

Situational Overview:

Key figures:

- > 14.1 million affected people (4.8m under the poverty threshold¹)
- > 4.1 million displaced
- > 1.1 million damaged houses (548,793 destroyed)
- > 6,190 people dead
- > 1,785 people missing²
- > The Typhoon impacted 9 regions, 44 provinces and nearly 600 municipalities, of which 171 municipalities are located within 50 km on each side of the path of the typhoon.

Mass displacement:

- > Of the 4.1 million displaced, only 2% are living in evacuation sites. 98% are living elsewhere – mostly with host families.³
- > Nearly all of those displaced are concentrated in the regions of Western and Eastern Visayas
- > 381 evacuation centres are open, providing temporary shelter to 101,527 people⁴ - predominantly from the poorest segments of the population and those most severely impacted.
- > The overwhelming majority of IDPs were living outside such facilities: as of 24 December 2013, 3,993,753 displaced people are living outside evacuation centres, most of them (2,431,952) in all provinces of the Region VI Western Visayas.

Country environmental profile:

- > **Climate:** tropical marine climate, dry season is December – May and wet season June – December.
- > **Natural resources:** Marine and coastal resources yield US\$ 3.5 billion annually in goods and services. The country's mineral, oil, gas and geothermal potential are also significant.
- > In areas most heavily affected by Typhoon Yolanda, industry comprises 50% of the **economy**, while agriculture and services comprise 33% and 16% respectively.⁵
- > In **rural areas** affected by the typhoon, **fishing and agriculture** are primary sources of income, the former along the coast (15%) and the latter further inland (45%). In urban areas, salaried and skilled employment make up 28%, while daily labour and wholesale/retail trade make up 25% and 15% respectively.⁶
- > **Major environmental issues:** deforestation (only 3% of original forest cover left), loss of mangroves (only 36% of 1900 levels), decline of fishing stocks and biodiversity and pollution of groundwater, rivers, lakes, and coastal areas.⁷

Typhoon Haiyan/Yolanda and the environment:

¹ ACAPS Secondary Data Report, January 2014, p.12

² All key figures from OCHA Situation Report No. 31, 10 January 2014, p1, unless otherwise stated.

³ OCHA Humanitarian Snapshot, 6 January 2014

⁴ *ibid.* p.16

⁵ ACAPS Secondary Data Report, January 2014, p.28

⁶ *ibid.*, p.41

⁷ Environmental Problems in the Philippines, WWF Philippines country profile

- > In response to the typhoon the Joint UNEP/OCHA Environment Unit immediately deployed an UNDAC environment expert to assess resulting environmental hazards.
- > **A major oil spill** occurred in Estancia, Iloilo Province when a power barge ran ashore after it broke loose at the height of the typhoon. From 21 to 23 November, the UNDAC environmental emergencies expert undertook a joint initial assessment with the Environmental Management Bureau of Iloilo and WHO. It was estimated that around 600,000 litres of bunker oil had spilled and the barge was still leaking at the time. Most of the oil had washed ashore and contaminated a one-kilometre-stretch of Estancia's coastline and oiling was reported on mangroves and beaches up to 10 km downstream. In response to a request by the Environmental Management Bureau of Iloilo province, an oil spill expert was deployed through the Joint UNEP/OCHA Environment Unit's rapid response procedures in partnership with the European Union's Civil Protection mechanism to support the management of the clean-up operations until end of December 2013.
- > Following a request from OCHA Philippines, an **Environmental Field Adviser** is being deployed (16 January) for 6 months from the Swedish Civil Contingencies Agency (MSB) through the OCHA Stand-by Partnership Programme. The adviser will support the clusters in identifying and addressing humanitarian issues that link with environmental aspects and will receive technical backstopping from EES. In order to support the resilience of the population and in line with the 'do no harm' approach, the Environmental Field Adviser will provide practical advice on how to integrate environmental considerations into humanitarian action. The environmental impacts of disasters exacerbate vulnerability, and threaten lives and livelihoods. By promoting environmentally resilient humanitarian programming, the overall quality and effectiveness of humanitarian action will be enhanced.
- > The ACAPS secondary data review notes **a lack of data on the environmental impact** of the typhoon in assessments and activity reports.
- > There is a risk of **landslides and severe erosion** one or two years after the typhoon due to severely damaged vegetation in mountainous areas.
- > **Impacts on marine life and nature conservation** areas, including mangroves, are as yet unknown.
- > One of the **largest environmental threats** after the storm was the quantity of **debris** left behind, some of it potentially hazardous (e.g. electronic waste or industrial chemicals)

Main Clusters with environmental links

1. Shelter
2. Early recovery & livelihoods
3. Food security & agriculture
4. WASH

1. SHELTER (and energy)

Situational Overview:

- > The typhoon damaged **1,140,332 houses** of which almost half were totally destroyed, mostly in Eastern Visayas and Western Visayas⁸. To date, shelter continues to be a major concern across affected areas and **shelter is seriously and disproportionately underfunded**: So far only 12 of the 33 projects in the Strategic Response Plan's shelter section have received funding.
- > There is a lack of adequate transitional and relocation sites.
- > **4.1 million people were displaced**. Displacement is not only linked to damaged housing, but also to community social structures that have been significantly changed as a result of high mortality and migration patterns.

⁸ ACAPS Secondary Data Report, January 2014, p.82

- > Most affected households have returned to rebuild or repair their houses.
- > **Support for self-recovery and sustainable solutions** that will enhance community resilience is now a priority for the shelter sector. This includes providing building materials, tools, relocation support and livelihoods support.
- > There are still **high numbers of IDPs** in three main types of temporary settlements:
 - > **Evacuation centres:** As of 2 January 2014, 101,527 IDPs were living in evacuation centres⁹. Pre-existing buildings assigned to accommodate displaced families since the onset of a disaster, e.g. schools, covered courts, gymnasiums, barangay halls, health centres and private buildings. Low funding for recovery shelter and limited transitional settlement options are prolonging the stay of displaced people in evacuation centres.
 - > **Transitional sites:** Sites established to temporarily host families facing displacement for more than a month and typically awaiting permanent relocation. Families are usually transferred from evacuation centres to these sites. Transitional sites host families in tents, bunkhouses or alternative transitional sites. These are increasing. More sustainable and permanent housing solutions are being sought for an estimated 60,000 households.¹⁰
 - > **Spontaneous settlements:** Displaced families who live collectively outside of government-designated evacuation centres or transitional sites. These families normally stay in open spaces in makeshift shelters on the roadside or near their homes and communities.
- > Most of the rural population is landless and more than one third of the urban population lives in informal settlements¹¹.

Building back better & no-build zones

- > There is the need for clear guidance and monitoring of minimum standards to ensure rebuilt homes are **resilient to natural hazards** and to **avoid recreating the same conditions of pre-typhoon vulnerability** and exposure.
- > Much of the affected population traditionally live in sub-standard houses made from lighter housing materials and do not have the means for self-recovery or capacity to buy materials and rebuild their houses. There is the need to support building back better for these families who risk becoming more vulnerable and falling into more severe levels of poverty if their housing is not repaired sufficiently to withstand the impact of the next natural disaster.
- > There is the need to provide incremental support for those who have 'built back worse' to increase resilience to natural hazards (cross-bracing, hurricane straps, sunken footings).
- > There is a need to ensure that IDPs do not shelter in high-risk areas.
- > **No-build zones on coastlines** are planned by the Government to ensure safe relocation and protect the population against the effects of new typhoons. The declaration of no-build zones may affect mobility behavior, as large, vulnerable groups will no longer be able to return to their original areas.
- > Land tenure issues should be resolved, in order to encourage greater longer-term homeowner investment into disaster resilient infrastructure (flood barriers, wind breaks etc.).

Construction materials

- > The main types of **construction materials** in the Philippines are concrete, brick and stone (37%), strong wood (21%), wood (20%), and light materials such as bamboo, sawali, cogon and nipa (20%).¹²
- > In the areas most affected by the typhoon, the type of construction materials used were generally lighter. The number of houses built out of concrete, brick and stone is only at 30% and those constructed with

⁹ ACAPS Secondary Data Report, January 2014, p.17

¹⁰ OCHA Philippines Situation Report No. 31, 10 January 2014, p.2

¹¹ ACAPS Secondary Data Report, January 2014, p.82

¹² *ibid*, p.81

half strong wood were at 20%. However, houses built with lighter materials such as bamboo, sawali, cogon and nipa were at 30% and wooden houses at 21%.¹³

- > **Roofing materials:** 75% of the households across the country use corrugated galvanised iron (CGI). The second commonly used material (16%) is caogon, nipa or anahaw which are all local natural resources (leaves and grass).¹⁴
- > Apart from timber frame and CGI sheets, a second type of roofing solution such as bamboo and nipa shingles has been explored for areas where roofs were made from bamboo before the typhoon. The shelter sector estimates that more CGI needs to be imported.
- > The Shelter Cluster is supporting a pilot project in Capiz Province (led by the Early Recovery Cluster and the Provincial Coconut Authority) that focuses on **salvaging fallen trees**. Shelter Cluster partners will receive 40 per cent of the lumber from this project.

Energy

- > As of 2011, 87% of households used electricity as the main source of energy. Other types of sources are fuel wood (54%), charcoal (36%), liquefied petroleum gas (LPG) (41%), and kerosene (34%).¹⁵
- > In 2011, 74% of households used electricity for lighting, approximately the same proportion as in 2004. The use of kerosene for lighting purposes decreased from 43% (2004) to 30% (2011). Wood fuel is the main source of energy for cooking (54%), followed by LPG (41%), charcoal (35%), and biomass residues (20%). Wood fuel is also used in 20% of houses for heating water for bathing. Next to wood fuel, charcoal (11%) and biomass residues (6%) are used for the same purpose (NSO 2011)¹⁶.

Environmental issues and concerns:

- > The ACAPS review has identified an **information gap relating to the impact of the demand for housing and roofing material on the environment** – this should be investigated.
- > **Locations of reconstruction** should take into account the natural environment and not contribute to further depletion of forest cover or the marine environment. They should also take **geo-hazards** into consideration, such as landslides. There may be the need to update **hazard maps** due to the impact of the typhoon.
- > **Recycling of waste/debris for reconstruction** of homes is planned (OCHA Strategic Response Plan). There will need to be coordination between the Shelter Cluster and the other Clusters and relevant authorities to ensure the appropriate recycling of waste/debris (e.g. coconut lumber).
- > **Use of environmentally friendly shelter materials:** Locally available shelter material is recommended provided that it is not impacting negatively on the local environment – for example using recycled coconut lumber. The use of relatively fast growing bamboo and other possible natural sources of construction materials including recycled material from debris should be considered. Attempt to find local solutions for the lack of CGI before importing.
- > Shelter plans should consider the local implications of mass production of shelter material, specifically considering use of wood. **Sustainable sources of wood** should be used to prevent further illegal logging, leading to deforestation and soil erosion, with further implications for livelihoods.
- > **Energy:** There is no mention of supporting fuel-efficient energy strategies for IDPs in current Strategic Response Planning. Wood fuel is the main source for cooking. Demand on wood for reconstruction will have an impact on supply, creating a need for alternative energy strategies. Alternatives such as Fuel-Efficient Stoves to reduce use of wood, and solar panels for lighting and water pumps should be

¹³ *ibid*, p.81

¹⁴ *ibid*, p.81

¹⁵ ACAPS Secondary Data Report, January 2014, p.82

¹⁶ *ibid*, p.82

promoted. Supporting markets with alternative technologies could help a more widespread adoption.

- > **An environmental advisor** was deployed with the Shelter Cluster until early January. This person has not yet been replaced.
- > **“The Environmental Self-assessment Checklist”** developed by the Shelter Cluster helps agencies to make environmentally informed decisions when selecting sites for reconstruction:
https://www.sheltercluster.org/Asia/Philippines/Typhoon%20Haiyan%202013/Documents/Shelter_Environmental_Self-assessments_v1.pdf

2. LIVELIHOODS & EARLY RECOVERY

Situational Overview:

- > **Some 5.9 million workers lost their livelihoods** and their income sources were destroyed, lost or disrupted due to the typhoon. Cluster activities are targeting 400,000 of these people.¹⁷
- > On average, incomes in all affected employment sectors have been halved. Damage to livelihoods has been significant, resulting not only in limited income sources becoming further diminished, but also in households losing one or more of their food sources. To meet their critical needs some families have resorted to a number of negative coping strategies such as the sale of remaining assets, reduced food consumption, family separation (sending family members elsewhere for work), child labour or begging.¹⁸
- > Households with mixed but vulnerable livelihoods (agriculture, fishing, trading etc.) have suffered damages even in their secondary and tertiary sources of income, particularly in coastal areas, as well as in major urban centers on the coast.

Livelihoods profile of the affected area:

- > In areas most heavily affected by Typhoon Yolanda, industry comprises 50% of the economy, while agriculture and services comprise 33% and 16% respectively.¹⁹
- > In **rural areas** affected by the typhoon, **fishing and agriculture** are primary sources of income, the former along the coast (15%) and the latter further inland (45%). In urban areas, salaried and skilled employment make up 28%, while daily labour and wholesale/retail trade make up 25% and 15% respectively.²⁰
- > The Visayas is one of the **major fishing grounds** in the Philippines. Northern Iloilo and Capiz on Northern Panay Island are the major contributors to fisheries production at 35% and 26% respectively. Of the total fisheries production in Western Visayas, 68% comes from capture fisheries and 32% from aquaculture production.²¹
- > In the affected areas, rice is the most commonly cultivated **crop**, followed by coconuts, bananas and vegetables. Other crops include abaca, cacao, cassava, coffee, corn, mango, sugarcane, sweet potato (camote), ubi, and legumes (peanuts, mung beans) that are planted on a smaller, sometimes marginal, scale.
- > **Livelihoods are often mixed**, with many households maintaining secondary or tertiary livelihoods and more than one income source. These different activities increase income diversity and reduce vulnerability to shocks. However, they are also complementary, when one activity has a lean period, another takes over. Thus, the loss of fishery assets impacts the productivity of other activities.

¹⁷ OCHA Philippines Situation Report No. 31, 10 January 2014, p3

¹⁸ ACAPS Secondary Data Report, January 2014, p.75

¹⁹ *ibid*, p.28

²⁰ *ibid*, p.41

²¹ *ibid*, p.41

Early recovery & Livelihoods cluster activities to date:

- > 57% of the cluster's funded activities are complete, 22% are ongoing and 21% planned.
- > Cluster activities are engaging some 72,000 beneficiaries, mainly in clearing debris.
- > Livelihoods activities include skills training for re-employment in Cebu Province, micro-enterprise development for small-scale shopkeepers in northern Cebu and other activities in Leyte.
- > Livelihoods activities for the worst-affected people need to be restarted and diversified. The Strategic Response Plan has highlighted the importance of rapidly integrating sustainable solutions to combat the underlying causes of the disaster.
- > Cash transfer programmes are beginning.

Environmental links and concerns:

- > **The environment is inextricably linked to the livelihoods** of affected communities, in particular those who rely on fishing and agriculture. There is the need to **consider the environment across all livelihoods interventions**.
- > **Natural resources** run the risk of depletion if the environment is not considered in humanitarian interventions, risking major impacts on livelihoods. For example, the potential impact of the over-provision of fishing boats on fishing stocks.
- > **Interventions to diversify livelihoods** should carefully consider the environment.
- > **Negative coping strategies** could have environmental impacts and, for example, lead to the reduction of future agricultural productivity. These should be considered in the planning of livelihoods interventions.
- > Early Recovery & Livelihoods Cluster aim: **Innovative and environmentally friendly waste management will promote debris recycling** for reconstruction of shelters and community assets. Links will need to be made with the Shelter, Food Security, Health, Education Clusters and other relevant authorities to ensure this happens in support of local government.
- > Environmental activities could be **integrated into cash for work schemes**, such as tree planting, camp clean-up and environmental rehabilitation.
- > **Livelihoods of indigenous communities** may have been impacted by downed trees in the uplands. No systematic surveys have been conducted to determine the extent of windblown trees in natural forests and upland areas. Although deep-rooted natural forest trees are more resistant to wind, given the strength of the Typhoon Yolanda winds, it can be expected that a fair number of trees in upland forests and plantations were downed where direct exposure to the winds was greatest. Further assessment is needed.

3. FOOD SECURITY & AGRICULTURE

Situational overview:

- > **Over 29% of the typhoon affected population remains food insecure** and dependent on food assistance. Most humanitarian assistance (food included) has focused on coastal areas, leaving inland and remote areas largely underserved.²²
- > The food security & agriculture cluster will target 3 million people, or 54% of the 5.6 million people estimated by the government to be in some need of food assistance and/or agricultural support.²³

²² ACAPS Secondary Data Report, January 2014, p.40

²³ OCHA Philippines Strategic Response Plan, December 2013, p.43

- > The most **critically food insecure are typically small farmers and fisher folk** living closest to the center of the storm's path, near coastal areas having experienced high storm surge, and with limited resources and coping mechanisms to meet their immediate needs until livelihoods can be rebuilt.
- > The remainder of people deemed to be in greatest need will be assisted primarily through large-scale, government-led food security interventions and traditional safety-nets.
- > As the typhoon had an extraordinarily severe impact on the region's agricultural and aquaculture infrastructure, the cluster will also prioritise the **immediate re-provision of or access to essential agricultural tools** and inputs and the rehabilitation of critical infrastructure
- > **Up to 450,000 farmers and fishing households** were directly affected, especially in coastal areas. Destruction of houses and infrastructure, including irrigation facilities, resulted in losses of rice, paddy, sugarcane, coconut crops and fresh vegetables, as well as livestock, poultry and fisheries and most food and seed stocks as traditionally houses are also used for storing such resources²⁴.
- > **Wage labourers** engaged in downstream agricultural and livestock sectors such as rice milling and feed milling have also been severely affected as a result of **damages in plantations and paddy fields**.
- > **Small and local traders (mostly women)** who relied on local agricultural or fishing have suffered a significant economic blow.

Agriculture

- > **The agricultural sector was heavily damaged** (including crop areas, infrastructure, irrigation systems, equipment and tools, seed stock etc.). In Region VIII Eastern Visayas alone, around 800,000 MT of crop were destroyed, amounting to 80% of the total tonnage of crops destroyed.²⁵
- > In December 2013, 29% of farming households reported that their livelihoods were completely destroyed.²⁶
- > While rice was largely harvested just before Yolanda hit, the destruction of seed stocks, the damage caused to cropland and the accumulation of debris on agricultural lands will have an impact on subsequent harvests.
- > **Livelihoods support could enable normal harvest levels** for March/April 2014 if it is done quickly (via agricultural inputs, farmland and the clearance of irrigation canals before the end of the planting season in Dec-Jan). If this does not happen, agricultural households are likely to become more dependent on food assistance and the earliest recovery would be with the next harvest in October/November 2014.
- > The easternmost parts of Samar, parts of southern Leyte, and Western Panay Island showed a **higher reliance on 'emergency' or 'crisis' livelihood coping strategies**. Such strategies could be irreversible and lead to a reduction in future productivity, e.g. selling productive assets, removing children from education, and begging.²⁷
- > **Principal crops** in the most badly **affected** areas of Regions VI, VII, VIII were coconut (73% of crop area), palay (16% of crop area), and corn (4% of crop area).²⁸ The most significant damage was to **coconut**, where damage was recorded over a wide area on 441,517 hectares, of which 161,400 hectares is considered totally damaged. Coconut plantations are particularly important in the affected areas. In Leyte and Villaba municipalities alone (North Leyte Province), a million coconut trees are estimated to have been destroyed. If the north of the province is included, the figures could be as high as three million trees, which impacts significantly on farmers dealing with the production of nuts, copra, the accompanying milk, and also leaves, lumber etc. A coconut sapling requires six years to start bearing fruit and a further two years to reach full production.
- > The main losses for inland communities were reported on standing annual crops and plantation crops, mainly coconuts in Samar and Leyte Island and sugarcane mainly in Panay and Cebu Island. This is

²⁴ ACAPS Secondary Data Report, January 2014, p.52

²⁵ *ibid*, p.50

²⁶ *ibid*, p.50

²⁷ *ibid*, p.54

²⁸ *ibid*, p.50

followed by damage to livestock assets and to a lower degree to farm machinery, damages to agriculture land and post-harvest workplaces or factories.

- > **Alternative medium term livelihoods restoration activities** should be explored, especially for communities in Region VIII directly and indirectly involved in coconut production.
- > Coconut and mango farmers may look at increased intercropping or cultivating alternative crops such as corn, cassava, vegetables which require far shorter seed and harvest cycles, but this depends on the absence of land tenure disputes and soil type.

Fishing and aquaculture²⁹

Situational overview:

- > **Overfishing** has been a major concern in the Philippines in the past year, specifically in the coastal areas around Panay Island, Leyte and Eastern Samar. According to the Asian Development Bank there has been a drop of 90% in the quantity of marine organisms that can be trawled in some traditional fishing areas of the Philippines³⁰.
- > Coastal communities engage in **aquaculture**, especially on Panay Island (e.g. milkfish in ponds or finfish in cages, oyster, crab or shrimp farms, as well as seaweed cultivation). Some fishers use traps, having up to 10 traps per household.
- > Before Typhoon Yolanda there were about 1,500 **commercial fishing** vessels in the Visayas regions and 150,000 small 'municipal' vessels or bancas, of which 50,000 were motorized³¹.
- > The **150,000 small boat fishers are especially economically vulnerable**, depending on their daily catch, which is sold immediately, to meet basic living needs (FAO 2013).

Impact on fishing communities³²:

- > **Damages in the fishing sector are significant.** The fisher folk, fish traders and processors, who are predominantly women, have all been affected.
- > 74% of fishing communities indicated their main income source had been severely affected by the typhoon.³³
- > The Bureau of Fisheries and Aquatic Resources estimates 146,748 fishermen and 21 of the country's 72 fishing provinces were affected by typhoon Yolanda.³⁴
- > **Typhoon damage to the fisheries sector** can be classified into four major impacts:
 1. **Damage to fishing boats or complete destruction of fishing boats.** Nearly all boats were destroyed. An estimated 21,000 fisher families lost fishing capacity due to damaged or lost boats.
 2. **Loss of fishing gears and mariculture assets** such as seaweed farms and fish cages. E.g. seaweed farms and stocks, fish cages and stocks, destroyed fishing gears and set traps.
 3. **Damage to aquaculture structures**, cultured stocks of either finfish (mainly Milkfish) or shrimps in inundated fishponds, disruption in production cycles due to damaged fishpond dikes, sluice gates, water supply canals and pumps; destruction of oyster farms (rafts or stakes where oysters spats from the wild are collected) and destroyed sea-based fish pens or fish corals.
 4. **Destroyed fisher houses.** Storm surges have destroyed fragile fisher houses in almost all coastal

²⁹ See ACAPS report page 43 for more details on fishing issues.

³⁰ Environmental Problems in the Philippines, WWF Philippines country profile

³¹ ACAPS Secondary Data Report, January 2014, p.43

³² *ibid*, p.48

³³ *ibid*, p.40

³⁴ *ibid*, p.49

areas directly in the path of the typhoon.

- > The impact of the typhoon on livelihoods also affects **women** who earn a living through fish processing and marketing activities. Especially of concern are seaweed fisher folk who are predominantly female.
- > **supplies in the affected regions have decreased by 30%**. Sales have decreased significantly and orders for replenishment are facing delays. Lead times for deliveries are long and transportation costs have gone up. Cold storage systems are scarce; storage capacity is low and carries high security risks.
- > Due to the storm surge, **fishing and pisciculture** (fish and seaweed) **were the most badly affected sectors along the coastal areas** including Eastern and Western Samar, Leyte, and Iloilo. Further inland, significant damage encompassed parts of Cebu, Capiz, Iloilo, Aklan and Palawan
- > In shallow waters, the force of the typhoon severely damaged coral reefs, which sustain marine ecosystems.

The **oil spill** in the vicinity of Estancia (Iloilo) affected shallow-water fishing, obliging fisher folk to trawl their nets further offshore. This increases expenses, and when coupled with lower demand (reduced purchasing power) and challenges with refrigeration (lack of electricity), risks further stunting recovery investments.

Environmental issues and concerns

- > **Overfishing** was a serious concern before the disaster. Livelihoods initiatives should not exacerbate this. A lesson learned from the Tsunami in 2006 is that agencies provided more fishing boats than had been lost, even where over-fishing had previously been a concern, causing severe depletion of fish stocks and faltering livelihoods.
- > **Preventing illegal logging when replacing boats:** The Department of Environment and Natural Resources has placed stringent restrictions on the logging of Red Lawa'an, but illegal logging still occurs. For small boats and some medium boats, particularly in Panay, wood can be sourced locally including Tipolo and Jimoline. If sourcing locally, boat owners buy the log directly from the land owner. Legally logged hardwoods can also be purchased in some wholesale/retail or lumber dealers in both Panay and Leyte, although this tends to be more expensive, or to be less preferred types of wood.
- > **Encouraging and supporting diversified agriculture and fisheries production systems** will increase resilience, enhance food security and nutrition at the household level while also generating a higher household income.
- > **Mangroves** in the Philippines have suffered from coastal development, notably **at the hands of the aquaculture industry**. In the Philippines, aquaculture has reduced mangrove stands to only 36% of 1900 levels.³⁵ Interventions related to aquaculture should ensure a do no harm approach to the already fragile ecosystem.
- > The possible medium to long term effect of the oil spill in Estancia, Iloilo on the marine environment, mangroves and fisheries needs to be assessed.

WASH

Water

Situational overview:

- > The Typhoon left the majority of the affected population with limited access to safe drinking water.
- > **Water supply damage and contamination:** Many water systems are damaged or destroyed, leading to threats of disease outbreak. During the typhoon over half of the surface resources and half the groundwater was contaminated by the discharge, leaching and infiltration of polluted waters from industry activities, agriculture chemicals, domestic waste and septic systems³⁶.

³⁵ Environmental Problems in the Philippines, WWF Philippines country profile

³⁶ ACAPS Secondary Data Report, January 2014, p.87

- > There are affected people whose water supply systems are still disturbed by the **storm surge**, especially those communities with flooded boreholes and wells who are relying on unprotected sources of water.
- > The storm surge mainly affected the coastal areas and contributed to the **flooding and overflowing of septic tanks that contaminated surrounding waters**.
- > Strong winds and flying objects caused damage in both the coastal and inland areas, and affected the energy and water supply structures. In some cases, broken pipes led to the **infiltration of polluted water into the water systems**.

Water background³⁷:

- > Country-wide **water supplies are generally sufficient** to meet the needs of the local population. However, the **quality of water is not good** across much of the country.
- > Only a third of rivers are able to provide safe drinking water. **Two thirds are polluted** by human waste, agricultural chemicals, animal and industrial waste.
- > **Quality of groundwater is contaminated** mainly by agrochemical, industrial and animal waste, infiltration from septic systems and urban related pollution.³⁸
- > In 2011, an estimated 92% of the population had access to safe drinking water. Urban areas predominantly rely on piped water (61%). Piped water networks systems have been extended across the country in the last decade, particularly into rural areas. However, in rural areas 67% use other water sources (mainly protected wells, springs and boreholes and rainwater), whose design adequately protects the water from outside contamination.

Disaster Waste Management (DWM):

Situational Overview

- > The safe management of DWM and identifying and using recyclable material (e.g. for shelter use) is a massive challenge.
- > A DWM expert (MSB Sweden) was deployed for 3 weeks at the request of the Early Recovery cluster in response to the earthquake in Bohol of 15 October 2013 and also covered typhoon affected area in Northern Cebu. A 4-person team of DWM experts is now being deployed to all the hubs through the Early Recovery cluster.
- > Brief DWM guidelines (two-pagers with pictograms) were disseminated in English, Tagalog and Cebuano by the Joint UNEP/OCHA Environment Unit.

Environmental issues and concerns

- > **Over extraction of groundwater is reducing water levels**, drying up natural wells and springs and causing salt contamination in freshwater aquifers in some coastal areas. A disruption of the hydrological balance and the consequent shortage of water is largely due to high rates of deforestation and poor land-use practices.
- > In storm surge areas there is the possibility of **contamination of shallow aquifers** due to hazardous waste - constant monitoring is needed. particularly in relation to the use of hand pumps from shallow aquifers in affected areas.
- > **Inadequate waste management systems and polluted surface and groundwater** is an information gap identified by ACAPS review that needs further consideration.

³⁷ All statistics on water are from ACAPS Secondary Data Report, January 2014

³⁸ ACAPS Secondary Data Report, January 2014, p.87

- > The Philippines has a history of **poor waste management**. For example, only about 10% of sewage in the Philippines is treated or disposed of in an environmentally sound manner.³⁹ Recovery solutions should factor in DWM techniques that do not cause or exacerbate health or environmental issues.
- > **Mismanagement of waste has serious environmental consequences**: ground and surface water contamination, local flooding, air pollution, exposure to toxins, and spread of disease. Many of the disposal sites contain infectious material, thus threatening sanitation workers and waste-pickers.
- > **The 3R = Reduce, Reuse, Recycle** can be applied to solid waste management. For example, **biodegradable materials**, when properly sorted, can be composted and sold or used directly as soil enrichment.
- > **Environmentally friendly techniques can be promoted for WASH**, for example innovative technologies; alternative energy sources such as solar panels for water pumps and lighting for safer use of latrines and showers; ideas for water management and water conservation such as rainwater harvesting, grey water reuse for small plantations, and eco sanitation.

References:

- > ACAPS Philippines Secondary Data Report, January 2014
- > OCHA Philippines Strategic Response Plan, December 2013
- > OCHA Philippines Situation Report No. 31, 10 January 2014
- > OCHA Philippines Situation Report No. 32, 14 January 2014
- > WWF Philippines country overview:
http://wwf.panda.org/who_we_are/wwf_offices/philippines/environmental_problems__in_philippines/
- > OCHA/UNEP Estancia Oil Spill Initial Assessment Report, November 2013
- > OCHA Operational Updates, January 2014
- > OCHA Humanitarian Snapshot, 6 January 2014

³⁹ WWF Philippines country overview