Typhoon Haiyan (Yolanda), Philippines (2013)

By Luke Pearson
geographyportal.co.uk
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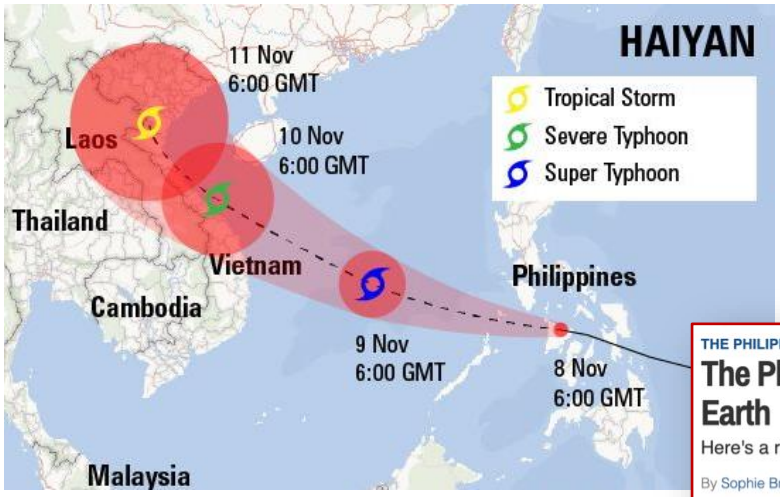
Topic: 3.1.5.5 Impacts and Responses as evidenced by at least **two contrasting Tropical Storm events.**



Background Information:
The Philippines is located around 10-15 degrees North of the equator, where sea surface temps are warm enough for the formation of tropical storm events. In 2013, **TIME magazine** wrote that it was the "most exposed country in the world to tropical storms." *[See below]*

THE PHILIPPINES

The Philippines Is the Most Storm-Exposed Country on Earth

Here's a rundown of just how bad the problem is

By Sophie Brown | Nov. 11, 2013

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How many storms on average strike the Philippines every year?

On average, eight or nine tropical storms make landfall in the Philippines each year, with another 10 entering Philippine waters. In 2013, only six storms have affected the country. The worst year was 1993, when 19 cyclones pummeled the coastline.

Tracking Haiyan:
Haiyan (or Yolanda as it's known in the Philippines) is the deadliest typhoon in PAGASA recorded history, although it wasn't the strongest nor the wettest.
On November 2 2013, a large low pressure area was first reported near Micronesia. This gradually grew to tropical depression stage by early November 3.
The JMA (Japanese Meteorological Agency) classified it as T.S. Haiyan a day later as strong winds brough the depression westerly toward the 7600 islands which make up the Philippine archipelago. As the storm entered the Philippine area of responsibility, on Nov 6 it became classified by PAGASA as Yolanda. It impacted lands in the East Visayas on the 8th before downgrading to a tropical storm as it approached North Vietnam and Laos a few days later.

PAGASA *(Philippine Atmospheric, Geophysical & Astronomical Services Administration)* has a 5-tier Tropical Storm Intensity Scale. It is broadly similar in concept to the Saffir Simpson Scale with different wind speeds (they start lower as this measures both tropical storms and stronger typhoons.)

Category	Sustained winds
Super Typhoon	≥119 knots ≥220 km/h
Typhoon	64–119 knots 118–220 km/h
Severe Tropical Storm	48–63 knots 89–117 km/h
Tropical Storm	34–47 knots 62–88 km/h
Tropical Depression	≤33 knots ≤61 km/h

Check out Typhoon Haiyan's trail of destruction with zoom.earth (click me!)

A* Deeper Dive:

Use this link to discover more about tracking and monitoring tropical storms.

Impacts of Haiyan:

Primary Impacts

- Struck close to Tacloban, a highly urbanised city on Leyte Island. Many dwellings were improper or 'shanty' settlements. 90% of the city, and nearly all of these were destroyed, up to 1 million houses were damaged.
- 6190 people lost their lives, many from being buried alive or washed out in a 5m storm surge, and nearly 30,000 were injured. Sadly, a large amount of these heeded the government's evacuation orders and filled a Stadium in Tacloban, which was subsequently flooded.
- 400mm of rain fell over a few days causing widespread flooding, further damaging airports, ports, and road infrastructure.
- The incurred cost of this disaster was around $10-12 Billion.
- 600,000 hectares of farmland was affected. Losses incurred from the agrarian economy and fishing (fleets of which were destroyed) totalled around $700 Million.

Cool Link Alert!
Click / scan here for an article from NPR has some really interesting satellite before/after comparisons of Tacloban City following the storm. It allows you to visualise the damage really well!

The 'SEEP Tracker' tells you whether an impact is either: Social Economic Environmental OR Political

Why is this important?
In many exam scenarios, especially longer 9 and 20 markers, you will be asked to talk about different impacts, both primary and secondary (happening after, as a result) but also in the context of which sphere is being impacted. For instance, you might get a question asking:
"Was the greater impact of Typhoon Haiyan social or economic in nature?" [9 marks]
This question could also include figures and graphs to help base your answer around. BUT it's super useful to know who's being affected!

Secondary Impacts

- Many ships ran aground of sunk, one such leading to 800,000L of oil spilled in valuable fishing waters.
- Around 4 million people were made homeless and 14.1 million affected.
- Subsequent landslides for weeks were reported due to flooding and heavy rain, this slows down relief efforts.
- Due to the high mortality rate, morgues were overwhelmed and so mass burials of thousands had to occur to limit spread of diseases.
- Flights and ferry services (which are critical for the islands' connectivity) were disrupted for weeks. Many remote communities waited excessive periods for aid supplies, resulting in additional deaths.
- Looting and violence was reported in Tacloban, although this was fairly quickly quashed by police.

Responses to Haiyan:

Remember! Like Impacts, responses can also vary across a wider spatial continuum, i.e., they begin before the disaster occurs (through prediction and preparation) and then throughout the immediate aftermath through to longer-term responses.

Before Landfall

The Philippines has a fairly well designed and robust disaster RMS (Risk Management System) due to the frequency of hazard events there. It is administered by the Government. Even so, it was not fully prepared for a disaster of this magnitude. Many issues surrounded PAGASA's delay in publishing storm hazard maps to local communities which they did have the data for. Subsequently, evacuation centres were mismanaged into future storm surge areas, where upon many people ended up losing their lives. Warnings are communicated to the public in daily bulletins, disseminated by the media. The president at the time, Benigno Aquino also appeared on TV to highlight the risks. Many locals are poorly educated and so lack some of the knowledge of specific terminology, such as 'Storm Surge.'

Click moi

A lot of information from the 'Prediction & Planning of Typhoon Haiyan' came from this really good paper by Humanitarian Practice Network

Immediate

Governmental and Non-Governmental (Aid) Agencies quickly readied supplies to be airlifted to communities which were severely impacted by the disaster. The Red Cross, for instance, distributed supplies of rice, canned food, cooking oil, salt and sugar which were prepared before Haiyan made landfall. They also supplied over 1.1 million people with clear water to limit the outbreak of diseases.

Both Canada and the USA deployed military aircraft to assist the Philippines with search and rescue. There was also significant efforts to build 1200 evacuation centres.

The United Kingdom also put in to the response effort, see the schematic below for more info on what we provided.

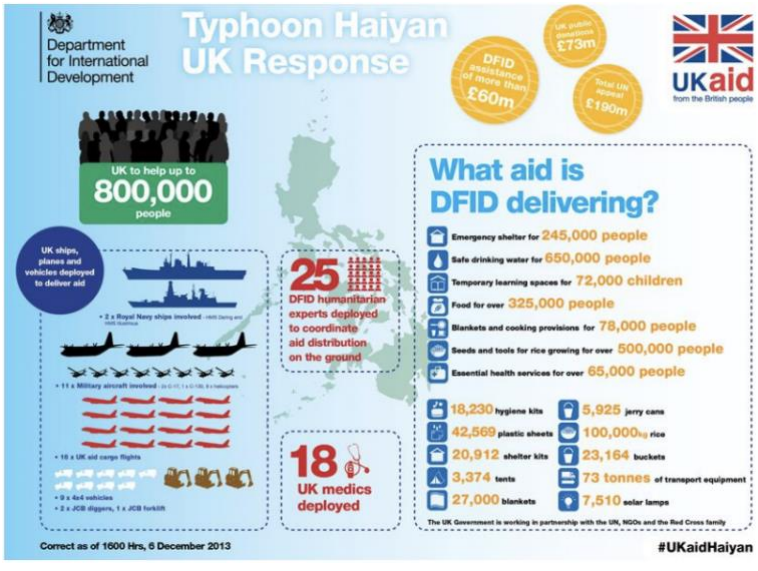
Longer Term

The Philippines is an LIC with a GDP of US$404 Billion and a GDP per capita of around US$2500 in 2013. It has received in the last decade 15,000 aid and development projects totalling at a value of around $4-5 Billion per year.

The UN Development Program set up cash for work programs paying villagers to clear debris and medical waste, providing livelihoods and work for those who lost it during the storm.

UNICEF and the WHO mass immunised thousands of children against polio and measles, this was a successful program which prevented many diseases.

The Government's Build Back Better scheme pledged 205,000 homes for those living coastally at risk of future typhoons. By 2016, only 1% of this target was hit, however.



Links & Resources:

What Case Studies can this be used with?

The Hazards Topic Overview on the Geography Portal states that we need 'impacts and responses as evidenced by at least two contrasting tropical storm events." This includes the impacts and responses of Haiyan and at least one more case study.

We have fact files from:

Hurricane Katrina (2005), USA
… as well as

Hurricane Matthew (2016), Haiti
Part of a wider face file on Multi-Hazardous Environments

Babes! This is a Geography Portal Resource; you can always click the link or scan the QR code to access it from wherever!

What if I want to practice an actual exam question?

We have you covered! The Geography Portal contains a huge bank of questions tailored to the AQA A-Level specification. Some come from past papers, some from teachers and examiners, all of them have detailed mark schemes which you can read through to figure out how well you did, where you could've added details or for your teacher to grade it.

A-Level Exam Question & Answer Bank

Top tip! When you access our big bank, just filter to this topic by typing into the search box: "Hazards" or "Storm"

Think About This Topic!

I have a few pieces of extra learning on natural hazards / tropical storms which haven't been mentioned above but I rate highly. The first one is a two-piece article from NASA's Earth Observatory which are really interesting. They consist of the **rising cost of natural disasters** and subsequent article on **population and natural disasters**. *(Click the links to access!)*

There's also this fantastic insider amateur documentary on YouTube called **'Surviving Super Typhoon Haiyan: the Storm that Broke a City.'**

Any Comments?

This is one of MANY Case Study Fact Files available on the Geography Portal. The UK's best free resource for Geography A-Level students. We have a really great network and are always happy to answer any questions, comments or notes you may have on the subject.

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