

PHILIPPINES

More intense typhoons: What does a changing climate mean for food security in the Philippines?

2015



Improving food security and nutrition is an important development priority of the Government of the Philippines. However, climate risk—as illustrated by consecutive intense typhoons—and the protracted crisis in Mindanao remain key challenges to improving the food security situation of the Philippine people.



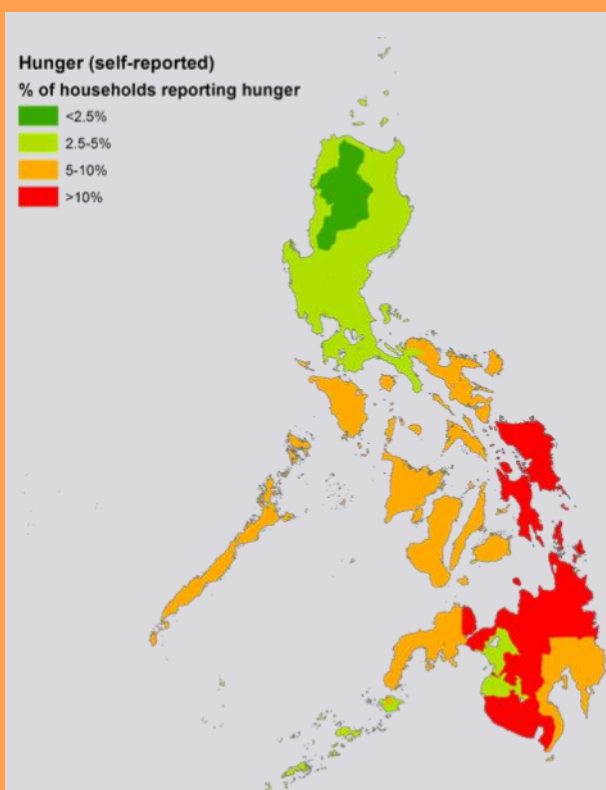
- ▶ Despite impressive progress to address poverty and food insecurity, climate-related hazards could threaten these hard-won development gains.
- ▶ Typhoon Haiyan, which hit the central part of the country in November 2013, and more recently Typhoon Hagupit are testament to the potentially devastating effects of climate on food security and vulnerable livelihoods.
- ▶ Better understanding of climate risks and their impact on household food security is a critical first step for managing and reducing risks.
- ▶ This year's State of Food Security and Nutrition report examines the links between climate risk and food security, and should be used to initiate discussion about appropriate interventions.

Key messages

- ✓ Climate is a key driver of food insecurity in the Philippines. Climate change will result in four key risks which could result in increased loss and damage, and could have detrimental effects on food security:
 - Higher Typhoon intensity. Typhoons are expected to occur less frequently but be more intense. This trend would have particularly detrimental effects in the north of the country which has been historically the most frequently affected.
 - Sea-level rise. Sea levels are expected to rise by up to 50 cm by the end of the century. In addition to causing damages to coastal livelihoods, rising sea-levels could also increase the damage of storm surges.
 - Drought risk. Climate projections suggest a decrease in rainfall in parts of Luzon and Mindanao during the dry season (March-May), which combined with higher temperatures can lead to increased drought risk. As these areas are predominantly agricultural, drought could have a devastating effect on livelihoods.
 - Flood risk. The wet season is expected to receive more rainfall in most parts of the country with potentially more frequent and intense floods. The largest increases in rainfall are predicted over the Visayan Islands.
- ✓ Given the potential loss and damage that could result from climate change in the Philippines, focus should be given to managing these impacts, including through disaster preparedness, better early warning systems, asset creation, support to social protection and risk transfer mechanisms.
- ✓ Urban food insecurity is an emerging challenge. More than half of the Philippine population is expected to live in urban areas by 2020—but while urbanization can offer new opportunities, food insecurity remains quite high among the poorest urban dwellers.

2014

Food & Nutrition Security Profile



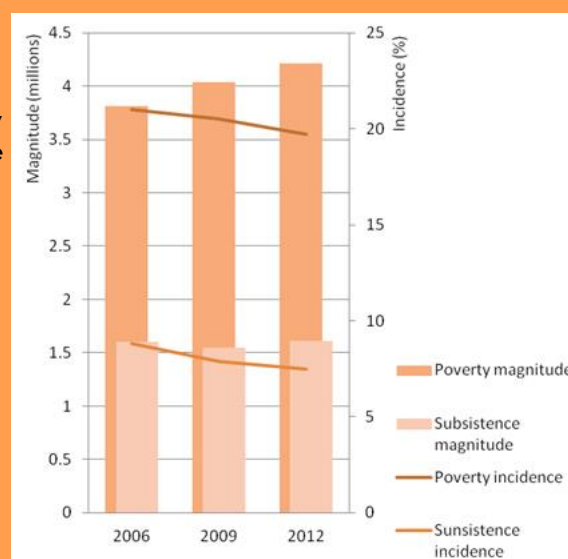
Source: Annual Poverty Indicators Survey (APIS), 2013

Overall, 6.3 percent of households report to experience hunger, but this number is much higher in the regions of the Eastern Visayas (16.2 percent), Davao (13 percent), Soccsksargen (11.7 percent), and Zamboanga (10.1 percent).

Experiencing hunger is more common in adults than children and can lead to skipping meals and not eating for a whole day. At least half of all households reduce the quantity of meals once a year, with 43 percent of adults reporting that they have gone several days without eating.

Key trends

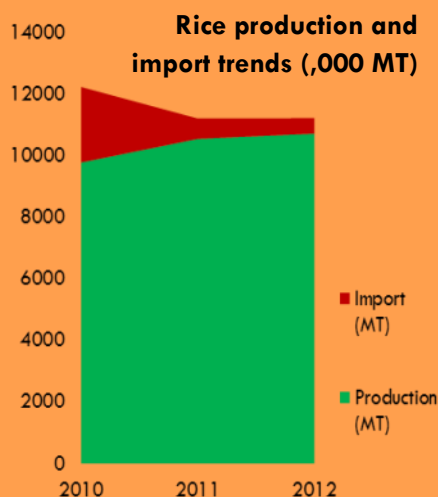
- In the past decade, impressive gains have been made in poverty reduction; however since 2009, poverty incidence has declined only moderately between 2009 and 2012 (from 26.3 to 25.2 percent), but the magnitude of poverty has increased in the same period (from 3.81 million people to 4.21 million people).
- Typhoon Haiyan is likely to have pulled a further 1 million people into poverty, and Typhoon Hagupit has likely delayed recovery in these areas.
- Employment is unstable. In 2013, around 2.8 million people were unemployed and 10.8 million underemployed. Over 28 million Filipinos are informally employed and have little or no protection from job losses.
- Remittances remain significant, contributing to US\$26 billion to the Philippine economy (8.4 percent of the gross domestic product). Remittances enhance resilience capacity.
- Nutrition concerns are still largely unaddressed. Since 2003, nutrition indicators for children under the age of 5 have shown marginal improvement or even deterioration: prevalence of underweight has gone down from 20.7 percent (2003) to 20.2 percent (2011); stunting rates have decreased from 33.9 percent to 33.6 percent in the same period.
- Wasting has increased between 2003 and 2011, from 6 to 7.3 percent. The highest wasting rates are found in parts of the Western and Central Visayas.



Availability

The Government of the Philippines aims for rice self-sufficiency. Currently, the country does not produce sufficient food to satisfy caloric demands. The Government has imported millions of metric tons of rice (between 200,000 and 660,000 in average years, and up to 2.5 million metric tons in years with particularly low production).

The average Filipino consumes 1,957 kcal—below the international recommendation of 2,200kcal (for women) and 2,600kcal (for men).

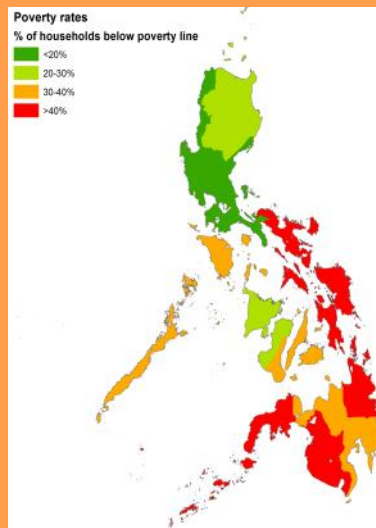


Access

Access to sufficient and nutritious food is limited by poverty and income levels. This is particularly the case in the Eastern and Southern parts of the archipelago.

Low incomes can also result in households spending more of their income on food. Households that spend over 65 percent of their income on food can be considered to be highly vulnerable to price shocks. Overall, ARMM has the highest proportion of families spending >65 percent of their income on food, followed by Zamboanga, Caraga, Bicol, Soccsksargen and Eastern Visayas.

This highlights a trend of low access in the eastern and southern parts of the country.



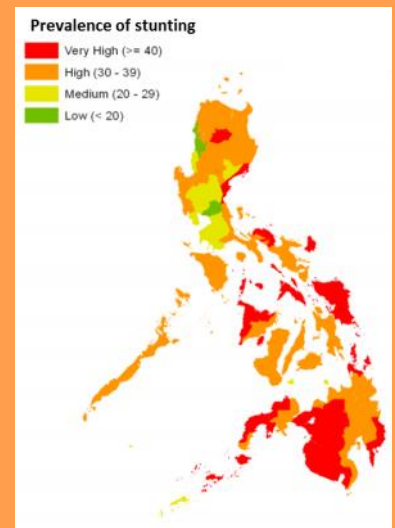
Utilization

Nutrition continues to be a challenge across most of the country, both in terms of under- and over-nutrition.

The magnitude and severity of underweight prevalence were found to be very high in 9 of the 81 provinces: primarily in the Eastern Visayas, Zamboanga, and Bicol.

Chronic malnutrition is considered to be very high in the Eastern Visayas, Panay, Central Mindanao and Zamboanga Peninsula.

Sanitation is a concern for approximately 16 percent of Filipinos who obtain water from unprotected sources, which can affect their health and nutrition.



Vulnerability: Emerging Issues

Climate change

- Climate change is likely to affect vulnerability, and food and nutrition insecurity over the coming decades through a combination of more extreme weather events (especially typhoons, floods, and landslides), rising sea levels and shifting rainfall patterns.
- Climate-related losses continue to be very high for the agricultural sector. Strategies to minimize loss and damage from climate extremes should be identified.

Urbanisation

- At a rate of 48.8 percent in 2011, the Philippines is one of the most quickly urbanizing countries in Asia. More than half of Filipinos will reside in urban areas before 2020.
- Poverty and correspondingly food insecurity remains more prevalent in rural areas (three quarters of the country's poor live in rural areas and are engaged in agriculture), although this paradigm is shifting.
- Absolute numbers of informal settlers in the urban areas of the Philippines has increased consistently over the past 25 years. In 2009 nearly 41 percent, or 18 million people lived in slums. These areas are characterized by low incomes and poor sanitary conditions, and are typically located on marginal lands with high exposure to climatic shocks such as cyclones and flooding.

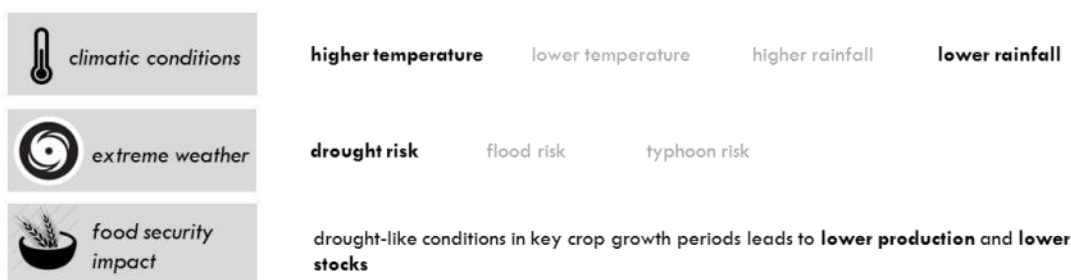
Climate risk and food security in the Philippines

HISTORICAL & CURRENT CLIMATE

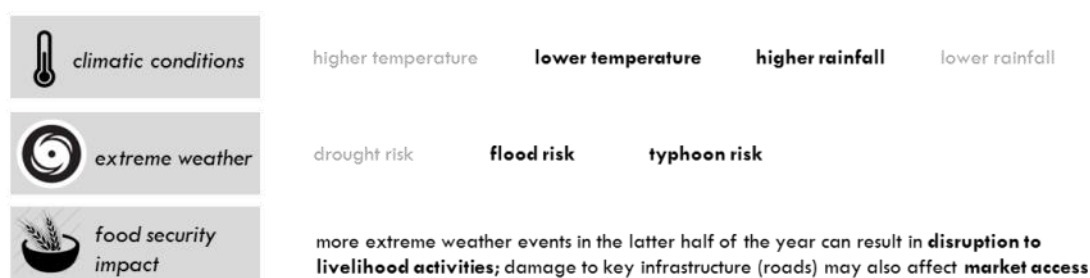
Over the 20th century, climate change in the Philippines has manifested itself through increased warming and more erratic rainfall patterns during the monsoon periods. Temperatures have increased across the entire country, which could exacerbate drought risk, particularly if combined with a delay in the onset of rains.

Rainfall is influenced by El Niño Southern Oscillation. Years with a strong El Niño cycle are associated with lower rainfall overall (but increased rainfall in the northwestern parts of the country), while years with a strong La Niña signal are associated with large increases in rainfall between October and December in the central eastern parts of the country. A key concern under a climate change scenario is that warmer sea surface temperatures may result in more frequent and stronger El Niño periods.

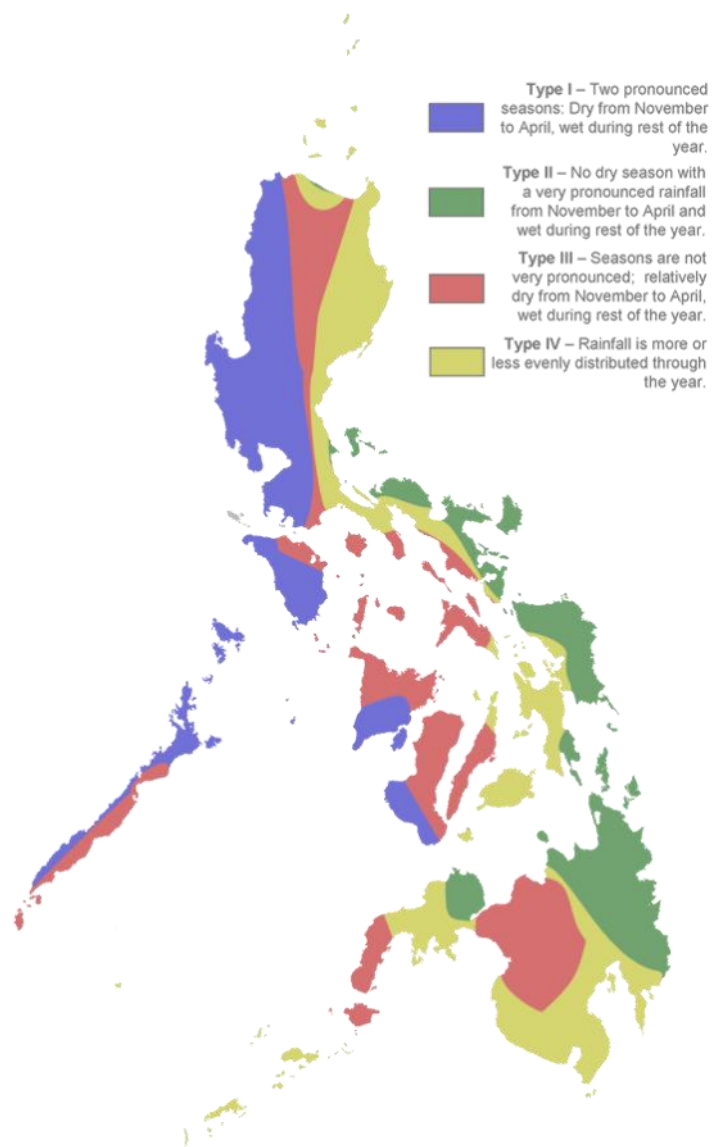
EL NIÑO



LA NIÑA



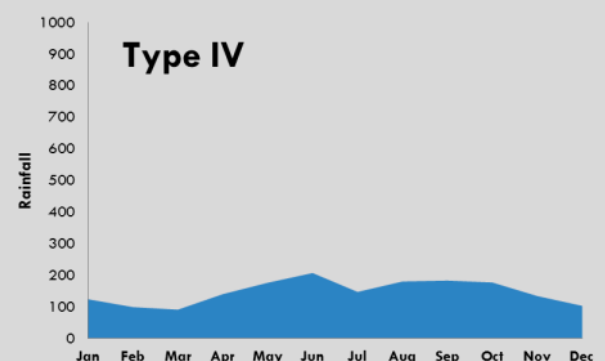
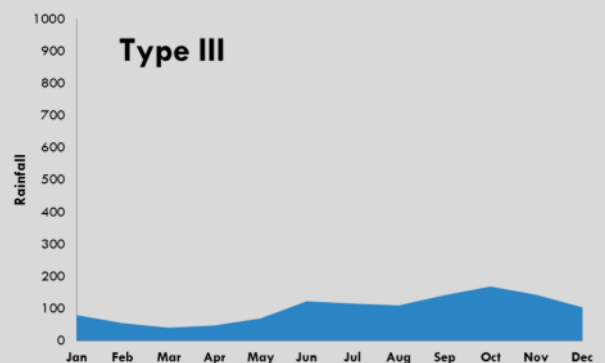
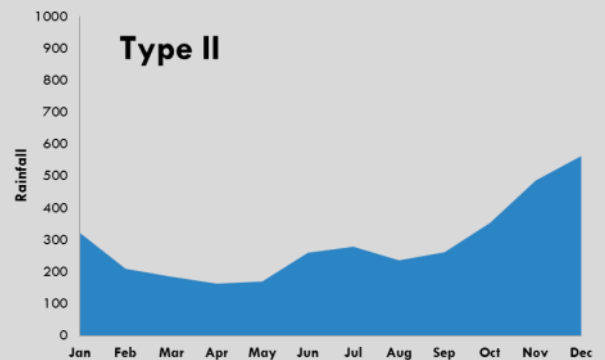
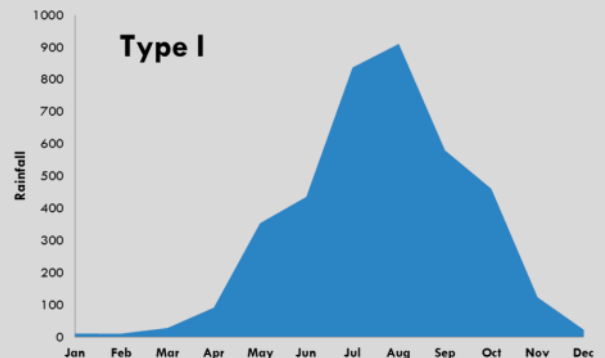
Climatology



Climate patterns in the Philippines are influenced by three key processes: the southwest monsoon, the northeast monsoon, and the El Niño Southern Oscillation which create four distinct climatic zones based on rainfall distribution:

- **Type I.** Predominantly located in the westernmost parts of the country, these regions have two pronounced seasons. The dry season generally occurs between November and April, and the wet season between May and October.
- **Type II.** These zones occur primarily along the eastern coast of the Philippines. They are characterised by a lack of a dry season but pronounced rainfall between November and April.
- **Type III.** Zones with Type III climate occur in the central-western part of the country. They have no pronounced seasons with a slightly dryer period between November and April.
- **Type IV.** These zones are located in the central-eastern part of the country and have equally distributed rainfall throughout the year.

Examples of rainfall climatology by climate type



Source: PAGASA, 2014

Trends in climate extremes



Trends in extreme weather events are difficult to determine, given the geographical complexity of the country.

There is no clear indication that extreme weather events are becoming more frequent over time as there is significant inter-decadal variability. However, recent

and anecdotal evidence suggests that cyclones are becoming more intense as shown by recent typhoons such as Washi (2011), Bopha (2012), Haiyan (2013) and Hagupit (2014)—all of which illustrated the devastating loss and damage that intense cyclones can have on food security and livelihoods.

The Philippines is highly susceptible to climate-related hazards



Climate



Affected population



Food security impact



Floods

Floods are linked to **typhoons and tropical depressions**, and can lead to **landslides**

On average, every year between **1.3 and 2.4 million people** are affected by floods

During the recent floods in Luzon (2009), households **depended on food assistance** for almost one third of their food. **Increases in the prices of vegetables** led to lower consumption of this food group among the poorest population



Drought

Major droughts are associated with **El Niño**

In years of severe drought, over **2 million people** are at risk

The most significant drought in recent years resulted from a strong El Niño event in 1997/1998. Given the timing of the drought conditions, **6.6 per cent of agricultural production** was lost



Typhoon

Typhoons are the most destructive weather-related event that affect the Philippines. In addition to **strong wind impact and storms surges**, typhoons increase **flood and landslide risk**

On average, **6 million people** are affected by typhoon every year but over **13 million are affected during severe typhoons**

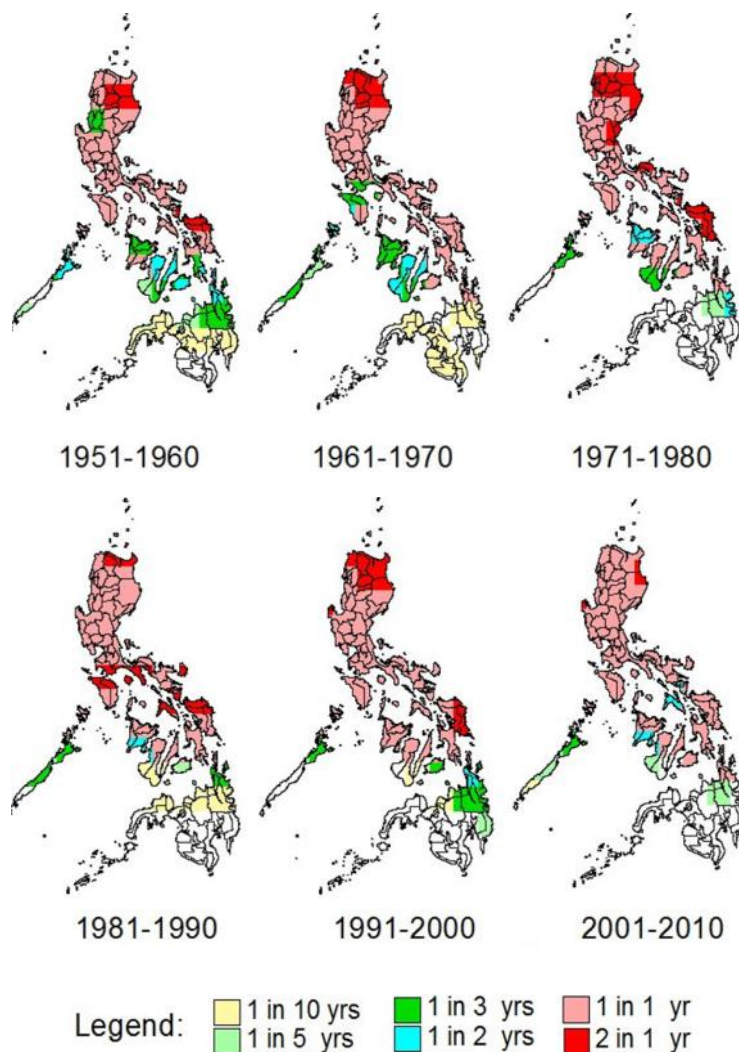
Typhoon Haiyan (2013) illustrated the devastating impact on typhoons on food security: in the most affected areas, **over half of the affected population reported significant reductions in the amount of food consumed**

Historical trends on tropical cyclone frequency over time reveals that the northern parts of the country are traditionally at higher risk. Tropical cyclones are much rarer in the southern parts of the country where they occur once or twice every ten years.

In recent years, there has been increasing concern about the southward movement of tropical cyclones to Mindanao as a result of strong typhoons—such as Bopha—making landfall in Mindanao. However, tropical cyclone climatology from 1950-2010 does not suggest such a trend. Instead, there is high inter-decadal variability in cyclone frequency.

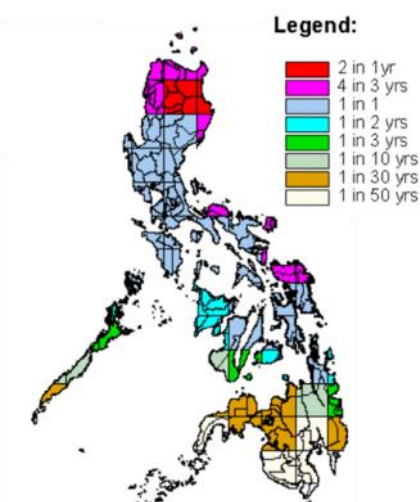
There is also no clear trend suggesting patterns in cyclone intensity, although climate projections suggest more intense storms resulting from warmer sea surface temperatures.

Tropical cyclone climatology in the Philippines, 1951-2010.



Source: Cinco, T.A., et al. (2011). *Updating Tropical Cyclone Climatology in the Philippines*.

Cyclone frequency



Storms are the most destructive natural hazard in the Philippines every year, with over twenty tropical cyclones affecting the country annually. Over **three quarters of all economic damages** from natural disasters in the period 1980-2014 come from storms, and over **four fifths of all people affected** by natural hazards in this period were affected by typhoons. The most exposed areas are located in the north of the country, where some municipalities receive one or two typhoons per year. Typhoon risk is lower in the south, where strong tropical cyclones occur at longer time intervals.

Source: Cinco et al. (2011)

Loss and damage in the Philippines

LOSS & DAMAGE

Every year, tropical storms have a devastating effect on livelihoods in the Philippines.

As populations grow and continue to settle in at-risk areas, and as climate-related hazards become more and more destructive, the potential for loss and damage continues to increase. Therefore, mechanisms to manage loss and damage associated are imperative.

Rural livelihoods are particularly affected by typhoons. Tropical storm Washi which passed through Cagayan de Oro and Iligan in December 2011 had significant effects on households that depend on farming livelihoods. Almost 60 percent of the affected population were farmers and reported that their main livelihood was severely affected.

Typhoon Bopha which made landfall in 2012 was also very destructive—particularly over Eastern Mindanao, with over 30 percent of the population reporting increases in use of negative coping strategies.

More recently, after Typhoon Haiyan, there were significant losses incurred in agriculture- and fishing-based livelihoods due to the loss of rice and other standing crops, including coconuts and sugarcane, directly within the path of the typhoon and damage to boats and fishing nets. The effect on income was also substantial: fisherfolk lost around 70 percent of their income while farmers lost 54 percent. Coconut farmers were especially

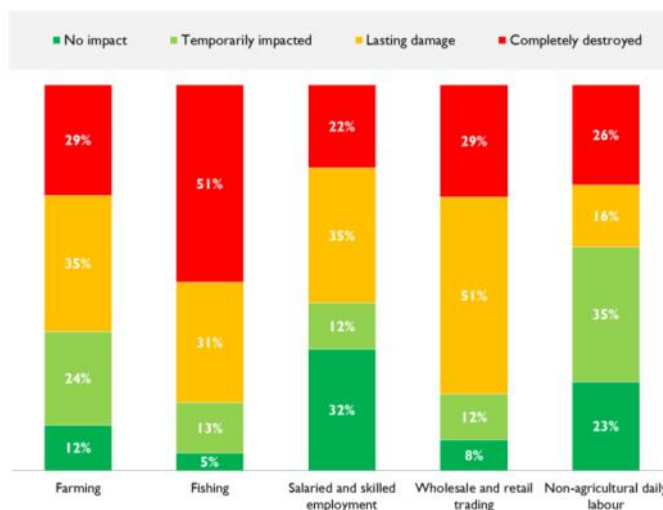
affected and it is estimated that it will take 7-10 years for newly planted coconut trees to be productive. This represents a significant loss in livelihood options for vulnerable groups.

During major typhoons such as Haiyan, fishing communities are also likely to be severely affected. In the aftermath of Haiyan, over half of all fishing communities reported that their livelihoods were completely destroyed, and almost one third reported that the damage to their livelihoods would be long-lasting.

Given the devastation associated with Haiyan, smaller-scale events such as Typhoons Rammason and Hagupit (both 2014) can undermine the resilience of the population and delay their ability to recover from the shock. This is an important consideration in the efforts to reduce livelihood losses and enhance resilience.

Impacts of Typhoon Haiyan on key livelihoods.

Source: MIRA II (2013)



Historically, rural-based livelihoods have been the most severely affected. It is these communities that should be targeted to better address the potential loss and damage associated with extreme weather events.

The National Economic and Development Authority (NEDA) warns that climate change may be the single most direct threat to achieving self-sufficiency in rice. Preliminary data highlights that almost three quarters of all estimated damage from natural hazards last year were in the farm sector, with rice being particularly affected. Typhoon Haiyan alone damaged about 600,000 hectares of agricultural lands, with an estimated 1.1 million metric tons of crops lost and over 33 million coconut trees flattened. The reduced production could result in higher dependence on rice imports. The Philippines is a rice importer, with imports

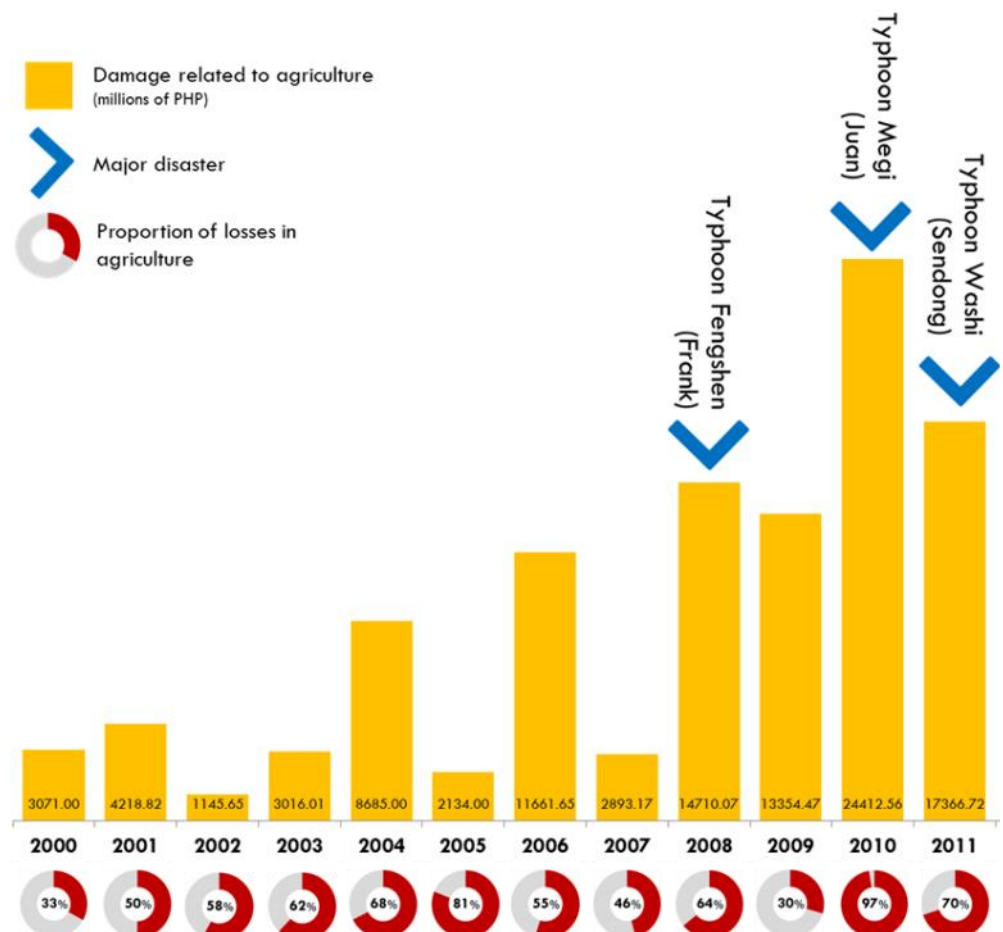
from 2.4 million tonnes in 2008 to 1 million tonnes in 2013. Given the reduced rice production due to Typhoon Haiyan, imports in 2014 have been projected to rise by 20 percent to 1.2 million tonnes.

As the natural hazards driving these damages are likely to increase in magnitude under climate change, there may be larger losses in the agriculture sector in the future.

Under this scenario, some livelihood activities may no longer be economically sustainable or feasible. Therefore it is important to ensure that rural livelihoods are resilient to the impacts of climate change based on the population's food security, poverty, and risk context.

Agriculture-related losses from climate-related events (data for 2012-2014 not yet available)

Source: National Disaster Risk Reduction and Management Council (2014)



The chart shows the amount of losses in agriculture resulting from natural disasters during the period 2000-2011. Years with a major Typhoon are highlighted with a blue marker. The proportion of losses in the agriculture sector compared to the total losses is shown by pie charts. The graphs show a trend of increasing losses in agriculture. Addressing this challenge will be increasingly important, especially as the Philippines aims to achieve self-sufficiency in rice production.

Future climate



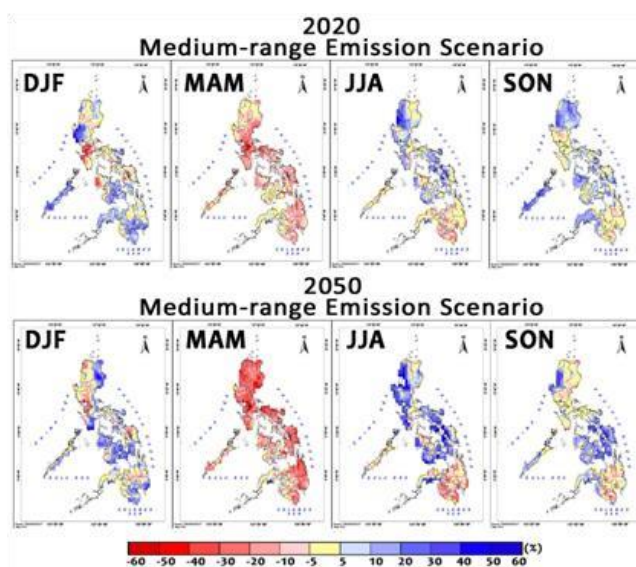
Future climate in the Philippines is likely to be characterised by four key trends:

- ✓ **Warmer temperatures**, especially in the summer months, exacerbating the risk of drought.
- ✓ **Increasingly variable rainfall**, with lower rainfall in the dry period (March-May) and higher rainfall in the wet seasons (June-August and September-November). This scenario would lead to higher drought risk in the dry period, and higher flood risk in the wet period. Moreover, the spatial distribution of rainfall is likely to change. A 60–100 percent increase in annual rainfall is projected for the Central Visayas and Southern Tagalog provinces and up to 11 percent reduction in annual average rainfall in Mindanao by 2050.
- ✓ **Less frequent but more intense typhoons**. Typhoons are expected to become more destructive under climate change, with the possibility of typhoons such as Haiyan becoming more common.

- ✓ **Sea level rise**. Sea levels are projected to rise by up to 50 cm by the end of the 21st century, with all coastal areas of the Philippines at risk.

In addition to these trends, El Niño events could exacerbate extreme weather and erratic climate patterns in the Philippines.

Projected rainfall changes in the Philippines suggest that rainfall will decline significantly in March-May. Source: PAGASA (2014)



Geographical overview of key climate change-related risks



Typhoons

Typhoon risk remains high, particularly in the north of the country which has historically been the most frequently affected region.

Climate change projections suggest increasing intensity of typhoons, which coupled with increased population growth and urbanization, can lead to catastrophic loss and damage.



Sea-level rise

Sea levels are projected to rise by up to 50 cm over the next few decades. Direct consequences of sea-level rise include destruction of low elevation coastal zones as well as coastal livelihoods (primarily fisheries). Indirectly, sea-level rise could also increase the impact of coastal surges caused by typhoons. The map shows low and medium elevation coastal zones (up to 20m above sea-level) which are likely to be increasingly affected. These areas are also very densely populated.



Drought

Climate projections suggest a decrease in rainfall in parts of Luzon and Mindanao during the dry season (March-May), which combined with higher temperatures can lead to increased drought risk. According to the index of agriculture and fishery statistics, these regions are predominantly agricultural, producing a significant amount of staple and cash crops, including rice, bananas, coconuts and pineapple. Drought conditions could reduce productivity of these crops and result in economic losses.



Floods

Under a climate change scenario, the wet season is expected to get wetter in most parts of the country. The largest increases in rainfall are predicted at the onset of the southwest monsoon (June to August) and particularly over the Visayas. Metro Manila is also expected to experience more extreme rainfall which can lead to major floods.

► Urban vulnerability:

Emerging challenges for food security

As the population of the Philippines becomes increasingly urbanized, food insecurity is increasingly becoming an urban problem. At present, urban households consume more calories than rural populations (2,086 in urban areas compared to 1,828 in rural settings) but concerns regarding food quality remain. Also, the ability of the poorest urban households to obtain sufficient food (either through own production or through purchase) is challenging given the difficulty to access markets, the high costs of transportation, and the erratic availability of employment.

The urban areas of the Philippines are among the most highly exposed to natural disasters. Manila and Davao are two of only three Asian cities with more than 750,000 inhabitants that rank in the top three deciles of frequency for at least three hazards: cyclones, floods, and earthquakes. Cebu ranks in the top three deciles globally for frequency of cyclones and floods. With a total population of

over 14 million in 2011, these three areas comprise the most heavily exposed combined urban population of any Asian country save India.

Smaller urban areas are also significant. As rural-urban migration catalyzes the growth of towns and peri-urban areas, smaller but more numerous urban agglomerations face significant risks as well. In 2010, 65 percent of urban households, or more than 29 million people, lived in cities with fewer than 500,000 people.

Wide geographic distribution of such cities increases the probability that a single hazard such as a Typhoon will strike one or more concentrated population centres where the food security status of the poor is already fragile due to reliance on markets for food, insecure land tenure and greater exposure to economic shocks.

While climatic events pose risks to the whole of urban areas, the precarious existence of informal settlers stands in stark contrast to that of other city dwellers. Particularly in Manila, informal settlements built along clogged waterways are often at odds with urban renewal programmes. The resulting cycle of eviction, relocation, and eventual illegal return of poor communities to these precarious locations reinforces a trend towards overcrowding and shoddy construction, resulting in increased risk to typhoons and flooding.



Photo: WFP/Blake Audsley/Philippines

Adapting to a new climate...

Recommended actions

Climate-related risk is one of the key obstacles to achieving food security in the Philippines. To address this growing challenge, the following actions are recommended:

Strengthen emergency and preparedness response capacity at all levels

With climate change, natural hazards such as floods, storms and droughts are likely to become more frequent, intense, and unpredictable. Investment in regional, national and local mechanisms for preparedness and response (early warning systems, logistical support, prepositioning) can help effectively anticipate and manage some of the impacts of climate risk.

GEOGRAPHIC FOCUS: primarily in the northern and central parts of the country

Support livelihood protection and diversification

Rural livelihoods will continue to be vulnerable to the impacts of floods, droughts and storms. In areas where extreme weather has short-term but significant effects on food security, livelihood protection through asset creation and safety nets should be prioritized. Some livelihood activities may not be feasible under future climate change due to shifting agroclimatic patterns—for these communities, options for livelihood diversification should be explored.

GEOGRAPHIC FOCUS: primarily in Mindanao and southern Luzon island, and in coastal areas

Manage loss and damage through innovative risk transfer mechanisms

Loss and damage associated with climate-related hazards are likely to increase. To manage increases in loss and damage, it will be important to scale up capacity to respond to disasters, support early recovery, and transfer risks. Disaster risk financing and insurance can be an effective mechanism for risk transfer—especially for the poorest communities. There are ongoing discussions for the establishment of a **Climate and Disaster Resiliency Fund** to ensure that hazard impacts are managed at the household level (by scaling up insurance and safety net access), at local level (by developing mandatory insurance for local governments), national (by proposing additional investment mechanisms) and at international level (by engaging in international partnerships) and to promote financial resilience in case of a major disaster.

GEOGRAPHIC FOCUS: throughout the country, depending on hazard experienced (focus should be given to Typhoon risk management in the northern and central parts of the country, flood risk management in the central parts of the country, and drought risk management in Mindanao and southern Luzon).

Philippines: Major Typhoons, 2005-2014

Every year, around 19 tropical cyclones enter the Philippine Area of Responsibility, with 6-9 making landfall. Below is a selection of the most destructive Typhoons in the last 10 years.

YEAR	AREAS AFFECTED	DAMAGE (PHP)
<i>Typhoon name (local name)</i>		
2005		
-		
2006		
Xangsane (Milenyo)	Luzon, Visayas	6.4 billion
Durian (Reming)	Luzon, Visayas	5.08 billion
2007		
-		
2008		
Halong (Cosme)	Luzon	4.71 billion
Fengshen (Frank)	Luzon, Visayas	1.35 billion
2009		
Ketsana (Ondoy)	Luzon	11 billion
Parma (Pepeng)	Northern Luzon	19 billion
2010		
Megi (Juan)	Luzon	8.22 billion
2011		
Aere (Bebeng)	Northeastern Luzon, Visayas	2.25 billion
Nock-ten (Juaning)	Eastern Visayas, Luzon	4.44 billion
Washi (Sendong)	Northern Mindanao, Visayas	2.07 billion
2012		
Bopha (Pablo)	Mindanao, Visayas, Luzon	42.2 billion
2013		
Nari (Santi)	Central Luzon	3.29 billion
Haiyan (Yolanda)	Visayas, Palawan	89.6 billion
2014		
Rammasun (Glenda)	Luzon	38.6 billion
Hagupit (Ruby)	Visayas, Southern Luzon	5.09 billion

Background image: NASA. Typhoon Haiyan at peak intensity on November 7, 2013.

Quick facts about the Philippines

Basic information

Land Area: 298,170 km²
Number of regions: 17 (2013)
Number of provinces: 81 (2013)
Number of municipalities: 1,491 (2013)
Number of barangays: 42,028 (2012)
Human Development Index: 0.654 (2012)
Human Development rank: 117/medium (2014)
Province with lowest HDI: Tawi-Tawi; 0.500 (2012)
Climate: tropical marine

Population

Total population: 100,617,630 (2014 est.)
Population growth rate: 1.84% (2013 est.)

Urbanisation

Urban population: 48.8% of total population (2013)
Rate of urbanisation: 2.16% annual rate of change (2010-2015)
Slum population as percentage of urban population: 41% (2009)

Economics

GDP (purchasing power parity): US\$694 billion (2014 est.)
GDP per capita (PPP): US\$6,985 (2014 est.)
Unemployment rate: 7% (2014 est.)

Poverty

Population below poverty line: 26.5% (2009 est.)
Population below US\$1 (PPP): 22.6% (2006 est.)

Agriculture

Contribution of agriculture to total GDP: 11.8% (2012 est.)
Total production of irrigated rice: 13,823,145 metric tons (2013)
Total production of rainfed rice: 4,616,261 metric tons (2013)
Total production of corn: 7,377,076 metric tons (2013)

Land use

Lands planted to temporary crops, proportion of total agricultural land: 50% (2002 est.)
Lands planted to permanent crops, proportion of total agricultural land: 44% (2002 est.)
Irrigated land: 18,790 square km (2010)

Education

Enrolment ratio in primary education: 92.1% (2008 est.)
School life expectancy: 11 years (2009)
Literacy rate: 95.6% (2011 est.)

Health and nutrition

Children under 5, stunting: 30.3% (2013)
Children under 5, wasting: 7.9% (2013)
Children under 5, underweight: 19.9% (2013)
Proportion of population using improved sanitation facilities (rural areas): 69% (2008)
Proportion of population using improved sanitation facilities (urban areas): 80% (2008)

Food Security Profile

A Profile of Food Security

			Food consumption		
			1	2	3
			Food energy available	Diet quality	Hunger
			Energy consumed per capita (kcal)	Share of energy derived from staples (%)	Percent of households who experienced hunger (self- rated)
Geography	1	Philippines	1957	62	6.3
	2	Rural	1828		
	3	Urban	2086		
	4	National Capital Region	2160		2.7
	5	Cordillera Administrative Region	1701		0.3
	6	Region I- Ilocos Region	1849		2.8
	7	Region II - Cagayan Valley	1723		3.5
	8	Region III - Central Luzon	1953		4.2
	9	Region IVA - Calabarzon	2228		3.8
	10	Region IVB - Mimaropa	1808		5.8
	11	Region V - Bicol	1861		9.5
	12	Region VI - Western Visayas	1887		6.6
	13	Region VII - Central Visayas	1813		8.1
	14	Region VIII - Eastern Visayas	1804		16.2
	15	Region IX - Zamboanga Peninsula	1984		9.3
	16	Region X - Northern Mindanao	1885		10.1
	17	Region XI - Davao	1909		6.4
	18	Region XII - Soccsksargen	1942		13
	19	Region XIII - Caraga	1895		11.7
	20	Autonomous Region in Muslim Mindanao	1879		4.9
Gender	21	Male headed households	1944		
	22	Female headed households	2014		

Economic vulnerability

4

5

Poverty (2012)	Share of total poor population (%)	Share of expenditure on food (%)	Number of 4Ps households	Share of 4Ps households (%)
22.3	100.0	42.8	3,938,964	100.0

47 (2009 est.)

55 (2009 est.)

3.8	1.9	36.5	212,309	5.4
22.6	1.6	40.8	61,482	1.6
16.7	3.7	45.3	189,677	4.8
19.8	3.7	49.4	96,242	2.4
12.2	5.6	43.7	262,117	6.7
11.2	6.0	40.6	292,975	7.4
28.4	3.7	46.4	174,795	4.4
34.1	9.6	49.0	361,190	9.2
24.7	8.8	44.4	299,986	7.6
28.8	8.8	44.5	249,401	6.3
37.2	7.9	45.8	256,285	6.5
36.9	5.9	49.0	272,412	6.9
35.6	7.4	43.8	245,321	6.2
28.6	5.9	47.6	201,173	5.1
37.5	8.0	48.2	219,167	5.6
34.1	4.2	47.5	168,220	4.3
46.9	7.8	59.8	376,212	9.6

52 (2009 est.)

47 (2009 est.)

Nutrition

6

7

8

Stunting rates	Wasting rates	Underweight
30.3	7.9	19.9

22.4	6.4	12.9
32.4	5.9	16.5
27.4	9.8	21.4
26.9	7.9	20.6
23.1	8.3	17.7
25.3	8.7	18.1
35.6	9.8	27.5
39.8	7.4	24.6
36.9	8.9	26.0
34.6	7.9	23.1
36.8	7.8	21.7
38.7	8.0	24.5
33.6	7.0	17.7
29.8	7.5	18.8
36.3	6.7	23.8
34.3	7.5	19.8
39.0	8.5	21.9

ABOUT C-ADAPT

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All photos: WFP/Krishna Krishnamurthy/Philippines unless otherwise stated



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