PHILIPPINES

Damages and needs assessment of families affected by Super Typhoon Rai (“Odette”) in selected provinces of Region VIII and Region XIII
PHILIPPINES

Damages and needs assessment of families affected by Super Typhoon Rai (“Odette”) in selected provinces of Region VIII and Region XIII
# Contents

Figures and tables........................................................................................................................................... vi
Abbreviations and acronyms......................................................................................................................... vii
Executive summary....................................................................................................................................... viii
Background ..................................................................................................................................................... 1
Objectives of the assessment ........................................................................................................................ 3
Methodology................................................................................................................................................... 5
  Site selection............................................................................................................................................... 5
  Data gathering............................................................................................................................................. 7
  Limitations................................................................................................................................................... 8
Results and findings ........................................................................................................................................ 9
  Impact on agricultural livelihoods................................................................................................................ 9
  Impact on markets and access to financial services .................................................................................... 14
  Impact on other basic needs....................................................................................................................... 15
  Coping strategies ....................................................................................................................................... 17
  Implemented assistance to affected families in response to Super Typhoon Rai................................... 18
Recommended immediate and medium-term response interventions.................................................... 21
References .................................................................................................................................................... 23
Annexes......................................................................................................................................................... 24
Figures and tables

**Figures**

Figure 1. Track of Super Typhoon Rai ............................................................................................................ 1  
Figure 2. Location map of the assessed sites in Southern Leyte................................................................. 6  
Figure 3. Location map of the assessed sites in Agusan del Norte and Surigao del Norte ......................... 6  
Figure 4. Level of recovery in the assessed municipalities in Region VIII .................................................. 11  
Figure 5. Level of recovery in the assessed municipalities in Region XIII .................................................. 12  
Figure 6. Percentage of the number of damages in aquaculture .............................................................. 14  
Figure 7. Percentage of the number of damages in capture fishery ......................................................... 14  
Figure 8. Coping mechanisms by the FGD respondents in the assessed municipalities in Southern Leyte, Agusan Del Norte, and Surigao del Norte .................................................................................... 18

**Tables**

Table 1. ST Rai–affected municipalities and barangays in Southern Leyte, Agusan del Norte, and Surigao del Norte selected for the FAO rapid damages and needs assessment ................................................................. 5  
Table 2. Number of farmers and production area affected, and production losses, in Region VIII due to Super Typhoon Rai (as of 18 January 2022) ......................................................................................................................... 10  
Table 3. Number of farmers and production area affected, and production losses, in Region XIII due to Super Typhoon Rai (as of 18 January 2022) ......................................................................................................................... 11  
Table 4. ST Rai-related production damages and losses in livestock and poultry in Regions VIII and XIII (as of 18 January 2022) ......................................................................................................................... 13  
Table 5. ST Rai-related fishery production losses in Regions VIII and XIII (as of 18 January 2022) ..... 14  
Table 6. Summary of government assistance in Region VIII (Eastern Visayas) and Region XIII (Caraga) 18  
Table 7. Summary of recommended immediate emergency and medium-term response interventions based on the findings of the FAO rapid needs assessment ................................................................. 21
### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARMM</td>
<td>Bangsamoro Autonomous Region in Muslim Mindanao</td>
</tr>
<tr>
<td>BFAR</td>
<td>Bureau of Fisheries and Aquatic Resources</td>
</tr>
<tr>
<td>DA</td>
<td>Department of Agriculture</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>FGD</td>
<td>focus group discussion</td>
</tr>
<tr>
<td>HCT</td>
<td>Humanitarian Country Team</td>
</tr>
<tr>
<td>ICCCG</td>
<td>Inter-Cluster Coordination Group</td>
</tr>
<tr>
<td>LGU</td>
<td>local government unit</td>
</tr>
<tr>
<td>KII</td>
<td>key informant interview</td>
</tr>
<tr>
<td>MAFAR</td>
<td>Ministry of Agriculture, Fisheries and Agrarian Reform</td>
</tr>
<tr>
<td>PCA</td>
<td>Philippine Coconut Authority</td>
</tr>
</tbody>
</table>
Executive summary

In December 2021, Super Typhoon (ST) Rai (local name: Odette) barreled through the Philippines, significantly affecting 11 out of 15 regions in the country and about 918,877 families (National Disaster Risk Reduction Management Council, 2021). Regions affected included Southern Luzon (Cavite, Laguna, Batangas, and Quezon (CALABARZON), Occidental Mindoro, Oriental Mindoro, Marinduque, Romblon, and Palawan (MIMAROPA), and Bicol), Western Visayas, Central Visayas, Eastern Visayas, Zamboanga Peninsula, Northern Mindanao, Davao, Caraga, and the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM).

In line with this, the Food and Agriculture Organization of the United Nations (FAO), in coordination with government partners, conducted a rapid damage and needs assessment to understand the impact of ST Rai on the livelihoods of smallholder farmers and fishers in selected affected areas in the Eastern Visayas and Caraga regions. The findings inform partner government agencies’ and FAO’s response and recovery plans and programs help to support the recovery of the livelihoods of affected populations from the devastation of ST Rai.

FAO collected data through semi-structured interviews with key informants, focus-group discussions at the municipal level, and transect walks/mapping.

The assessment found that the typhoon adversely affected the agriculture and fisheries production of the respondents. Farm equipment, tools, machinery, and agricultural inputs were either severely damaged or lost with a total of PHP 13.3 billion (USD 266 million) worth of agricultural goods. Some 462,766 hectares of agriculture were affected, with 273,062 metric tonnes (MT) of agricultural goods lost due to the typhoon. Specifically, damage to crops was as follows: rice – PHP 2.1 billion (USD 42 million); high-value crops—PHP 2 billion (USD 40 million); coconut – PHP 1.6 billion (USD 32 million); and sugarcane – PHP 1.15 billion (USD 23 million). The fisheries sector, on the other hand, FAO observed similar damages to aquaculture and fisheries-based livelihoods sustained losses amounting to PHP 3.97 billion (USD 79.4 million). ST Rai affected some 113,479 farmers and fishers (about 22,696 farming and fishing families).

The assessment also found major disruptions in markets because of the loss of terrestrial- and mobile-based communication systems. Prices for almost all types of commodities increased three-fold from pre-typhoon rates because of these market disruptions.

In terms of food security, most respondents reported that they coped with the lack of food by reducing the number of meals per day. They also borrowed food from neighbors and relatives. They “repaid” the borrowed food as soon as they get aid from the government and/or from humanitarian agencies, or if they were able to acquire some from adjacent villages. As for the lack of income, many families resorted to doing odd jobs such as clearing debris and construction/repair work of damaged houses (for the men) and doing laundry (for the women), among others.

1 High-value crops are crops that provide higher net returns per hectare to the farmer than high yielding winter rice. These may include hybrid maize, potatoes, vegetables, spices, and fruits.
Based on the findings of the assessment the typhoon resulted in a significant number of damages and losses on agriculture-based livelihoods, food insecurity, houses, and inability to access income sufficiency with a valuation that could take years for an improved and recovered state, FAO recommends a combination of response interventions to meet the immediate and medium-term needs of ST Rai-affected populations. Particularly, these interventions should focus on urgently restoring their primary sources of livelihoods through in-kind assistance (i.e., provision of agricultural and fishing inputs, tools, and equipment) and/or cash transfers (conditional and unconditional). FAO also recommends providing technical support to local government units and other stakeholders in re-establishing the functionality of the domestic agri-food markets.
Background

As one of the most disaster-prone countries in the world, the Philippines is hit by around 20 typhoons per year, with about eight or nine making landfalls (PAGASA, 2021). The country is also vulnerable to other natural hazards such as earthquakes, drought, flooding, and volcanic eruptions. Super Typhoon (ST) Rai was the 15th extreme weather event – and the strongest – to hit the Philippines in 2021. The typhoon made initial landfall on 16 December on Siargao Island in the southeastern Philippines. Shortly after landfall, with winds at 160 mph (258 kph), it underwent an eyewall replacement cycle and decreased in strength to a Category 4, but winds remained at 150 mph (241 kph). ST Rai made several other landfalls at Category 3 and 4 intensities throughout the day as it moved through the Philippines. It roared through Region IV-A [Cavite, Laguna, Batangas, Rizal, Quezon (CALABARZON)], Region IV-B [Occidental Mindoro, Oriental Mindoro, Marinduque, Romblon, Palawan (MIMAROPA)], Region VI-Western Visayas (Aklan, Antique, Capiz, Guimaras, Iloilo, Negros Occidental), Region VII-Central Visayas (Bohol, Cebu, Negros Oriental, Siquijor), Region VIII- Eastern Visayas (Biliran, Eastern Samar, Leyte, Northern Samar, Southern Leyte), Region X-Northern Mindanao (Bukidnon, Camiguin, Lanao Del Norte, Misamis Occidental, Misamis Oriental), and Region XIII Caraga (Agusan Del Norte, Agusan Del Sur, Surigao Del Norte, Surigao Del Sur, Dinagat Islands) in the northeast section of Mindanao. On 17 December, ST Rai made its ninth and final landfall in Roxas, Palawan before moving out into the West Philippine Sea. The national government placed the affected areas under a state of calamity due to the extent of their sustained damages as well as to ease the provision of assistance to affected communities.

Figure 1. Track of Super Typhoon Rai

On 18 December, ST Rai exited the Philippine Area of Responsibility (PAR). In its wake, ST Rai affected 9.9 million people (1.98 million families) with 409 fatalities, displaced 144,000 people, and inflicted damage on 9,500 barangays (villages) in nine regions.2

The Rapid Damage Assessment and Needs Analysis (RDANA) conducted by the Philippine Government, the UN Humanitarian Country Team (HCT), and the Inter-Cluster Coordination Group (ICCG) immediately after the onslaught of ST Rai identified the initial priority needs of the affected population. The priority needs identified through the RDANA included family food packs and non-food items, access to potable water and hygiene kits, emergency shelter repair kits and temporary shelter, fuel, medical supplies, restored access to all affected areas, as well as protection services.

For the assessment, FAO deployed two teams: one in Region VIII (Eastern Visayas) and another in Region XIII (Caraga) from 28 to 31 December 2021. Municipalities assessed included those in Southern Leyte in Region VIII, and in Agusan Del Norte and Surigao Del Norte in Region XIII. The assessment was conducted through FAO’s Special Funds for Emergency and Rehabilitation Activities (SFERA).

The FAO assessment teams conducted Key Informant Interviews (KIIs), focus group discussions (FGDs), and direct observation to gather data. To facilitate the recording of responses and consolidation of gathered data, the teams used KoboCollect as part of the KoBoToolbox application.

In conducting the assessment, the FAO teams coordinated with the Disaster Risk Reduction and Management Service (DRRMS) at the DA’s Central Office, as well as with the LGUs of the municipalities and the field units of the Philippine Coconut Authority (PCA) and the Bureau of Fisheries and Aquatic Resources (BFAR).

The HCT and the ICCG will also conduct follow-up assessments to determine emerging needs and gaps in the most affected areas.

In its final typhoon damage tally released on 18 January 2022, the Department of Agriculture (DA) reported that ST Rai wiped out a total of PHP 13.3 billion (USD 266 million) worth of agricultural goods. Some 462,766 hectares of the agriculture land were affected, with 273,062 metric tonnes (MT) of agricultural goods lost due to the typhoon. Specifically, damage to crops were as follows: rice – PHP 2.1 billion (USD 42 million); high-value crops3 – PHP 2 billion (USD 40 million); coconut – PHP 1.6 billion (USD 32 million); and sugarcane – PHP 1.15 billion (USD 23 million). The fisheries sector, on the other hand, sustained losses amounting to PHP 3.97 billion (USD 79.4 million).4 ST Rai affected some 113,479 farmers and fishers (about 22,696 farming and fishing families).

FAO will share the findings and recommendations of its damages and needs assessment with the DA, the Ministry of Agriculture, Fisheries, and Agrarian Reform (MAFAR) in the

---


3 High-value crops are crops that provide higher net returns per hectare to the farmer than high yielding winter rice. These may include hybrid maize, potatoes, vegetables, spices, and fruits.

Bangsamoro Autonomous in Muslim Mindanao (BARMM), as well as with other humanitarian and development partners for use in their respective ST Rai response and recovery programming.

Objectives of the assessment

The overall goal of the FAO rapid damages and needs assessment was to understand the immediate impact of ST Rai on the agriculture livelihoods and food security of farmers and fishers in the identified affected municipalities in Southern Leyte (Region VIII) and in Agusan Del Norte and Surigao Del Norte (Region XIII).

Specifically, the assessment aimed to:
- assess the impact of ST Rai on agriculture and fishery livelihoods and food security of affected coconut farming and fishing families in the covered areas, including availability of agri-food commodities and identification of income opportunities;
- map the needs and capacities among the most affected coconut farming and fishing households, with the view of urgently restoring their livelihoods; and
- recommend immediate/short-, medium-, and long-term interventions to help restore the agriculture and fishery livelihoods and food security of the most affected coconut farming and fishing households.

Critical issues and gaps

The needs assessment highlighted the deterioration in the quality of living condition in terms of sustainability of livelihoods and their ability to restore the production and income capacity of the affected communities. More so, it underlined the importance of urgently developing and deploying responsive and integrated assistance interventions that considers of the needs of vulnerable groups and ensures the immediate recovery of the agriculture production and its livelihoods of affected families from the devastation of ST Rai. Specifically, these interventions must strengthen their capabilities to secure food, re-establish and stabilize their incomes, recover and improve their damaged agriculture livelihoods. Such interventions should also be able to build the affected families’ resilience to future typhoons and other natural disasters, particularly in the areas of income generation and food production.

Vulnerable groups

Labourers, small landowners and tenants. Ninety percent of coconut farming and fishing are the main and secondary sources of income, respectively, in the two assessed regions for a total of 178,880 affected farmer and fishery sectors. Both sectors suffered significant losses due to ST Rai in consideration on the level of recovery state which will take these group from six to ten years to restore their pre-disaster harvest capacity if not able to access alternative income opportunities.

Women and youth. Before ST Rai hit, women’s tasks were usually confined in their homes such as taking care of their children and doing household chores. During the FGDs, some
of the women indicated that their family’s dire situation forced them to look for additional sources of income in order to help their families financially cope and recover from the damages and losses wrought by the typhoon. However, limited job opportunities at that time made it difficult for women to find work. Majority of them preferred to engage in home-based businesses so that they could still take care of their family while earning income. Most of the respondents also raised the possibility of engaging in alternative income-generating activities such as producing value-added derived products which could be sold on-farm or in markets.

Elderly. Due to their age and physical limitations, the elderly are considered as the most vulnerable and the most in need of assistance, particularly in times of emergencies and crises. However, their wealth of knowledge and practical experience could provide valuable guidance, especially among the youth, in areas such as farming techniques and production know-how.

Cross-cutting issues (regional level)

Gender. All members of the family, including the women, were expected to contribute to income generation if affected families are to recover from the impact of ST Rai. In general, women are keener to learn new skills to generate income compared to their pre-typhoon situation. Hence, there is an opportunity to follow national recommendations to include at least 40 percent of women in all the income generation components of recovery interventions (PCW, 2020), as well as the provision of specific training for women, adapted to their interests and capacities.

Disaster risk reduction. Many of the barangays have mitigation interventions for flood and landslide-prone disaster areas in place. Cash-for-Work may be applied for such disaster risk reduction initiatives. There are also opportunities for the strengthening of existing disaster risk reduction and management plans, for example within the Early Warning System and Anticipatory Action for flood and landslide in the municipality of St. Bernard. Partnerships with national and local government entities could also be strengthened such as in training, emergency response, and awareness-raising on disaster management.

Challenges in the restoration of agriculture and fishery-based livelihoods

The main difficulties identified for the most vulnerable families in the assessment sites in Regions VIII and XIII are the following:

- Unsafe environment to rebuild or start their livelihood recovery due to debris from fallen coconut which caused accidents in case debris management will not start immediately. This will also attract the infestation of Rhinoceros Beetle (pest in coconut trees). Insufficient knowledge to other alternative income activities by those households dependent on coconut for their means on income.

- Incapacity of the households to repair damaged fishing boats because of the lack of resources to purchase materials due to income insufficiency.

- The insufficiency of available supply in the provinces to address the need to replace damaged fishing assets and agriculture inputs, as well as to conduct further market assessment and identification of local government units (LGUs) of
available resources for recovery. Duplication and overlapping of work can also be included in cases when interventions that complement those by government are not defined or sorted out.

- Unsafe construction is done due to insufficient knowledge on proper construction techniques and skilled personnel.

- Available job opportunities for farm labourers within the affected communities are scarce. As many of the farms have also been severely damaged by the typhoon, most the farm hands will not be hired immediately by the farms they previously worked for. And as damaged coconut farms will take six to ten years to recover with new seedlings, this will force many of the labourers to find work away from their families to provide for their immediate needs.

Methodology

Site selection

The municipalities and barangays selected for the FAO assessment were recommended by government partners and the LGUs based on the initial assessment by the regional offices of the DA, PCA and BFAR on ST Rai’s damages to the agriculture sector. The samples were considered in terms of their accessibility, similarities in agro-ecological context, level of damage from the initial assessment of the partners from the government agency, and type of accessibility to reach the location in order to achieve a general understanding of the needs and capacities (Table 1).

Table 1. ST Rai–affected municipalities and barangays in Southern Leyte, Agusan del Norte and Surigao del Norte selected for the FAO rapid damages and needs assessment

<table>
<thead>
<tr>
<th>Regions</th>
<th>Provinces assessed</th>
<th>Municipalities assessed</th>
<th>Barangays assessed</th>
</tr>
</thead>
</table>
| Region VIII      | Southern Leyte     | 1. Hinundayan  
2. Anawahan  
3. Saint Bernard  
4. San Juan  
5. Liloan      | 1. Barangay Sabang  
2. Barangay Canlabian |
| Region XIII      | Agusan Del Norte   | 1. Butuan City  
2. RT Romualdez  
3. Tubay          | 1. Barangay Sto. Nino, Butuan  
2. Barangay Panaytan  
3. Barangay Dona Rosario |
|                  | Surigao Del Norte  | 1. San Francisco  
2. Placer  
3. Mainit  
4. Alegria   | 1. Barangay Oslao and Balite  
2. Barangay Amoslog  
3. Barangay Pongtud |

Figure 2. Location map of the assessed sites in Southern Leyte


Figure 3. Location map of the assessed sites in Agusan del Norte and Surigao del Norte

Data gathering

The assessment utilized primary and secondary data. To gather primary data, the FAO assessment teams employed direct observation, semi-structured interviews with KIs, municipal-level FGDs through the use of the KoboCollect software application, and transect walks/mapping. Participants to the FGDs included the local chief executives (barangay captains) of the covered villages, barangay health workers, barangay officials, fisherfolk, barangay Kagawad (Council) Committee for Agriculture, barangay women leader groups, farmers (tenants, labourers and small landowners), representatives of LGU departments, and local residents including vulnerable groups (women, youth, and the elderly).

The FAO assessment teams also conducted consultations with national, regional and municipal-level officials of partner agencies of DA, PCA, and BFAR, as well as with officials of the Municipal Planning and Development Council (MPDC), Municipal Disaster Risk Reduction Management Office (MDRRMO), Municipal Health Unit (MHU), and Municipal Agriculture Office (MAO).

The assessment teams obtained secondary data from the municipalities’ recovery plans, initial rapid assessments, damage reports, reconstruction plans, investment plans, indicators for livelihoods, and disaster risk reduction plans. For verification, the teams cross-checked the secondary data through KIIIs. The assessment teams also conducted desk reviews of pre-typhoon secondary data to serve as comparison points.

The assessment teams consisted of the following members:

For Eastern Visayas (Region VIII)
- Alberto Aduna, Emergency Response and Preparedness Sub-Group Leader/ National Emergency Coordinator
- Rhinadel Cañete, Coordination Specialist
- Kattleya Torrecampo, Technical Assistant

For Caraga (Region XIII)
- Mario Corado, Agronomist/Farming Systems Specialist
- Carmela Belonio, Project Field Assistant
- Albert Cang, Driver and photographer
In coordination with the government partner’s focals and members:

For Eastern Visayas (Region VIII)
- Joel Pilapil, Regional Manager, Philippine Coconut Authority Region VIII
- Cylet Luz, Chief, Licensing, Regulatory and Enforcement Division In-Charge, BFAR
- Angel C. Enriquez, Regional Director, DA
- Andrew Rodolfo Orais, Chief, Field Operations Division, DA
- Evelyn Mionda, Chief, Agribusiness and Marketing Assistance Division, DA
- Grace Fenilda Jaradal, Planning Officer, BFAR
- Edmar Kristopher Petallana, Senior Fishing Regulations Officer, BFAR

For Caraga (Region XIII)
- Joel Oclarit, Regional Manager, PCA
- Jell Carphe C. Tamparong, Agriculture II and Program Development Officer, PCA
- Engr. Ricardo Ofate Jr., Regional Director, DA
- Gerlie Antipaso, Report Officer, Operations, DA
- Usop D. Pendaliay Jr., Regional Director, BFAR-Masao
- Rizalinda L. Abing, Chief, Fisheries Production and Support Services Division, BFAR

Limitations

The number of people available to participate in the assessment FGDs was limited because most of the residents of the covered municipalities were busy clearing debris from their homes, repairing their damaged houses, looking for food or jobs, or engaged in temporary work for income.

Also, an accurate market assessment has not been carried out since there have not been reports of major problems from suppliers and buyers at the time of the assessment. However, the assessment found major disruptions in markets because of the loss of terrestrial- and mobile-based communication systems. Prices for almost all types of commodities increased three-fold from pre-typhoon rates because of these market disruptions. Additionally, it is advisable to monitor market prices along with the implementation in case components related to cash (cash for work, unconditional or condition cash transfers) and in-kind intervention will be considered to measure the cash feasibility and capacity of the local market.

Presented damages and losses in the assessment findings focused data which will be relative to compare afterwards their level of recovery to obtain the gaps needed to respond. Relatively, pre-typhoon data was not available during the time of assessment to determine whether damages and losses from the previous typhoon on livelihoods were recovered. Limitations on agricultural infrastructure were also not included in the analysis of data as the information source documented was intended to obtain a response to the immediate needs of the affected communities.

There was also limitation in reference to the datasets available to distinguish whether the impact was solely due to ST Rai or to other factors such as COVID-19, thereby limiting the
ability to define the extent of severity especially on addressing the supply and income sustainability needs.

**Results and findings**

**Impact on agricultural livelihoods**

When ST Rai hit, rice farmers have already started with land preparations to start cultivating of *palay* (unmilled rice) which made them not too much affected by the typhoon since they’ve already harvested their crop. On the other hand, coconut farmers’ standing and fruit-bearing coconut trees suffered the most significant damages and losses from ST Rai. Additionally, new plantings to replace their damaged or lost coconut stands take six to eight years before they reach maturity and reach their pre-typhoon productive state.

The majority of the FGD respondents cultivated less than one hectare of land. Farmers sourced their planting materials at a cost of PHP 2,500 - PHP 3,000 from local suppliers and through agricultural programmes of government agencies such as the Philippine Rice Research Institute (PhilRice) and PCA in-kind assistance through the accredited associations in their municipality. Additionally, the respondents indicated that they bought fertilizers at the average price of PHP 2,090 (USD 42) per bag, which is higher than the average market price in November 2021 of USD 29 per bag. Most of the respondents’ farms are rain-fed. The respondents also indicated that they struggle with crop pests, which they control by using chemicals they acquired from the local market or from government support.

![A drone image of coconut trees felled by Super Typhoon Rai in Southern Leyte.](image-url)
The FGD respondents indicated that the typhoon significantly affected their livelihoods as they lost valuable production assets such as farm machinery (rice transplanter and tractors), tools and farming materials (pick mattocks, sharp edge hooks, and bolos, which is a type of large single-edged knife commonly used by Filipino farmers), and agricultural inputs (seeds, seedlings, and fertilizers). Silt, downed trees, and other debris damaged their farmlands. Some of the respondent-farmers in the Caraga region said that their farms were inundated by overflowing water from Lake Mainit, additionally affecting their crops.

Region VIII assessment findings

ST Rai badly affected the coconut sector in Region VIII. Based on data gathered from the DA’s consolidated damages and losses report as of 18 January 2022, coconut farmers in the region incurred production losses equivalent to PHP 614,279,678 (USD 11.99 million).

Table 2 also shows losses incurred by other crops such as rice, commercial crops (like soybeans and small grains), and banana, among others, in the region due to the devastation by ST Rai.

Table 2. Number of farmers and production area affected, and production losses, in Region VIII due to Super Typhoon Rai (as of 18 January 2022)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Number of farmers affected</th>
<th>AREA AFFECTED (HA)</th>
<th>PRODUCTION LOSSES (BASED ON FARMGATE PRICE)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>With no chance of recovery</td>
<td>With chance of recovery</td>
<td>Volume (MT)</td>
</tr>
<tr>
<td>Abaca</td>
<td>15,969</td>
<td>0</td>
<td>14,793.08</td>
<td>3,878.83</td>
</tr>
<tr>
<td>Banana</td>
<td>3,275</td>
<td>256</td>
<td>1,109</td>
<td>1,909</td>
</tr>
<tr>
<td>Cassava</td>
<td>940</td>
<td>306.5</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Coconut</td>
<td>82,370</td>
<td>3,919.615</td>
<td>6,083.094</td>
<td>614,279,678</td>
</tr>
<tr>
<td>Commercial crops</td>
<td>1,701</td>
<td>980.33</td>
<td>60.14</td>
<td>178.05</td>
</tr>
<tr>
<td>Corn</td>
<td>163</td>
<td>51.25</td>
<td>32.37</td>
<td>58.78</td>
</tr>
<tr>
<td>Fruits</td>
<td>420</td>
<td>103.16</td>
<td>18.97</td>
<td>86.78</td>
</tr>
<tr>
<td>High value crops</td>
<td>7,885</td>
<td>1,948.13</td>
<td>288.28</td>
<td>3,281,959</td>
</tr>
<tr>
<td>Mango</td>
<td>162</td>
<td>178</td>
<td>3.04</td>
<td>453.76</td>
</tr>
<tr>
<td>Rice</td>
<td>12,441</td>
<td>2,675.5</td>
<td>9,081.45</td>
<td>90.58</td>
</tr>
<tr>
<td>Root crops</td>
<td>18</td>
<td>9</td>
<td>12.1</td>
<td>146.28</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>359</td>
<td>0</td>
<td>1,026.8</td>
<td>629,839</td>
</tr>
<tr>
<td>Vegetables</td>
<td>1,369</td>
<td>115.14</td>
<td>73.57</td>
<td>508.08</td>
</tr>
<tr>
<td>TOTAL</td>
<td>127,072</td>
<td>3,926.238</td>
<td>6,108.604</td>
<td>11,222</td>
</tr>
</tbody>
</table>

Rate of exchange: 1 USD = PHP 51.216 (UNORE, January 2022)

**Region XIII assessment findings**

Similar to Region VIII, the coconut sector in Region XIII experienced the highest damages and losses among crops produced in the region. Table 3 summarizes the production damages and losses to crops in Region XIII due to ST Rai.

**Table 3. Number of farmers and production area affected, and production losses, in Region XIII due to Super Typhoon Rai (as of 18 January 2022)**

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Number of farmers affected</th>
<th>AREA AFFECTED (HA)</th>
<th>PRODUCTION LOSSES (BASED ON FARMGATE PRICE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>With no chance of recovery</td>
<td>With chance of recovery</td>
</tr>
<tr>
<td>Banana</td>
<td>936</td>
<td>678</td>
<td>62</td>
</tr>
<tr>
<td>Cassava</td>
<td>129</td>
<td>136</td>
<td>17</td>
</tr>
<tr>
<td>Coconut</td>
<td>44 678</td>
<td>6 639 542</td>
<td>4 332 608</td>
</tr>
<tr>
<td>Commercial Crops</td>
<td>483</td>
<td>346</td>
<td>13</td>
</tr>
<tr>
<td>Corn</td>
<td>57</td>
<td>186</td>
<td>3 519</td>
</tr>
<tr>
<td>Fruits</td>
<td>56</td>
<td>146</td>
<td>0</td>
</tr>
<tr>
<td>HVC</td>
<td>2 087</td>
<td>1 695</td>
<td>106</td>
</tr>
<tr>
<td>Mango</td>
<td>9</td>
<td>180</td>
<td>0</td>
</tr>
<tr>
<td>Rice</td>
<td>2 899</td>
<td>5 786</td>
<td>1 492</td>
</tr>
<tr>
<td>Root crops</td>
<td>174</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tobacco</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Vegetables</td>
<td>300</td>
<td>186</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51 808</strong></td>
<td><strong>6 648 906</strong></td>
<td><strong>4 337 834</strong></td>
</tr>
</tbody>
</table>


Rate of exchange: 1 USD = PHP 51.216 (UNORE, January 2022)

**Figure 4. Level of recovery in the assessed municipalities in Region VIII**
Livestock and poultry

In terms of livestock, swine presents the highest volume of livestock production in both regions, with 77,522 MT of live weight produced in Region VIII in 2019 and 40,495 MT of live weight in Region XIII (PSA, 2020). According to the FGD respondents, they mainly used carabaos (water buffalos) as draft animal.

Based on secondary data gathered from the DA and cross-referenced with the FGD respondents, ST Rai also significantly affected the livestock and poultry sectors in Regions VIII and XIII. Table 4 summarizes the typhoon-related losses by type of livestock in the assessed regions, particularly Southern Leyte and Surigao del Norte. As of the assessment report writing, no losses have been reported in Agusan del Norte and Dinagat Islands.

“Before Rai hit, our family had 20-30 chickens. Only three survived after the typhoon. Our pigs also drowned. Along with our house, our pig pen was also destroyed by fallen coconut trees and stones and debris thrown from the sea. What will happen to us now?” - Diocela Estrada from Brgy. Sabang, Southern Leyte, one of the many victims of the devastation of Super Typhoon Rai on Leyte Province.
Table 4. ST Rai-related production damages and losses in livestock and poultry in Regions VIII and XIII (as of 18 January 2022)

<table>
<thead>
<tr>
<th>Region</th>
<th>No. of farmers affected</th>
<th>Livestock mortality (no. of heads)</th>
<th>Estimated value of losses (PHP)</th>
<th>Estimated value of losses (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region VIII</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carabao</td>
<td>34</td>
<td>0.98%</td>
<td>36</td>
<td>1018000</td>
</tr>
<tr>
<td>Cattle</td>
<td>46</td>
<td>1.33%</td>
<td>54</td>
<td>1271000</td>
</tr>
<tr>
<td>Chicken</td>
<td>1770</td>
<td>51.19%</td>
<td>102373</td>
<td>28762826</td>
</tr>
<tr>
<td>Duck</td>
<td>248</td>
<td>7.17%</td>
<td>2262</td>
<td>1141900</td>
</tr>
<tr>
<td>Goat</td>
<td>164</td>
<td>4.74%</td>
<td>248</td>
<td>1592982</td>
</tr>
<tr>
<td>Quail</td>
<td>1</td>
<td>0.03%</td>
<td>65</td>
<td>7150</td>
</tr>
<tr>
<td>Swine</td>
<td>1195</td>
<td>34.56%</td>
<td>4865</td>
<td>44791355</td>
</tr>
<tr>
<td>Region XIII</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carabao</td>
<td>123</td>
<td>12.42%</td>
<td>579</td>
<td>19905000</td>
</tr>
<tr>
<td>Cattle</td>
<td>79</td>
<td>7.98%</td>
<td>537</td>
<td>14635000</td>
</tr>
<tr>
<td>Chicken</td>
<td>294</td>
<td>29.70%</td>
<td>28739</td>
<td>6179360</td>
</tr>
<tr>
<td>Duck</td>
<td>57</td>
<td>5.76%</td>
<td>2872</td>
<td>577000</td>
</tr>
<tr>
<td>Goat</td>
<td>154</td>
<td>15.46%</td>
<td>502</td>
<td>3702000</td>
</tr>
<tr>
<td>Sheep</td>
<td>0</td>
<td>0.00%</td>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>Swine</td>
<td>208</td>
<td>21.01%</td>
<td>2497</td>
<td>8451000</td>
</tr>
<tr>
<td>Turkey</td>
<td>75</td>
<td>7.58%</td>
<td>1153</td>
<td>1134200</td>
</tr>
</tbody>
</table>


Rate of exchange: 1 USD = PHP 51.216 (UNORE, January 2022)

Fisheries

Capture fishery is the main practice especially for municipalities facing the Pacific Ocean as fish cages are often destroyed by strong ocean currents.

Region VIII assessment findings

In the assessed municipalities of Southern Leyte, the FAO assessment team observed widespread damage to fishing boats, both motorized and non-motorized. Among the five municipalities assessed, Saint Bernard suffered the most damage, with 517 fisherfolk with damaged fishing boats (377 motorized and 140 motorized). Without fishing boats, fishers cannot go out to sea, thereby posing a significant threat to their income and food security.

Region XIII assessment findings

In Barangay Oslao, San Francisco, Surigao del Norte, one of the villages assessed by the FAO assessment team, fisherfolk mentioned yellowfin tuna, scad fish, and squid as common fish species captured through open sea fishing. They sell the fish they catch within the village or in the local markets. Moreover, tilapia is the common species of fish cultivated and produced in Lake Mainit in the Caraga Region in either fishponds or fish cages. Most of the fishers in the assessed barangays in the region lost their production assets such as boats, gillnets, and other fishing gear. In Barangay Oslao, San Francisco, Surigao del Norte, 65 pump boats were totally damaged while 120 pump boats were partially damaged.
Table 5. ST Rai-related fishery production losses in Regions VIII and XIII (as of 18 January 2022)

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of fisherfolk affected</th>
<th>Volume Loss (MT)</th>
<th>Estimated production value loss (PHP)</th>
<th>Estimated production value loss (USD)</th>
<th>Estimated equipment/property value loss (PHP)</th>
<th>Estimated equipment/property value loss (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region VIII</td>
<td>8 595</td>
<td>275</td>
<td>161 507 949</td>
<td>3 153 467</td>
<td>909 983 366</td>
<td>17 767 560</td>
</tr>
<tr>
<td>Region XIII</td>
<td>6 418</td>
<td>210</td>
<td>190 842 420</td>
<td>3 726 227</td>
<td>219 493 300</td>
<td>4 285 639</td>
</tr>
</tbody>
</table>

Rate of exchange: 1 USD = PHP 51.216 (UNORE, January 2022)

Impact on markets and access to financial services

Markets

Based on the KII s of operators and traders in the city center markets of the assessed municipalities (Liloan City, Tacloban City and Maasin City in Southern Leyte; Butuan City in Agusan Del Norte; and Surigao City in Surigao Del Norte), ST Rai did not significantly impact local market operations and infrastructure, apart from the cut in electricity supply. To address this, most of the respondents ran generator sets to power lights and other basic equipment.

However, some traders reported supply chain problems in terms of the delivery of goods and services from one province to another. Further probing by the FAO assessment teams showed that the supply chain problems were largely due to COVID-19 movement restrictions imposed by LGUs and not as a result of ST Rai. These restrictions delayed the delivery of products to the markets, resulting in a low supply of many basic commodities. The prices of basic commodities in areas affected by Typhoon Odette drastically increase amid a price freeze. Trades take advantage of the situation and imposed a hikes to their prices of basic commodities amid the disaster based for the FGD conducted with six out of nine respondents. These price increases, unfortunately, had a negative impact on typhoon-affected families, most of whom lost their livelihoods because of ST Rai. Simply, these families could not anymore afford to buy food and other basic commodities – or at least not in the quantities sufficient to fulfill their existing needs.
Financial services

Before ST Rai hit, there were several financial service providers (FSPs) operating in Regions VIII and XIII. These included: (1) money remittance services (Palawan Express Padala, MLhuillier, Cebuana Lhuillier, RD Pawnshop, Moneygram, and Western Union); (2) government and commercial banks (Philippine National Bank and Landbank of the Philippines, Development Bank of the Philippines, Metrobank, and Banco de Oro); (3) electronic cash platforms (GCash, Smart Padala and PayMaya); (4) cooperatives; and (5) micro-lending institutions (LA and MJ Micro Lending Corporation, 1st Valley Bank Inc, Orix Metro Leasing and Finance Corporation, 16 Carat Lending Corporation).

Interactions with community members in the assessed areas indicated that, pre-typhoon, GCash was the most preferred cash remittance facility because of its convenience in terms of proximity of their outlets through local stores and market center where most of the households were situated. Moreover, an application through mobile phone can be used to send and to receive money using mobile number with Globe service provider. Palawan Express Padala was the second most preferred with context same as mentioned.

After the typhoon, only Palawan Express Padala remained operational in the assessed areas by running generator sets. However, their remittance services were down as internet and mobile communications infrastructure in the areas, critical for such services, were also severely damaged by ST Rai.

To access financial services post-typhoon, many of the affected populations in the assessed municipalities had to travel to the cities, which are usually some distance away, to get their remittances. In the Municipality of San Francisco, for example, people had to travel as far as Surigao City and Butuan City, which are 25.2 kms and 138 kms away, respectively, just to receive money from relatives. The transport cost to go to these cities is about PHP 720 (about USD 14), with return to the place of origin, a considerable amount that affected families need for other essential items like food and other basic necessities.

Impact on other basic needs

ST Rai also affected other basic needs such as access to drinking water, sanitation, personal hygiene, transportation, communication, and power.

Drinking water

After ST Rai hit, the price of bottled water increased by at least 40 percent in the main towns because of the spike in demand. This is because the water systems in many of the affected communities suffered various levels of damage to their facilities such as pipelines, intake boxes, and reservoirs. As the cost of bottled water became prohibitive and tap water was basically non-existent, many families resorted to getting water from deep wells and ground/boreholes. However, they had to boil water taken from such sources before consumption for safety and health reasons which entailed additional costs in the overhead cost (cooking fuel, water for cleaning, and cost of time) of the households.
Sanitation, hygiene and waste management

Personal hygiene became difficult to maintain as many people defecated in the open because of damaged sanitation facilities and the lack of water supply. Families whose houses and toilets were either damaged or destroyed coped by using neighbors’ functional toilets. Sanitation facilities that were either repaired or were not damaged became difficult to maintain and keep clean as available water was prioritized for people’s consumption.

During the transect walk of the communities, the assessment teams observed that debris, particularly from fallen trees and damaged houses, littered the villages. As villagers cleared the areas around their homes and farms, the collected rubbish and debris were simply piled in a corner. Although generally considered illegal, many of the affected households were also observed to be burning the collected trash and debris as there were no garbage collection trucks that were coming in to pick them up. The teams were not able to obtain specific environmental and local waste management policies related to these clearing activities.

Transport and logistics

Many roads and footpaths were obstructed with fallen coconut trees, rocks and other debris, preventing full access to affected communities. However, most of the assessed areas were passable and accessible by car, cargo truck, motorbike, habal-habal (motorbike taxi), and motorized tricycles. Motorbikes were the primary mode of transportation when going into the village interiors. Coastal barangays were also accessible via boats (motorized and non-motorized) that survived damage from the typhoon.

Communication and power

Mobile network coverage and internet in Southern Leyte were limited and unstable as communication infrastructure suffered severe damages from the typhoon. As electricity supply in the affected communities was also down, radio and television were basically useless unless powered by a generator or batteries.

Similarly, in the Caraga Region, mobile communication and internet were also limited. To call using their mobile phones, the people in the affected areas had to find a specific spot in the village where they could get a network signal.

Power supply infrastructure in the assessed areas suffered major damage. Most government offices used generator sets to power lights and basic equipment to continue operations. They also allowed affected households to charge their mobile phones and rechargeable flashlights. In one barangay in San Francisco, an enterprising household made available the use of a generator for a fee (about PHP 30.00 to 40.00 – or USD 0.60 to 0.80 – to fully charge a mobile phone).

In Southern Leyte, the local government indicated that regular power supply to affected communities might only be restored by March or April 2022 which was essential for cold storages on freshly produced commodities, frozen processed goods, water pumps supported by electricity, and communication lines of the households where they can be
able to charge their cellular phones and data internet for the LGUs to transmit reports and updates on the damages, needs, and gaps due to Typhoon Odette.

Coping strategies

In the aftermath of ST Rai, affected families had to employ several coping mechanisms to manage the impact of the typhoon particularly on their livelihoods/income and food security. Below are the findings of the assessment teams of these coping mechanisms based on the conducted FGDs.

Livelihoods and income

Reversible strategies: Short-term strategies to sustain household needs and their existing livelihood assets. The assessment found that:

- households shifted most of their capacities and resources into rice, root crop and vegetable production as alternative livelihoods due to heavy damage to their coconut farms to support their immediate need; and
- households heavily depended on remittances from family members or relatives and on government cash subsidy programmes to have the means to purchase their immediate needs.

Crisis strategies: Households access and maximize available, but usually inadequate, services and resources to fully meet their needs. Under this, the assessment found that:

- households sold their remaining/surviving livestock (particularly chicken);
- farmers cut their downed coconut trees into different parts (i.e., wood from the trunks) and sold them, while some were used in the reconstruction of their houses; and
- households heavily borrowed from lending institutions or even loan sharks, further sinking them into debt.

Distress strategies: people to move to other locations and leave their families, engage in activities, or accept jobs outside of their skills/will, with a view of gaining income to sustain the household’s needs which were not preferred by the household economically. Under this coping strategy, the assessment found that:

- households or family members migrated to the cities (Maasin/ Tacloban City) or to other regions in search of income opportunities; and
- household members took on non-agriculture-related jobs such as repairing damaged houses or constructing new ones within their locality to get income for the family’s immediate needs.

Food security

Results of the assessment showed that most of the members of the assessed communities in both regions tended to reduce the number of meals they consume per day due to a shortfall in food and income. Borrowing food was also mostly observed, with “borrowers” returning the same quantity once they get food aid from the government or humanitarian agencies, or if they are able to obtain food
from neighboring villages. Figure 8 shows the various food security coping mechanisms practiced by the affected families in the assessed sites.

Figure 8. Coping mechanisms by the FGD respondents in the assessed municipalities in Southern Leyte, Agusan Del Norte, and Surigao del Norte.


Implemented assistance to affected families in response to Super Typhoon Rai

Most government agencies consulted about the relief distribution and livelihood restoration efforts as their assistance to the typhoon-affected communities at the time of the assessment. Table 6 summarizes the ongoing assistance and planned response activities by the different government entities.

Table 6. Summary of government assistance in Region VIII (Eastern Visayas) and Region XIII (Caraga)

<table>
<thead>
<tr>
<th>Government agency</th>
<th>Form of assistance</th>
<th>Nature of ongoing assistance</th>
<th>Nature of planned response activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Agriculture - Regional Field Offices</td>
<td>in-kind</td>
<td>Relief, coordination, livelihood restoration, food supply</td>
<td>Damage assessment</td>
</tr>
<tr>
<td>Bureau of Fisheries and Aquaculture Resources</td>
<td>in-kind</td>
<td>Relief, livelihood restoration, damage assessment</td>
<td>Rehabilitation of livelihoods, repair of facilities</td>
</tr>
<tr>
<td>Philippine Coconut Authority</td>
<td>in-kind, cash</td>
<td>Relief, cash incentives to farmers, monitoring and assessment</td>
<td>Rehabilitation of livelihoods, capacity building, intercropping, coconut timber disposal and utilization</td>
</tr>
</tbody>
</table>


Department of Agriculture

In Caraga, there is an ongoing relief distribution to DA employees in Surigao del Norte, Siargao, and Dinagat Islands from funds generated from DA regional staff. A DA Mindanao’s response was also activated to solicit commitments from other regions. For instance, DA-RFO XII will provide 1 500 bags (40 kgs per bag) of certified rice seed (CRS).
DA-RFO XIII, on the other hand, is spearheading damage assessments with representatives from the DA Central Office and other agencies (e.g., DTI, National Irrigation Administration, Department of Public Works and Highways). Data from this joint assessment will be used to prepare the regional recovery and rehabilitation plan and the utilization of buffer stock of rice and corn seeds, and vegetable seeds. The priority interventions needed are certified rice seeds, hybrid and open-pollinated variety (OPV) corn seeds, assorted vegetable seeds, fertilizers (urea, complete, organic fertilizers), small farm machinery, and post-harvest equipment.

In Southern Leyte, there is a plan to address the challenges on food supply in the affected areas through milling of 1 500 bags (40 kgs per bag) of palay as buffer shares to affected municipalities. The regional office is also planning to start a community pantry in affected municipalities to address challenges on food supply and link this to the agency’s Kadiwa ni Ani at Kita program. Findings of the initial assessment showed that damages and losses on rice and corn were not significant because farmers harvested ahead of the typhoon, while other crop stands were newly planted or still at the vegetative stage. No further recovery plans are being put in place until the ongoing assessment and other support documentation have been completed. However, there was a suggestion to visit common municipalities with BFAR for further validation of damages and losses.

**Bureau of Fisheries and Aquatic Resources**

BFAR employees have initiated relief efforts by providing goods and cash to their colleagues and their families in Dinagat Island. BFAR has also provided boat rebuilding and repair materials (i.e., nails and epoxy resin) and boat engines.

The response plan in Caraga includes the provision of fingerlings, seaweed farm implements, propagules, motorized boats, non-motorized boats, fishing gears, lobster cages, Community Fish Landing Centers (CFLCs), chest freezers, fish stalls, refrigerated vans, floating assets, survival equipment, and repair of BFAR facilities (buildings, hatcheries, outreach stations). The priority interventions needed are the provision of bangus fingerlings, lobster cages, replenishment of boats, replacement of engines, fishing gears, seaweed implements, seaweed propagules, and cold storage facilities, rehabilitation of fish sanctuaries, and capacity building for the fisherfolk.

In Southern Leyte, BFAR has simultaneously deployed Provincial Fisheries Officers from other provinces and the Fisheries Livelihood Development Technicians (FLDTs) in the municipalities of Saint Bernard, Anawahan, and Hinundayan in Southern Leyte to support the data findings needed to analyze the needs and gaps to response and mobilize resources in support to the recovery of the affected communities in the fishery sector.

An integrated response and recovery plan will be finalized once the final figures consolidated by the deployed assessment teams of the agency are available. However, possible assistance to be extended by the agency includes the provision of aquaculture

---

5 Kadiwa ni Ani at Kita program is a market system which sells major agricultural goods at reasonably low prices to help poor Filipino households. Kadiwa is loosely translated as “one idea, one thought” which is in consonance with Secretary Dar’s “New Thinking” for Agriculture paradigm.
and capture fishing equipment (e.g., gillnets and squid jiggers), repair/construction of fish cages, and provision of bangus (milkfish) fingerlings to producers.

**Philippine Coconut Authority**

In Caraga, 25 units of chainsaws from the PCA were utilized for rehabilitation. Eighty more units of chain saws are expected to arrive from Region VIII. PCA Region XIII has also planned rehabilitation activities such as debris management, seedling dispersal, incentivized planting/replanting, skills training for farmers, and incentivized intercropping. The PCA Region XIII has also submitted a proposal to the Department of Social Welfare and Development (DSWD) to provide cash-for-work for debris clearing, lumber production, and an alternative source of income for coconut farmers.

In Southern Leyte, the following are the ongoing relief measures for ST Rai-affected families:

- distribution of Participatory Coconut Planting Project (PCPP) incentives of PHP 1.2 million (USD 23 430), with PHP 5 750 (USD 112) to be allocated per farmer in Southern Leyte and Northwestern Leyte (Inopacan and Bato);
- distribution of food packs worth PHP 25 000 (USD 488) to affected farmers from funds of the PCA Employee Association and PCA Employees Credit Cooperative; and
- monitoring of municipalities along the Pacific Coast by unmanned aerial vehicle (UAV) or drone.

The PCA Region VIII plans to implement intercropping as a recovery plan for the newly planted or replanted coconut farms using short-gestation crops, preferably vegetables (Pinakbet seeds), mungbean, and other leguminous crops which can also improve the fertility of the soil. PCA will also implement coconut timber disposal and utilization activities, which will involve establishing log traps and using Green Muscardine fungus (GMF) against the Rhinoceros beetle. Downed young coconut trees deteriorate after about five to six months, while felled mature trees start to rot about one to two years. Rotting coconut trunks are the breeding sites of rhinoceros beetles which is a coconut pest. The establishment of log traps using felled coconut trunks on the ground and the spreading of Green Muscardine fungus to the log traps will prevent the spread of damage caused by Rhinoceros beetles. To this end, the PCA has deployed chainsaws to municipalities where there are verified reports of totally damaged coconut trees to help with the clearing. The chainsaw allocation shall be based on the reported number of totally damaged coconut trees.

The recovery plan will also introduce the re-planting of coconut trees by groups of three’s (or three seedlings per hill) to increase coconut productivity per unit area in coastal and upland areas.

---

6 Participatory Coconut Planting Project (PCPP) aims to encourage and support coconut farmers and potential coconut farmers in planting and replanting coconut trees. It is both a participatory and incentive-based system approach guided by the PCA recommended Good Agricultural Practices (GAP).
Recommended immediate and medium-term response interventions

Based on the findings of the assessment and while government entities are responding, further support and response will be needed, a combination of response interventions should be implemented to meet the immediate to long-term needs of the typhoon-affected population. This could include in-kind assistance, cash and voucher assistance (CVA), technical assistance, alternative livelihood skills training, and technical support for the market restoration.

Table 7 shows the summary of the recommended immediate and medium-term response interventions.

Table 7. Summary of recommended immediate emergency and medium-term response interventions based on the findings of the FAO rapid needs assessment

<table>
<thead>
<tr>
<th>Response Phase</th>
<th>Emergency and Transition to Recovery</th>
<th>Long-Term</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Immediate</td>
<td>Medium-Term</td>
</tr>
<tr>
<td>Cash activities</td>
<td>• Emergency unconditional cash grants for targeted small businesses</td>
<td>• Conditional cash grants for livelihood inputs</td>
</tr>
<tr>
<td></td>
<td>• Cash-for-work (repair of damaged asset, community works, etc.)</td>
<td>• Vouchers for food commodities</td>
</tr>
<tr>
<td></td>
<td>In-kind activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Food</td>
<td>• Food-for-work: work on constructions/rehabilitation of infrastructures paid with food</td>
</tr>
<tr>
<td></td>
<td>- Food relief (dry or ready-to-eat food), kitchen/ cooking sets</td>
<td>- Distribution of Sealed Food Storage</td>
</tr>
<tr>
<td></td>
<td>- Distribution of Sealed Food Storage</td>
<td>- Food-for-work: work on constructions/rehabilitation of infrastructures paid with food</td>
</tr>
<tr>
<td></td>
<td>- Food-for-work: work on construction/rehabilitation of infrastructures paid with food</td>
<td>- Targeted feeding programmes: distribution of prepared meals to target groups that meet a specific set of qualifying criteria</td>
</tr>
<tr>
<td></td>
<td>- Targeted feeding programmes: distribution of prepared meals to target groups that meet a specific set of qualifying criteria</td>
<td>- Targeted feeding programmes-nutritional/ supplemental feeding programs</td>
</tr>
<tr>
<td></td>
<td>• Livelihoods</td>
<td>• Livelihoods</td>
</tr>
<tr>
<td></td>
<td>- Provision of resources for existing or pre-disaster livelihoods and income generating activities</td>
<td>- Distribution of livelihood support inputs such as agricultural tools, seeds, planting material, fish pond maintenance tools, livestock, fishing gear</td>
</tr>
<tr>
<td></td>
<td>In-kind activities</td>
<td>- Technical support on income generating activities</td>
</tr>
<tr>
<td></td>
<td>• Food</td>
<td>- Network building with financial institutions (e.g. Microfinance, Banks, Cooperatives with Lending Services)</td>
</tr>
<tr>
<td>Social Protection and Nutrition</td>
<td>Cash activities</td>
<td>In-kind activities</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>• Emergency unconditional cash grants</td>
<td>• Conditional cash grants or vouchers-for-vitamins, transport to health facilities, etc.</td>
<td>• Conditional cash grants or vouchers for vitamins, food security, transport to health facilities, etc.</td>
</tr>
<tr>
<td>• Cash-for-work (e.g. debris clearance, tree trunk collection)</td>
<td>• Conditional cash grants to attend health-related training or for nutritional screenings (cash incentives)</td>
<td>• Provision of training on vulnerability and capacity assessment</td>
</tr>
<tr>
<td>• Cash-for-service (e.g. short-term income opportunities)</td>
<td>• Cash-for-work (e.g. Market infrastructure/rehabilitation, etc.)</td>
<td>• Provision of early warning devices in the community and establishment of communication tools to respond/give feedback to needs and vulnerability</td>
</tr>
<tr>
<td>• Cash-for-service (e.g. short-term income opportunities)</td>
<td>• Conditional cash grants or vouchers-for-vitamins, transport to health facilities, etc.</td>
<td>• Provision of training on vulnerability and capacity assessment</td>
</tr>
<tr>
<td>• Cash-for-work (e.g. Market infrastructure/rehabilitation, etc.)</td>
<td>• Conditional cash grants to attend health-related training or for nutritional screenings (cash incentives)</td>
<td>• Provision of early warning devices in the community and establishment of communication tools to respond/give feedback to needs and vulnerability</td>
</tr>
</tbody>
</table>

References


### Annex 1. Focus group discussion questionnaire

<table>
<thead>
<tr>
<th>Community Focus Group Discussion Questionnaire – Agriculture Needs Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

**SECTION 1 – DEMOGRAPHICS**

*Read - “May I ask you a few questions on the composition of your community?”*

*(NB: For the purpose of this survey, a household is defined as people eating together)*

How many people in total, how many men and women, children under 5 years, elderly and disabled people do you have in this community? Any minority groups?

**SECTION 2. COMMUNITY LIVELIHOODS /INCOME**

2.0 What are the main livelihood and income activities in your community?
### 2.1 CROPS
What are the main crops cultivated in your community? Which crops were affected by the disaster? How much is affected by the disaster? At what stage were the crops standing? Did you lose any equipment or agro chemical inputs? Has the land been damaged? If yes, what is needed to recover the land for cultivation? (Possible options: Silt/debris removal, bound reconstruction, others) Do you use irrigation, was the system affected? What is the usual yield and farm gate price you receive for your produce? What are the usual seasonal seeding and harvesting timelines? Where do you usually get your seeds, fertilizers? Will the season allow you to re-seed? Do you have any available seed stock to re-seed? What are the usual market prices for seeds and fertilizers? Do you struggle with pests on your crops? What do you usually do in case of pest? How much yield do you usually lose due to pests?

### 2.2 LIVESTOCK
What is the main livestock in your community? How many animals are affected by the disaster? How many died? How many are missing? Do you have animals with you in the evacuation shelter/back in the village? Do you have fodder and water? Are any of the animals sick? What are the usual market prices at this time of the year for live animals and meat? How big is the difference in prices during religious or cultural holidays? What proportion of income from sales of livestock in a year do usually come from religious or cultural holidays?

### 2.3 AQUACULTURE
Does your community engage in aquaculture and fisheries? Which type of cultivation was affected by the disaster? How much is affected by the disaster? Did you lose any equipment? Ponds? Fingerlings? Feed? Where will you source the fingerlings to restart? What is the usual yield and farm gate price you receive for your produce? How big is the difference in prices during religious or cultural holidays? What proportion of income from sales of fish in a year do usually come from religious or cultural holidays?
### 2.4 Fisheries

What are the most common type and size of boat/fishing vessels you use in your community? What is the most common fishing equipment used, especially for small boat/small fisherman? Are there any government or private run facilities such as fish landing, processing, cold storage etc., that are affected by the disaster? How are they affected? Are there any fish aggregation devices for fishing in the affected area? Are there any marine protected areas or species in the area affected by the disaster? How have they been controlled and regulated before the disaster? How much of the local fish catch is destined for local or national level consumption, and for exportation? Are you able to continue fishing since the disaster? How has the fish market developed after the disaster? Are there any cultural or religious holidays that increase fish consumption and prices?

### 2.5 Markets

Are local markets available and functional? Was the market infrastructure damaged by the disaster? How far is the closest market to purchase basic items? What is the name of the closest market location? How many days per week is the market open? What products are available in this market at current and normally? What prices are currently being charged for items as compared to normally? How has the disaster affected the functioning of the market? When will the market be back to normal? Would the local market have the capacity to respond to significant increases in demand (food, productive assets, seeds, fertilizers, etc.) in a short time? What do you think will happen for the upcoming holidays in terms of food and special items prices?

### 2.6 Dietary Intake

How many meals have you eaten in your households yesterday? And how many meals do you usually eat before the typhoon? What foods have you eaten yesterday (fruit, vegetables, cereal, meat, fish, eggs, dairy products, beans/nuts/seed, sugar/sweet, oil/condiment)? Have you had to reduce your intake since the disaster? Are you worried about not having enough food over the next 2-3 months?

### 2.7 Coping Capacity

Have you had to adjust your food supply since the disaster? Have you had to do any of the following activities to ensure there is food for the family – Rely on less preferred and less expensive foods, borrow food from a friend or relative, purchase food on credit, gather wild food, hunt, or harvest immature crops, consume seed stock held for next season, limit portion size at mealtimes, reduce number of meals eaten in a day, skip entire days without eating, restrict consumption by adults in order for small children to eat, send children to eat with, send household members to beg neighbors? Are you in need to sell any assets, i.e. livestock, equipment, land? Do you have any outstanding loans or credits that need to be paid back? At what condition?
Annex 2. Key informant interview questionnaire

Key Informant Interview Guidance – Agriculture Needs Assessments – Local Authorities
R = Region, P = Province, M = Municipality

1. Crisis and Disaster Management
   • What is the Department of Agriculture (DA)’s regional, provincial, or municipal level crisis management system?
   • Does the DA Region, Province, and Municipal level have a disaster management plan for the agriculture sector? Could you share the document?
   • Are there any strategic reserves for food, fodder, animal vaccines, replacement seed/equipment etc.? Is there a disaster fund or compensation scheme or social protection system/safety net (the later might be managed by a different line agency)?
   • What are the currently ongoing disaster response activities by your office (on regional, provincial or municipal level)?

2. Crops and Irrigation
   • What are your latest pre-disaster household crop cultivation data available on R/P/M level? Please share the main crops - cropping surface, yield and farm gate prices by crops.

SECTION 3 – ASSISTANCE
3.1 Did you receive any kind of assistance since the floods? What did you receive (specify in-kind assistance, food non-food items, agriculture/fisheries inputs, others)?

To restore your livelihoods, what assistance do you need? (same options as above)

Do you or anyone from your household have an active cellphone number?
Are you willing to accept temporary jobs?
Is your household a member of Pantawid Pamilyang Pilipino Program (4Ps)/Listahanan/Registry System for Basic Sectors in Agriculture (RSBSA)?

3.2 What are your major worries at this time?

SECTION 4 – ACCESS CONSTRAINTS
Are there any obstructions to access the location/site?

Is this location/site located in a flood prone zone?
What are the most preferred ways of communicating to aid providers about community needs or the assistance received?
Status of Network Services. What network service is either stable/acceptable?
Status of Internet Connection. What internet service is either stable/acceptable?
Electricity/Water supply still available?
• Were there standing crops at this time? When would the harvest have been? Can you share a seasonal calendar?
• Do you already have any household/community damage and loss data for these crops or equipment (i.e. tractors, tillers, crop storage etc.)?
• Will there be time for households/communities to re-seed before the end of this season? If so, by when would re-seeding need to happen? What is needed to ensure re-seeding is feasible?
• Are there any commercial crop farms in this R/P/M, for instance cereal, tubers, vegetables, fruit orchards, etc.? What surface has been cultivated in these farms before the disaster, how much was reported damaged or lost?
• Are there any seed farms or seed producer groups in this R/P/M? Have they been affected by the disaster or are they able to provide certified seeds?
• Are there any fertilizer or other chemical agro industry producing companies in this R/P/M that could affected by the disaster, and become an environmental hazard?
• What are the common crop pests and diseases, management and monitoring activities? Please briefly explain the system, and common response to outbreaks.
• Does your R/P/M have any irrigation systems? Traditional or modern? What are your latest pre-disaster irrigation system data available for this R/P/M? Have you received any damage data yet? Any damages reported on hydro dams, dams, embankments, canals, head intakes, or other?
• Will the lack of irrigation affect the next upcoming cultivation season?
• What are R/P/M main response gaps for crops and irrigation at this time? Possibly in 4-6 months?

3. Livestock
• What are your latest pre-disaster household livestock data available here on R/P/M level? Please share the main livestock species numbers for cattle/buffaloes, sheep/goat, pigs, chickens/ducks, mule/donkey/horse, camel, other relevant species?
• Do you already have any households/community livestock loss data? Is there any current account of animal death / sick/ injured across the above species due to the disaster and ensuing diseases?
• Are there any commercial livestock farms in this R/P/M, for instance chicken farms, piggeries, dairy farms, etc.? How many animals are registered in these farms before the disaster, how many have been reported lost? Could you provide details by species, gender and age?
• What are the current fodder and water provisioning activities for the remaining livestock in this R/P/M? What are the current animal shelter arrangements? Are there animals in the tent or temporary shelters of displaced people? Which kind of animals have been registered/observed in these displaced shelters and how many and where? What is your offices planned support activities for households, communities or commercial farms?
• What are the most common livestock diseases in this R/P/M? Please briefly explain the surveillance system and response plan. Did you have any recent outbreaks? If yes, which districts or villages for which diseases? When was the last vaccination campaign with what coverage (in percent) and where? What are the current livestock vaccination services available, veterinarians/para-vets, vaccines, cold chain, equipment? Do you have plans to do a vaccination campaign in response to the disaster, please explain the system and capacities?
• What are R/P/M current animal carcass management activities? Please explain the system and capacities, and how animal carcasses are managed and disposed of at this time, and if you are planning to adjust the system in the near future.
• Are there any specialized livestock markets in this R/P/M? How have they been affected? Infrastructure affected? How often do they happen? Any impact on the trading of animals across borders to the neighboring R/P/M or even country?
4. Fisheries and Aquaculture

- What are your latest pre-disaster household fisheries and aquaculture data available on R/P/M level? Please share numbers for the main fishing activities – number of fishponds and aquaculture ponds by species, how many households involved in river and marine fishing, registered fishing boats and types, other relevant equipment?
- Do you already have any households/community fisheries/aquaculture loss data?
- Are there any commercial fish farms in this R/P/M? How many fish/animals are registered in these farms before the disaster, how many have been reported lost?
- Are there any fish breeding stations in this R/P/M, which could be affected by the disaster? What is their fingerling and seed potential? Any feed companies?
- What are the most common type and size of boat/fishing vessel the affected communities use?
- What is the most common fishing equipment use, especially for small boat/small fisherman?
- Are there any government or private run facilities such as fish landing, processing, cold storage etc, that are affected by the disaster? Are there any fish aggregation devices for fishing in the affected area?
- Are there any marine protected areas or species in the area affected by the disaster? How have they been controlled and regulated before the disaster?
- How much of the local fish catch is destined for national level consumption and exportation?
- What are R/P/M main response gaps for fisheries/aquaculture at this time? Possibly in 4-6 months?

5. Markets

- Are local markets available and functional?
- How far is the closest market to purchase basic items?
- What is the name of the closest market location?
- How many days per week is the market open?
- What products are available in this market at current and normally?
- What prices are currently being charged for the items as compared to normally?
- How has the emergency affected the functioning of the market?
- When will the market be back to normal?
- Would the local market have the capacity to respond to significant increases in demand (food, productive assets, seeds, fertilizers, etc.) in a short time?
- What are R/P/M main response gaps for market rehabilitation at this time? Possibly in 4-6 months?