such effects would compound the severe agricultural impacts experienced in 2023 due to El Niño-induced dry spells, leading to a deterioration of food insecurity in the affected areas.

In Cuba, Haiti and the Dominican Republic, forecasts point to a high risk of flooding and cyclones over the coming months. Such hazards are expected to cause waterlogging, damage to crops, fishing boats and equipment, and livestock, also due to increased pests

and diseases. They would also cause damage to irrigation and drainage infrastructure. Impacts are likely to result in higher prices, and lower availability of and access to food for affected families in rural, but also urban and peri-urban areas. In Haiti, such impacts would occur when nearly 5 million people experience high levels of acute food insecurity¹ and in a context of population displacement and humanitarian access difficulties due to high levels of insecurity.

In the Bolivarian Republic of Venezuela, heavy rainfall and floods are expected to affect crop production due to waterlogging of soils and increased incidence of pests, impacting particularly maize, beans, bananas and vegetables production during the first cropping cycle. Such impacts would compound the negative effects of El Niño-induced drought in 2023.

Planned activities



FAO requires
USD 42.6 million



to assist
885 105 people

FAO, together with partners, has already started the planning of anticipatory and response actions to mitigate the expected impact of potential floods in Colombia, the Plurinational State of Bolivia, El Salvador, Guatemala, Honduras, Nicaragua and the Bolivarian Republic of Venezuela. Additional resources are urgently needed to expand the scale and coverage of the interventions across all high-risk countries, and to ensure support can be provided to vulnerable households across all prioritized countries. The sequencing and combination of activities would depend on each country's context and agricultural calendar.

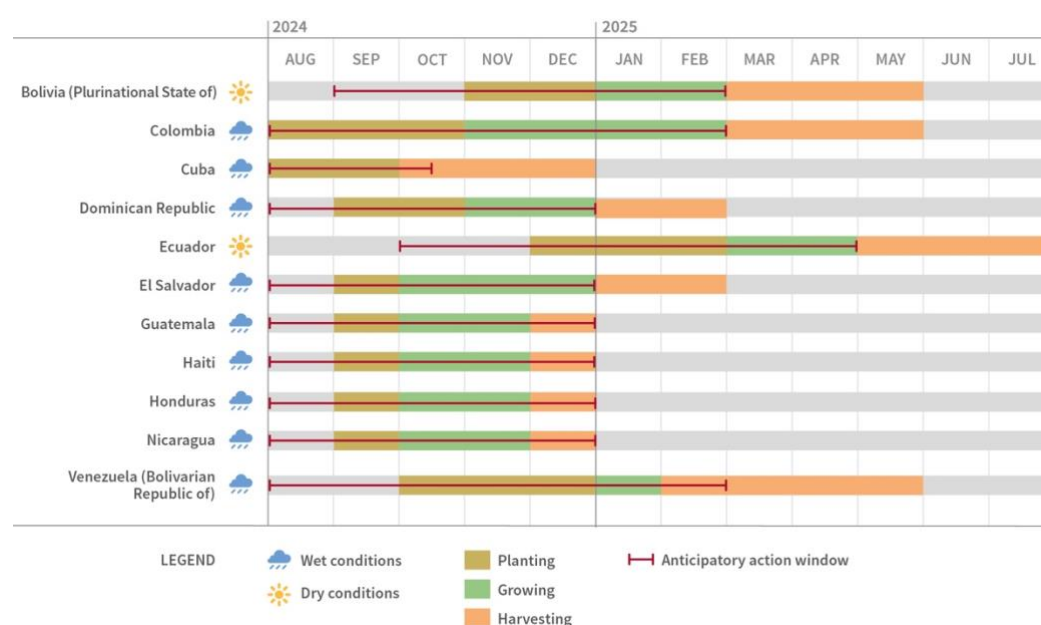
Priority actions for floods:

- Disseminate agrometeorological bulletins and early warning messages at the community and local levels, and conduct workshops and meetings with communities and authorities to coordinate and articulate government and community efforts.
- Distribute cash, inputs, seeds, tools and hermetic containers for safe storage of grain seeds and agricultural inputs, and staple food production kits.
- Support livestock evacuation from areas exposed to flood risk, supply fodder to evacuation centres and provide vaccines and supplements for livestock.
- Provide supply centres with essential equipment and supplies to meet the basic needs of families and food production.
- Repair and restore meteorological and river level stations; reinforce drainage and irrigation systems for flood-prone crops as well as productive infrastructures for the protection of domestic animals.

Priority actions for drought in the Plurinational State of Bolivia and Ecuador:

- Deliver water storage containers, freezers for preserving fish products, seeds and silos, as well as complementary feed for livestock.
- Provide short-cycle crop varieties and other inputs to reduce the risks of drought, combined with institutional and productive capacity-building of technicians and producers.
- Promote rational use and management of water for livestock and agricultural production.

Figure 5. Latin America and the Caribbean priority countries seasonal calendar



Source: FAO. 2024. *Internal document*. Rome.

West Africa and the Sahel

Context

The correlation between ENSO and the climate across West Africa and the Sahel appears weaker than in other regions, due to the strong influence of nearby Atlantic and Mediterranean climatic phenomena which can significantly influence its outcomes. Historical analysis shows that La Niña often brings above-average rainfall to parts of West Africa and the Sahel between July and September, coinciding with the main agricultural season of most countries in the region. This can be particularly beneficial for agriculture, promoting good crop yields and replenishing groundwater levels. However, excessive rainfall can also lead to flooding.

In recent years, record rainfall has severely impacted West African countries, affecting millions across West and Central Africa. Floods have displaced thousands, destroyed food stocks and cultivated land, and killed livestock. As of early July 2024, 271 000 people have been affected by floods in West and Central Africa (including in Chad and the Niger).⁹

Agricultural losses have heightened food insecurity and malnutrition risks for the vulnerable population.

The forecast La Niña event could further strain the region's already fragile food security, which is exacerbated by high levels of instability and conflict. Ongoing unrest in the Central Sahel, affecting Burkina Faso, Mali, the Niger and northern Nigeria, continues to cause significant displacement and disrupt agricultural livelihoods and markets. According to the latest Cadre Harmonisé analysis (March 2024), nearly 52 million people in the region (around 12 percent of the population analysed) were projected to be in acute food insecurity (Phase 3 or above) in June–August 2024.¹⁰

Seasonal forecast

During the June–September 2024, the agricultural regions across the Sahelian belt of Burkina Faso, Cameroon, Chad, Mali, the Niger and Nigeria will continue to receive above-average to near-average rainfall. Some international climate models indicate a near to average rainfall outcome for large parts of the Sahel. According to the Regional Food Crisis Prevention Network, the 2024–2025 agrosilvopastoral campaign appears promising due to forecasts predicting higher-than-normal rainfall in the region. However, there are risks of delayed to mid-season start dates in the Central Sahel and potentially prolonged rain breaks in the Sahelian strip towards the end of the season.

Expected impact on agriculture and food security

In most parts of the Sahelian belt, planting has started in June. The anticipated characteristics of the 2024 rainy season suggest that the risks could vary significantly across different areas. The predominance of wet conditions during this period forecasts a range of potential hazards, including the threat of flooding, which could drastically reduce cultivable land areas.

Infrastructure such as houses, roads, markets and schools may face severe damage or destruction. The agriculture sector could suffer substantial losses in crops and fodder. Livestock and human lives are at risk due to potential drownings. There's a heightened risk of waterborne diseases spreading, including cholera, malaria, dengue and diarrhoea. Moreover, there may be an increase in crop pests and water pollution, while limitations on the movement of both people and animals could occur. Soil erosion and the possibility of landslides pose additional dangers, alongside concerns over the silting of waterways and the proliferation of weeds. Post-harvest losses are also a significant concern, potentially leading to economic setbacks and food shortages.

Ultimately, the rainy season's characteristics could lead to substantial losses in both human and animal life, if adequate measures are not taken to mitigate these risks effectively. However, the localized abundance of water could offer the concrete opportunity to invest in agricultural production towards the latter part of the season, through home-gardening, receding crops and dry-season cultivation.

Planned activities



FAO requires
USD 66.2 million



to assist
2 million people

Resources are urgently needed to expand the scale and coverage of interventions, and to ensure support can be provided to vulnerable households across all prioritized countries. The sequencing and combination of activities would depend on each country’s context and agricultural calendar.

Priority actions for floods:

- Strengthen early warning systems at community and municipal levels, and provide training and awareness-raising activities on anticipatory action and disaster risk reduction.
- Provide emergency multipurpose cash transfer assistance to vulnerable households, as well as cash for work.
- Distribute water pumps, storage materials, tools and high yielding seeds, as well as livestock fodder and vaccines.
- Conduct post-flood assessments and strengthen coastal shores against wind and water pressure through riverbank tree planting.

Figure 6. West Africa and the Sahel priority countries seasonal calendar



Source: FAO. 2024. Internal document. Rome.

Coordination

The activities foreseen in the Plan cannot be implemented in isolation. FAO will continue to coordinate closely with affected communities and their national and local governments, including disaster risk management authorities and ministries of agriculture, as well as national meteorological services and civil protection departments. Country-led efforts are reinforced by strong collaboration with regional organizations such as IGAD, the Permanent Interstate Committee for Drought Control in the Sahel, the Southern African Development Community, the Association of Southeast Asian Nations, the Pacific Islands Forum and the Coordination Centre for the Prevention of Natural Disasters in Central America.

Coordination on anticipatory action is pursued also through global platforms, such as the Anticipatory Action Task Force, the Anticipation Hub, Risk-Informed Early Action Partnership and the Early Warnings for All initiative, as well as through regional and national technical working groups for anticipatory action. Where the cluster system is active, coordination with humanitarian actors will be ensured both within the Food Security Cluster and across clusters. Joint implementation with partners will be favoured wherever possible, including through CERF inter-agency anticipatory action frameworks. Close coordination and collaboration with the World Food Programme will be ensured wherever both agencies are activating anticipatory action protocols.

Notes

- ¹ **Food Security Information Network and Global Network Against Food Crises.** 2024. *Global Report on Food Crises 2024*. Rome. www.fsinplatform.org/grfc2024
- ² **World Meteorological Organization.** 2024. *El Niño/La Niña Update (September 2024)*. Geneva, Switzerland. <https://wmo.int/files/el-ninola-nina-update-september-2024>
- ³ **FAO.** 2024. *Crop Prospects and Food Situation – Triannual Global Report. No. 2, July 2024*. Rome. <https://doi.org/10.4060/cd1503en>
- ⁴ **FAO, IFAD (International Fund for Agricultural Development) and World Bank Group.** 2023. *Rehabilitation and Reconstruction after the Floods: Just-in-Time Policy Note on Agriculture and Food in Pakistan*. Washington, D.C. <http://documents.worldbank.org/curated/en/099626301232334200/IDU035ea00170110004d0d0a6480260ba496cb58>
- ⁵ **IPC.** 2024. *Bangladesh: IPC acute food insecurity analysis, February–October 2024*. Dhaka. <https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1156935/?iso3=BGD>
- ⁶ **FAO, IFAD, United Nations Children’s Fund, World Food Programme and World Health Organization.** 2024. *The State of Food Security and Nutrition in the World 2024 – Financing to end hunger, food insecurity and malnutrition in all its forms*. Rome. <https://doi.org/10.4060/cd1254en>
- ⁷ **Viceministerio de Defensa Civil – VIDECI (Vice-Ministry of Civil Defense).** 2024. *Reporte Nacional de Afectación por Sequías 2023 y 2024*. La Paz. http://defensacivil.gob.bo/web/uploads/images/doc_20230531_144253.pdf
- ⁸ **Government of Colombia and United Nations Development Programme.** *Colombia: Evaluación de daños, pérdidas e impactos asociados a la ocurrencia del fenómeno de La Niña 2021–2023*. Bogotá. https://www.fondoadaptacion.gov.co/images/2024/Gestion_del_Conocimiento/Estudios_Investigaciones_Publicaciones/Evaluacion_Danos_Perdidas_e_Impactos_Fenomeno_de_la_Nina_2021-2023.pdf
- ⁹ **Office for the Coordination of Humanitarian Affairs.** 2024. *West and Central Africa: Flooding Situation Overview, as of 15 July 2024*. New York, USA, OCHA. <https://bit.ly/ochasitoverview>
- ¹⁰ **Cadre Harmonisé.** 2024. *Sahel, Afrique de l’Ouest et Cameroun: Résultats de l’analyse de l’insécurité alimentaire et nutritionnelle aiguë courante en mars-mai 2024 et projetée en juin-août 2024*. https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/ch/FICHE_COMMUNICATION_-_MARS_2024_VF.pdf



FAO's anticipatory action approach uses risk analysis and forecasts to trigger interventions before a crisis escalates into a humanitarian emergency.

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