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FINAL REPORT

# Internal Migration In The Philippines: Adaptation To Climate Change (IMPACT)

By Dr. Sonja Ayeb-Karlsson and Dr. Noralene Uy

Implemented by



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Institute for Environment  
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## Acronyms

<b>ADB</b>	Asian Development Bank	<b>EM-DAT</b>	Emergency Events Database
<b>ARMM</b>	Autonomous Region in Muslim Mindanao	<b>ENSO</b>	El Nino Southern Oscillation
<b>BARMM</b>	Bangsamoro Autonomous Region in Muslim Mindanao	<b>FCM</b>	Fuzzy Cognitive Mapping
<b>BFAR</b>	Bureau of Fisheries and Aquatic Resources	<b>FGD</b>	Focus Group Discussion
<b>BPI</b>	Bank of the Philippine Islands	<b>GCM</b>	Global Compact on Migration
<b>CALABARZON</b>	Cavite, Laguna, Batangas, Rizal, and Quezon (Region 4-A)	<b>GFDRR</b>	Global Facility for Disaster Reduction and Recovery
<b>CCA</b>	Climate Change Adaptation	<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit
<b>CCAM-DRR</b>	Climate Change Adaptation, Mitigation and Disaster Risk Reduction Cabinet Cluster	<b>HDI</b>	Human Development Index
<b>CCC</b>	Climate Change Commission	<b>HMCCC</b>	Human Mobility in the Context of Climate Change
<b>CIAT</b>	International Center for Tropical Agriculture	<b>HSBC</b>	Hongkong and Shanghai Banking Corporation
<b>COVID-19</b>	Coronavirus Disease 2019	<b>IDMC</b>	Internal Displacement Monitoring Centre
<b>CRVA</b>	Climate Risk Vulnerability Assessment	<b>IMPACT</b>	Internal Migration in the Philippines: Adaptation to Climate Change Project
<b>CSS</b>	Collective Storytelling Session	<b>IOM</b>	International Organization for Migration
<b>DA</b>	Department of Agriculture	<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>DHSUD</b>	Department of Human Settlement and Urban Development	<b>KEI</b>	Key Expert Interview
		<b>KES</b>	Key Experience Session



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# 01

## Introduction

The Philippines is frequently ranked as one of the places most at risk of climate change (Germanwatch 2018). The geographical location brings exposure to a range of weather-related hazards, and its large population dependent on natural-resource-based livelihoods are vulnerable to climatic changes. Until now, most research on human mobility in the Philippines has been on quick onset hazards such as typhoons, but slow onset processes such as changes in temperatures, rainfall and sea level rise are also impacting people and contributing to migration and displacement (IDMC 2019). Global policy frameworks have recently identified the need for more studies on slow onset processes. For example, Activity I.2 of the Task Force on Displacement's (TFDs) Workplan concerns "Synthesizing the state of knowledge to better understand displacement related to slow onset events" (UNFCCC 2018). Strategic priority 1.6 of the Workplan of the Platform of Disaster Displacement refers to the need to "Promote and disseminate research and findings on gaps in the context of slow onset and extreme events associated with the adverse effects of climate change" (PDD 2018). This research makes valuable contributions to these workplans and data gaps.

Many regions in the Philippines are at risk of slow onset processes, such as sea level rise, land degradation and desertification, changes in rainfall and drought. One may evacuate from a cyclone and return home to continue their livelihood, but when a livelihood is dependent on rain-fed agriculture, in situ adaptation may be more problematic as precipitation or access to water slowly decreases over time. People may adjust their livelihoods, or shift to a more sustainable income source to protect themselves against food and livelihood insecurity (Scoones 1998). Migration can be an effective way to bounce back from environmental stress. People who migrate to a place where they already have a social network may have better access to livelihood assets, such as land, housing, and jobs. However, it can also come at a cost; working conditions can lead to injuries, or loss of ability to work and so income loss and reduced livelihood resilience. Migration can therefore serve as a solution to escape environmental stress, but it can also expose people to new hazards and risks (Warner and van der Geest 2013; McNamara et al. 2016; Ayeb-Karlsson et al. 2016). Mobility related to slow onset processes can take on a more permanent or circular profile interacting with the idea of translocality,

which can have positive and/or negative impacts on livelihoods, health and human rights and culture (Oakes 2019). However, slow onset processes may also erode people's ability to move and make people more vulnerable to the impacts of sudden onset hazards (Black et al. 2011).

The IMPACT project undertook a study of perceptions of slow onset climatic risks and migration in the Philippines. Typhoon Haiyan proved the importance of perceptions in the Philippines as many did not evacuate despite having received the warning message days prior to its landfall (GIZ 2014; Ayeb-Karlsson et al. 2019a). The assumption is often that people will prepare and respond to climatic impacts if they have the means to do so (Mercer et al. 2009; Bankoff 2015). However, individual behaviour is deeply influenced by what is expected by the peer group and its cultural and social norms (Oakes 2014; Ayeb-Karlsson et al. 2019b). It is therefore vital to gain deeper insights into the impacts of migration in origin and destination areas, which can inform and be informed by perceptions (Oakes 2019). Migration can have a range of impacts for those moving, their origin and arriving areas (Gemenne and Blocher 2017). An effective way to enhance

the understanding how people's perceived risks relate to human mobility is to follow migrant individuals, families and social 'communities'. This allows for examination of the social, cultural and economic impacts, which can give valuable insights how such movements bring positive outcomes, and whether they have served as successful adaptation strategies (Oakes, Banerjee and Warner 2020). In this way, IMPACT's people-centred research approach supported in enhancing the knowledge on slow onset-induced internal migration in the Philippines, but also on how research programmes best can support relevant policy- and decision-making processes.

## 2.1 CLIMATIC AND ENVIRONMENTAL STRESS IN THE PHILIPPINES

**B**y its location in the tropics along the western rim of the Pacific Ring of Fire and the Pacific typhoon belt, the Philippines is found to be vulnerable to multiple hazards. At least 60% of the total land area of the country is exposed to natural hazards and 74% of total population is vulnerable to disasters (GFDRR 2013). As with most countries, disasters in the Philippines are closely linked to environmental and social degradation, which are exacerbated by climate change (Wisner et al. 2003; IPCC 2018; UNESCAP 2019). Disasters happen when exposed and vulnerable human and natural systems interact with extreme weather and climate events (IPCC 2012). Based on the Intergovernmental Panel on Climate Change (IPCC) Global Warming of 1.5°C report, risks from droughts and precipitation deficits, and heavy precipitation events especially those associated with typhoons are projected to be higher at 2°C compared to 1.5°C (IPCC 2018). Socio-economic processes in a developing country like the Philippines determine exposure to hazards and the level of vulnerability and adaptive capacity of populations (Wisner et al. 2003). It is expected that climate change will have direct and indirect negative impacts that will increase the stress on natural ecosystems and biodiversity in the country and consequently to vulnerable populations that highly depend on them for sustenance and livelihood (Cruz et al. 2017).

The Philippines has consistently been identified among the highest countries at risk in different risk indices such as (1) the Global Climate Risk Index where it ranked fourth for long term climate risk for the period 1999-2018 (Eckstein et al. 2019), (2) the Hongkong and Shanghai Banking Corporation's (HSBC) Climate Vulnerability Report in 2018 ranked the country 3rd for highest number of people affected by climate change for period 2007-2016, and (3) the 2019 World Risk Index ranked the Philippines ninth country most at risk of being exposed to extreme natural events and sea level rise (Mucke et al. 2019). Furthermore, disasters, both natural hazards- and human- induced (e.g. conflict and violence) have resulted in 484,000 and 88,000 new displacements, respectively, in the Philippines between January to June 2019 (IDMC 2019). The Emergency Events Database (EM-DAT) reports that between 1989-2019, disasters in the Philippines caused over 40,000 deaths, affected 188 million

TABLE 1: DROUGHT EVENTS IN PERIOD 1968-2016

DROUGHT EVENT	AREAS AFFECTED	DAMAGE
1968-1969	Moderate to severe drought over most of the Philippines with Bicol region as the most affected	Total loss of 5x10 <sup>5</sup> Mt of rice and corn
1972-1973	Central Luzon, Palawan, Visayas, and Mindanao	Total loss of 6.3x10 <sup>5</sup> Mt of rice and corn
1977-1978	All of Mindanao except Davao	Total loss of 7.5x10 <sup>5</sup> Mt of rice and corn
1982-1983 October 1982 - September 1983	Western and Central Luzon, Southern Tagalog provinces, Northern Visayas, Bohol, and Western Mindanao; Moderate to severe drought affected most of Luzon, Negros Occidental, and Iloilo	Total loss of 6.4x10 <sup>5</sup> Mt of rice and corn Insurance claims amounted to PhP38 M; Hydropower generation loss was PhP316M
1986-1987 October 1986-September	Severe drought affected Bicol region, Southern Negros, Cebu, and Western Mindanao; Severe drought affected mainland Luzon, Central Visayas, and Western Mindanao	Estimated agricultural damages of PhP47 M; Estimated hydropower generation loss was PhP671 M
1989-1990 October 1989- March 1990	Drought affected Cagayan Valley, Panay Island, Guimaras, Palawan, and Southern Mindanao; Affected rice and corn area: 283,562 hectares; Major multi-purpose water reservoirs reduced inflow	Estimated 5x10 <sup>5</sup> Mt of rice and corn; Hydropower generation loss of PhP348M; 10% cutback in water production in Metro Manila
1991-1992	Severe drought affected Manila, Central and Western Visayas, and Cagayan Valley; Affected agricultural area: 461,800 hectares; 20% shortfall in Metro Manila's water supply	PhP4.09 B in agricultural losses
1997-1998	About 70% of the Philippines experienced severe drought; About 292,000 hectares of rice and corn area completely damaged	622,106 Mt of rice production loss and 565,240 Mt of corn amounting to PhP3 B; water shortages; forest fires and human health impacts 100% loss in production during the dry season and more than 33% loss during the wet season Significant decrease in the production of several fruit crops

Table continued on the next page >

Table 1 illustrates the damages and impacts on the affected areas of the larger drought events between the years of 1968 and 2016 (based on Yumul et al. 2010; Villarin et al. 2016; Cruz et al. 2017; FAO 2017).

TABLE 1: DROUGHT EVENTS IN PERIOD 1968-2016 (*continued*)

DROUGHT EVENT	AREAS AFFECTED	DAMAGE
May 2002 – March 2003	Severe drought affected Western Mindanao. Central Mindanao, Bicol, Eastern Visayas, Southern Tagalog and Northern Luzon moderately affected.	0.8% reduction in rice production in first quarter of 2003
2009 – 2010	Dry spell affected many parts of the country such as Pampanga, Batangas, Aurora, Quezon, Isabela, Nueva Viscaya, Quirino, Abra, Benguet, Kalinga, Ifugao, Apayao, Mountain Province, Ilocos Norte, Ilocos Sur, La Union, Pangasinan, Cagayan and Bataan in Luzon; Capiz, Northern Samar, Aklan, and Guimaras in the Visayas; and Davao del Sur, South Cotabato and Sultan Kudarat in Mindanao	USD 240 million in damages
February 2015 – July 2016	85% of provinces experienced drought. Iloilo, Guimaras, General Santos City, Isabela, Quirino, Bukidnon, Davao del Sur, Basilan, Bohol, and Cebu declared a state of calamity.	PhP 10 billion in crop damages; 1.48x10 <sup>6</sup> Mt of crops lost including rice, corn, cassava, banana and rubber; over 400,000 farming households and 556,000 ha affected; 23% decline in fish catch & PhP 600 million preventive expenditures

people, and brought direct economic losses estimated at USD 24.4 billion. Climatological and hydrometeorological events (i.e., typhoons, landslides, flood, drought, subsidence) accounted for 86% of deaths, 96% of total population affected, and 97% of direct economic losses in this period (EM-DAT 2020). South-eastern Luzon and Eastern Visayas have been identified as country areas most at risk of experiencing climate-related stress (Manila Observatory 2005). A regional study also identified Metro Manila, Southern Tagalog, Cagayan Valley, Central Luzon, the Cordillera Administrative Region, Ilocos and Bicol Province as some of the most vulnerable locations to climate risks in Southeast Asia (Yusuf and Francisco 2009).

Climate variability in the Philippines is largely driven by rainfall, which is influenced by the El Niño Southern Oscillation (ENSO), monsoons, and mesoscale systems (Jose and Cruz 1999; Estoque and Balmori 2002; Cruz et

al. 2013). Drought and water stress occur during El Niño events, while La Niña events bring heavy rainfall (Villarin et al. 2016). Excessive rainfall has caused landslides and floods such as those in Quezon and Iloilo in 2004 and 2008. For example, perennial flooding affected villages along the riverbanks, damaged fishponds and agricultural lands, and destroyed roads and bridges and other infrastructure in the Cagayan River Basin and other major river basins. As a result, agricultural production, particularly rice which is very sensitive to water and temperature stress, is negatively affected by highly variable rainfall patterns and distribution. Destructive landslides also created great damage in Guinsaugon, Southern Leyte in 2006 and Masara, Compostela Valley in 2008. Finally, Metro of Manila in 2009 experienced disastrous floods from torrential rains brought in by Typhoon Ketsana (Cruz et al. 2017).

The rising temperatures are observed to increase the frequency and intensity of droughts during the summer, dry months, as well as dry spells during the ENSO events (Cruz et al. 2007; IPCC 2007). Climate projections estimate an increase in annual precipitation from -7.5% to 23% in 2020 and -9.5% to 27.8% in 2050 with increases occurring in most areas of Luzon and Visayas and decreases in Mindanao (CCC 2014). Studies indicate that rice, corn, and other grain-producing and moisture-deficit areas that experience seasonal aridity, recurrent droughts, and desertification processes can be found in Northern Luzon including Cagayan Valley, and Mindanao including Davao del Sur (DA et al. 2010). Long dry periods during El Niño events have also been associated with increased fire occurrences that alter grasslands, agroecosystems, and forests in central Luzon (Lasco et al. 2005). As an overview, significant drought events in the period between 1968 and 2016 are summarized in Table 1. The EM-DAT database indicates that drought events in 1978, 1980, 1983, 1987, 1990, 1998, 2002, 2007, 2015, and 2019 together affected a total of 6.7 million people in the Philippines (EM-DAT 2020).

Slow onset environmental events such as temperature changes, sea level rise, erosion and land degradation in combination with economic and social factors often lead to permanent and long-term migration in the Asia-Pacific region (Ayeb-Karlsson et al. 2016; ADB 2017). Annual economic losses in the region are estimated at USD675 billion, out of this nearly two-thirds are due to slow onset events that has contributed to an increasing internal displacement and migration movements in the recent years (UNESCAP 2019). Sea level rise in the Philippines is expected to reach approximately 20cm by the end of the 21st century (from a worst-case scenario) increasing more than the global average sea level rise (PAGASA 2018). Sea level rise can be attributed to socio-economic and physical factors including excessive groundwater withdrawals, beach mining, coastal modifications, and mangrove removal, among others (Cruz et al. 2017). A coastal study in Eastern Samar and Cebu nicely summarised the impacts and recommended adaptation measures of sea level rise (as shown in Table 2).

**TABLE 2: IMPACTS AND RESPONSES TO SEA LEVEL RISE**

IMPACTS	ADAPTATION MEASURES
<ul style="list-style-type: none"> <li>• Increased vulnerability of coastal communities to storm surges and tsunamis</li> <li>• Loss of habitable lands due to water intrusion                             <ul style="list-style-type: none"> <li>• Coastal erosion</li> </ul> </li> <li>• Damage to coastal resorts and properties</li> <li>• Salt water intrusion to domestic water source                             <ul style="list-style-type: none"> <li>• Flooding in residential areas</li> <li>• Danger to lives of coastal households</li> <li>• Damage to crops and residences</li> </ul> </li> <li>• Loss of sources of livelihood and income</li> <li>• Loss of tourism business and local employment</li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of liveable resettlement sites with livelihood for highly vulnerable coastal communities</li> <li>• Review of the 40 m easement no-build zone policy                             <ul style="list-style-type: none"> <li>• Assessment and proper zonation of coastal areas according to suitable use(s)</li> <li>• Improvement in structural design and requirements for ports, sea walls, and coastal resorts' establishments in view of the occurrence of coastal erosion</li> </ul> </li> <li>• Improved and active information, education, and communication campaign                             <ul style="list-style-type: none"> <li>• Program for alternative livelihoods for households in critical coastal and marine areas</li> </ul> </li> <li>• Rehabilitation of lost and degraded mangrove and beach forest areas as greenbelts</li> </ul>

Table 2 illustrates the impacts and response measures registered in the Philippines (based on Mangaoang et al. 2019).



## 2.2 MIGRATION AS AN ADAPTATION STRATEGY

Internal migration and displacement studies in the Philippines until date have mostly focused on environmental shocks and sudden-onset natural hazards (such as typhoons, storm surges, earthquakes, floods) and conflict events. Meanwhile, we still know very little about the impacts upon people of gradual climate changes as manifested through slow onset events. Climate-related variables were not even incorporated into the recently concluded 2018 National Migration Survey (NMS) undertaken by the Philippine Statistical Authority (PSA) and the University of the Philippines Population Institute (UPPI). This study therefore supports filling this knowledge gap and increases our understanding of the mobility desires, patterns and behaviors of people responding to slow onset events in the country.

Poverty in rural areas is one of the main drivers of internal migration to cities on a global level. This is also the case in the Philippines where people often migrate towards the cities for work. These internal mobility dynamics have resulted in both emigration pressures and new demands on the destination areas (IOM 2013). Migration as an adaptation strategy to environmental stress is a common livelihood strategy for individuals as well as for whole families (Quisumbing and McNiven 2010). However, social tension and conflict feeds into the country's mobility patterns and particularly in some regions. In Mindanao, for example, a long history of internal armed conflict and instability have resulted in large-scale and involuntary movement outward or away from areas of heavy conflict between military and insurgent groups. Additionally, some areas with high rates of population displacements also experience equally high rates of provincial out-migration by households who choose to avoid security risks (Tigno 2006).

According to the 2018 NMS, about four in ten Filipinos are lifetime migrants involving movement from one region to another (23%), and movement from one city/municipality to another within the same province (12%). In contrast

to lifetime migrants, the 2018 NMS shows that only 15% of Filipinos migrated in the past five years, of which 13% are internal migrants, while 2% are international migrants. Internal migration in the Philippines can be described as largely rural to urban and rural to rural, it is also most commonly carried out by women and youth (Gultiano and Xenos 2004; Quisumbing and McNiven 2005). Migration flows are mainly interprovincial, with the National Capital Region (NCR) and surrounding areas as the prime destination (Quisumbing and McNiven 2005). Results of the 2018 NMS shows that the percentage of Filipinos with internal migration experience ranges from 4% in Central Luzon to 20% in Bicol, Eastern Visayas (22%), and ARMM (22%). NCR and CALABARZON are the top migrant destination regions as well as Central Luzon, Davao Region, and Central Visayas (PSA and UPPI 2019). Educated populations migrate to urban centres for employment or education, while less educated individuals often move to urban areas for manual labour or low-paying jobs (Deshingkar and Natali 2008). The 2018 NMS indicates that the percentage of Filipinos with internal migration experience also increases as education level increases, from 11% of those with less than high school education, to 15% of those who have attended college or higher. Across employment status, more unemployed Filipinos have moved within the Philippines in the past five years compared to the employed (15% vs. 12%) (PSA and UPPI 2019). It is estimated that at least 75% of migrants find employment in their areas of destination (DHSUD, 2016).

Bohra-Mishra et al. (2017) found that temperature and increased frequency of typhoons mainly exaggerate outmigration of men, more educated and younger populations. According to the 2000 Census on Population and Housing, migration in the Philippines is characterized by persons in the prime ages (52% among working age 20-39), females in the 20-29 age group (33.6% of female migrants), single or unmarried (46% of migrants), at least high school graduates (24%). The 2018 NMS reveals that internal migration in the past five years decreases with increasing age, from about 30% of those in the age



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groups 15-19 years and 20-29 years making this move, to less than 5% of those above 50 years old. Majority of women aged 15-49 have lived continuously in their current location (see Table 3) (Philippine NDHS 2017). When asked on their intention to move in the next five years, households in the study regions reported their intention whether to move or to reside in the city/municipality of residence 5 years after the survey (see Table 4).

Education and social networks are some of the ‘pull factors’ while unemployment, low wages, low profitability in farming, lack of infrastructure facilities in the rural areas are some of the reasons why people leave their villages (Paris et al. 2009). Family pressure and family ties, and to a lesser extent prior migration experience, economic resources, marital status and age are also considered important factors to a person’s migration intentions (De Jong et al. 1985). Migration is a common livelihood strategy of poor farming households which helps to smooth seasonal income fluctuations and earn extra cash to meet contingencies or increase disposable income (Paris et al. 2009).

In Cagayan Valley, a study found that a majority of the migrants come to urban centres, including Santiago City, from provinces within the region. Generally, migration in the Cagayan Valley is of economic nature. These urban centres were often perceived to offer better jobs, opportunities for higher income, or business opportunities, peaceful living, and better housing. The main reasons provided for people’s migration decisions were employment and business opportunities, new environment to live in, joining loved ones, and education (Asis 2011). Migration studies in the Philippines would benefit by an increased understanding of the factors that influence demographic and environmental change such as natural resource endowments, climate and topography, soil quality, transportation linkages to markets and cities and availability of off-farm employment; access to family planning, health and education facilities, availability of rainfall and surface or ground water, land tenure and distribution, agricultural prices, availability of labour for farming, and government policies (Bilsborrow 1992). The 2018 NMS describes the main reasons and decision makers for internal movements as employment, housing and school; and self and immediate family, respectively (see Table 5).

**TABLE 3: DISTRIBUTION OF NON-MIGRATING WOMEN**

BACKGROUND CHARACTERISTIC	WEIGHTED PERCENT	WEIGHTED NUMBER	UNWEIGHTED NUMBER
< 6 months	3.4	856	751
6-11 months	2.1	518	399
12-23 months	2.4	597	556
2-4 years	12.2	3,064	2,709
5-9 years	14.5	3,634	3,210
10+years	26.6	6,660	6,730
Always/Since Birth	38.7	9,703	10,654
Visitor	0.2	43	65
<b>Total</b>	<b>100.0</b>	<b>25,057</b>	<b>25,074</b>

Table 3 indicates the percent distribution of women aged 15 to 49 who decided to remain living in their current locations (NDHS 2017).

**TABLE 4: HOUSEHOLD'S INTENDED MIGRATION MOVEMENTS**

PROVINCE	TOTAL NUMBER OF HOUSEHOLDS	RESIDENCE 5 YEARS AFTER SURVEY			
		SAME PROVINCE	DIFFERENT PROVINCE	FOREIGN COUNTRY	NOT REPORTED
Tarlac	280,382	278,069	604	702	762
Isabela	336,823	336,259	420	515	431
Negros Occidental	630,586	626,782	619	483	1,761
Eastern Samar	90,041	89,325	283	111	233
Davao del Sur	535,460	526,285	2,401	1,242	4,772
North Cotabato	271,784	269,746	598	101	905

Table 4 summarises the households' intentions of where to reside in the city/municipality of residence 5 years after the survey (National Statistics Office - Census of Population and Housing 2010).

## 2.3 MIGRATION IMPACTS ON ORIGIN AND DESTINATION AREAS

### A) ECONOMIC IMPACTS (INCLUDING REMITTANCES)

The 2018 NMS shows that 16% of population surveyed aged 15 and above received remittances from either a domestic source or a foreign source (both at 48%). In addition, 10% of the population surveyed sent remittances, almost all to a domestic recipient (98%) (PSA and UPPI 2019). As observed in the Country Migration Report, poor households in the origin areas tend to receive remittances from internal migrants rather than from overseas (IOM 2013). These domestic remittances mainly come from household helpers, mostly women, and other service workers who moved from rural areas to urban centres. In this way, poor households in rural areas benefit financially from the internal migration through remittances (Ang et al. 2009). A study in Bukidnon, Mindanao showed for example that remittances have a positive impact on housing and consumer durables, nonland assets, educational expenditures, and total expenditures (Quisumbing and McNiven 2010). Remittances are often spent on food, children's education, farm inputs, and health care (Paris et al. 2009). More females received and sent remittances, and senior citizens comprise the age group with highest percentage of remittances received (21%). The age groups 30-39 and 40-49 accounted for a large percentage of those that sent remittances (PSA and UPPI 2019).

### B) SOCIAL IMPACTS (INCLUDING SOCIAL NETWORKS AND CULTURE)

Extended households are common in urban areas in the Philippines partly due to migration as many urban households take in relatives arriving from their rural areas. Other factors that may account for this include housing shortages, economic considerations, and social and family obligations. A case study in the Visayas showed that female headed households arising from

gender-selective migration in urban areas are rare because of social constraints including the illegality of divorce. The social value placed on family coherence and interpersonal harmony, child-centeredness, and moral propriety of women, end up discourage women from separating from their spouses (Chant 1998).

### C) POLITICAL IMPACTS (INCLUDING POLICY, POLICY PLANNING AND SUPPORT)

Migration to urban centres in the Philippines has given rise to issues in housing and the increasing population in informal settlements, transportation systems, and urban planning, in general. It also raises concerns on commercial business districts having different day time and night time populations and the problems that go with addressing the needs of the former. In-city relocation schemes by city governments have been successful in some, but the move is generally to take populations away from the cities and into adjacent regions. However, livelihood or employment is often not available in these areas. Developing economic zones in the peripheries of cities has proven to be a good strategy in addressing issues of employment and housing. In the case of displaced populations due to disasters, however, resettlement to another area is often not welcomed due to reasons such as poor basic services and infrastructure, lack of livelihood and / or employment opportunities, and worries around the upcoming relationships with people in the destination area.

In-migration is increasingly being seen as a governance challenge requiring urban local governments to plan for additional provision of basic social services (e.g. health, education, security and more) to new migrants. This necessitates the consideration of migration and development in planning, investment in a migration information database, and engagement of migrants and diaspora settlements with the local government (IOM 2013).

TABLE 5: DISTRIBUTION OF INTERNAL MIGRANTS BY REASON AND DECISION-MAKER

REASON FOR MOVING/DECISION MAKER	LAST INTERNAL MOVE (IN THE PAST 5 YEARS) (%)		
	MALE	FEMALE	BOTH SEXES
School	7.1	11.2	9.2
Employment/Job change Job relocation	27.1	19.2	23.0
Family business succession	0.5	0.3	0.4
Finish contract	7.5	3.5	5.4
Retirement	0.5	0.3	0.4
Housing-related reason	15.5	17.3	16.4
Living environment	4.4	5.6	5.0
Community-related reason	0.7	0.5	0.6
To live with parents	5.9	6.7	6.3
To live with spouse	7.1	12.8	10.0
To live with children	1.6	2.6	2.1
Marriage	4.2	6.6	5.4
Divorce	0.1	0.2	0.1
Health-related reason	2.2	1.2	1.7
Peace and security	1.4	0.9	1.2
Other	14.2	11.1	12.6
<b>DECISION MAKER</b>			
Self	57.5	44.1	50.6
Spouse/partner	1.8	5.5	3.7
Joint decision of self and spouse	21.3	30.0	25.8
Immediate family	16.5	16.4	16.4
Other relatives	1.7	3.3	2.5
Others	1.2	0.9	1.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Number of internal migrants</b>	<b>1,555</b>	<b>1,647</b>	<b>3,202</b>

Table 5 shows the distribution of internal migrants aged 15 and over, by reason and decision-maker in the last internal move in the past five years (PSA and UPPI 2019)

# 03

## Overview of the Study Areas

The research locations were distributed across the three major island groups of the Philippines and include places of migration origin and destination. For each study site, a context specific set of slow onset climate change drivers was examined including warming, drought, sea level rise, salinization of land or water, shifting rainfall/flood regimes, and natural resource and land degradation (e.g. desertification). For each of the three provinces, one site with relatively low risk was selected and another with relatively higher risk according to the data contained in the DA and CIAT Climate Risk Vulnerability Assessment (CRVA). By selecting six pairs of locations, we were able to gain an understanding of the current translocality<sup>1</sup> and its interaction with climate change, adaptation and migration.

### 3.1 JUSTIFICATION OF SITE SELECTION

The three major island groups in the Philippines, i.e., Mindanao, Visayas and Luzon have different socio-spatial characteristics that make them vulnerable to climate-related risks. Building onto the selection criteria suggested by GIZ, cities and municipalities were selected from the provinces of Isabela and Tarlac and the NCR in Luzon, Eastern Samar and Negros Occidental in the Visayas, and North Cotabato and Davao del Sur in Mindanao to obtain a broad, diverse sample (see Figure 1 and Table 6). The findings of the Climate Risk Vulnerability Assessment project of the Department of Agriculture (DA) and International Centre for Tropical Agriculture (CIAT) informed the study site selection (Palao et al. 2016), supplemented by government reports (e.g. NEDA 2017) that were used for Eastern Samar as the area was not part of the DA and CIAT project. Eastern Samar is vulnerable to hydro-meteorological hazards due to its location along the eastern seaboard, and has 50-70% of the population that is poor. During the literature review, minor changes were made to the study site selection as the research team informed themselves of how to best capture the breadth and depth of the country's social and environmental processes. The research team also decided to maintain some flexibility for the study site selection as the field work began. For example, the knowledge gathered during the national and local

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<sup>1</sup> Translocality is a variety of enduring, open, and non-linear processes, which produce close interrelations between different places and people. These interrelations and various forms of exchange are created through migration flows and networks that are constantly questioned and reworked (definition from [www.transre.org](http://www.transre.org)).

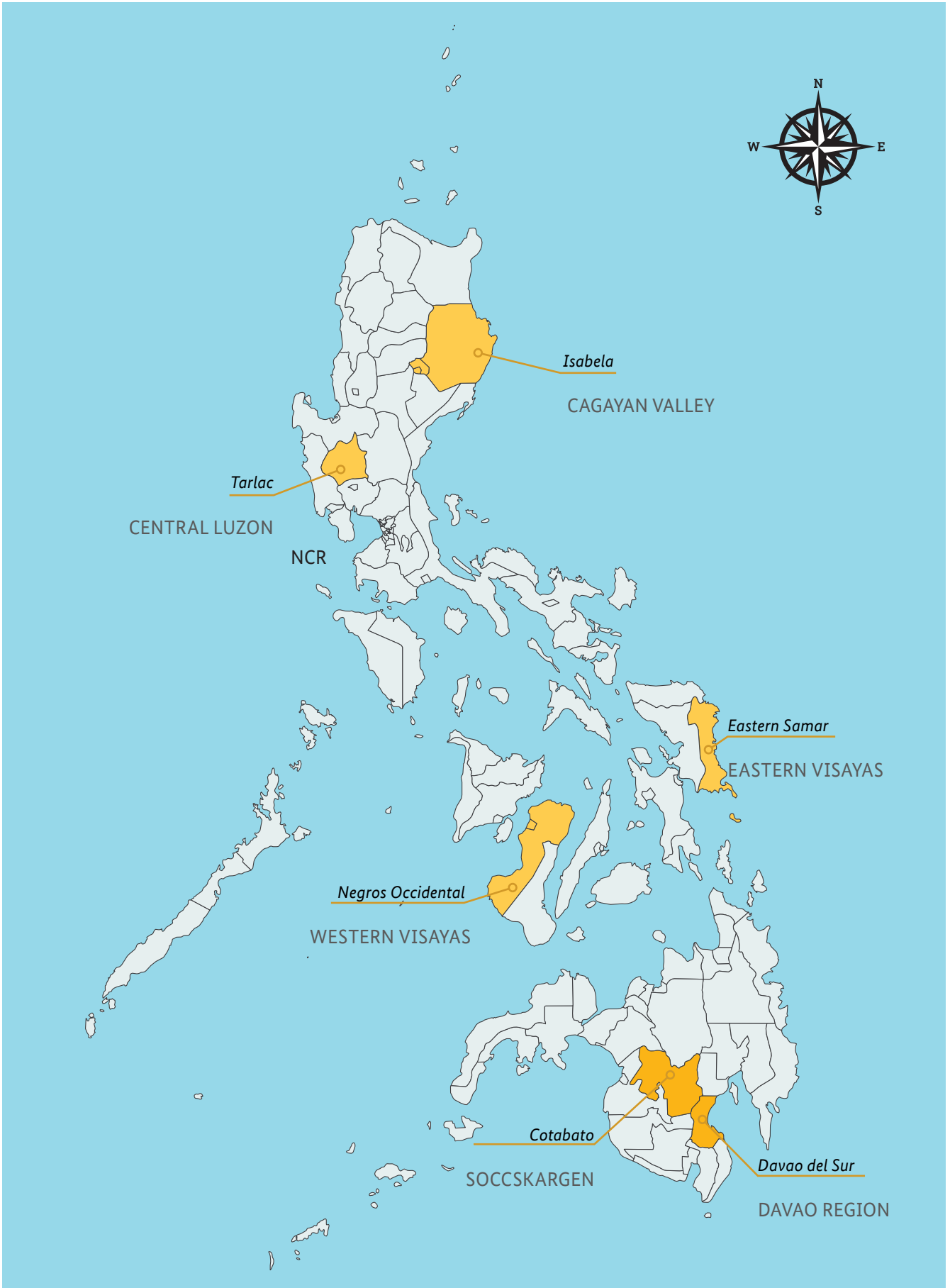


FIGURE 1. IMPACT STUDY SITES

[BASE MAP BY VEMAPS.COM](http://VEMAPS.COM)

expert interviews were considered in terms of the origin areas, meanwhile the early findings from the origin areas were used to justify the selection of the destination areas.

### **A) MINDANAO: CHANGING WEATHER, ETHNIC GROUPS AND CONFLICT**

Mindanao's climate makes it ideal for crop production all year round. The region contributes to over 40% of the country's food requirements and 30% to national food trade. Mindanao is a culturally-rich and conflict-ridden region due to the presence of ethnic groups, Islamic communities, and Christian migrants, that live together in several areas. Northern Mindanao's proximity to the Pacific typhoon belt makes it particularly vulnerable to extreme rainfall events (ADB 2015). The changes in the climate patterns in recent decades also generated destructive typhoons such as Sendong in 2011 and Pablo in 2012 during the last months of the year.

Davao del Sur is an agricultural province due to its favourable climate and fertile soil. It is known as the 'Coconut Country' since coconut is a major commercial crop along with rice, corn, bananas, cacao, ramie, coffee, fruits and vegetables. The region is built up by eleven coastal municipalities facing the Philippine Sea. The province is diverse as it has sandy beaches and outlying islands, agricultural plains and valleys, rainforests, swamps, rolling hills and mountains. The mountains include the Philippines' highest peak, Mt. Apo, which is at 2,954 metres (9,692 ft) above sea level. Aeta populations as well as Lumad groups (i.e., Bagobo, Tagacaolo, Kalagan, Mangguangans) inhabit the areas near the slopes of Mt. Apo and the Davao Gulf. The indigenous Moro, a Muslim-majority ethnic group that form the largest non-Christian majority population in the country, also occupy some areas of the province.

Davao City is geographically situated in the province of Davao del Sur but is governed and administered independently from it. The city is the centre of Metro Davao, the third-most populous metropolitan area in the country with a population of 2.5 million based on the 2015 census. It serves as the main trade, commerce, and industry hub of Mindanao, and the regional centre of Davao Region. Barangay 8-A is located close to the Bankerohan public market and has informal settlements, and a relocation centre for Lumad people from Davao del Norte who were displaced from their ancestral lands by militarization.

Sulop is a 3rd class municipality in the province of Davao del Sur, occupying a total land area of 155.26 km<sup>2</sup>. It has a population of 33,613 with a poverty incidence of 21.4 percent based on the 2015 census. In December 2019, 14 barangays and 310 families in Sulop were affected by a Magnitude 6.9 earthquake that occurred in Mindanao. Barangay Labon has a population of 1,301 based on the 2015 census. Livelihoods are agriculture-based, with rice, corn, sugarcane, and vegetables as the main products.

North Cotabato, now referred to as the province of Cotabato, is an agro-industrial province producing rice and exotic fruits and processing crops such as rubber and sugar, as well as generating geothermal energy. It is a landlocked region with some of its villages under the jurisdiction of the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM). The province recorded the highest population in 2015, 1.38 million, among the four provinces in the region (NEDA-R12 2017). The province is traditionally inhabited by various ethnic groups such as the Manobos and the Bagobos as well as the Muslims before the coming of Christian migrants from Luzon and Visayas, who saw potential for agricultural lands and organized settlements. The Muslim Independence Movement, which rallied for the independence of Mindanao, found its roots in



**TABLE 6: STUDY SITE OVERVIEW**

Municipality / City	Province	Island Group	Origin Or Destination?	Vulnerability Class	Main Climate Stressor	Main Language
Yeban Norte	Isabela	Luzon	Origin	Moderate vulnerability	shifting rainfall and flood regimes	Ilocano, Tagalog
Ilagan City	Isabela	Luzon	Destination	Moderate vulnerability	shifting rainfall and flood regimes	Ilocano, Tagalog
Camiling	Tarlac	Luzon	Origin	Very high vulnerability	shifting rainfall and flood regimes	Ilocano, Tagalog
Quezon City	NCR	Luzon	Destination	Moderate vulnerability	shifting rainfall and flood regimes	Tagalog
Salcedo	Eastern Samar	Visayas	Origin	Very high vulnerability	shifting rainfall and flood regimes	Waray
Borongan	Eastern Samar	Visayas	Destination	Moderate vulnerability	shifting rainfall and flood regimes	Waray
Talisay	Negros Occidental	Visayas	Origin	Very high vulnerability	Warming, drought	Hiligaynon
Bacolod City	Negros Occidental	Visayas	Destination	Moderate vulnerability	Warming, drought	Hiligaynon
Matalam	North Cotabato	Mindanao	Origin	Very high vulnerability	Warming, drought	Hiligaynon, Bisaya
Kabacan	North Cotabato	Mindanao	Destination	Moderate vulnerability	Warming, drought	Hiligaynon, Bisaya
Sulop	Davao del Sur	Mindanao	Origin	Very high vulnerability	Warming, drought	Bisaya, Cebuano
Davao City	Davao del Sur	Mindanao	Destination	Moderate vulnerability	Warming, drought	Bisaya, Cebuano

the province. The area has for a long period been a battleground between rebel groups and military forces of the government.

The province of Cotabato does not experience typhoons, and rainfall is evenly distributed throughout the year. It experienced a severe El Niño event in January 2016, however, which affected 27,558 hectares of farm lands and an estimated damage of PHP238 million which prompted a declaration of a state of calamity (Romero 2016). Adding to this, people also faced a series of earthquake events in October and December 2019.

Kabacan is a first-class municipality in the province of Cotabato with a population of 89,161 and serves as the business and trading centre of adjacent municipalities including Matalam. The municipality is known as the Rice Granary of the Province of Cotabato because most of its land is devoted to rice production, which is grown by the Ilocano immigrants from northern Philippines. Other agricultural crops include corn, oil palm, rubber, sugarcane, and banana. The municipality is the location of the University of Southern Mindanao (USM), one of the four state universities to achieve excellence in agricultural

education. The municipality is a melting pot, where Christian, Muslim, and indigenous tribes live together. Barangay Poblacion is located in the town centre, where commercial activities are conducted in the public market and along the national highway and USM Avenue.

Matalam is also a first class municipality in the province of Cotabato with a population of 79,361 people based on the 2015 census. It has a level to nearly level topography making it ideal for agriculture. Rice, corn and copra are the primary agricultural products. Barangay Salvacion is located in the northeast of Matalam and has a land area of approximately 2,020 ha. Education and lack of alternative livelihoods were identified as the main problems in the barangay (Barangay Salvacion 2013).

## **B) VISAYAS: AGRICULTURE AND FISHING HUB**

The economy of Eastern Samar is dominated by agriculture and fishing, both low-income generating activities. Croplands cover about 95% of the total agricultural land which are planted with commercial crops such as coconut, abaca, banana and pineapple. The agricultural land is mainly used for food crops, which mostly includes root-crops and palay and account for about 25% of the total agricultural land. While there has been an upward trend in crop production, low productivity of agricultural lands, especially palay and coconut, continues to negatively impact the province's economy. Eastern Samar has one of the highest rainfalls in the country, enough to cause severe flooding. Heavy and incessant rains in the province can lead to rain-induced landslides such as that with Typhoon Oras in January 1989 which caused the death of 16 people.

Eastern Samar faces the Philippine sea, which makes the province vulnerable to typhoons. It was highly affected when Typhoon Haiyan made landfall in the province in 2013. It registered the highest predicted storm surge and tide height at 5.3 meters for Matarinao Bay which covers several towns of Eastern Samar, including

Salcedo (Lagmay et al. 2015). The province incurred high economic losses due to significant damages on agriculture and livestock estimated at around PhP 2 billion (Abamo 2017). The United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) reported that out of the 448 affected barangays in Eastern Samar, 312,553 individuals were displaced by Typhoon Haiyan. Typhoon Haiyan also brought many issues on land tenure security in Eastern Samar including eviction of farmer-tenants, selling of produce and sale of lands without the tenant's knowledge, and displacement of fisherfolk communities (Alvarez 2017).

Eastern Samar recorded very high poverty incidence at 43% in the first half of 2018 (PSA 2019). It is among the provinces that is provided with an Investment Portfolio for Risk Resilience for fiscal years 2021-2023. The portfolio is part of the Risk Resiliency Program, a convergence program of the Climate Change Adaptation, Mitigation and Disaster Risk Reduction (CCAM-DRR) Cabinet Cluster, which supports coordinated province-based planning and budgeting of climate change-related investments.

Borongan is a 4th class city and the capital of the province of Eastern Samar. It is located along the middle section of the province along the coast, with the city centre situated along the northern banks of the Lo-om River and a short distance from the shores of Borongan Bay. Many families rely on coastal and deep-sea fishing as well as lowland and upland farming as means of livelihood. Copra is its main agricultural product. Barangay Maypangdan has a river and is the location of the Eastern Samar State University.

Salcedo is a 5th class municipality in the province of Eastern Samar with a population of 22,532 in 2015. Due to its location along the south-eastern portion of Samar Island, it is vulnerable to various hazards including typhoon, storm surge, flood, rain and earthquake-induced landslide, ground shaking, and tsunami. It was one of the areas severely hit by Typhoon Haiyan

in 2013. The primary agricultural resources in the area were destroyed, and the farmers who relied heavily on coconut for income were the most affected. By its location near the coast, San Roque is among the 41 barangays most prone to storm surge, flood and landslide.

Negros Occidental is one of the five provinces of Western Visayas composed of 13 cities and 18 municipalities. The province is primarily volcanic, making its soil ideal for agriculture. A whopping 80% of all arable land in the island region is cultivated mainly for sugarcane and rice production. The island is known as the “Sugar bowl of the Philippines” due to the history and financial focus around the sugar industry. The economy of Negros Occidental generates an estimated annual revenue of more than PhP18 billion and the island produces more than 1 million metric tons of sugar which is nearly half of the country’s total production.

Agriculture in Negros Occidental reflects inter-provincial migration and social upheaval driven largely by the expansion of the plantation sugar industry, resistance to the exploitive and violent practices of plantation owners to control workers, poverty and famine following the collapse in global sugar prices in the 1980s, legal and illegal logging, and movement into the uplands by landless farmers in search of cultivable land. Rural livelihoods remain challenged due to demographic pressure, finite land resources, competition for those resources with the urban rich, and persistent poverty in the uplands (Lockie et al. 2012). According to a report by the Regional Disaster Risk Reduction and Management Council (RDRRMC)-Western Visayas 6, Negros Occidental suffered P6.11 million worth of damage to its rice crop due to the dry spell brought about by El Niño in 2019.

Bacolod City is the highly urbanized capital and the communication, trade and service centre of the province of Negros Occidental. It is considered as one of the most

progressive and elite cities in the country. Based on the city’s socio-economic profile in 2017, it has an annual population growth rate of 1.79%, poverty incidence of 22.6%, and agriculture consists of sugar (4,400 ha.), rice (731.20 ha.), root crops (70.80 ha), and corn (25.60 ha.) (Bacolod City Government 2017). Barangay Singcang-Airport is one of the biggest barangays of Bacolod City with population projected at 36,845 in 2020 located 2.7 kilometres from the city proper. Its topography is plain with a land area of 331.58 ha. Most of the agricultural lands in the barangay have been converted to residential and commercial areas. Fourteen districts in the barangay are prone to flood (CPDO 2018).

Talisay is a fourth-class city in the province of Negros Occidental politically subdivided into 27 barangays: 21 urban barangays and 6 rural barangays. It has a total land area of 20,118 ha, 60.11% of which (12,092.55 ha) is agricultural land while 32.95% (6,628 ha) is forest land. The topography of the city ranges from generally flat terrain to moderately sloping with mountainous areas. Dos Hermanas is one of the rural barangays located in the northern part of the city.

### **C) LUZON: RICE AND INDUSTRIAL METROPOLE**

Metro Manila or the National Capital Region (NCR) is the center of socio-economic and political activities in the country, and thus is the prime migration destination region in the country. The region is home to about 13 million people, approximately 12 percent of the country’s total population based on the 2015 Census (PSA, 2016b). It is the most densely populated region in the country at 21,000 persons per square kilometer (sq. km.) (PSA, 2016a). Despite rising urbanization, the rapid economic and population growth of the region is not at pace with the development of services and infrastructure. As a result, both formal and informal settlements have expanded

with minimal planning and regulation. The risk of natural hazards such as typhoon and flooding contribute to increased vulnerability, especially for the urban poor.

A study by Porio (2014) reveal that the lack of security of tenure in housing, jobs, and livelihood sources of a majority of the population increases the vulnerability of the community as a whole. Quezon City is the largest city in NCR occupying one-third of its total land area. It is the main gateway, linking NCR to all Northern and Southern Luzon expressways. The city's economy predominantly consists of small to medium-scale businesses engaged in the distribution of finished products, and the provision of basic services. Barangay Loyola Heights and Barangay Pansol, both located in the third District of Quezon City, have areas with exclusive subdivisions and urban poor settlements.

Central Luzon is known as the country's "rice granary" because of a well-developed irrigation system that has resulted in extensive rice farming in the region. In addition, the area has special economic zones that serve as a pull factor for internal migrants from the NCR and adjacent provinces. Conversely, it is also the second-largest source of migrants going to the NCR. For landless agricultural workers, geographical mobility was identified as a coping strategy, where they go in search of jobs in other villages, towns, and neighboring provinces (Veneracion 1985). In recent decades, however, structural changes in the rural economy saw changes in land tenancy, innovation in agricultural technologies, increased schooling of working members, and rapid growth in nonfarm income (Takahashi and Otsuka 2009).

Central Luzon ranks at the top of the Human Development Index (HDI), with four of its provinces among Philippine's HDI top 20 (Asis 2011). The region is also called the W-Growth Corridor due to the rapid development in many areas such as Clarkfield and the Subic Bay Area. Its rapid growth potential consequently raises

concern over land use and environmental management to address the sprawl of industries, businesses and human settlements. In Tarlac, for instance, a large percentage of land that has been developed for agricultural research, piggery and poultry projects are contributing to potential pollution of water bodies.

In 1991, the eruption of Mount Pinatubo brought widespread and persistent lahars and flooding that destroyed houses and damaged farmland or other source of livelihood in Central Luzon. Large areas of agricultural land were covered, and some lost their supply of irrigation water. More than 10,000 families were reported to have been displaced and relocated to nearby provinces and the NCR. Leone and Gaillard (1999) described the challenges the disaster brought including population transfer, abandonment of lands, creation of new settlements, economic restructuring, and psychological impacts such as loss of identity, trauma and stress.

Tarlac is a landlocked province, with vast river systems and irrigation, covering a total land area of approximately 3,053.60 km<sup>2</sup> in Central Luzon. Around 75 percent of the province is plain while the rest is hilly to slightly mountainous. The economy of Tarlac is predominantly agricultural, with its own rice and corn mills, sawmills and logging firms. The province is among the biggest producers of rice and sugarcane in Central Luzon. Camiling is a first-class municipality in the western part of Tarlac, about 150 km. north-northwest of Manila. It is considered one of the fastest-growing towns of Tarlac in terms of income and economy. The main crop is rice but corn and vegetables like eggplant, beans, okra, and bitter gourd are also grown. Pindangan 2nd is among 22 barangays in Camiling that is highly susceptible to flooding (MGB 2010).

Cagayan Valley is a region that is largely rural with one of the lowest population densities in the country. It has an agricultural economy with rice, corn, sugarcane, banana, coconut, and tobacco as its major crops. The area has the

lowest gross regional domestic product in Luzon, and the third lowest in the country (Asis 2011). It is rich in natural resources, including the Cagayan River, the country's longest river which provides irrigation and electric power. The Cagayan River drains water from three mountain ranges which are increasingly being deforested leading to reduced capacity for water absorption, increased run-off and heightened flood risk (WWF and BPI 2014). Due to the strategic location of a trading port in the region, it is promoted as an investment area for agriculture, forestry and fishing. These financial investments are all highly impacted by extreme weather events and climatic changes.

The population of Cagayan Valley represents 6.01% of the overall population of the Luzon island group, or 3.42% of the entire population of the Philippines. The province of Isabela has the biggest population in the region with 1.59 million and annual population growth rate of 1.23% in 2015 (PSA, 2015). A study on the incidence and patterns of individual out-migration in rice-producing villages in Cagayan finds that the rate of out-migration is higher among farming than non-farming households, out-migration of female members especially daughters is higher than male migration, and there is a greater tendency for sons than husbands and other male family members to migrate. Furthermore, the rate of out-migration is higher in areas with higher population density, in rainfed villages, with lower adoption of modern varieties, lower rice yields, lower cropping intensity indices and where tenancy prevails (Luis and Paris 2003).

The province of Isabela located in the Cagayan Valley is the second largest province in the Philippines by land area and considered the 10th richest province in the Philippines. Due to its plain and rolling terrain, it is known as the rice and corn granary of Luzon contributing to 15 percent of the aggregate annual national rice production and 21 percent of the annual national yellow corn production, respectively. It is also one of the most typhoon-prone provinces in the country due to the

location of the Philippine Sea in its eastern side. Ilagan City, proclaimed as the corn capital of the Philippines, is Luzon's largest and the country's fourth biggest city by land area. Barangay Alibagu is its most populous barangay.

Benito Soliven is a 4th class municipality in the province of Isabela. The municipality has three watersheds which regulate the supply of water downstream. It is primarily an agricultural municipality with about 85 percent of the total population dependent on agriculture. Corn is the main crop as well as banana, cassava and sugarcane. The municipality's fish sanctuary and fishponds are also sustained by the watersheds. Benito Soliven is traversed by the Pinacanaun River that provides an alternative livelihood for communities near the river. Benito Soliven is vulnerable to flood, rainfall-induced landslide, typhoon and drought (Municipality of Benito Soliven 2016). The Department of Public Works and Highways (DPWH) recently completed a flood control project along a section of the Pinacanaun River in 2020. Yeban Norte is among the barangays highly at risk to flood and rainfall-induced landslide.

# 04

## Theoretical framework

Figure 2 indicates the conceptual framework that the IMPACT project utilized to investigate the relationship between the changing climate and migration in the Philippines (“the climate-migration impact chain”). Central to the conceptual framework is the prevailing notion that people do not migrate because of climate change as such, but because of the way climate change affects their livelihoods, food security, and wellbeing. The framework further acknowledges that impacts of climate change on people are often caused by climate impacts on ecosystem services (Black et al. 2011; Zommers et al. 2016; van der Geest et al. 2019), which are the benefits that people obtain from ecosystems (MEA 2005).

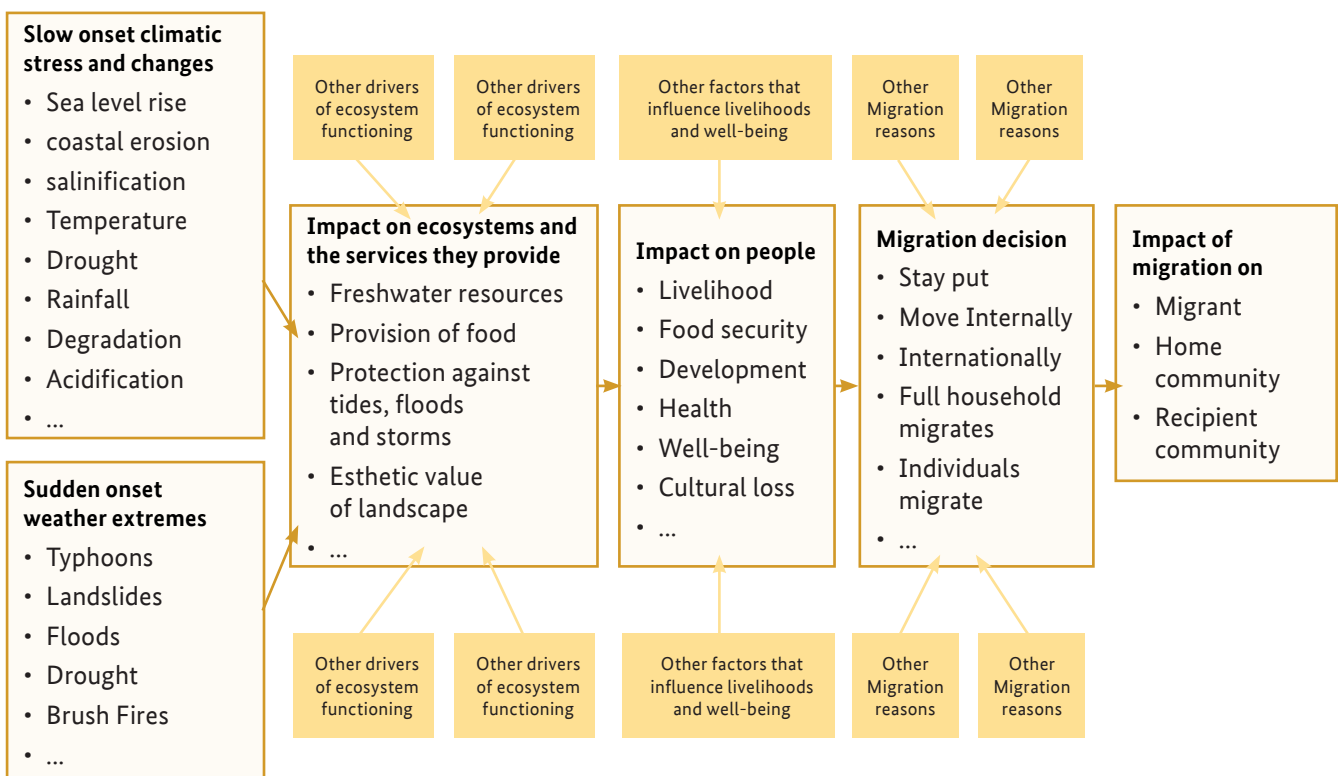


FIGURE 2: THE CLIMATE-MIGRATION IMPACT CONCEPTUAL FRAMEWORK



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From left to right, the conceptual framework moves from the natural environment to human behaviour. The relevant content of each box in the framework varies by location. For example, in the first box (climate change and extreme weather), specific climate factors that are relevant in the study sites in the Philippines include: temperature increase, drought, floods, sea level rise, salinization, shifting rainfall patterns and land degradation due to climate change. Between each set of adjacent boxes, there are relationships that the research investigates. For example, it can look at how drought (box 1) affects water provision (ecosystem service, box 2), and how this affects people's livelihoods and well-being on the islands (box 3). In the case of adverse effects, the next question would be whether drought and its effect on water provision and livelihood influence people's migration decisions. And when people migrate this will have consequences for the livelihoods of migrants, their relatives at home and the host societies in destination areas.

**Guided by this conceptual framework, the study aims to answer the following research questions:**

1. How do slow onset climatic and environmental stress influence people's livelihood changes and mobility decisions in the Philippines?
2. How does human mobility influence people in origin areas of the Philippines (on a household, social network, and societal level)?
3. How does human mobility influence destination areas in the Philippines (including people arriving / hosting, and social, environmental, institutional and organisational impacts)?

# 05

## Methodology

To be able to assess how climate change-induced risks and slow onset events affect migration perceptions, decisions and aspirations of people in the Philippines, and the causality and impact both in the destination and origin areas, a methodological combination of already applied PRA and interviewing techniques was utilized. The research strategy builds on over a decade of UNU-EHS learning-by-doing approach through wide-known large-scale projects such as Where the Rain Falls, Gibika and Pacific Climate Change and Migration that aligned well with the research questions and approach stipulated by GIZ. The research design focuses on qualitative research tools which consider subjective risk and perception. Our experience with various interviewing questionnaires that had included sections on climate impacts, migration drivers, livelihood, and impacts of migration helped shape the research design. These questionnaires served as input for the IMPACT questionnaires and were adjusted to the specific context of the study sites in the Philippines. A wide range of snowball sampled respondents were included in the study. The consortium for example spoke to the community leaders and various study site focal points to be able to identify a wide a range of informants that included vulnerable groups such as women, elderly, children and ethnic minorities.

### 5.1 KEY EXPERT INTERVIEWS (KEI)

During the inception and end phase of the field work an expert list of people with whom the research team wanted to speak to and interview as part of the research were identified at national and local levels. These interviews were semi-structured to gain vital insights and allowed a degree of flexibility. The interviews begun early in the project to aid research design and focus, and in the end of the field research they bridged the research to policy aspect of the study.

### 5.2 PARTICIPATORY RURAL APPRAISAL (PRA)

PRA methods create knowledge, contribute to understanding and facilitate discussion (Bandari 2003). The approach is appropriate for gathering data in the field particularly when people's perceptions are important. Chambers (1996) defines PRA as "a family of approaches, methods and behaviours that enable people to express and analyse the realities of their



**TABLE 7: OVERVIEW OF RESEARCH SESSIONS**

Method	Luzon Sessions	Visayas Sessions	Mindanao Sessions	Origin Sessions	Destination Sessions	Female Informants	Male Informants	Total Sessions
PRA Mobility Map (PRAMM)	8	8	8	12	12	105	109	24
PRA Fuzzy Map (PRAFM)	8	8	8	12	12	101	99	24
Collective Storytelling Sessions (CSS)	6	8	8	10	12	108	76	22
Livelihood History Interviews (LHI)	8	10	8	14	12	12	12	26
Key Experience Sessions (KES)	12	9	12	13	20	19	14	33
Key Expert Interviews (KEI)	4	4	4	6	6	4	8	12
Other: Short Video Interviews	0	0	8	4	4	5	3	8
<b>Total:</b>	<b>46</b>	<b>47</b>	<b>56</b>	<b>71</b>	<b>78</b>	<b>355</b>	<b>322</b>	<b>149</b>

lives and conditions, to plan themselves what action to take, and to monitor and evaluate the results.” PRA helps participants evaluate the challenges and issues that they face in their local setting. The sessions bring together actors who do or do not usually interact such as local people, development practitioners, and government officials and provides people an opportunity to be heard and to then develop appropriate initiatives. The approach helped IMPACT in developing solutions and actions to respond to local challenges while empowering local people. It proved to be an effective way to generate reliable qualitative research data (Chambers 2007).

### A) PRA SESSION: FUZZY COGNITIVE MAPPING (PRA-FCM)

In this exercise, participants and researchers discussed reasons and underlying causes of migration, obstacles and enablers. The exercise utilizes a flipchart, with a circle in the middle, showing the word “migration”. The group identified reasons people move to other places, such as

urban centres, agricultural frontiers or the national capital. For each reason, the facilitators asked about underlying causes. This exercise enhanced understanding of people’s perceptions of how different factors influenced migration, the strength of these factors, and the possible linkages.



PRA-FCM | © Paredes, 2020

## B) PRA SESSION: MOBILITY MAPPING (PRA-MM)

This exercise explored the prevalent mobility patterns in the study sites, with a focus on where people moved and for what reasons. Participants identified where people from the study area migrated to, by writing the names of these places on post-it notes. Then people organized the destinations in geographic clusters (migration within their island; elsewhere within their province; Luzon; Visayas; Mindanao; abroad) according to distances from home. The participants used leaves or pebbles to indicate the (relative) numbers of people who moved there. Lastly, they identified the main pull factors for each destination (e.g., good wages, nice weather, or family ties).

### 5.3 INDIVIDUAL AND COLLECTIVE STORYTELLING INTERVIEWS

The team leader has extensive experience in conducting anthropological fieldwork methods, such as in-depth open interviews and storytelling sessions (Ayeb-Karlsson et al. 2016, 2019a, 2020; Ayeb-Karlsson 2020a, 2020b, 2020c). The in-depth Livelihood History Interviews and Storytelling Sessions (such as CSS and KEI) yielded a rich collection of quotes from respondents, together with tagged images and legal consent to use quotes and pictures in storytelling products. The three selected storytelling interviewing tools are described in more detail below.

#### A) LIVELIHOOD HISTORY INTERVIEWS (LHI)

The so-called ‘Livelihood History Interviews (LHIs)’ were successfully used in Bangladesh to provide a detailed analysis of people’s behaviour and responses to environmental stress and shocks (Ayeb-Karlsson et al. 2016, 2019a; Ayeb-Karlsson 2020b, 2020c). This method enables a deeper understanding of how and why people’s adaptation strategies may fail and under which circumstances people use migration as a



PRA-MM | © Uy, 2020



LHI | © Dela Cruz, 2020

coping or adaptation strategy. Moreover, it enhances understanding of the impacts of migration (or immobility) on the livelihoods of migrants themselves and their relatives at home. The method gives policy-makers valuable insights in what is required to create more sustainable climate change adaptation policies (Grothmann and Patt 2005; Adger 2010). Dr Ayeb-Karlsson has received widespread credit for the use and value of this methodological approach, recognised by various human mobility and immobility scholars.

## B) COLLECTIVE STORYTELLING SESSIONS (CSS)

Dr Ayeb-Karlsson has previously worked with CSS in Bangladesh (Ayeb-Karlsson 2020b, 2020c). These collective storyline creations around migration stories have turned out to be extremely valuable and effectively capture sensitive and complex thematic areas. The interviews are fully open ended, and narrated in groups of 8-12 participants, after being presented with different storyline characters.



CSS | © Banta, 2020

## C) KEY EXPERIENCE SESSIONS (KES)

These are individually repeated interviews around migration or immobility experiences that were applied successfully in Bangladesh (Ayeb-Karlsson 2020b, 2020c). The method builds upon Experience Sampling Method (e.g. Koro-Ljungberg et al. 2008; Csikszentmihalyi and Larson 2014). Personal narratives allow for the storyteller to choose what stories to tell, and who's discursive reality to describe. A story selection is generally not random, but represents a deeper meaning, and can give important insights in the inter-social and subjective decision-making process. People use stories to position themselves, and to justify their behaviour. In this way, storytelling is a methodological window into the subjective space available to the subject (Pfahl and Wissener 2007; Bell 2010; Ali 2013).



KES | © Hipe, 2020

# 06

## Work Process

### 6.1. DATA COLLECTION

In the inception phase, the consortium selected pairs of sites with existing or emerging flows of migration. In some instances, the connections already existed while in others they may exist in the future. These intertwined lives, livelihoods and cultures came to draw out the translocalities investigated as part of this study. The literature review considered the interaction of the slow onset risks and environmental migration by looking at how the two has been characterised and operationalised separately and in combination.

Furthermore, the review considered these risks in the specific case of the study areas. The review informed the design of the fieldwork and the approach for the analysis. During the end of this research design phase, the research team also prepared the research plan, inception report and questionnaires.

The fieldwork period faced a number of challenges due to the COVID-19 pandemic. The Mindanao leg of the research and the Isabela fieldwork for Luzon had been completed before the country went into lockdown. The Tarlac fieldwork for Luzon was partly underway when hard quarantine measures were put in place. The Philippine government issued different quarantine orders every month. Eastern Samar, Negros Occidental, Central Luzon, and the NCR were all identified among those with the highest cases of COVID-19 and thus categorized as regions requiring the strictest quarantine protocols for a long period. The Filipino Expert was in close communication with the Team Leader and regularly monitored the pandemic situation while actively looking for options on how and when the remaining fieldwork could be completed. The fieldwork had to be reoriented to include additional Research Assistants for the Visayas, and the method training had to be conducted online for Eastern Samar and Negros Occidental. The timing of the fieldwork became highly dependent on quarantine orders and the number of participants had to be restricted that may have influenced the demographic profiles.

Initially, the method trainings were conducted by the International Expert / Team Leader in Luzon for the Luzon-based Research Assistants, and in Mindanao for the Mindanao-based Research Assistants. For the Visayas, two separate online sessions were conducted by the Filipino Expert for the new set of Research Assistants in Eastern Samar and Negros Occidental. The final

decision on the research sites was determined at the beginning of the fieldwork when more information on the municipality or city and the barangay were obtained from the visit to the government offices, and collection of local documents. The fieldwork in Mindanao was conducted by the research team between 12-23 February 2020, parts of which were guided by the International Expert. The fieldwork in Luzon for Isabela and Tarlac was conducted in the period 3-13 March 2020. The data collection in Isabela took more time due to the approval process from the city government of Ilagan to conduct fieldwork. The coordination with the barangay focal points in Alibagu and Yeban Norte was also challenging. The fieldwork in Eastern Samar was conducted by the Eastern-Samar based Research Assistants between 4 August-11 September 2020. They encountered coordination challenges with the local government since they were not amenable at first to allowing group gatherings despite the proposed research safety protocols. There was several rescheduling of PRA and interview sessions because of quarantine measures. Interview sessions, except with the experts, could not be conducted online as the internet connection in the barangay was not reliable. The Filipino Expert provided offsite support, but had hoped to participate in more of the sessions which was hindered by the poor connection in the barangays.

Once quarantine measures eased up in NCR, the Filipino Expert and Research Assistants in Luzon conducted the fieldwork in Quezon City in 12-26 September 2020. Barangay Loyola Heights was initially identified as the study site partly due to its partnership with the Ateneo. However, only some of the interviews were conducted there due to local politics and processes. The research team therefore combined these insights with findings from another barangay, Pansol, which is a neighbouring barangay in Quezon City. This worked well as the demographics were not dissimilar to Loyola Heights. The research team also struggled to conduct some of

the remaining storytelling sessions and interviews in Tarlac, which were hindered by the nationwide quarantine announcement in March. Lastly, the fieldwork in Negros Occidental was conducted in 4-13 October 2020 after the new Research Assistants were engaged, and quarantine restrictions in Negros Occidental were lifted. Again, the Filipino Expert provided offsite support, but could not travel to or participate in some sessions because of the weak connection. The fieldwork was completed within a week of contracting the additional Research Assistants.

Overall, the fieldwork stage was designed to identify the objective and subjective experiences of people in the origin and destination areas. It was carefully planned according to four stages to find the common and individual contextual factors (including economic, social, psychological and environmental) which contributed to migration decision through the PRA sessions, expert and storytelling interviews:

### **Stage 1: Societal level (origin)**

During this phase the local expert interviews provided an overview of the climate change impact and migration situation in the migrating study sites. The PRA sessions also enhanced the understanding of the same by the people in the migrating study sites.

### **Stage 2: Personal level (origin)**

The storytelling sessions conducted during this phase capture in-depth the livelihood situations, social embedding and connectivity, as well as the subjective feeling and perceptions of people having migrated, planning to migrate, who have stayed behind, or who were trapped. The informants represented the wider study sites in terms of vulnerability, adaptation strategies, migration intensity as well as demographic background.

### **Stage 3 Personal level (destination)**

The storytelling sessions conducted during this phase captured in-depth the livelihood situations, social embedding and connectivity of the arriving

migrants, as well as the subjective feeling and perceptions of people planning to migrate again and who wanted to stay (and why) or had a desire to leave, or identified themselves as trapped.

#### **Stage 4 Societal level (destination)**

These PRA sessions enhanced the understanding of the social groups and demographic context of the migrating populations as well as how the migration flows impacted the area. During this phase the key expert interviews also gave an overview of the impact of the migration in the area (government, city, demographic).

## **6.2 DATA PROCESSING AND REPORTING**

**T**he PRA sessions were documented with visualizations (PRA methods, pictures and translations) and note-taking, while the interviews were audio recorded and transcribed and translated into English by the research team. Simultaneous to the fieldwork, data processing and cleaning, as well as development of the storytelling database was undertaken. The International Expert was responsible for monitoring, reviewing and increasing the quality of data.

All members of the team, led by Filipino Expert, contributed to the draft final report. The experts worked together in the analysis of findings to produce policy-relevant recommendations. The international expert focussed on linking IMPACT to global policy frameworks while the Filipino Expert contributed more on the connection with national and local policy frameworks. The IMPACT main findings and knowledge can be used widely to inform stakeholders in many years to come. Feedback and comments from GIZ (headquarters and Philippines) have been incorporated into the final outputs.

A detailed overview of IMPACT's key findings structured according to the island groups (e.g. Mindanao, Visayas and Luzon) will be presented in this chapter. To increase the understanding of the links between slow onset events and human (im)mobility in the Philippines the research included a critical analysis of people's subjective perceptions around environmental changes as well as their adaptation responses and constraints. In the storytelling narratives explaining people's (im)mobility or migration decisions five thematic areas emerged, these included 1) experiences around environmental stress, 2) responses to environmental stress, 3) gender and (im)mobility, 4) wellbeing and (im)mobility, and 5) social cohesion and (im)mobility."

### 7.1 MIGRATION DESTINATIONS AND (IM)MOBILITY DECISIONS

The detected migration patterns that emerged from the research sessions showed that internal as well as international migration were common among the participants. Internal migration movements were observed to surrounding municipalities and cities in the respective regions as well as to the other island groups particularly Luzon, and the NCR. The internal migration map shows the internal migration flows based on responses from informants in Mindanao, which revealed more movements to Luzon rather than the Visayas or other regions in Mindanao (see Fig. 3). Within Mindanao, there were also observed movements from Cotabato to the Davao region. Women comprise a significant number of the migration flows from the Davao region, whereas men make up more of the migration flows from Cotabato. In the Visayas, there are again substantial movements to Luzon, particularly to the NCR rather than to Mindanao (see Fig. 4). Interestingly, there was little inter-island movement detected within the Visayas. Women stand for a majority of the movement from Borongan, Eastern Samar. Finally, migration flows in Luzon showed that the main migration destinations included NCR and other nearby industrial zones. People's origin destinations were spread out within the Visayas and Mindanao (see Fig. 5). There is more movement of men from Isabela while movement of women is more common in Tarlac. In terms of international migration, the destinations varied but mainly included locations in the Middle East, North America, Europe, Australia, and East and Southeast Asia to which people migrated for work or to join their family (see Fig. 6).

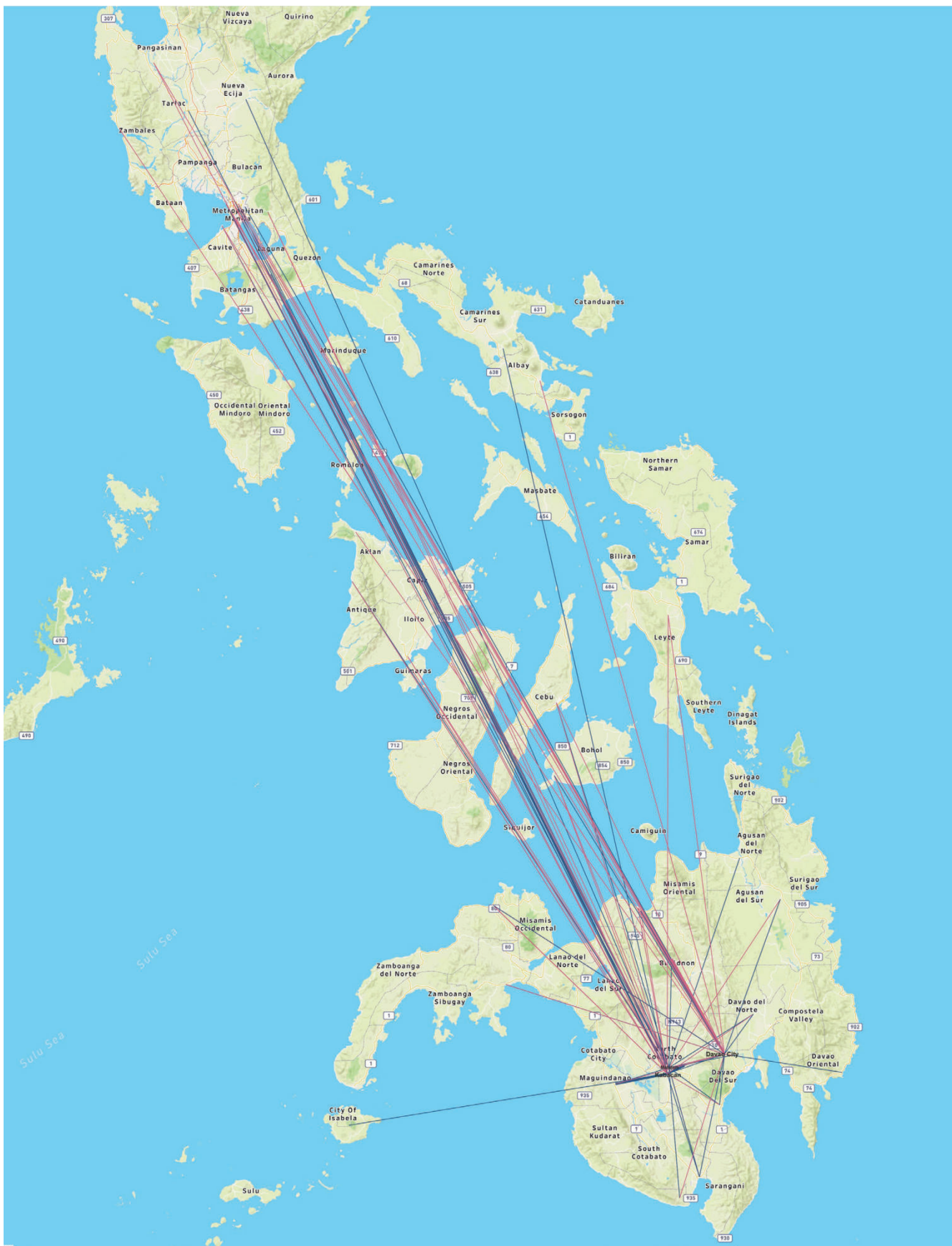


FIGURE. 3: INTERNAL MIGRATION FLOWS GENERATED FROM THE STUDY SITES IN MINDANAO (BLUE LINES INDICATE MALE MOVEMENTS, AND RED LINES FEMALE MOVEMENTS).



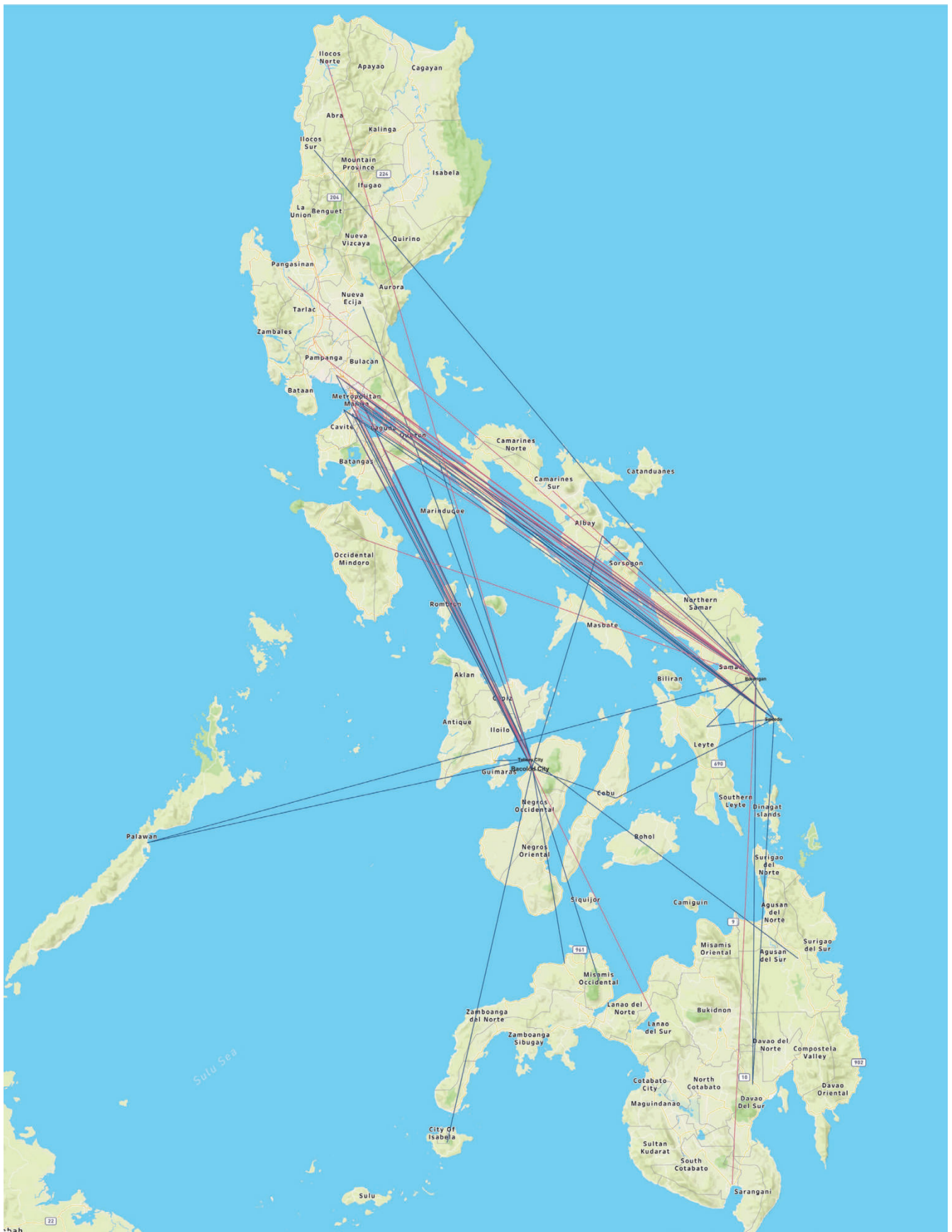


FIGURE 4: INTERNAL MIGRATION FLOWS GENERATED FROM THE STUDY SITES IN THE VISAYAS (BLUE LINES INDICATE MALE MOVEMENTS, AND RED LINES FEMALE MOVEMENTS).

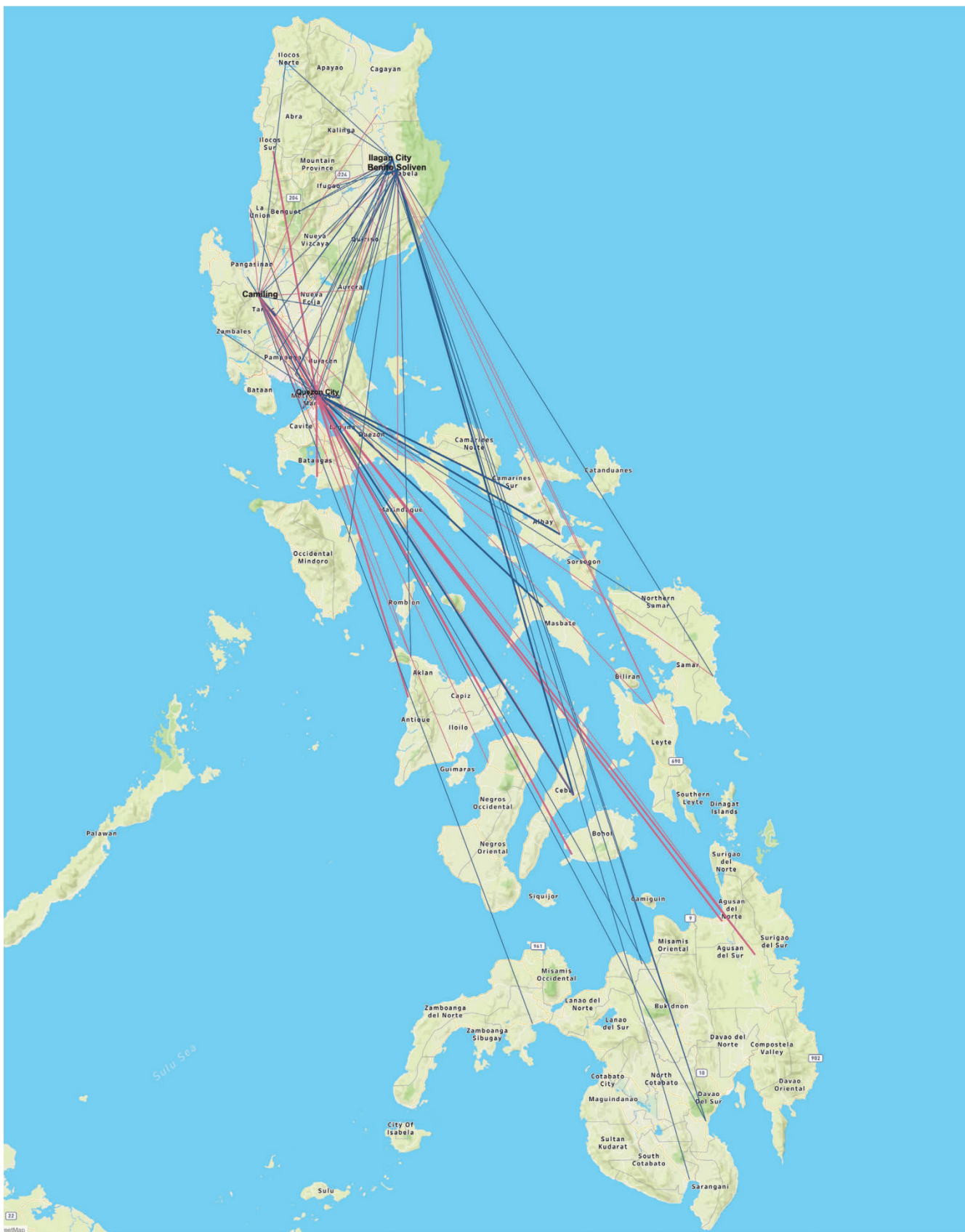


FIGURE 5: INTERNAL MIGRATION FLOWS GENERATED FROM THE STUDY SITES IN LUZON. (BLUE LINES INDICATE MALE MOVEMENTS, AND RED LINES FEMALE MOVEMENTS).



FIGURE 6: INTERNATIONAL MIGRATION FLOWS GENERATED FROM ALL TWELVE STUDY SITES (BLUE LINES INDICATE MALE MOVEMENTS, AND RED LINES FEMALE MOVEMENTS).

In regard to financial remittances, those with family members overseas receive money regularly but generally not those with extended relatives abroad as they reported only receiving remittances when needed. The remittances were described to support families in the shorter-term. Local remittances were explained to generally be received by the immediate family located within the regions, and were used for family sustenance and education. Mobility decisions were explained by various factors such as employment or livelihood opportunities, marriage, family, education, and disaster, among many others (see Appendix I for a complete of factors – (im)mobility enablers and barriers - influencing people’s migration decisions).

## 7.2 (IM)MOBILITY NARRATIVES IN MINDANAO

Informants in the origin sites in Mindanao revealed that their income was insufficient to meet their family’s needs mainly because jobs and livelihoods were limited to farming and farm labor, which did not provide regular income due to the seasonal nature of farming. According to them, people generally migrate to places where they think they are likely to succeed in life, which means finding a good job and receiving a higher salary. People believed that the quality of life is better with regards to wage, job opportunities, and education outside of their villages. Those that do not own land said that they would not

think twice of migrating to other places where they can get a job or find another livelihood. Ultimately, migration decisions are tied to the desire to better provide for their family and for them to enjoy a high standard of living.

According to the informants, destination areas in Mindanao offer facilities and convenience that make them attractive for migrants. For example, roads are paved, electricity, potable water supply is available, internet and mobile reception are reliable, and modern technology is accessible. People often migrate to areas where persons from their own ethnolinguistic group have already settled, and where neighbourhoods are united and tight-knit. They also encourage relatives to join them so that the latter can enjoy better living conditions. This was the case in Kabacan, where some informants' families have their origins in Pangasinan in Luzon. It was former President Marcos' resettlement program which encouraged families from Luzon to migrate to Mindanao. Because of the presence of a state university in Kabacan which offers affordable and quality education, as well as extensive course offerings, many students temporarily migrate here.

## A) PERCEPTIONS OF ENVIRONMENTAL CHANGE

Environmental changes are more present in the origin sites because people's livelihoods are closely inter-linked with the natural resources in the areas. Climate change is believed to have brought about environmental stress such as rising temperatures and less or more intense rains, and land and forest degradation along with associated extreme events, for example, rainfall-induced landslides resulting in poor harvest. The unpredictable weather patterns push people to migrate due to long periods of high temperature and rainfall deficiencies during El Nino or drought and continuous rains during La Niña damaging their crops or decreasing the productivity of their farms. Crop failure can also be caused by pests such as rice black bugs, which have increased in population due to the

decrease in biodiversity particularly of its predators. These challenges influence people's decision to migrate since no financial assistance is provided by the government:

*It is very hot now. The temperature is very different from what it used to be. It is not the same intensity or heat. It is scorching hot. It is far from what we experienced when we were younger. /.../ If it rains, it rains hard, and if it is hot, it is very hot. This is the result of the conversion to agricultural land. [Male (56), LHI, Salvacion, 2020.02.16].*

*With these changes in the climate, our crops will not grow, and we do not have any harvest. We wait for the rainy season to plant but rains would be excessive resulting to landslides in the area. During drought, the river would dry out. Either way, it would be bad if there is too much heat or too much rain. It really has a huge impact here [Male (59), KES, Labon, 2020.02.13].*

The impact of climate variability and change on livelihoods through changes in the seasonal calendar often lead to disruptions to economic activity and therefore becomes a driver of livelihood change:

*The changing weather pattern is a factor for migration. People used to harvest four times a year. Now, they can only harvest once a year. The high temperature leads to crop failure.... Livelihood is also seasonal. After the sugarcane harvest, people will move to find another job since there are no alternative jobs here. These challenges push people to migrate to urban centres for a stable source of income [Male FGD, FCM, Labon, 2020.02.12].*

*We experienced a lot of difficulties when we started planting sugarcane. We cannot predict the weather anymore. 2013/2014 was El Nino season but we did not know. We went bankrupt because we put in a huge capital for our farm but the sugarcane did not grow. Because of this crop failure, we shifted to cultivating banana. We still cannot cope with the changes in the weather, especially the unpredictability of the rains [Female (34), KES, Salvacion, 2020.02.15].*

Environmental changes were also described as having been human-induced. The cutting of trees, and excessive use of chemicals on the soil lead to land and forest degradation and result to decreased land productivity, and pollution in water sources such as rivers lead to health problems. The increased dependency on fertilizers and pesticide sprays has resulted in less farm-related jobs (such as manual weeding) available for some people. This is because farmers are able to save more money when they use sprays compared to hiring laborers:

*Land in Labon has become less productive due to loss of trees, frequent spraying of fertilizer, less rains, and intense temperature. Since sugarcane farming is the major source of livelihood in the area, land productivity is a factor for people to migrate in search of fertile land [Male FGD, FCM, Labon, 2020.02.12].*

*I noticed that land the was more productive before. The excessive use of chemicals has made the soil bad, it has lost its fertility and the water has become polluted. For example, the Kabacan River in the past was clean and you would not be afraid to take a bath. Now it is so polluted that people get skin rashes from bathing in the river. When we were children, we used to take a bath in the river and I never once experienced any skin rash or health problem. In this generation, I have noticed a lot of cases where our students have skin rashes because of the river. One reason for this is that there are so many piggeries located along the river, and the waste goes directly into the river. There are also so many houses along the river, and that is probably why it has become very dirty due to people's attitude around waste and throwing of garbage into the river. [Female (34), KES, Salvacion, 2020.02.15].*

The increased occurrence of flood, fire and other natural hazards is another factor for people to migrate. The earthquakes in the latter part of 2019 that damaged a large portion of the houses has made people think about living in areas that are less exposed to natural hazards. Some

families who migrated temporarily before the earthquake indicated that they will not return after learning about the extent of the damage from the earthquake.

## **B) ADAPTATION STRATEGIES AND CONSTRAINTS**

In Mindanao, migration is an adaptation strategy for many of the informants not only to explore better livelihood opportunities, but also to avoid conflict:

*Our decision (to migrate) was made because the story that time was that the land in Mindanao was plenty and free. They were giving the land away. We went hoping to own a farmland, which we will not have to share with others. My uncle was part of the first group that cut down the trees and converted the land into a farm. My uncle had 10 hectares of land. When we arrived, he gave us 2.5 hectares to farm on. We obtained this land without paying anything. My uncle gave it to us and we accepted it [Female (85), LHI, Salvacion, 2020.02.15].*

*Staying in the evacuation centre is a different kind of hardship for us. Living in the city means that you must always have money to meet your needs. In the mountains, we get things for free, such as our food. However, even if it is hard for us to live here, because of what we fight for and believe in, we will continue to live here and do what we can. We only want the best for our community and that the younger generation continues to receive education through the community school. We want our rights to our ancestral lands and protection of Pantaron Range [Male (31), LHI, 8-A, 2020.02.23].*

However, people with land and property in origin sites find it hard to make the decision to move:

*In our area, the people who want to move but cannot are those with animals and farms. Those without permanent investments who only work as laborers are the ones who would move to seek work elsewhere [Female (85), LHI, Salvacion, 2020.02.15].*

*Farming is really hard and the labour problems add to it. As others have migrated, labourers do not come here. If there is one, he will be very demanding. Those who stayed are those with property. They are stable. However, it is not only about being stable, you also have to mechanize (your farming processes). We have no money to buy the equipment so we bear the hardship. We have to continue on hiring labourers [Male (56), LHI, Salvacion, 2020.02.16].*

Similarly, migration is an adaptation strategy in destination sites to gain access to good schools, hospitals, and employment opportunities:

*People are encouraged to move here because aside from their children being able to go to a good school, they can also find jobs. In case someone gets sick, the hospital is nearby. Personal necessities are also accessible because the market is close [Male (22), Short Video Interview, Poblacion, 2020.02.18].*

*That is why I went to Davao to support my family through other means, because my parents only knew farming. They were not able to go to school. I went to Davao by my own free will without waiting on my parents. That time, we were not sure that we would get a harvest and I could not wait thinking that I really have to get a job. It was a good thing that I was able to join the army. My uncle is a lawyer so it was easy to get in. I met my wife when I was posted here [Male (64), LHI, Poblacion, 2020.02.18].*

*If people want to migrate, they must think of ways to do it. They cannot just migrate and expect the government to help them. Perhaps if they are eligible for calamity assistance and the like, the NGOs, might be able to help them. However, if it is your own decision, you must be up for it. You have no reason to demand help. It would be good if your place is declared to be in a state of calamity so that you can ask for aid. You will be supported with the relocation. If you have*

*your house and your own livestock and you still want to migrate, why not try improving what you have instead? If it is your own decision to move, you are not entitled to any help. If you just want to be closer to your family or neighbours or for other reason, do not ask for help [Male (64), LHI, Poblacion, 2020.02.18].*

### **C) MIGRATION AND GENDER**

The links between gender and migration in Mindanao touches upon topics such as early marriage, migration abroad to work as domestic service helpers, and the capacity for women to work farm jobs or initiate businesses:

*Most girls my age and who are single would leave to go to General Santos City or abroad because there is nothing here for them. Others also marry early because they have parents who cannot provide for their education, and they would stop going to school [Female (23), Short Video Interview, Labon, 2020.02.14].*

*Almost all women who left to work as domestic service workers do so to help their family. If they stayed, they would be totally dependent on the income of their husbands, if there is any. If they go abroad and work as domestic service workers, they know that people will look at them differently since they will be able to buy a house and land, and have an additional source of income apart from their husband's. People see them as well-off or rich without realizing the struggles that they have to go through abroad to get there [Female (34), KES, Salvacion, 2020.02.15].*

*Here in Labon, what a man does, a woman can do, too. Similarly, the work of a woman can be done by a man. For example, when harvesting sugarcane, the wife works just as the husband does. Many women now also know how to drive motorcycles just like the men [Male (44), KEI, Labon, 2020.02.14].*

*It was difficult when we first came here. I was doing manicures to have an income. My husband did not work and only stayed at home. It was like our roles were reversed, I become the man and he the woman. That was our situation until I eventually set up my business here, which is the same business I did back in Surigao. You go back to the things that you are already comfortable with [Female (40), LHI, Poblacion, 2020.02.18].*

For men, their gender roles are described to increasingly take on caregiving roles for children left behind by their spouses as they migrate to Metro Manila or abroad for work:

*I experienced working in the market with my two children in tow. That was the hardest! My customers would start coming in at 4am and we finish around 9pm. My children will already be very tired at 7pm. I used to come home very late in the evening, tend to the children and cry. It is really difficult to work and take care of your children at the same time [Male (27), KES, 8-A, 2020.02.22].*

## **D) MIGRATION AND WELLBEING**

Wellbeing is described as a primary concern for migration activity in the country. This does not only pertain to the wellbeing of the migrant but also to the family members left behind. The storylines captured challenges around the physical and mental wellbeing of the migrant in the destination country or city:

*I complained to the Overseas Workers Welfare Administration (OWWA) office in Davao over their inaction in the case of my daughter. She was abused by her employer in Jeddah. She was kept in her room for a week with no food. She could have died. She was also not given a salary for two months. Now she is under the custody of her recruitment agency after OWWA demanded that the employer released my daughter through the recruitment agency [Female (51), Short Video Interview, Salvacion, 2020.02.17]*

*I miss my sister in Manila. I also feel sad when I see how my niece misses her mother. My sister left her baby in Midsayap when she went to Manila for work. Her being away has already caused a strain in our family. My brother's wife always has something to say to my sister, judging her for leaving her child with us to work in Manila. It is difficult to see my niece without a mother [Female (19), KES, Poblacion, 2020.02.17]*

*I identify myself as a Monobo, a Lumad. If I do not accept this about myself, I would feel incomplete. /.../ I do not get affected (by bullying) because I have already reconciled with myself and I will not be swayed easily by other's opinions. I need to have confidence in myself. My peers now would think before they say something to me. My experiences before were difficult because I was younger. I did not know how to defend my tribe and my roots, or how to express pride in my being a Manobo [Female (19), KES, Poblacion, 2020.02.17].*

## **E) MIGRATION AND SOCIAL COHESION**

Conflict is an important issue in Mindanao with great implications on social cohesion. People have often moved out from the origin sites to avoid armed conflict that generally is tied to land ownership. Other informants shared stories of how Indigenous Peoples used to live in their area but moved away when Christians started settling in order to avoid conflict and discrimination. Similar narratives were captured around land formerly being occupied by Muslims that now belong to Christians. Conflicts due to clan wars, and militarization of tribal lands also push people into displacement who move to peace zones to avoid violence. Indigenous Peoples and Muslims continue to be underrepresented and excluded in the economy and society in Mindanao, and in the country in general:

*Our seeking refuge here is not a simple matter. Our evacuation is a historical move to fight for our tribal lands. We are in this evacuation centre to continue the*

education of our children. For a parent, it hurts to think that the government itself closed our school. They did not even give a peso to build our school. As leaders of the community, we have an initiative to build a school here so our youth can learn their principles and rights, and the laws pertaining to their rights as children [Female (39), Short Video Interview, 8-A, 2020.02.23].

Life was good in our tribal land. I do not think that we will make it if we were to stay here permanently. We were born there and our livelihoods are there. There is no question that we will go back there. That is why we call on the government to respect our culture and allow us to go back to our community free from military aggression. [Male (60), KEI, 8-A, 2020.02.23].

I stayed in Manila and tried my luck there. I applied for a job as a saleslady but they would not accept me because I am Muslim. They have a prejudice against Muslims, who they believe are not trustworthy [Female (38), Short Video Interview, Poblacion, 2020.02.17].

### 7.3 (IM)MOBILITY NARRATIVES IN VISAYAS

Based on the interviews conducted in the Visayas, the primary reasons for people to move to other areas include poverty, livelihood or job opportunities, tertiary education, marriage or family relationships, social network, and new experiences for younger people. Many of those who finish a college degree would opt to work elsewhere – either in Metro Manila or abroad:

Poverty is the main reason [that people migrate], such as people like us. Back in Alangilan we have land but we do not have the means to make it productive. That is why we decided to go to Manila. We had a good life in Manila which allowed my children to go to school. That was my main concern at the time [Female (53), KES, Dos Hermanas, 2020.09.19].

There is a big difference between living in a city and in a rural area. When I was in Pasay City, food, transportation, and electricity, were very expensive. I realize now that living here in the province is much better than in the city. However, looking back, I needed to provide for the needs of my family. That was the reason I had to leave and find better opportunities [Male (27), LHI, Dos Hermanas, 2020.10.04].

The difference with [being] here, is that looking for a job is quite hard unlike in Manila. There are factories [and industries] in Manila where you can apply for a job as a factory worker or a sales woman. There are not many places to work here [Female (51), LHI, Maypangdan, 2020.09.04].

My husband and I work here in Bacolod. My brother-in-law suggested that we should come and live here during the time when there was [cheap] land for sale and housing. We brought one lot to build our house on [Female (47), LHI, Singcang, 2020.10.10].

Most of the youths get to finish college since the university is nearby. After finishing college, most want to go and work somewhere else. That is when they leave. They go to Manila and others go abroad. There are many who become seafarers [Female (51), LHI, Maypangdan, 2020.09.04].

One does not have to work in faraway places as there are jobs right here. However, the employment here is influenced by politics. If you are connected to a politician, you can easily get a job. In Manila, you can be employed without any political backing for as long as there are jobs available. Look at those education graduates from here who easily got a job in Manila! It is different there [Male FGD, CSS, Maypangdan, 2020.09.02].



## A) PERCEPTIONS OF ENVIRONMENTAL CHANGE

Perceptions of environmental change is informed by people's experiences with their immediate environment in the origin sites. For instance, farmers who are working under the heat of the sun almost everyday share how intense the temperature is now causing negative effects on their health such as migraine, sunburn and heat rashes. Climatic change and slower onset environmental stress in relation to increasing temperatures and less rains during periods of El Nino and drought as well as the associated typhoons and extreme weather events that climate variability brings are recognized in origin areas as having adverse impacts on lives and livelihoods. Farmers have had to accept that the planting and harvesting seasons have changed. Fishermen may have to go further into the seas to fish because there is limited catch in the municipal waters. Some also acknowledges how urban development has contributed to higher carbon emissions and pollution that contribute to climate change:

*Typhoons have always hit the area, but the heat /.../ it was not this hot before. It has been very hot here lately! When the sun shines, it burns. When it rains, it really pours. Back then, the rains did not cause flooding like it does now. Yes, it is hotter and the rain is heavier now [Female (38), LHI, San Roque, 2020.09.02].*

*Back then when we experienced typhoons there would be casualties, but not like today. Typhoons are responsible for a lot more deaths these days due to the floods. When there is a typhoon, we cannot travel to buy products for our business. It affects my source of income directly. That is when I rely on manicure and pedicure service to cover our needs [Female (43), LHI, Dos Hermanas, 2020.09.19].*

*In the city, the high carbon emissions from vehicles destroy the ozone layer. The garbage thrown everywhere by people who lack discipline also cause flooding. This is the reason why we cannot blame God whether he is the one who allows these [disasters] to happen because it is our own doing [Male (47), KEI, Dos Hermanas, 2020.09.20].*

In the destination areas, the informants described similar slow onset environmental impacts on people's livelihoods because of unpredictable weather patterns especially in dry season:

*Based on my experience with fisherfolks here in Maypangdan, it is really hard to fish in municipal waters so most of them would sail to deeper waters. In Anton's case, he should fish further into the sea if he wants to earn more money from the fishing. If he does not, he might as well be content with catching just a few fish in municipal waters. Climate change*



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*and the increasing number of fishermen are making it necessary to sail into deeper waters to catch abundant fish [Male FGD, CSS, Maypangdan, 2020.08.30].*

*And the climate? It has become unpredictable. We used to be able to expect the arrival of the northeast “amihan” monsoon and the southwest “habagat” monsoon in certain months, but they no longer follow their usual patterns. That is definitely climate change. It makes it harder for our farmers to know when to start harvest, especially those that do not have access to irrigation systems. Some would plant their seeds expecting rains in December but only to witness sunny days. Also, many have encountered insects such as rice black bugs. Events like these make sustaining livelihoods very difficult [Female (51), LHI, Maypangdan, 2020.09.04].*

*It is hard for us to deal with the typhoons that come [with the changing climate]. We are forced to switch to other livelihoods other than fishing [Female (51), LHI, Maypangdan, 2020.09.04].*

## **B) ADAPTATION STRATEGIES AND CONSTRAINTS**

People in areas where livelihoods have been severely affected by extreme weather events such as Super typhoon Haiyan have found diverse ways to cope. Most of the fishermen and farmers take on construction work during off season in the surrounding area or nearby cities. The women support in earning income through handicrafts or other livelihood activities. For many, however, it is not easy to shift livelihood or employment as they lack training and skills for alternative jobs. Fishing or farming is all that they know and a way to live life:

*He has gone as far as MacArthur for fishing but there were limited fish in the sea. He decided to work as a construction worker in the town of Salcedo because a school building and an evacuation centre were being constructed. He keeps on working in*

*construction while the fishing is low. When the fish season come around, he goes back to fishing [Male FGD, CSS, San Roque, 2020.08.30].*

*Some time ago, fishing was good. There was a lot of fish but that has changed now. /.../ Perhaps, we are not the only ones catching fish here. Maybe it is those migrants who use better [fishing] gear to fish. Back then, there were plenty of fish even near the shore. /.../ Nowadays, it has dwindled. I even used to sell around 30 kilos of fish a day, but not these days. We can consider ourselves lucky if we get to catch and sell about 10 or 20 kilos in a day. At other times, there is none at all. Our income from fishing is not sufficient anymore [Female (51), LHI, Maypangdan, 2020.09.04].*

*My major livelihood is copra [dry coconut meat] production. Since the copra production takes three months, I resort to other livelihoods like fishing and coconut wine in other times [while waiting]. /.../ We earn less from copra nowadays. After Typhoon Haiyan struck, half of the total number of our coconut trees were damaged [Male (52), LHI, San Roque, 2020.09.02].*

*We get a good income from making these bags, mats and hats. There are times when they sell fast, but sometimes they do not. /.../ We also gather leftover “tarukog” [chitons or marine mollusks] and when we collect plenty, we sell them. /.../ As we do not have much, we switch and tend to double livelihoods. That is how it is here in the province, we cannot rely solely on copra production. We were hit by a typhoon recently so we do not have that many coconuts [to get our copra from] anymore. Adding to that, my husband cannot do construction work since he got ulcers. He stays here to farm and sell copra while fishing and gathering tarukog on the side [Female (38), LHI, San Roque, 2020.09.02].*

*They should think of an alternative livelihood. Even if they are copra [dry coconut meat] farmers, they can go fishing or utilize available resources from*

*nature which may generate an income. Since we eat vegetables every day, maybe they should plant more vegetables. If the price of copra is low, they should think of other ways instead of limiting themselves to copra production only, like making charcoals from coconut shells since you can get more for charcoals these days [Male FGD, CSS, Maypangdan, 2020.09.02].*

*My parents are farmers but their income has declined since my father got sick. As a result, my mother looked for other ways to earn a living such as by reselling products. Our major source of income at the moment is still farming our small land. /.../ We grow crops such as corn, peanut, and ginger, that are all considered high-value due to their high demand. However, it is not very profitable for us since we only manage to sell them for low prices [Male (23), LHI, Singcang, 2020.10.12].*

Some of the wives of fishermen and farmers work as domestic service helpers in surrounding areas or outside the country. This is explained as a way to support their spouses in earning an income and improve their family's economic situation:

*Martha found a job as a domestic service helper close by like in the town of Salcedo. She goes home when she has a day off. On the days she is at home, she helps her husband make copra so the work can be done faster, they get more products, and higher income [Male FGD, CSS, San Roque, 2020.08.30].*

*She went to Hong Kong to work as a domestic service helper, and left her children with their grandmother. While abroad, she sent money so that her children could go to school. Her oldest son started resenting her absence after some time. /.../ When her contract ended, Selma came home and realized that she needed to take care of her children. She was able to save money during the five years of working abroad so she decided to put up businesses - a small retail store and an agriculture supply shop. She was able to build her own house later on [Male FGD, CSS, San Roque, 2020.08.30].*

Despite the changes in environmental conditions, many prefer to remain where they are for reasons such as place attachment, social network, and reluctance to start over from scratch in a new place or due to lacking assistance from the government. Those migrating temporarily express that they look forward to going back to their origin areas because 'home' is different and they feel a deep desire to be reunited with their families:

*After [Super typhoon] Haiyan [struck], many left the area. We chose not to, and decided to deal with what remained. We still continue to farm [Female (38), LHI, San Roque, 2020.09.02].*

*I cannot think of any place to which I would like to move. It will be good to move to a place if you own land and properties there, or if you have family members living in the area. I do not have any of those. My siblings live Manila, which is too far. I would not like to go there [Male (52), LHI, San Roque, 2020.09.02].*

*Our relatives and the people that we know are here. If I move, I am not sure that I will be safe. I cannot imagine what it will be like without the people I know. It is hard to move without knowing what is in store for us in the new place. Meanwhile, staying here assures me that I can continue with my livelihood. /.../ Moving to a different place would mean starting all over again [Female (38), LHI, San Roque, 2020.09.02].*

*I would not want to leave. I was born here and I choose to stay here. It is better here. You can simply plant and do backyard gardening so that you can eat. You can go to a nearby hill to get coconuts. However, when you are in the city it is hard. You have to pay for your vegetables and coconuts [and other needs]. It is not like here where one just plants crops and gets them whenever needed. /.../ In the city, the air is polluted due to the smoke but here the air is fresh. I like it better here. It is already polluted over there [Female (51), LHI, Maypangdan, 2020.09.04].*



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*The fishermen here do not want to leave fishing. The Bureau of Fisheries and Aquatic Resources (BFAR) has recently chosen us as a community partner and we get assistance for our fishing needs ...If there was no pandemic, we would have received a boat and eight 8 payaos [rafts] already.... We chose not to permanently switch from fishing to another livelihood since the government is assisting us [Male (51), LHI, Maypangdan, 2020.09.04].*

The living conditions in the origin sites are described as difficult and lacking in many ways and this gives motivation for people to aspire something better in life:

*I grew up with parents who were farmers. Our livelihood has always been farming. My father would harvest sugarcane while I helped loading them onto the truck to be transported. That has been my main role ever since. There were days when it would suddenly start raining during a hot day after working under the sun*

*for hours. We often get sick and suffer from fatigue, body pains and flu [due to the changing weather] [Male (47), KEI, Dos Hermanas, 2020.09.20].*

*When I was working on the farm, I said to myself that I will find a better job. Not because I look down on our livelihood, but it was more like I wanted a job that does not require me to work under the sun. You sweat a lot during a hot day. I want a job where I can wear makeup. I want to be in a place that is air-conditioned [Female (28), KES, Dos Hermanas, 2020.09.19].*

*When I was young, I used to walk three kilometres to get to school but now my children do not have to experience that. Many children do not go to school simply because it is too far and rather work on the farm. That was also what I experienced when I was young [Female (43), LHI, Dos Hermanas, 2020.09.19].*

*He is thankful to God that he qualified and was admitted to the University of the Philippines in Iloilo. He will work hard to achieve his dreams. He will scavenge and recycle garbage and think of ways to turn that garbage into money. His life is difficult. He just wants to get by each day. Eat three times a day. He works hard and stays focused on his studies [Male FGD, CSS, Dos Hermanas, 2020.10.04].*

The narratives also indicate how receiving remittances makes an important difference, for some in the short term while for others in the longer term:

*Sometimes my siblings who work in Manila send me money through Palawan Express [remittance service] when I struggle financially. I ask them for help and they send some money /.../ usually five hundred pesos. It is barely enough. It only gets you five kilos of rice, and two packs of noodles. However, they are also facing financial difficulties so I accept any amount that they can spare [Male (61), LHI, Dos Hermanas, 2020.09.20].*

*My brother in Singapore gave me Php 20,000.00 as capital investment for my business. By God's grace everything is fine now. It is just like people say, when you strive hard and you do not just sit and wait for something to happen, you will get what you need [Female (60), KES, Singcang, 2020.10.10].*

In the destination sites, some informants express that they have experienced hardships after having migrated while others feel that living in the city is preferable. Migrants who are happy in their destination areas explain how their happiness is founded in the improved access to basic social services, especially in relation to education and health:

*I currently live in Bacolod City. I moved here when I was in my first year of high school. During that time, my parents could not support our education. It resulted in me looking for means of income to continue my education. I took up part-time jobs such*

*as being a dishwasher and all-around cleaner in a canteen. I also worked in the construction sector for two months [Male (23), LHI, Singcang, 2020.10.12].*

*As a teacher, I cannot say that my finances have improved, but the job has helped me and my siblings. As I am the eldest child of my family, my parents expected me to support the education of my siblings. Because of this, only a limited amount of money is left for myself [Male (23), LHI, Singcang, 2020.10.12].*

*Our situation is better here since we no longer need to pay rent. In regards to the education of our children, their schools are accessible as we are in the city. In addition to this, hospitals are near, and going downtown, or reaching other important areas of the city is easy [Female (47), LHI, Singcang, 2020.10.10].*

*You seldom see people from the city migrating to the countryside. Most of the people who migrate are those coming from rural areas due to the following reasons; First of all, more job opportunities. There is also this mindset in the countryside that if you are farmer, you are labelled as poor or having low status. Secondly, a majority of the people in the countryside want to have a better and easy life. Teenagers want to change their skin tone and physical appearance to be able to show-off to others in rural areas. Finally, in order to have a stable source of income people migrate [Male (23), LHI, Singcang, 2020.10.12].*

### **C) MIGRATION AND GENDER**

The group sessions revealed female gender roles where women are expected to manage the household despite having other work. The double burden on women often included taking care of the family's daily needs, doing household chores, and farm work which came with activities such as going to the market to sell farm produce. Women, in general, were expected to follow their husbands' movements, take care of children and parents, and participate in farming:

*I struggled when I first came because life is different from what I am used to. I have to learn to get along with people here, and find a way to make a living in my husband's birthplace [Female FGD, FCM, Dos Hermanas, 2020.10.04].*

*I was born in Bulacan. I joined my older siblings in Cavite when I started working. When my parents moved back to Maypangdan, I took a vacation and joined them. I never went back to Cavite. I decided to earn a living here so I can be with my parents. I eventually found a husband, and settled down here for good [Female (38), KES, Maypangdan, 2020.09.04].*

*I do not want to leave my children. I cannot imagine going abroad or even to Mindanao because I do not know anyone there.... I learned to farm because I have to help my husband [Female FGD, MM, Dos Hermanas, 2020.10.04].*

## **D) MIGRATION AND WELLBEING**

The impact of disasters upon the wellbeing of families was a strong narrative, especially in Eastern Samar, an area that experiences frequent typhoons:

*I myself have experienced [destructive] typhoons. As a typhoon [Haiyan] survivor, you experience trauma and need support from the government. While waiting for governmental support, I do other activities like gardening in order to recover [Male FGD, CSS, Maypangdan, 2020.09.02].*

Migration overseas was coherently described as bringing challenges to the wellbeing of both the migrant and the family left behind:

*It greatly affects my relationship with my family since I am always away. There is a saying among us seafarers that "when one gets into a ship, it is like leaving half of your body behind". It is difficult because your thoughts are always with your family*

*that was left behind. It was one of the major factors that affected my work on the ship as extreme focus is required [Male (29), KES, Singcang, 2020.10.12].*

*My mother is based in California, USA. She got married, her second marriage after our father died, to a foreigner. When my mother migrated to America, I was already working and so was my older sister. She was working in Dubai. The ones who were affected the most by her leaving were our two younger brothers. We took responsibility for them and provided support on behalf of our mother [Male (29), KES, Singcang, 2020.10.12].*

*There was one overseas Filipino worker whose employer did not pay her a salary. The employer had told her that they have been sending money directly to her family. However, her husband never received any money at all! /.../ Well, I suppose she was lucky as she managed to get back home safely without any further challenges abroad [Female FGD, CSS, San Roque, 2020.09.02].*

Life in cities can be stressful for migrants due to the high cost of living and the need to adapt to a new place. The worries and stress of not earning enough as well as keeping the family safe in a place where different kinds of people co-exist were portrayed as constant threats to people's wellbeing:

*There is an overflow of food in the countryside compared to here in the city. I often experienced hunger and difficulties when I had no money, but God was good, merciful and ensured that my needs were met. I also worked hard to provide for my needs. /.../ Migration greatly affects a person in the way that you have to adjust with regard to the people in the new society or the new place, as well as how you earn and provide for your needs. It affected my wellbeing. I was very thin back then and experienced depression and some problems because of the changes [Male (23), LHI, Singcang, 2020.10.12].*

*For me, it [migration] greatly affects our country. The cities start to be congested and crowded since many people from the country migrate to the city. There is a decrease in income as there more people who do not mind low-paying jobs just to be able to remain in the city. Most of them cannot handle the burden of extraneous work in the country, that, in fact, gives a higher income. This mindset pushes people to settle for less and make them manage with whatever they have got. /.../ It also affects the economy as the poor gets poorer [Male (23), LHI, Singcang, 2020.10.12].*

*When we were in Gonzaga [informal settlement], our house had no bathroom and the houses were located very close to one another. We experienced a fire, and we were greatly challenged as we had to try to escape through the very narrow pathways. /.../ They have also reported drug-users in that area. Houses often get raided because of the use of illegal drugs. There are also thieves being chased by the authorities. I told my husband to find a safer place to live in for our family. If we remain in such a place, it will affect the way my children grow up. At worst, they will become just like them [Female (60), KES, Singcang, 2020.10.10].*

## **E) MIGRATION AND SOCIAL COHESION**

Social networks and conflict are important factors for migration in the Visayas. Actively giving back to those left behind is also common for those whose lives improved after migrating abroad:

*It gets lonely when you are new to a place you have just moved there, as you do not know the place and the people there. It would still be better to stay in one's hometown filled with familiar faces. In case something happens, you can easily ask for help unlike in a new place [Female (38), LHI, San Roque, 2020.09.02].*

*We own land in Negros Oriental, which my parents planted with wheat and coffee beans. Around 1986, we had to leave our home due to the rising conflict between the [government] military and the New People's Army [left-wing or communist revolutionary movement]. We were concerned for our safety so we decided to evacuate and found a home here in Talisay, Negros Occidental [Female (43), LHI, Dos Hermanas, 2020.09.19].*

*Like one of our former community members here [who is abroad]. She contributed to the community and a changed a number of things here. She donated to the school and to the church. She set up a local shop selling construction materials, things like cement and galvanized iron which gave locals the opportunity to work [in construction]. A number of our people [abroad] continue to donate to our society [Female (51), LHI, Maypangdan, 2020.09.04].*

## **7.4 (IM)MOBILITY NARRATIVES IN LUZON**

Because of the proximity to the NCR and surrounding industrial regions, migration movements in Luzon are generally towards NCR, CALABARZON and Central Luzon regions. These were also identified as the top destination areas in the 2018 NMS. Among the many reasons for people wanting to move to NCR, including the availability of jobs (due to an abundance of businesses and factories in urban centres), the presence of schools and universities offering quality education, and the opportunity to experience the perks of city life such as technology, food, and recreation. One expert, however, stated that the gap in governance planning is a main factor:

*The influx of migrants to NCR reflects poor regional planning and failed countryside development and education. Agriculture is viewed as having lower status, and is often associated with poverty. People coming from the provinces are therefore considered traditional and behind [Female (71), KEI, Loyola Heights, 2020.09.06].*



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Many see the advantages of migrating to urban centres and overseas particularly with regard to income, experience, and the opportunity to improve the family situation or even give back to others left behind:

*The ones who leave want a better life and they usually go abroad. They want to earn a living there. That is their ambition. If you want to have a better life, and there is nothing here, and you are educated, you often decide to go abroad where you will earn more [Male (62), Yeban Norte, 2020.03.05].*

*Based on my experience, when I went to Manila to become a domestic service helper and stopped my studies, it was alright that I went there. I saw the beautiful sceneries there. Luneta was a good place to stroll around in. I was fortunate to see tall buildings, different showbusiness, and personalities. This is the reason why the 18-year-old me felt happy despite just being a domestic service helper. The experience was also made more amazing because my employer was nice [Female FGD, CSS, Alibagu, 2020.03.05].*

*If you stay in a different country for a long time, and your job there is good, then you will be able to help your children finish their studies. Everyone deals with sacrifices before they get to have a good life. My*

*batchmate in elementary school is in Hong Kong. She has been living in Hong Kong for 20 years now. She has five children, and all of them have finished school. One child is a seafarer, and the other two are nurses. They all live abroad. Angge has a successful life, but she has not forgotten about Alibagu Elementary School. /.../ When she returned yesterday, she gave something back to the school where she finished her studies. That is Angge. Her life is a success [Female FGD, CSS, Alibagu, 2020.03.05].*

However, not all migration stories to urban centres in Metro Manila become success stories, or results in a positive outcome. Many of the arriving populations are unskilled or have skills in traditional livelihoods from origin areas, and therefore often need additional training and experience to engage in work in the destination areas. Sometimes, people are able to acquire skills easily, but other time people expressed struggling to adjust to the new jobs. Those who manage to develop, and master a new job would find stable work. However, many are not able to get jobs and are as a result excluded and discriminated upon. People described how having a lower level of education or being a part of a low income group were often looked down upon. The arriving migrants tend to take up livelihoods in the informal sector such as buying and selling market produce,



clothes and other items; cooking and selling street food; doing laundry and other personal services such as manicure. People having moved to the city described how these circumstances were not understood by people back home who only saw the success in those who are able to migrate. One expert explains that the image of migrants making it in the city may be founded in narratives reproduced among people in the origin sites:

*Are migrants better off after they make it to Metro Manila? Most of the migrants that come have low educational background, and automatically become part of the informal sector. They are often looked down upon because of their class, ethnicity, gender, etc. unless, of course, they come from families who are well-off. They may also face discrimination or resentment from the Tagalogs because of the Imperial Manila stigmatisation. At the same time, migrants are viewed by people from their places of origin as having higher status, being successful, having access to cash, and as being consumption-driven among other things [Female (71), KEI, Loyola Heights, 2020.09.06].*

## **A) PERCEPTIONS OF ENVIRONMENTAL CHANGE**

In line with the other regions, environmental changes are strongly felt in origin areas in Luzon. Agriculture-based livelihoods are described to be affected severely by climatic change and slow onset variability, land degradation, as well as disasters. The impacts of El Nino and drought events, in particular, hit farmers hard because of their inability to address water scarcity since the vast agricultural lands of Luzon lack irrigation systems. Similarly, during La Nina season, agricultural lands are not protected from floods because most are located in plains:

*The farmers who can afford it installed deep wells, but not farmers like us, we have almost nothing. Our farming is rainfed since we have no irrigation system. We have no water supply. We live on prayers during these times. Once*

*you plant, you start praying. /.../ Last year, it was hot and dry already in February. We have experienced severe droughts perhaps three or four times. This is the reason why our debts keep piling up. It is hard when you only get to harvest once a year and all expenses are covered by loans [Male (52), KES, Yeban Norte, 2020.03.03].*

*The flood affects our agricultural land and our livestock. Nowadays people have elevated houses so that the floodwater does not reach them. They are used to the floods. In my point of view, I think it really affects us. /.../ If the floodwater remains high, it will affect us as we will not be able to work. How can you perform your job when your home is flooded? How will you go to the rice fields? How can you take care of your crops, or your livestock? They will all be affected by the flood [Female (27), LHI, Pindangan 2nd , 2020.03.11].*

*There are times when the flood comes as the corn is still growing so it gets completely damaged. For example, this harvest, this is the second time that this area has been planted with corn. The previously planted corn got flooded and was damaged. Our harvest will therefore be delayed this time around. The losses vary. This is because the corn was still growing when the flood struck. So, the expenses were small, since while farming, you need to spend more as the crops grow. We use fertilizers two to three times after planting. Then again when the crops have grown a little bit, and finally when it is almost fully grown [Male (52), KES, Yeban Norte, 2020.03.03].*

Farmers described having observed deterioration of the land due to the poor quality of the soil and hazards such as erosion, landslides and earthquakes that affected the productivity of the land:

*The soil was rich back then. We did not use fertilizers. As time passed, the quality of the soil changed because of the changes in the climate. There was also a strong earthquake that happened here in Luzon. Our land got covered in rocks and the river covered with soil.*

*The water level of the river rose and covered our land with rocks and other material. That is why we started looking for other areas where we could plant. We started planting in the areas that can still be used for planting rice. In the soil filled with rocks, which came from the mountains, you can sometimes still plant certain vegetables like sweet potato. This is still possible [Male (62), LHI, Yeban Norte, 2020.03.05].*

In both origin and destination areas, disasters are major challenges that have the potential to increase vulnerability of marginalised groups despite the increased efforts by the government to reduce their impacts through prevention and preparedness measures. Many informants described how more slow onset events often interlinked with more sudden onset events:

*When Camiling is flooded, all the excess water goes here and water floods our houses. We have the embankment now that prevents the river to overflow so people's homes will not be flooded. Street lights are also provided. In the past, there was none so it was scary to go outside because it was dark. If you do not have light, you will not be able to see the path or what is in front of you. [Female (27), LHI, Pindangan 2nd , 2020.03.11].*

*About eight years ago, I experienced the impacts of Typhoon Haiyan. It was a hard time. I was in the rescue unit then. We have an area here that is prone to flooding. /.../ The houses are located just next to the creek. The toilets also do not drain into a septic tank, but directly into the canal. Therefore, when the creek overflows, this water goes into their houses and all of their things get wet. /.../ It is such a hassle for us because we are the ones to clean it up after every flooding event. Three of our personnel actually resigned due to this hard work [Female (41), KES, Loyola Heights, 2020.09.12].*

The urban development in destination areas has led to increased health and wellbeing risks as a result of reduced green spaces, garbage pollution, and poor drainage that

cause flooding. Unplanned settlements that do not take climate and disaster risks, or the environment into consideration contribute to greater exposure of cities to the increased frequency and intensity of hazards (brought about by climate change). Consequently, anticipated future negative impacts require capacity building of personnel and institutions in preparing and responding to disasters.

## **B) ADAPTATION STRATEGIES AND CONSTRAINTS**

Migration is undoubtedly an adaptation strategy in Luzon to take advantage of the economic development in nearby regions or abroad. These strategies are undertaken to manage challenges in agriculture productivity due to both slower climatic changes, land degradation, and disasters, as well as to work around irregular employment due to the seasonal shifts by switching to alternative livelihood activities:

*People go abroad because they can find work there. If you stay in the province, farming is your only source of income. This will not be enough to provide for your family. Many decide to go to another country or city simply because of their income [Female (27), Pindangan 2nd , 2020.02.11].*

*I started working in construction in 2016 because we were poor and the harvest was not enough for our daily needs. That was the only reason. Our arrangement was this; My wife would manage the farm, and I would tend to construction work. I still need to oversee the farm as well of course, since there are farming elements that are difficult for a woman to manage [Male (51), KES, Yeban Norte, 2020.03.07].*

*His work within constructions is irregular. We were able to get a motorcycle, which was a gift from his parents. We have a sidecar installed on it so it can be used as a tricycle. He therefore started working as a tricycle driver. When there is construction*



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*work, he works there in the day, and at night, he drives the tricycle with me accompanying him [Female (33), KES, Alibagu, 2020.03.05].*

*I tended to so many jobs. I started working when I was still in grade school as a tee boy at a golf course. /.../ I then became a service crew member at a Tropical Hut [fast-food restaurant]. /.../ I also tried selling Selecta ice cream in Marikina City. Later on, I got employed in a Bingo centre in Munoz market in Quezon City. This is where I met my wife. These days, I am a jeepney driver, but as jeepneys are not allowed during the pandemic, I drive a pedicab. /.../ I also help my father collect recyclables to sell, such as plastic, cartons, and so on [Male (43), KES, Pansol, 2020.09.26].*

People expressed feeling constrained in their decisions to move by factors such as land or property ownership, and family and children. Land was described as the most precious asset that everything emanates from —people’s identity, lifestyle, and source of income in origin areas. People hold on to their land as long as they can despite hardship and threats. Keeping the family together was also important for many. Some described how they would take any and more than one job if that meant keeping the family together:

*I do not know of anyone here who has given up farming due to the current conditions because this is the only thing they have to depend on. There are no other livelihoods here. Land is important for people. Even though losses occur, people continue to farm. They will not think of selling their land except during an emergency when there is no other way but to pawn their land [Male (52), KES, Yeban Norte, 2020.03.03].*

*There are people whose home regularly gets flooded, but they still decide to stay. Even those who have money, they still decide to stay in the village. They do not want to leave their houses, and they do not want to leave their livestock [Male (54), LHI, Pindangan 2nd, 2020.03.13].*

*I just stay at home and run this small shop. If I can find someone to take care of my children, I sell banana- and sweet potato sticks, or spring rolls from house to house. I receive orders for these. When the weather is hot, I sell ‘halo halo’ [iced dessert]. I also take up part time jobs such as doing laundry for others [Female (29), KES, Alibagu, 2020.03.05].*

Place attachment, family dependence and lack of social networks discouraged migration. Many were also content where they were despite life being difficult at times. The place or home had a meaning and value

that could not be found elsewhere. The opportunity for new family constellations to live on their own, separate from parents and in-laws, held a certain appeal for some. Some described how they did not feel courageous enough to break out and confront life on their own. In this sense, the lack of a social network in potential destination areas held them back:

*I do not have any plans of relocating. I will still stay in Ilagan. As people say, there is no place like home. This is where my family is [Male (35), KES, Alibagu, 2020.03.07].*

*I did not want to live in my husband's hometown. I found the area crowded and chaotic with houses close to one another. We shared a house there [with his family] whereas here we have our own. We saved up money to be able to build this house. We do not own any farmland, but my husband can find daily wage work on a farm [Female (33), KES, Pindangan 2nd, 2020.03.13].*

*He has some work experience, but it is still not easy to land a job in Manila as he does not have a social network there. He struggles to find a job, and as he is underemployed he will not be able to save up any money. Maybe another reason why he does not have any savings is because he regularly sends money to his family. /.../ In Manila, everything needs to be bought and it is expensive. Life is really difficult there because you spend money on everything, but especially on rent [Male FGD, CSS, Alibagu, 2020.03.07].*

Meanwhile, the destination areas have their own set of challenges that are experienced by migrants such as lack of support network, limited access to housing, criminality, and more others. Adjusting to a new place especially on your own was described to require courage and determination as people in the arriving destinations would be different, including their culture and language. According to some informants, there was a danger of being associated with the wrong kind of people. Adding to this, being on your own added the

challenge of dealing with loneliness and homesickness. Moreover, the cost of housing and financial stress in the cities was described as a major burden. Therefore, housing was often shared by families and friends, which did not allow for enough space and privacy. In this way, family members that migrated abroad shared the burden of the high cost of living in the cities:

*I worked in Pampanga. I was trying to gain more working experience as I had recently graduated. I experienced living alone and away from my family. What my father experienced in another country, I experienced here. You have to do it as your family needs to be supported. You have to adjust to the language as well as to the difference. This can make you feel alone or as if you do not know how to work with them. /.../ You have to stay in a foreign place and away from your family so that you can help them [Female (27), Pindangan 2nd, 2020.02.11].*

*A friend invited me to look for a job in Manila. I lived in Quiapo and worked as a dishwasher. I also worked other jobs such as delivery and driving. I was eighteen then. After three years, I went back to Isabela because I was being led astray by Manila due to the pressure and trouble in the city. I got involved in a gang. It was violent back then because gangs would challenge each other [Male (35), KES Alibagu, 2020.03.07].*

*I live with my four brothers and their families all under one roof. One brother, who is employed as a family driver, takes care of the water bill. The rest of us, my twin and I, and our other brother, who has a disability but has a job, take care of the electric bill. /.../ I have a sister in Belgium. She has a Tourism degree and was invited by a good friend to work in a hotel there. This is where she met her husband, Steve, who has two jobs, one at a plastic factory and the other as a gardener. They live in a condominium and pay rent, but they also struggle with their life over there [Male (43), KES, Pansol, 2020.09.26].*

Some informants said that they would prefer to stay or go back to their places of origin despite having aspired and desired to migrate in the first place. People expressed that they missed the simple lifestyle, where money was not needed for everything especially when it came to food that could be obtained from your own land or from a friendly neighbour. Money may be easier to make in the destination areas, but it was also spent quickly because of all that you had to pay for:

*If I were given a choice, life is better in the provinces than in Metro Manila. Even though it is easy to find money here, it is also spent rapidly. /.../ In the province meanwhile, you will not need to spend as much money, and especially not if you have a rice field. When you harvest, you already have basic food. You just spend money on soap, salt, coffee and other essentials, but here, you need money to buy everything, even spoiled vegetables [Female (41), KES, Loyola Heights, 2020.09.12].*

The children were a primary consideration for many to stay. The opportunity to earn a high income abroad was tempting, but not when it meant having to spend time away from children. Many preferred to keep their family together, and especially when the children were still young and needed both parents more:

*I hope to be able to work and help my mother, and especially now that my father is gone. If there was an opportunity, I would. I want to go abroad because of the money one can earn there. I want to renovate our house and I want to build a bigger store. I want to save money for our children, for their future. At the same time, if I were to leave I will not be able to take care of my children [Female (33), KES, Pindangan 2nd, 2020.03.13].*

### C) MIGRATION AND GENDER

Women would not hesitate to become the primary breadwinner of the family when they were given an opportunity to work in NCR or abroad. Many were able to do so because someone in the family could be trusted with their children and loved ones. This included a spouse, mother, aunt or cousin or someone from the extended family. Some women achieved success in the destination areas from the hard work and perseverance. These women explained how they were able to experience the good things that city life had to offer:

*There are Filipino workers overseas, like my wife who is abroad. She has been away for a long time, since 1994. /.../ From time to time she comes home. /.../ It is better now as someone else in the family is working too, so it is not just me working on the farm. /.../ My children have no problem with their mother being away. I am the one who need to raise them [Male (52), KES, Yeban Norte, 2020.03.03].*

*Would I have this house [if I did not go abroad]? There would be none. My husband's income as a carpenter would not have been enough for our children's education. It would not have been enough if I did not help him. This is what I can contribute with, I can go to another country and work [Female (27), LHI, Yeban Norte, 2020.03.06].*

*Here I do not experience what I experienced in the province. I have been able to experience many good things here. I have achieved what I came for, despite the present circumstances. What I have now, I would never have attained if I stayed behind in the province. For example, owning a house in Manila is a huge blessing [Female (52), LHI, Pansol, 2020.09.26].*

Migration often ended up leaving the caregiving responsibility on the spouse left behind. For example, mothers would have to take up the gender roles of the father and vice versa. Women have the double burden of child rearing and earning an income to supplement that

of their spouse's. Many of the informants expressed how importance of extended families. Grandparents and other relatives often supported with caregiving duties so that mothers would be able to fulfil other responsibilities:

*I needed to be both a mother and father to my children. You have to take on your husband's responsibilities. You have to make sacrifices. Sometimes money is not sufficient so I sell 'halo halo' (iced dessert) in my house during hot days to ensure an additional income. I also have a small retailing store [Female (33), KES, Pindangan 2nd, 2020.03.13].*

In the origin areas, women were often raised to be enterprising to prepare them for a more independent life. Some girls helped out with farm work alongside their fathers while also supporting their mother and/or sister with household chores such as cooking, cleaning, and looking after their younger siblings:

*It used to be very common here for girls to either get married at a very young age or move to Manila where they would get pregnant so they would return home with a child. My parents did not want me to turn out that way. They wanted me to focus on work so that I could learn how to live on my own. I have been trained [to work] at a very young age by selling rice and food in the market, for example, when I was only in third grade. My father would also go to the river, catch fish and ask me to sell it in the market during the day. Meanwhile, my mother would cook snacks which I could sell from house to house in the afternoon [Female (29), KES, Alibagu, 2020.03.05].*

## **D) MIGRATION AND WELLBEING**

Many informants shared stories of how the mobility affected their wellbeing such as by raising children with disabilities alone, and looking after children who were prone to sickness especially in times of flood. In addition, the parents who were old and sick living with their married children needed special attention. Some explained how faith and religion played an important role in dealing with the negative impacts to their wellbeing:

*About two years ago, a Christian group invited me to join them. I learned to pray, and to be patient and humble. I learned to forgive those who look down at my children [with disabilities]. I let them be. I just focus on taking care of my children and making it through each day. Right now, my husband has no work so I am crying on the inside. I want to help my husband in whatever way I can, such as by doing laundry, be a maid or saleslady, or even by doing the dishes at a restaurant in the market. However, I cannot leave my children because no one will take care of them. My mother is with us but she is sick [Female (33), Alibagu, 2020.03.05].*

*Children are the ones most impacted, they get sick. You know, when they see water (when it rains), they want to go out and play. They might catch leptospirosis and get fevers, colds or coughs. This is what most of the cases here are like [Female (27), Pindangan 2nd, 2020.02.11].*

Those working overseas or in NCR left childcare responsibilities on the spouse or older children to look after their siblings. Fathers reported often relaying on their daughters to take up the female gender roles of the household early on in the absence of their mother which left them having to grow up fast. In the instance of the father migrating, similar gender responsibilities were left behind on the sons such as by supporting and managing with stretched resources:

*Our third son was eight months old when my husband left to work as a delivery man in Manila for a water refilling station. He was away for almost to four years. We had a hard time because when he started his job, it took two weeks for him to get a salary advance. Meanwhile, we already needed money for milk, rice, and the allowance for my daughter's school the first day or two after he started working. /.../ He would send money every week, but it was always not sufficient [Female (33), KES, Alibagu, 2020.03.05].*

*My mother also worked abroad. She used to work in Kuwait and Singapore as a domestic service helper. Most of those who go abroad from here work as domestic service helpers. She left when I was in day care and came back for my fourth grade in school. I was the eldest. I took on most of my mother's responsibilities, but I was lucky to have a good father [Female (33), KES, Pindangan 2nd , 2020.03.13].*

In some of the narratives, substance abuse and violence in the home drove children to migrate in a means to escape verbal or physical abuse. Despite leaving difficult family situations, the children would still send money home to support their parents once they found a job. In NCR, many migrants ended up living in informal settlements due to the high cost of housing. As houses were built very close to each other, fires commonly broke out in these areas. People also spoke of being displaced as a result of eviction or the demolition of houses and businesses in informal settlements occupying privately owned land:

*My mother is an alcoholic. This is what drove me to start earning a living of my own at an early age so that I no longer needed to ask her for money to school. /.../ To be able to escape from having to live with my mother, and because I had to support my siblings, I took on several jobs /.../ until one day when a recruiter came and offered a job in a factory. This is what lead me to Metro Manila [Female (41), Loyola Heights, 2020.09.12].*

*This is what the Lord has given me. Imagine, the canteen almost caught on fire. There was only a bamboo wall that separated us [from the main fire], but not even that caught fire. I was praying that if that was taken from me, I would have nothing left and nowhere else to go. /.../ The canteen was located in the area that was demolished to build the UP Town Centre [mall] later on. /.../ That was one of the most difficult challenges that I experienced here. /.../ The demolition team came and destroyed everything, even some of*

*our equipment. /.../ It felt as if our world crumbled down upon us. I could not bear the thought of losing our livelihood [Female (52), Pansol , 2020.09.26].*

## **E) MIGRATION AND SOCIAL COHESION**

Destination areas such as the NCR were described facing challenges in building social cohesion due the mix of people from different regions. Power relations between original inhabitants and migrants strongly came through the storylines. This was for example observed in Quezon City where the urban poor live next to gated and rich housing areas. The migrants expressed how they constantly worked towards proving themselves the worthiness and social value to be allowed to occupy space in the metropolis. The informants in Quezon City were noticeably more political since they had more access to information that influenced their livelihoods, social relationships and neighbourhood, which allowed them to express their grievances and offer recommendations:

*There are socio-economic power relations between urban and rural areas, and original inhabitants and migrants. Migrants are being socially excluded because they have no connection with the original inhabitants and with the place. As a result, they have no or limited access to social services, and it is difficult for them to enter the formal sector. For this reason, migrants strategize in building links or bridging capital. They gradually assert themselves so that they can be integrated into the system. You must have been able to observe for yourself how aggressive the migrants in Metro Manila are? [Female (71), KEI, Loyola Heights, 2020.09.06].*

This was not the case in origin areas where social networks closely aligned as people in the study site are related to each other. People here supported each other in many ways including by keeping their home areas safe from rebel groups in Luzon:

*The good thing is that most of the families here are related to one another. So, they help each other out. If you have a problem, they will support you. They can even loan you money and you just pay it back when you can. It is not like in other places, here, everyone helps one another [Female (43), LHI, Yeban Norte, 2020.03.06].*

*There are rebel movements in some areas but not in these parts. The uprisings are generally in the mountains of San Mariano. I have lived here long, but I have never experienced any issues with rebellious groups. Things may happen in the villages in the mountains. That will not go away. There are always people who think differently because they do not get what they want. They cannot infiltrate these parts, however, because the sense of community here is very strong. People live in harmony and if anyone observes anything suspicious they immediately report it to the authorities. The police or army will be notified [Male (62), LHI, Yeban Norte, 2020.03.05].*

In Isabela, insurgency was no longer as rampant as it has been a few decades back, but it still exists and is something that the government is aware and cautious about. Police check points can be observed in strategic locations throughout the area.





# 08

## Discussion:

### Research Feeding Into Policy

The discussion that follows draws insights from the research results and findings, and addresses the research questions on (i) how slow onset climatic and environmental stress influence people's livelihood changes and (im)mobility decisions, (ii) how human (im)mobility influence people in origin areas (on a household, social network, and societal level), and (iii) how human (im)mobility influence destination areas (including people arriving / hosting, and social, environmental, institutional and organisational impacts). It provides recommendations for adaptation and disaster risks, positive migration effects, and negative migration effects that can feed into policy-making.

#### 8.1 HOW DO SLOW ONSET CLIMATIC AND ENVIRONMENTAL STRESS INFLUENCE PEOPLE'S LIVELIHOOD CHANGES AND (IM) MOBILITY DECISIONS IN THE PHILIPPINES?

The research findings show that environmental changes and climate change impacts are observed and experienced more in origin areas than destination areas, where people are less dependent on ecosystems and subsequently, are less vulnerable to environmental stresses. In particular, people described a) decreased agriculture, forest, and fisheries productivity to both slow and rapid onset events such as increased temperature, increased/decreased rainfall, land and forest degradation, b) disasters such as typhoon, flood, landslide, and c) human-induced activities (e.g., water and waste pollution or the use of pesticides) as observed environmental changes. The perceptions of risk related to rapid-onset events such as earthquakes, typhoons, and floods have the most influence on (im)mobility decisions, which in turn depends on gender, income, education and health (Zander and Garnett 2020). The environmental stresses that people mostly relate to are those that affect their livelihood and wellbeing such as loss of trees and forest, deteriorating soil quality, rapid-onset hazards, seasonal/annual weather changes, water scarcity, water and land pollution, and impacts on health due to various hazards. Slow onset events such as sea level rise, ocean acidification, salinization, land and forest degradation, loss of biodiversity, and even potential desertification are poorly understood by the people on the ground and the local government. This is similar to how slow onset hazards, pollution and environmental degradation, were perceived in one study by women as

the stress that pose the greatest risk (Zander and Garnett 2020). Since these events are creeping and almost unseen and covering longer periods of time, they are studied less than extreme weather events and often not monitored.

Slow onset processes— and their characteristics, priorities and emerging issues— are context specific and area dependent (Pereira et al. 2020). Over time, slow onset climatic and environmental stresses affect livelihoods and wellbeing through poor harvest and declining productivity, longer time spent working on the farm, health problems, lower income, and sometimes weakened social relationships. In IMPACT’s destination areas, people attribute income loss and poor health to increased temperature, torrential rains, and disasters such as typhoon and flood. Despite experiencing negative consequences to their livelihoods, work or other sources of income, households do not make livelihood and work changes easily since people often have an emotional attachment to their livelihood. People see their work as extension of their identity and something that they are used to doing, trained in and experienced at carrying it out. This was also seen in the event of livelihood diversification, where more often than not the second or third livelihood

activity remained within the same sector. For example, in agriculture, it could mean changing crops, or alternating between farming and fishing depending on the season.

The level of vulnerability for individuals and households plays a key role for their (im)mobility decisions. Those who are less vulnerable often adapt to slow onset processes and mitigate their impacts (UN 2020). When the impacts of slow onset climatic and environmental stresses are felt, families with land, property and safety nets often remain where they are, and apply coping strategies with the resources they have. Poor families who have little resources, on the other hand, turn to their social networks and the government for assistance. In-situ adaptation and coping strategies are preferably undertaken, whenever possible, due to attachment to land, people and place. Coping strategies may not always be sustainable in the longer-term, as they do not necessarily improve wellbeing and lift people out of poverty. Sometimes people tend to responses that lead to maladaptive strategies or unsustainable coping practices such as the slash and burn (kaingin) system, extensive use of fertilizers and pesticides, and land pawning, among other things.



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People's (im)mobility decisions depend on a lone line of factors including the environment but also work, income, family, education and others (see Appendix I for a comprehensive list). Among sectors that are highly climate sensitive, such as agriculture, climate variability and its associated uncertainty motivated people to migrate through the impacts of temperature and rainfall on livelihood. Particularly for the young and landless, environmental stress often pushed for livelihood changes that resulted in migration. This was explained to be as the young often were more open to change by learning new skills and new environments. In contrast, the elderly, especially those with health issues, and those with caregiving responsibilities in the family were more constrained in their ability to move.

Extreme weather events associated with climate change may influence migration decisions. People in areas prone to typhoons, floods and landslides face challenges to their livelihood or work and wellbeing, and the risk of displacement due to recurring disasters. TFD (2019) identifies the pathways through which slow onset events may turn into disasters and contribute to displacement: (i) slow onset events may contribute to decreased ecosystem services that lead to disruption of livelihoods and acute food insecurity, (ii) slow onset events may turn into a disaster prompted by a rapid onset event, for example, when temperature increase turns into heatwave, (iii) slow onset events may reduce both community and ecosystem capacity to withstand the impacts of slow and rapid onset events, and potentially trigger cascading hazards resulting to displacement, and (iv) slow onset events often aggravates and acts as a threat multiplier for economic, social, cultural and political factors. The compounding and cascading risks from climate change and extreme weather when intertwined with slow onset events increase vulnerability of populations with great implications to safety and wellbeing. As a last resort, planned relocation can be undertaken when areas of origin are at high risk or become uninhabitable (UN 2020).

## 8.2 HOW DOES HUMAN (IM)MOBILITY INFLUENCE PEOPLE IN ORIGIN AREAS OF THE PHILIPPINES (ON A HOUSEHOLD, SOCIAL NETWORK, AND SOCIETAL LEVEL)?

Human (im)mobility can have both positive and negative impacts on origin areas. Based on data collected through the IMPACT study, origin sites often experienced slower development due to the loss of labour force, either skilled or unskilled; decline of agriculture; and poor business environment. The sugarcane farmers in Matalam, North Cotabato, for example, were unable to hire local people from their community to help in the harvest because many have migrated. For the few farmers who were able to hire and pay temporary workers, the hourly rates ended up being higher than what laborers generally received in neighbouring areas. For this reason, many farmers have resorted to hiring people from indigenous groups in another municipality to harvest their crops. Agricultural productivity has decreased as many left farming to pursue other livelihoods and work in other sectors. The uncertainty of regular income from farming and fishing pushed people to take up low paying jobs in the construction and service industries, or livelihoods in the informal sectors. Further, the business environment in origin sites was often not favourable for profit seeking enterprises making it difficult to attract investments to the area.

Origin areas also reported experiencing cultural losses. For indigenous people in Davao del Sur, the displacement of certain indigenous groups due to the militarization of tribal lands threatened their way of life and cultural traditions. Their children grew up in relocation centres in the city not fully appreciating the richness of their culture, and continually fighting for their rights. In North Cotabato, the young members of indigenous groups sought education in urban centres. Not all make it back home. The few that eventually go back bring with them influences from other cultures.

At the household level, relationships may become strained and ties weaken due to the migration of a family member. It can lead to the separation of couples and broken families as shared by informants. Those who are left behind especially the children may face challenges to their wellbeing due to the lack of care and attention from either parent. An informant in North Cotabato, for example, described the burden of taking care of his siblings while both parents were away and how it led to his depression and suicidal ideation. Another informant mentioned that her son's studies were negatively impacted by the migration as he got involved with drugs while she worked abroad. The spouse that stayed behind has to take up the dual caregiving responsibilities. A father in Davao del Sur had to bring along his children to the market where he earned a living by selling farm produce since his partner was abroad. A mother described having to manage a small retailing store and cook food to sell to bring in additional income while taking care of the children. For the migrating family member, mental health issues were described as common challenges related to the extended period of being away from family and social networks. This was, for example, true for a seafarer who spent months on end at sea, or for a daughter having been sent alone to the city working to support her parents financially.

With regard to positive impacts, human (im)mobility can lead to economic improvement and better quality of life of families in origin areas. The findings showed that it can result in families being able to send their children to better schools, purchasing larger houses, having more money to travel, and overall, occupying a more respected position within their societies. More importantly, it can promote altruism and give something back to those left behind. Some examples given in IMPACT origin sites are making donations for school and church construction, and providing humanitarian aid during disasters.

### 8.3 HOW DOES HUMAN (IM)MOBILITY INFLUENCE DESTINATION AREAS IN THE PHILIPPINES (INCLUDING PEOPLE ARRIVING / HOSTING, AND SOCIAL, ENVIRONMENTAL, INSTITUTIONAL AND ORGANISATIONAL IMPACTS)?

Human (im)mobility has its advantages and disadvantages in destination areas. It leads to urbanization and rising populations as well as faster development of sectors and industries. It offers arriving populations access to social services; opportunities for skills building, training and education; access to information and technology; and employment and business opportunities. This provides them the opportunity for social and economic empowerment to improve their quality of life. Conversely, it can heighten the vulnerability of the poor and marginalized populations as cities become increasingly exposed to hazards associated with sea level rise in the country. When poor households move to cities, they tend to reside in informal settlements and peripheral areas that are often prone to climate-related hazards, which are projected to increase in frequency and severity. Housing, land and property rights can be a key barrier to durable solutions to migration in destination areas as lack of ownership often lead to unsustainable relocations, evictions and multiple displacements (UN 2020).

For the people or local government that is hosting arrivals, human (im)mobility presents challenges in many dimensions. In the provision of basic social services, the more people arriving, the more facilities and infrastructure will be required for housing, health services, education, utilities, transportation, and businesses or employment. This has implications to urban and land use planning, and area development extending to the suburbs. More importantly, the creation of new risk in development (such as within infrastructure and housing developments) would need to be consciously avoided. Furthermore, this



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calls for renewed focus on environmental management to ensure that the environment and urban green spaces are protected, and pollution —water, noise and air—are abated. Resources in destination areas will face the added stress of serving an increased population due to new arrivals with the potential of creating tensions between the host and the people arriving (TFD 2019).

With regard to social networks, people arriving in destination areas may need to build relationships and social capital. Since people in destination areas often come from different backgrounds and culture, it would be important to strengthen communication and interaction to avoid social tensions. The capacity of hosts to receive migrants and displaced persons would need to be enhanced to facilitate local integration (UN 2020). Culture is an important factor that influences how well arriving populations are able to adapt to new locations. Kabacan in North Cotabato, for example, demonstrates how cultures can co-exist in a destination area that serves as a melting pot for various indigenous groups, the Muslims and Christians, and migrants from Luzon and the Visayas.

#### 8.4 POLICY RECOMMENDATIONS

The findings of the IMPACT study revealed gaps in understanding the climate change-migration nexus of the country. These include data and research, knowledge of climate change at the local level, integration of gender into migration policy, fragmented approaches to governance, and legal framework on human (im)mobility. There is limited data and sources of information on climate-induced migration, both locally and regionally. In particular, studies that explore the climate-migration sensitivity by demographic and socioeconomic characteristics as well as origin and destination contextualization are few. Evidence, by way of disaggregated data and transdisciplinary research, is much needed to support prioritization of migration-related interventions at national and local levels. This aligns to the objective of the Global Compact for Safe, Orderly and Regular Migration on collecting and utilizing accurate and disaggregated data for evidence-based policymaking (UN 2019).

Disasters and climate-change related initiatives at the local level are urgently needed as our knowledge of climate change at the local level remains poor. Our informants in

both origin and destination areas have been affected by extreme weather events such as torrential rains, floods, and long periods of droughts. However, they perceive these as normal occurrences and fail to directly associate them with climate change. In the case of farmers who take a loan every time their harvest is devastated by flood or drought, this will be a normal response for them without realizing its negative consequences such as getting deeper into debt. Informants continue to have low awareness of climate change, and poor appreciation of preparedness measures against observed risks. An understanding of the differentiated perceptions of risk, particularly of slow onset events, by those affected need to be improved (TFD 2019). It would also be important to understand how environmental change exacerbate pre-existing vulnerabilities of at-risk populations in order to come up with effective and efficient adaptation measures (Porio 2014). Increased awareness of the risks and potential impacts of disaster and climate change will support prevention and preparedness actions at the local level. Participation of local communities and partnership with different stakeholders will allow for inclusivity and the opportunity to co-design actions appropriate to the area and the people on the ground.

Bohra-Mishra et al (2017) suggests that Filipino men as bread earners and agricultural workers may migrate more than women when agriculture productivity decreases as a consequence of higher temperature, increased typhoon activity, and adverse rainfall outcomes thereby affecting their income. Findings from IMPACT point to women increasingly taking on the bread earning role, and migrating to urban centres and abroad. As the narratives have shown, women share the load with men on earning an income like participating in farming, and undertaking other livelihoods like handicrafts as well as going to NCR or abroad to work as domestic service workers. This is while continuing to take on the caregiving role at home for children, spouse and parents. There is a need for better understanding of the differing implications of migration

to both men and women considering the changing roles and responsibilities they have within their family and the society, as a whole. Gender must be integrated in migration policy to address disproportionate effects.

Government structures and processes in the Philippines are guided by sectoral policies, plans and guidelines at the national level. These are usually carried down to the local level. For example, the Department of Agriculture has its priority programs that are implemented down to the municipal or barangay level. Similarly, the Department of Social Welfare and Development or National Disaster Risk Reduction and Management Council (NDRRMC) or Climate Change Commission (CCC) at the local level has its own areas of focus with associated programs, projects and activities. There is little evidence that there is a concerted effort to deliver programs on the ground based on information collected by IMPACT. Consequently, the linkage between migration, climate change, and disaster is not established, and implementation of activities are fragmented. This lack of coherence and coordination in matters of human (im)mobility and climate change has similarly been identified by the TFD in many countries (TFD 2018). There is a missed opportunity when resources and partnerships are not maximized and synergy is not obtained towards the achievement of common goals.

Human (im)mobility in the context of climate change has no legal and policy basis in the Philippines. There is no policy framework that provides the authority and mandate as well as necessary resources to support actions to address human (im)mobility and climate change. While there are existing policies and institutions that are relevant to human (im)mobility and climate change in the country (i.e., Republic Act (RA) 10174 and the CCC, RA 10121 and the NDRRMC, Climate Change Adaptation and Mitigation-Disaster Risk Reduction (CCAM-DRR) cabinet cluster, and Population Commission, among others), a national legislation would be important to regulate the interactions and responses between these two areas.

Given the gaps described above, the following general recommendations are put forward which can inform national and local policy initiatives as well as international policy processes such as the UNFCCC TFD, and the PDD in which Germany plays a key role.

### **A) POLICY RECOMMENDATIONS FOR ADAPTATION AND DISASTER RISKS**

Disaster and climate risks in both origin and destination areas must be determined, and potential impacts to populations, especially the vulnerable and marginalized, must be identified. Slow onset risks, in particular, must be monitored and their impacts documented over time. A deeper understanding of risk and impacts to populations as well the primary reasons and channels that enable climate-induced migration is needed that would provide insights to formulating strategies to address climate-induced migration and displacement.

Disaster and climate-induced displacement is a growing challenge due to the increasing occurrences of disaster and extreme weather events, and the cascading impacts of slow onset events in the country. An understanding of the interaction between slow onset processes and rapid onset events, and their impacts on displacement as well as profiling of displaced populations and their specific protection needs need to be enhanced (TFD 2019). Displacement and migration should be made explicit in preparedness and response plans especially in areas identified at high risk. For livelihoods in origin areas that are agriculture-based, provision of better climate information services can help farmers and fishermen anticipate potential impacts of increasing temperature, increasing/decreasing rainfall, and slow onset events especially recurring El Nino and La Nino episodes and increasing land degradation and biodiversity loss. Mechanization of agricultural processes can also lead to increased productivity that could increase income and support resilience-building

activities of farmers. In destination areas, risk information can provide early warning and inform preparedness actions that could save lives and secure livelihoods.

Even though policies and plans are in place to address disaster risks and climate change in the country, implementation of programs and activities to mitigate and prepare for disasters and extreme weather events as well as slow onset events need to be strengthened from national to local levels. In particular, vulnerable and marginalized communities that are directly affected should be provided with platforms to increase their knowledge of disaster and climate risks, and participate in co-designing actions that would enhance their resilience. This would require joint action at all levels of government, and a multi-stakeholder coordinated approach to climate change adaptation, disaster risk reduction, and sustainable development.

As strategies for addressing slow onset events, ecosystem-based adaptation (EbA) and ecosystem-based disaster risk reduction (Eco-DRR) offer multiple benefits to addressing disaster and climate change risks. The Department of Environment and Natural Resources is already implementing an EbA program to protect intact ecosystems and rehabilitate degraded ones as well as acts as Secretariat to the CCAM-DRR cabinet cluster. A convergence mechanism would be important to link the EbA and CCAM-DRR programs to agriculture-, forestry-, fisheries-related livelihoods.

### **B) POLICY RECOMMENDATIONS FOR POSITIVE MIGRATION EFFECTS**

Policies should be developed that consider the effects of internal migration upon men and women in the same way that policies have been set in place to safeguard the welfare of migrant workers overseas. This can be in relation to employment conditions and benefits; access to social services especially housing, health, and financing; and opportunities for advancement in terms

of education and training; among others. In addition, regional development can be promoted to avoid migration movements being concentrated around the current prime destinations. This serves as an opportunity for policies to strengthen gender equality and women's inclusion in businesses, industries, and other male dominated sectors. Destination areas can provide an enabling environment for migrants to feel included and secure, and to improve employment or livelihoods and subsequently their social wellbeing. For this, profiling of migrants would be needed for monitoring. Origin areas, in turn, can improve economic and social conditions that would reduce socio-economic inequalities and increase resilience to disasters and climate change and curb out-migration, brain drain and diaspora. A stronger wellbeing focus must be undertaken so that the mental health of families, especially children, left behind as well as the migrant is not negatively affected by the movement.

### **C) POLICY RECOMMENDATIONS FOR NEGATIVE MIGRATION RISKS**

Internal migration has received less policy focus in the country although its effects are greatly felt by local governments in both destination and origin. In destination areas particularly, a lack of understanding of incoming population movements has major implications on the resources of the city and forcing people to compete for housing, education and other social services. A regular collection of disaggregated data could help inform planning and monitoring better. The rise of urban poor settlements in the metropolitan centres of the country show that local governments are ill-prepared for the influx of migrants. The settlers are not to blame for the potential deterioration of the environment and reduced green spaces that comes with the settlement expansions. There is an urgent need for increased and improved urban planning, as well as other social and



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financial support systems and assistance of the arriving migrants. It is likely that the current situation will result in increased vulnerabilities of governance systems and specific social groups. The urban landscape is currently shaped by a growing population that would need to be provided with housing, transportation system, and other social services and infrastructure. This would influence urban planning and development of the city as a whole. Local governments should therefore consider the urban and rural linkages to see how development in one area can affect surrounding cities and municipalities.

It is time to prioritise policies at national and local levels addressing internal migration especially in relation to climatic changes and environmental impacts. At present, there is no policy that explicitly mentions and addresses migration and displacement in the context of climate change (Vinke 2020). It is important to prioritise an improved understanding of the climate-migration nexus that includes monitoring the trends and impacts of rapid and slow onset events, and their relationship to human mobility through displacement, immobility and migration. Present policies focus more on addressing rapid onset events, and fail to account for the seemingly invisible impacts of slow onset events. There is a need to increase as well as improve the data collection in this area, including empirical evidence especially on slow onset events to inform the formulation of migration policies and actions.

It would be crucial to find measures to minimize the impacts of adverse drivers and structural factors that compel people to leave their places of origin who aspire to stay (UN 2020). Prioritization of the agriculture sector by providing market and infrastructure support is critical and can result to financial stability of vulnerable and marginalized groups in rural areas. Many of them tend to livelihoods that are linked to farming, forestry and fishing. Agriculture is highly climate-sensitive thus safety nets including social protection measures or alternative livelihoods will be important. Agriculture

is one key area where climate change influences migration in the Philippines (Bohra-Mishra et al. 2017). Adding to this, low-income earners including those with irregular low paying jobs, or poor employment conditions often migrate seeking more favourable employment and competitive salaries. Regional economic development, through the “Balik Probinsiya” (Back to the provinces) program, for example, can be strengthened to address regional poverty differentials, diversify livelihoods, while incorporating strategies around rapid and slow onset events in the regions. It is essential to ensure that deteriorating environments and desperation of people do not force people to undesirable livelihood changes and migration (UN 2020).

A coherent and integrated approach in implementing and enforcing policies at the local level is urgently needed. Multilevel and intersectoral coordination must be established in implementing activities related to climate-induced human mobility. Approaching the issue from a systems lens will enable more holistic actions with multiple positive outcomes. A whole-of-government and whole-of-society approach is the only way towards a more sustainable future for people on the move in the Philippines.

# 09

## Conclusion

The findings of the IMPACT study strongly support the 2018 NMS in the sense that migration in the Philippines is driven by economic reasons primarily as the country (and especially poorer regions) develops. However, the evidence from this study also illustrates that internal migration flows in the country are attributed to climatic changes and environmental stress through negative impacts to livelihoods, health, and wellbeing. This includes 1) slow onset events such as rising temperature and increasing or decreasing rains, 2) environmental changes due to deteriorating conditions of the land, forest, and ocean, crucial for people's livelihoods, 3) extreme weather events where disasters are a result of natural and human-induced hazards, and 4) conflict due to social unrest but with close links to natural resource pressures. While rapid onset events often may drive human (im)mobility in the short term, this study shows that slow onset events tend to influence longer-term movements that require targeted planning for future migration movements in response to climate risks (Zander and Garnett 2020). Subsequently, there is a need to address the roots of people's vulnerability as well as build capacity to strengthen institutions in sectors directly affected by or sensitive to climate change to respond to slow onset events (UNFCCC 2012).

We need more focused approaches in implementing measures to address migration risks at both origin and destination sites. At origin, policy and action ought to target poverty traps and unsustainable economic development so that people do not feel forced to leave seeking financial opportunities elsewhere. In destination sites, policies and interventions must be put in place to accommodate, assist and better support those arriving to ensure that people on the move are not excluded from economic, health and social services essential to their wellbeing and resilience.

We also need enhanced focus on better understanding the connections between human mobility and the negative impacts of climate change, disasters, and conflict. Undertaking a transdisciplinary research approach would better support the understanding of human (im)mobility decisions, and how these interact with climatic and environmental factors.

More strategic and sustainable migration policies must integrate the collection of disaggregated data, environmental risks, gender and their governance linkages through multiple stakeholders. The unequal impacts on vulnerable populations and regions through the climate-mobility nexus must be a key focus area to avoid exaggerated vulnerabilities among already fragile populations in the future.

This study has produced new knowledge that will inform national disaster and migration policies and support other recent endeavours such as the Human Mobility in the Context of Climate Change (HMCCC) and the 2018 NMS. In addition, the study contributed to a growing people-centred database at the local level in the three island groups. The hope is that the generated evidence from these areas will help guiding future research designs within as well as beyond the research team and partner institutes.



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## Appendix I: (Im)mobility Decisions

### IMMOBILITY DECISIONS - MINDANAO

Study site	Factors for Migration		Enablers		Barriers	
Mindanao	Male	Female	Male	Female	Male	Female
Origin sites	Lack of jobs Disasters Family Marriage Income Work assignment Business Seasonal change Climate change Lack of weather information Agricultural concerns Security, peace and order	Job Livelihood Business Family Marriage Land and property Education Security, peace and order Hazard avoidance Climate Better living conditions Food Health Experience of place	Financial capability and savings Livestock sale Skills Job opportunities Relationship Good health Education Scholarship grant Government assistance	Job Business opportunity Government assistance Financial assistance Income Education Technology Peace Consent of spouse	No finances Family Land assets Livelihood Livestock Lack of education Health condition Lack of skills Fear of taking risks Disability Laziness	Epidemic Age Family Health Conflict Finances Property Relationship Education Contentment in present situation
Destination sites	Peace and order Job Livelihood Family Marriage Education Land Agriculture Disaster Poverty Policies and regulations Business Source of income Crime Gender equality Social network	Family Job Disaster Marriage Religion Armed conflict Social tensions Health Friendship Criminal offense Romantic relationship Education Markets Land and property Family	Government assistance Free vocational courses Transportation Business Money Eligibility Property Community Government Job opportunity	Government-endorsed opportunities Government support Financing schemes/ loans Business Children Money Invitation from foreign institution Scholarship Family support Nanny for children	Lack of jobs Disasters Family Marriage Income Work assignment Business Seasonal change Climate change Lack of weather information Agricultural concerns Security, peace and order	Lack of jobs Disasters Family Marriage Income Work assignment Business Seasonal change Climate change Lack of weather information Agricultural concerns Security, peace and order

IMMOBILITY DECISIONS - VISAYAS

Study site	Factors for Migration		Enablers		Barriers	
Visayas	Male	Female	Male	Female	Male	Female
Origin sites	Livelihood Source of Income Job Business Climate Family Property School Poverty Marriage Land	Family Money Job opportunity Business Land and property Concrete roads Transportation Climate Governance Education	Job Marriage Family Business School Livelihood Land Education Savings Transportation	Financial capacity Job opportunity Social network Education City experience Not risk averse Provision of land and housing	Money No means of transportation Pandemic No social network No job availability Family	Attachment to community Lack of education Family Low self-confidence Fear of the uncertain Property Living expenses Not fully supported
Destination sites	Job Health services Environment Business Family Money Land and property Fame Crime Debt Tourism Job stability Peace	Job Business Education Family Marriage Farming Climate change Fisheries status Livelihood	Family House and property Money Job Ownership of a vehicle Sense of community Social media Life situation Ambiance	Employment Career Family support Social network Salary Transportation Employment benefits Livelihood Community Food security Shelter Accessibility to school and hospital	Pandemic No transportation No money Job Livelihood No property Children Culture Discrimination Distance Language Homesickness Adapting to new environment	Money Social network No housing Job Pandemic Food security Language Time zone Transportation Workload Health Adjustment to new place

IMMOBILITY DECISIONS - LUZON

Study site	Factors for Migration		Enablers		Barriers	
	Male	Female	Male	Female	Male	Female
Luzon						
Origin sites	Job	Education	Money	Government financing schemes	Safety	Health
	Social services	Poverty	Transportation	Education	Virus	Money
	Relationships	Relationship	Social network	Credit facilities	Climate	Children
	Family	Family	Education	Family	Money	Education
	Community	Job	Property	Money	Hazards	Property
	Tourism	Money	Good health	Transportation	Sickness	Social network
	Hazard avoidance	High salary	Skills	Employment	Poverty	Spouse
	Salary	City lights and buildings	Education	Local government	Family	Transportation
	Business	Crop productivity	Legal documents		Age	
	Livelihood	Livelihood	Family support			
	Poverty	Low prices of agricultural products				
	Crime	Many people				
	Marriage	Property				
	Children	Business				
	Education	Marriage				
	Travel	Social network				
	Leisure	Hazards				
	Virus					
	Experience of city					

IMMOBILITY DECISIONS - LUZON (CONTINUED)

Study site	Factors for Migration		Enablers		Barriers	
	Male	Female	Male	Female	Male	Female
Luzon	Job	Job	Job	Job	Money	Poverty
	Salary	Business	Family	Education	Low skill	Disability
	Poverty	Salary	Religion	Age	Transportation	Unemployment
	Crime	Culture	Technology	Salary	Low level of education	Criminal offense
	Peace and order	Tradition	Skills	Policies	Technology	Education
	Food	Religion	Social network	Money	Legal documents	Legal documents
	Ambition	Social relations	Politicians	Courage	Family	Family support
	Learn new language	Family	Transportation	Talent	Legal issues	Health
	Weather	Adventure	Money	Government support	Experience	Money
	Pollution	Education	Credit	Good health	Age	
	Hazards	Transportation system	Housing	Determination	Health	
	Relocation	Buildings	Experience	Faith	Anxiety	
	City night life	Tourism	Courage	Kindness	Poverty	
	Virus	Weather	Legal papers	Skills	Government requirements	
	Social relations	Vacation	Education	Experience		
	Marriage	Recreation		Legal documents		
	Family	Food				
	Technology	Marriage				
	Entertainment	Hazards				
	Health	Leave home (runaway)				
Government services	Poverty					
Transportation	Relocation					
Tourism	Health services					

## Appendix II: Project Collaborators

A consortium of eight researchers was planned, which expanded to a total of ten due to COVID-19 considerations. The International Expert led the team, in close cooperation with the Filipino Expert. In terms of the operational side of the study, the International Expert led on the analytical and methodological approach bringing institutional knowledge of the United Nations University and the Filipino expert led on the local context, in particular the socio-environmental interactions in the case study areas. The substantive expertise of the two proposed experts is also complementary. While the International Expert has more knowledge of human mobility and its interaction with society and culture, the Filipino Expert has a deep understanding of how ecosystems are affected by climate change. Adding to this, the eight Research Assistants brought local knowledge of the specific case study sites. This enabled the team to develop a detailed and appropriate research plan, inception report and research tools and questionnaire before the commencement of fieldwork. The two experts stayed in close contact throughout the fieldwork, analysis and reporting phase to ensure that their unique experiences and knowledge provides the project with fruitful insight from the beginning to end.



### UN UNIVERSITY'S INSTITUTE FOR ENVIRONMENT AND HUMAN SECURITY (UNU-EHS)

The United Nations University (UNU) is the academic arm of the United Nations and acts as a global think tank. The mission of the Institute for Environment and Human Security (UNU-EHS) is to carry out cutting edge research on risks and adaptation related to environmental hazards and global change. The institute's research promotes policies and programmes to reduce these risks, while considering the interplay between environmental and societal factors. The Environment and Migration: Interactions and Choices (EMIC) Section undertakes pioneering research to strengthen the evidence base on the multiple linkages between human mobility and environmental change. EMIC research informs policy and action of UN organizations, governments and civil society. Specific themes within the migration-environment nexus include environmentally induced migration and displacement, trapped populations, migration into risk-prone environments, and environmental impacts of migration. Cross-cutting research themes include decision-making, health, well-being, livelihoods, adaptation, risk, ecosystem services, food security, development, urbanization, gender, conflict, social cohesion and culture. An important feature of the EMIC Section is its people-centred approach, showing the human face of climate change and migration. EMIC researchers have also played an important role in advancing the science on the emerging topic of 'loss and damage' from climate change.



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## ATENEUM DE MANILA UNIVERSITY

The Ateneo de Manila University is a private research university in Metro Manila, Philippines. The Ateneo has a number of units undertaking innovative and transdisciplinary research and programmes on disaster risk reduction (DRR) and climate change. These include the Ateneo Institute of Sustainability builds knowledge on climate change and disaster risk through collaborative, multidisciplinary research within the Departments of Environmental Science, Sociology and Anthropology, Ateneo School of Government and the Ateneo Innovation Center. The Ateneo is closely linked to the Manila Observatory, which is committed to a scientific culture and research excellence in environmental and pre-disaster science, particularly in the areas of atmospheric studies, solid earth dynamics, instrumentation, and applied geomatics. The Ateneo sits as the representative of the academic community in disaster risk reduction and climate change research and policy discussions in the Philippine National Disaster Risk Reduction and Management Council where it has provided inputs to planning, strategy formulation and policy reviews.



## PROJECT TEAM

### TEAM LEADER / INTERNATIONAL EXPERT:

#### **Dr Sonja Ayeb-Karlsson (UNU-EHS)**

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Dr Ayeb-Karlsson is a Senior Researcher at UNU-EHS who researches migration, (im)mobility decisions, health and wellbeing in the context of environmental shocks and climatic changes. She is also a senior research fellow at University of Sussex and part of WG1 and WG2 in the Lancet Countdown of health and climate change. Her research combines quantitative and qualitative methods such as Q, survey design, storytelling methodology, personal life history interviews and discourse analysis while exploring alternative ways to communicate research findings through mediums of photography and visual communication. She is well-published in several high-level peer review journals and sits on the editorial boards of *Climate and Development*, *UCL Open: Environment and SEI* and *weAdapt's Human Mobility* theme. Dr Ayeb-Karlsson has conducted research on the Philippines prior to the IMPACT study and spent a considerable amount of time on various islands including Luzon, Mindanao, and Samar and Negros Occidental in the Visayas. The research design of IMPACT is based on her people-centred human mobility work in countries such as Bangladesh, India, Senegal, South Africa and various small island developing states.

*To read more of her research, see publication list on Google Scholar for Dr Ayeb-Karlsson.*

## PROJECT TEAM

### LOCAL EXPERT:



#### **Dr Noralene Uy (Ateneo de Manila University)**

Dr Uy is a Lecturer at the Department of Environmental Science and is a Contributing Author in Working Group 2's Chapter on Asia in the IPCC Sixth Assessment Report. She conducts social research on disaster risk reduction, climate change adaptation and ecosystem management employing quantitative and qualitative methods such as questionnaire survey, interview, focus group discussion and workshops in climate and disaster risk analysis, including review of governance processes. Dr Uy was a member of the research team in a UNDRR project on Indigenous Knowledge for Disaster Risk Reduction, and Philippine Climate Change Assessment on Impacts, Vulnerabilities and Adaptation. She has published in peer-reviewed journals, and books. As a licensed Environmental Planner, Dr Uy assisted local governments in the formulation of local climate change action and disaster risk reduction and management plans. She has supported the Office of Civil Defense in the review of the Philippine Disaster Risk Reduction and Management Law and Plan. Dr Uy has experience working with international organizations such as the UNDP, ASEAN Secretariat, and ADB, and is fluent in English, Tagalog and Cebuano, as well as understands Hiligaynon.

*For previous research, see publication list on Google Scholar for Dr Uy.*

## PROJECT TEAM

### LUZON:



#### **Mr Arjay Arcinue Dineros**

Currently serves as the Knowledge Management Specialist of Protect Wildlife, a USAID-funded project in the Philippines. He was the principal data analyst who processed and analysed census data from the Philippine Statistics Authority (PSA) to show evolving social vulnerabilities in Metro Manila for the Coastal Cities at Risk in the Philippines: Investing in Climate and Disaster Resilience project. Mr. Dineros is fluent in English and Tagalog.

*For previous research, see publication list on ResearchGate for Mr. Dineros.*



#### **Ms Julie Anne Dela Cruz**

A licensed teacher. She is currently a Research Officer at Assessment, Curriculum and Technology Research Centre based in University of the Philippines Diliman. As Research Officer, she provides support in research planning and data gathering, cleaning, organization, transcription and translation; communicates and collaborates with partner institutions and research participants, and facilitates workshops. Ms. dela Cruz speaks Ilocano, Hiligaynon, Filipino, and English. She also understands and speaks basic Bisaya.

### VISAYAS:



#### **Dr Richelle H. Verdeprado**

The head of the Social Work Program of the University of Negros Occidental-Recoletos (UNO-R) in Bacolod City. She is a Registered Social Worker by profession. She utilized phenomenology on her papers and thesis for her Master's degree in Social Work at Asian Social Institute. She also teaches social research in both the BS Social Work and MS Social Work programs in UNO-R, and is now a fourth-year juris doctor student. Dr. Verdeprado finished her legal research on "Demystifying the Law through Liberty and Prosperity-based Social Welfare Practice: A Divergence from Doctrinal to Socio-Legal Perspectives" in early 2020. She is fluent in English, Tagalog and Hiligaynon, as her mother-tongue.



**Ms Seth N. Barce**

A project and research associate working on community development, public health, and program evaluation. She has been involved in a number of community projects focused on disaster risk and reduction management, empowerment of children and women, and community organizing and education. Ms. Barce graduated with a degree of Community Development from the University of the Philippines Visayas. She is fluent in English, Tagalog and Hiligaynon.



**Ms Hannah Hipe**

She served as a graduate research assistant at the Institute of Strategic Research and Development Studies at the Visayas State University and was part of the secretariat for inter-university workshops on Sustainable Energy and Industrial Policy in Eastern Visayas in partnership with the Action for Economic Reform Industrial Policy and the Friedrich Ebert Stiftung Philippines in 2019. From 2017-2018, she was a project officer at the Institute of Social Order and was member of the Participatory Coastal Resource and Ecological Assessment team that conducted household surveys, mangrove area assessments and community mapping sessions as part of a USAID-funded project on Promoting Participatory Island Development Strategy for Culion, Palawan. She is currently a graduate student taking up Masters of Sciences in Development Sociology at the Visayas State University (VSU) in Baybay City, Leyte. She speaks Waray, Filipino, English and Cebuano.



**Ms Leanna C. Catamora**

A Bachelor of Secondary Education Major in English graduate from Eastern Samar State University. She attended various seminars and workshops on education such as problem-based learning and project-based learning which both focus on addressing a problem in the society as well as climate change and disaster risk reduction management. Her previous research work is on her undergraduate thesis about listening strategies and listening comprehension. Ms. Catamora speaks Waray, Filipino, and English.

## MINDANAO:



### **Ms Gloria Amor Paredes**

Works as the Asia-Pacific Regional Coordinator in ESSC. She has experience of building capacity in indigenous and migrant youth through technical training and leadership formation to enable greater access to sustainable livelihood options as Mindanao face a growing trend of outmigration among rural youth. From 2015 to 2019, she developed and implemented an annual three-week field course on Natural Resource Management and Human Development for graduate students of the University for Peace and Ateneo de Manila University, on the impacts and drivers of land and water use change, livelihood insecurity due to erratic climate events, and disaster risks in Northern Mindanao.

*For previous research, see publication list on Academia for Ms. Paredes.*



### **Ms Mary Jill Ira A. Banta**

A Mindanao-based science-and-development worker who is committed to participatory and people-centred research. She has experience in environmental science, and integration of Indigenous People by accompanying them in sustainable natural resource management. This is done through research, science communication, program implementation, culture-based education, and skills training. Her research interests revolve broadly around environmental sciences in both marine and forest ecosystems, including recent research involvements in marine protected areas, natural resource management, and land use change. Ms. Banta speaks English, Tagalog, and Bisaya.

*For previous research, see publication list on ResearchGate for Ms. Banta.*

