

**International
Institute of
Social Studies**

Erasmus

**‘Debt Sentence’ by Disasters?:
Rural Indebtedness among Filipino Smallholder Farmers
in Post-Disaster Context**

A Research Paper presented by:

Martin Sylvan I. Dacles

Philippines

in partial fulfilment of the requirements for obtaining the degree of
MASTER OF ARTS IN DEVELOPMENT STUDIES

Major:

Agrarian, Food and Environmental Studies

AFES

Specialization:

Environment and Sustainable Development

Members of the Examining Committee:

Julien-Francois Gerber

Saturnino M. Borras, Jr.

The Hague, The Netherlands

November 2019

Disclaimer:

This document represents part of the author's study programme while at the International Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

Inquiries:

International Institute of Social Studies
P.O. Box 29776
2502 LT The Hague
The Netherlands

t: +31 70 426 0460
e: info@iss.nl
w: www.iss.nl
fb: <http://www.facebook.com/iss.nl>
twitter: [@issnl](https://twitter.com/issnl)

Location:

Kortenaerkade 12
2518 AX The Hague
The Netherlands

Acknowledgements

No words can encapsulate the gratefulness in my heart, for the help and support these following people have extended to me, who walked with me throughout the entire journey of writing this research paper.

To **Julien-Francois Gerber**, my supervisor and mentor, who tirelessly shared his well of wisdom and expertise in this field of research. His guidance eased me in all the times I was confused and lost, while treading this endeavour. I could not have imagined having a better advisor and mentor for my post-graduate studies. I am also equally thankful for **Saturnino 'Jun' M. Borras Jr.**, for pushing me to my limits with his critical insights, which proved useful for this final product.

To **Mark Alfred Rosete** and **Joan Denolan**, my ever reliable and equally passionate colleagues in the Philippines, who unweariedly helped me in gathering my data for this research. Without their assistance, I would not have been able to complete this research.

Same appreciation goes to my former organization, Centre for Disaster Preparedness. To **Tita Lou** and **Tita Malu**, who nurtured and shaped my 'development and grassroots' consciousness, for always believing in me regardless of the odds. I would not have gone this far, without their care and guidance.

To my friends-turned-family in The Hague, Netherlands - ISS Pinoy batchmates, AFES Siblings, and RP buddies, especially to **Yodhim, Lalaine, Ariane, Laine, and Neha**. To my colleagues from 73 other countries who shared their experiences and made my life here bearable and enjoyable. I will forever keep our happy moments in my heart.

To the 40 lovely, diligent and inspiring **farmers and friends** of Pres. M.A. Roxas, Zamboanga del Norte, Philippines, who indefatigably aided me in many ways so as to bring this endeavour into completion. Thank you for sharing your life stories and time to me, really, you have been my greatest motivation when I was at the brink of giving up.

To my family and relatives, **Tita Cejo** and **Tita Let** – for taking care of me while I am away from home. Of course, I am so much grateful to my beloved family, **Mama Daisy** and **Papa Boy, Ate Rosyl, Mark, Mikko** and **Fatima**. Thank you for believing in me when I thought I was losing it, thank you for being my constant supporters and for pouring in so much love and care.

Above all, I ultimately thank our **Almighty God**, for granting me all the blessings and graces, for the unending affection and guidance, and for the gift of a wonderful life.

Contents

<i>List of Tables</i>	<i>vi</i>
<i>List of Figures</i>	<i>vi</i>
<i>List of Maps</i>	<i>vi</i>
<i>List of Appendices</i>	<i>vi</i>
<i>List of Acronyms</i>	<i>vii</i>
<i>Abstract</i>	<i>viii</i>
Chapter 1 : Introduction	1
1.1 Nature of the Problem	1
1.2 Justification of the Research	2
1.3 Background of the Study	4
1.4 Analytical Framework	7
1.5 Central Argument: Research Objective & Questions	9
Chapter 2 : Laying the Groundwork: A Brief Review of the Key Concepts	10
2.1 Disasters and Climate Change: Increasing Trends, Vulnerability and Impacts	10
2.2 Re-reading of James Scott's 'Moral Economy of the Peasants' in the Contemporary Times	14
2.3 Consequences of Rural Indebtedness in Post-Disaster Context	16
Chapter 3 : Methodology	19
3.1 Research Design	19
3.2 Survey	19
3.3 Qualitative Data: Key Informant Interview	22
3.4 Secondary Data: Philippine Disaster Profile	22
3.5 Limitations	23
3.6 Ethical Considerations	24
3.7 Positionality	24
Chapter 4 : Data, Findings, and Analysis	25
4.1 Philippines' Increasing Disaster Risks: Occurrence, Intensity, and Impacts	25
4.2 Respondents' Profile	30
4.3 Credit on Post-Disaster Context: Access, Utilization, and Issues	31
4.4 Role of the Government in Post-Disaster Context	37
4.5 'Debt Sentence' by Disasters?: Consequences of debt and Strategies to get out from it	39
4.6 Increasing Climate-Related Disaster Risk and Rural Indebtedness: The next global crisis?	44

Chapter 5 : Conclusion	47
<i>Appendices</i>	<i>51</i>
Appendix A: Survey Questionnaire/Interview Guide	51
Appendix B: Profile of Participants Interviewed	54
Appendix C: Philippine Disaster Profile	55
<i>References</i>	<i>58</i>

List of Tables

Table 1. Sociodemographic profile of small-holder farmers (N=40)	31
Table 2. Information on Credit in Post-Disaster Context (N=40)	32
Table 3. Microfinancing vs harvest buyers from the point of view of farmers	33
Table 4. Role of the government in Post-Disaster Context (N=40)	37
Table 5. Consequences of Debt in Post-Disaster Context (N=40)	39

List of Figures

Figure 1. The broader context of rural indebtedness in The Philippines by highlighting the multiple factors behind the phenomenon.	3
Figure 2. Conceptual Framework of this study	9
Figure 3. Global occurrence of natural disasters by continent (1900-2014)	11
Figure 4. Numbers of disasters and people deaths (x 1000): 1990-2016	12
Figure 5. Number of disasters and amount of damages (x 1 billion 2016 US\$): 1990-2016	13
Figure 6. Typhoon occurrence and affected population in the Philippines (1905-2019)	27
Figure 7. Flooding occurrence and affected population in the Philippines (1905-2019)	28
Figure 8. Philippine Crop Production and Yield Output in metric tons (1961-2017)	29

List of Maps

Map 1. Map of Zamboanga Peninsula, Philippines	21
--	----

List of Appendices

Appendix A: Survey Questionnaire/Interview Guide	51
Appendix B: Profile of Participants Interviewed	54
Appendix C: Philippine Disaster Profile	55

List of Acronyms

ADB	Asian Development Bank
ADBI	Asian Development Bank Institute
CRED	Centre for Research on the Epidemiology of Disasters
EM-DAT	Emergency Events Database
ENSO	El Niño Southern Oscillation
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
IRRI	International Rice Research Institute
ISS	Institute of Social Studies
KII	Key Informant Interviews
NDRRMC	National Disaster Risk Reduction and Management Council
NGO	Non-Government Organization
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PAR	Philippine Area of Responsibility
PCA	Philippine Coconut Authority
Php	Philippine Peso
PSA	Philippine Statistics Authority
SST	Sea-Surface Temperature
UCL	Université catholique de Louvain
UN	United Nations
UNCDP	United Nations Committee for Development Policy
UNDRR	United Nations Office for Disaster Risk Reduction
UNISDR	United Nations International Strategy for Disaster Reduction

Abstract

Rural indebtedness in the context of environmental shocks (disasters), have long been studied by agrarian scholars. However with the changing behaviour and trends of disasters and climate change, it is crucial to explore how this ‘new normal’ phenomenon affects the agriculture sector, specifically to the spread of rural indebtedness. This is also aggravated by the worsening conditions of vulnerabilities among smallholder farmers who live in the margins, which defines how they are affected by climate-related disasters. The environmental impacts–indebtedness nexus, then triggers social, economic, political, and environmental changes in the countryside, that push the farmers to fall into the ‘debt sentence’. This study aims to explore how the changing (increasing) trends of climate-related disasters contribute to the emergence/spread of rural indebtedness (debt sentence) among smallholder farmers in Southern Philippines. This nexus was unpacked using vulnerability analysis, moral economy approach, and theses on the consequences of rural indebtedness as analytical and theoretical handles. Furthermore, this complex phenomenon was examined from the perspective of small-holder farmers in Southern Philippines, who are at the forefront of environmental and agrarian issues.

This study combined quantitative and qualitative data to understand how smallholder farmers experience the increasing trend of climate-related disasters. This includes their credit-seeking behaviours, credit-utilization patterns, the role of the government, and the consequences of debt in post-disaster context. The study revealed that the increasing climate/disaster trends has direct links to the rapid proliferation of rural indebtedness, which merits to be considered as a global crisis. Hence, the nexus surrounding climate emergency issues and rural indebtedness, requires a twin-integrated approach of agrarian climate justice as a way forward.

Relevance to Development Studies

Indicatively, this paper aims to inform different stakeholders, such as the national and local government units, relevant line agencies (National Disaster Risk Reduction and Management Council and Department of Agriculture), farmers’ cooperatives, and smallholder farmers. on how differentiated impacts of disasters shape and influence rural indebtedness among agricultural communities. Also, this paper seeks to suggest policies that could improve farmers’ resilience to disaster impacts and alleviate the problems on indebtedness. In terms of its relevance in development studies, this research aspires to enrich the growing body of literature on different factors behind rural indebtedness among farmers, from an environmental point of view (post-disaster context). Accordingly, my point of departure is to re-read Scott’s Moral Economy of the Peasants in the contemporary times of increasing climate-related disaster trends and the rise of economic liberalization in the Philippines. Within this contextualization, the findings of this paper cut across fields of development studies tackling current issues in agrarian systems and political ecology (climate change and disasters), through agrarian climate justice approach.

Keywords

Rural indebtedness, climate change-related disasters, smallholder farmers, credit/debt, agrarian climate justice

Chapter 1 : Introduction

1.1 Nature of the Problem

Between 1995 to 2015, the Emergency Events Database (EM-DAT) estimates an occurrence record of 6457 weather-related events, which has resulted to a death toll of 606000 casualties, disrupting the lives of 4 billion people globally (CRED & UNISDR 2015). This data is just a conservative estimation of disaster impacts only in a span of 20 years. While it is true that climate change has a big role to play in understanding the complex manifestation of hazards and disasters with amplified frequency, intensity, severity, and impacts, it is also important to situate our analytical lenses in the discourse of vulnerabilities. A vast amount of literature expounds on the different effects of disasters, such as loss of lives, injuries, health illnesses, as well as massive displacement of populations, destruction of public and private infrastructures, damage and loss of livelihoods, etc. Accordingly, it is important to understand how disasters and climate change have varied impacts in different places and spaces, as it has also been proven that these effects are felt disproportionately by marginalized sectors and (least) developing countries (McDermott 2012).

While it is true that scholars in the fields of sustainable livelihoods and peasants' moral economy have been looking into shocks and debt in the countryside, there are still literature gaps on the angle of increasing disaster/climate change risks and its impacts vis-a-vis the emergence of rural indebtedness in contemporary times. Rural indebtedness has indeed often been framed from the perspectives of capital, landlessness, and industrialization (Gerber 2013). For example, different elements have been studied in relation to the causes of rural indebtedness among small scale farmers, such as productivity vis-a-vis profitability of rice sector, increasing prices of chemical inputs, and the frequent occurrences of natural hazards such as typhoon and floods (Anneshi and Gowda 2015). On top of this, rural indebtedness also occurs because of external shocks, such as pest outbreaks and, increasingly, climate-related disasters.

The literature around this subject matter purports that such disasters have the biggest impacts to the agricultural sector of a country, as it drives massive destruction of livelihoods, decline in farm incomes, and food insecurity. These pressures lead to further marginalization of smallholder farmers, forcing them to sell their productive assets (land, animals, equipment) and in many cases, are also forced to access multiple forms of credit (formal and informal),

which results to increased indebtedness (FAO 2015). The accumulated principal credit and interest rates are considered as key factors in inflicting detrimental effects to smallholder farmers. (Anneshi and Gowda 2015).

This paper aims to understand how climate-related disasters reinforce the spread of rural indebtedness among smallholder farmers in Southern Philippines, in the context of increasing disaster and climate risks, and with what consequences these farmers are faced with. Given the vast share of agriculture sector in the economy of the country and the high exposure to climate change and disaster risks, it is then crucial to explore how these two phenomena are related. This paper also explores the credit-accessing behaviour and credit-utilization patterns (both formal and informal) of smallholder farmers in post-disaster context. Ultimately, it is not impossible that the next global crisis will be linked to rural indebtedness as the number of climate-related disasters are increasing in frequency, intensity, and impacts.

1.2 Justification of the Research

This paper seeks to better understand how the changing trend of climate-related disasters impact and shape the agriculture sector of the Philippines, using the lens of rural indebtedness and moral economy. Over the centuries, disasters such as typhoon and flooding incidences have struck rural areas of the country, where agriculture is the main source of livelihood. At the same time, since the 1970s, rural scholars have noted a growing incidence of agriculture credit among farmers who eventually fall into the “debt trap”. However, links between these two phenomena have been poorly established, most especially in the contemporary context of climate change and economic liberalization, thus the need to expound further through the Southern Philippine experience.

A typical smallholder farmer borrows year after year to ensure that all inputs are in place before the start of each farming season. This is one key lesson in agrarian history: a farmer must borrow because his capital - land and crops are locked up until the harvest season (Dutta 2009). In the Philippine context, this is not the only cause behind agrarian distress and debt accumulation. There are multiple factors that contribute to the deeply rooted problems in the agricultural sector, which ultimately put farmers at a disadvantaged position. Aside from the fact that disaster and climate risks are constantly increasing, the countryside is also threatened with the negative impacts of economic liberalization. A clear manifestation of this is the enactment of the Rice Trade Liberalization Law (RTL) in 2019, which claims to ‘ensure food security and to make the country’s agricultural sector viable, efficient, and globally competitive’ (Sec 2. Republic Act 11203 2018: 1). However, farmers

and activists clamor that this is not the solution to the rice crisis in the country as this policy only favors the business interests of big rice importers and suspected smugglers while the poor farmers suffer (Alliance of Rice Farmers Against Rice Tarrification 2019). To an extent, the influx of imported rice affects farmers’ productivity and income, as market prices continuously plummet, while prices for chemical inputs and farm-machine rentals increase constantly over time. A similar study in the Indian context supports this argument, emphasizing how the impacts of “deregulation of input markets under the neo-liberal economic regime have pushed up prices of seeds and chemical inputs significantly” (Banerjee 2009: 8).

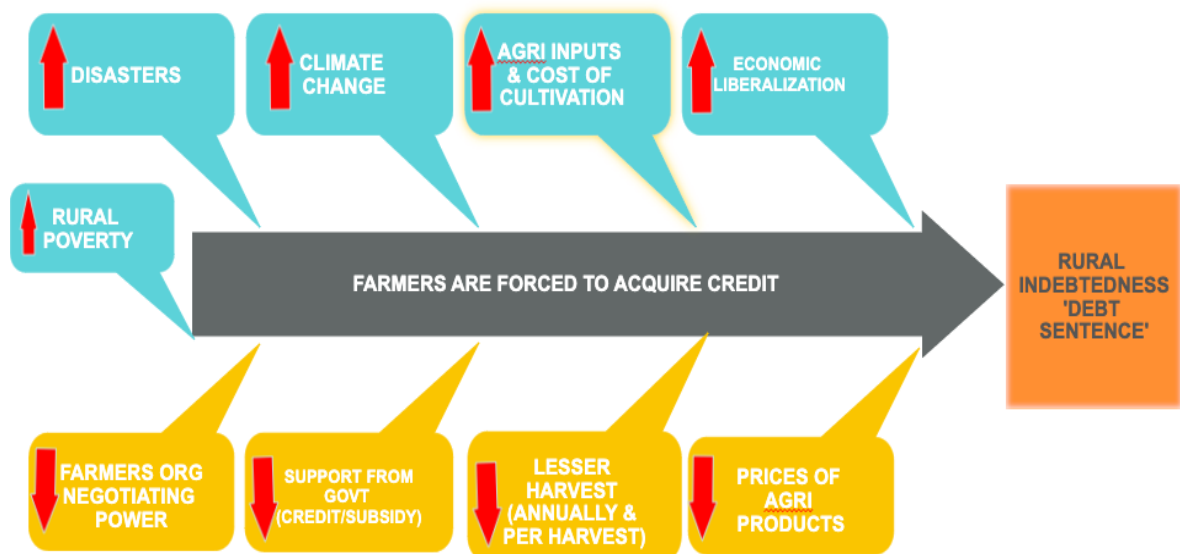


Figure 1. The broader context of rural indebtedness in The Philippines by highlighting the multiple factors behind the phenomenon.

In this complex phenomenon, it is clear that smallholder farmers are always at the losing end, even before a disaster strikes, and this is exacerbated even more in times of calamities. With the existing debt that they incur during ‘peace time’, it only takes one major disaster to press them down to the bottom of the ‘debt trap’, hence the increasing prevalence of rural indebtedness.

Hence, a key concept which will be used in this research is James Scott’s ‘Moral Economy of Peasants’, understood as a ‘system of norms for peasants or subsistence place-based communities’ (Mauritz 2014). Accordingly, my point of departure is to re-read Scott’s ‘Moral Economy of the Peasants’ in the contemporary times of increasing trends of climate change-related disasters and the rise of economic liberalization in the Philippines. Then analyse the phenomenon of debt through Gerber’s ‘Theses on the Consequences of Rural Indebtedness’. Within this contextualization, I am also interested on how significant disaster

impacts are, in the emergence and spread of rural indebtedness, as well as the question on how these farmers adapt to disaster-led credit and how this affects them as a social class (of ‘middle peasants’ in Bernstein’s sense, 2010).

1.3 Background of the Study

1.3.1 Philippine agriculture sector

Agriculture in the Philippines has remained one of the most important sectors in the economy. Over the centuries, agriculture has been pivotal not only for its economic contribution to the country, but also as an integral part of the way of life for majority of the people living in rural areas. In terms of agriculture’s share of land area in the country, FAO (2016) estimated a total of 41.5% of the total land area accounted as agricultural lands (Worldbank 2017). Contradictorily, albeit the large share of agriculture in spatial terms, it does not automatically translate to high returns in its share to the Philippines’ Gross Domestic Product (GDP). Of the Php 15.8 trillion GDP in 2017, only 10% or Php 1.53 trillion can be accounted from the agriculture sector (Ebora et al 2018). This low turn-out in GDP is reflected in the labour force structure of the country’s economy, as agriculture sector only employs 24.1% of the total employment by industry (PSA 2018).

In the broad spectrum of the sector, crop cultivation is considered as the main agricultural enterprise, among other outputs. The major agricultural crop farming systems include, lowland irrigated farming, rainfed farming and upland farming (FAO n.d.). The development of these different farming systems can be accounted to the establishment of the International Rice Research Institute (IRRI) in the country during the 1960s, with the funding support from Rockefeller Foundation. Also during this time, the Green Revolution had its golden era, wherein rice intensification was one of its pillars in promoting agricultural development. Through this, hybrid varieties of seeds, chemical inputs, and improvement in irrigation facilities have been promoted all throughout the agricultural areas of the country.

1.3.2 Climate-Related Disasters in Philippines

World Risk Index in 2018 released a ranking of countries with the highest rating of disaster risk index scores based on the level of their exposure to extreme climate change and disaster events. On this report, results show that Philippines is ranked third (25.14% risk percentage), just behind Vanuatu (50.28%) and Tonga (29.42%), showing a very high level of societal vulnerability (Bundnis Entwicklung Hilft and Ruhr University Bochum 2018).

The Philippines is nested in a geographical location wherein a sundry of natural hazards are considered intrinsic to the everyday lives of its people. Considering its archipelagic nature with more than 7600 islands, it is also noteworthy to mention that this country is situated along the Pacific Typhoon Belt. This is the logic behind the frequent occurrence of cyclonic storms averaging 25 typhoons each year and flooding incidences, making these two the primary hazards in the country (Warren and Murdoch University n.d.). To illustrate this in numbers, it has been recorded that since 1990, the country has already endured 565 disasters caused by natural hazards, resulting to (estimated) 70,000 death toll and \$23 billion in damages. The magnitude of its impact extends to the 74% of the total population who are highly vulnerable to disaster impacts, given that 60% of its total land area is extremely exposed to different environmental risks (GFDRR 2018).

1.3.3 *Disasters and Agriculture in the Philippines*

Philippines as a country, is not only known for its rich and biodiverse ecosystems, it is also tagged as the country that is wealthy in terms of natural hazards which are not always that “natural” as they are exacerbated by socio-political factors. Hydrometeorological (typhoon, flooding) and geological (Vulcanic eruptions, earthquake) hazards occur frequently in the country. These hazards can bring about negative economic and environmental effects to communities, especially in rural areas, who usually bear the brunt of disaster impacts, due to their geographical location (exposure), and high level of vulnerabilities (physical, social, political, behavioural, economic).

This highlights the importance of looking into sector-specific impacts of disasters to expand our understanding in the dynamic relationship of disasters and agriculture, both in analytical and practical terms. A vast amount of literature suggests that disasters have direct negative impacts to the agriculture sector. An extensive research by Easterling et. al (2007: 7) suggests that “The interannual, monthly and daily distribution of climate variables (e.g., temperature, radiation, precipitation, water vapor pressure in the air and wind speed) affects a number of physical, chemical and biological processes that drive the productivity of agricultural, forestry and fisheries system”. This finding is very much relevant in the Philippine context given considering that agriculture sector is one of the country’s key economic drivers, notwithstanding the fact that the Philippines is currently the third most at-risk nation in the world (World Risk Index 2018).

Several studies suggest that farming communities are among the most vulnerable groups to climate change and disasters (Kurukulasuriya & Rosenthal 2003; Mallari 2016; Pulhin et.al. 2016). This is due to the fact that their livelihoods are mostly dependent to

biophysical characteristics such as the quality of soil and the availability of water resources, among others (Kurukulasuriya & Rosenthal 2003). Hence, alterations in weather and climate conditions could also mean massive disruptions to the day-to-day lives of people working in the agriculture sector. Thus, a single disaster event can cause immense disruption to their economic and personal lives. Primarily, these negative impacts include reduction in farm productivity as well as damages in their farm inputs, outputs, facilities, and infrastructure (Israel and Briones 2013). In post-disaster context, the disaster impacts can also disrupt the timing of farming seasons, not to mention the injuries and casualties these farmers are subjected to in the aftermath of a calamity. This also holds true in a global context, as the FAO (2017) claims that in developing countries, 23% of the total disaster-related damages and losses are absorbed by the agriculture sector. This is supported by an empirical data collated from 2005 to 2014, which shows a staggering \$93 billion disaster losses in crops and livestock production in developing countries (FAO, 2017). Similarly, this global picture can also be observed at the Filipino national level, as shown by the disaster archives from National Disaster Risk Reduction and Management Council (www.ndrrmc.gov.ph).

To give a clear picture of how disasters disgruntle the agriculture sector, I want to use the case of Typhoon Haiyan. In 2013, it was the strongest typhoon that ever hit the face of the earth; it devastated the Eastern and Central Visayas regions of the country. Records show that this caused extensive damage to the agriculture sector with hundred thousands of hectares of rice farms destroyed. For this single super typhoon alone, the estimated damage to agriculture was appraised at \$1.4 billion, with over 74% of the total damage accounted in the crop industry (FAO 2018).

1.3.4 *Situating the Problem to the context of Southern Philippines, Zamboanga Peninsula*

Over 70% of the Philippine population lives in the rural areas during 1960s. This also means that majority of the Filipino workforce is well-focused in agriculture – crops, livestock and poultry, as well as vegetables and fruits (Garrity, Kumer, and Guiang 1993). Over the years, a declining trend of rural population in the country has been noted, due to lack of opportunities in the countryside, poor government support in the agriculture sector, and occurrence of disasters and conflict. The Philippine Statistics Authority have recorded a steep decline of the rural population, from almost 70% in the 1960s to 48.8% in 2015 (PSA 2019). In Zamboanga Peninsula alone (research site), data shows a huge disparity between urban and rural population, with 62.2% of regional population residing in the rural areas.

The poorest regions in the Philippines have always been situated in the rural countryside areas, mostly in Southern Mindanao. According to the PSA report (2017), among the

different basic sectors in the country, the farmers are consistently the poorest in terms of poverty incidence (34.3% in 2015 census). In Zamboanga Peninsula, these numbers are even higher, with a poverty incidence rate of 45.2% among farmers, based on the 2012 National Census (PSA 2017).

Rice crop farming is one of the main sources of livelihoods in the Zamboanga Peninsula, as Zamboangeño farmers are the ones who usually supply neighbouring regions with rice or ‘palay’ and other food commodities. This is not surprising in the context of Southern Mindanao, given the fact that in the previous decades, this area has been the most conducive place for food production. This is due to the enabling climate for growing crops and food commodities, as disasters like typhoon and flooding are not usually frequent in these areas. However, the past decade has been a different experience for farmers in the region. The prevalence of climate-related disasters such as typhoon, flooding, landslide, and drought have exponentially increased. With this being the ‘new normal’ in terms of climate and weather conditions, farmers are the ones bearing the impacts of these changes. Specifically, small-holder farmers have been at the centre of disaster impact analyses given the potential damage and loss they are subject to every time a calamity occurs (FAO 2017).

This complex type of phenomenon highlights the importance of credit to farmers. The ability or inability to access formal and informal types of credit becomes a significant factor in post-disaster context, considering the different needs of farmers in relation to the recovery of their livelihoods and for personal reasons (healthcare, education, food security, shelter repair, etc.). Historically, agricultural financing in the Philippines has been an area of scrutiny due to issues like inability to reach the poorest farmers, rigorous process of application (formal types) and exorbitant interest rates (informal types) (Cuevas & Sumalde 2015). This then is very telling how farmers’ credit-accessing behaviours change in post disaster context, hence the question on how this relates to the level of rural indebtedness in Southern Philippines.

1.4 Analytical Framework

Unpacking the problems presented in this research requires analytical and theoretical handles to sift through its complexities. With the increasing trends of climate-related disasters globally (Southern Philippines as my case) and the worsening social, economic, and political conditions among farming communities, rural indebtedness (and its consequences) might be the next global crisis that we should anticipate for. The concept of ‘debt sentence’ is also coined

in my research as a new phenomenon among smallholder farmers, considering their compounding vulnerabilities to multiple environmental and socio-economic-political pressures.

In looking into the consequences of rural indebtedness to smallholder farmers in post-disaster context, one of my theoretical frameworks is Gerber's 'Theses on the Consequences of Rural Indebtedness'. In detail, the theses are as follows: (1) *indebtedness restructures ownership relations* – does rural indebtedness in post-disaster context pressure the farmers to have their productive assets be used as collateral and sold to repay debts? Or are they forced to acquire credit for survival because they have lost their access to the means of production? (2) *Indebtedness shapes capitalist rationality and culture* – in post-disaster context, does indebtedness force commercialization and growth as every opportunity to make money to repay loans must be taken?? And (3) *indebtedness undermines community* – does indebtedness among farmers affect community relations since their debts push them to become more individualized/entrepreneurial? (Gerber 2014).

In addition, Scott's moral economy of the peasants (1976) is also deemed relevant in understanding how shocks (climate-related disasters) could affect peasants'/small-holder farmers' idea (and manifestation) of subsistence and reciprocity. In detail, my task is to re-read Scott's theorization of the moral economy approach through its main pillars, subsistence and patron-client relationship, and analyse how these norms manifest in the contemporary times of increasing disaster/climate risks and economic liberalization. Hence in my research, I will seek to expand on Gerber's and Scott's frameworks.

1.5 Central Argument: Research Objective & Questions



Figure 2. Conceptual Framework of this study

My main research question is: Does the increasing trend of climate-related disasters contribute to the emergence/spread of rural indebtedness ('debt sentence') among smallholder farmers in Southern Philippines? And if yes, how and with what consequences?

My sub-questions are:

1. How do smallholder farmers experience the increasing trend of climate-related disasters' occurrence, intensity, and impacts in Southern Philippines?
2. What are the different sources of credit that smallholder farmers access in post-disaster context?
3. What are the credit-utilization patterns of small-holder farmers after a disaster?
4. What is the role of the state (local government units) in providing post-disaster aid/relief programs to disaster-stricken farming communities?
5. What are the consequences of debt in post-disaster context at the household level?

Chapter 2 : Laying the Groundwork: A Brief Review of the Key Concepts

Looking into rural indebtedness in post-disaster context is relatively new despite the fact that disasters have already been extensively studied in the past three decades. Linking disaster events to the emergence of rural indebtedness in agricultural communities offers a new opening in exploring how smallholder farmers get into a never-ending cycle of ‘debt sentence’.

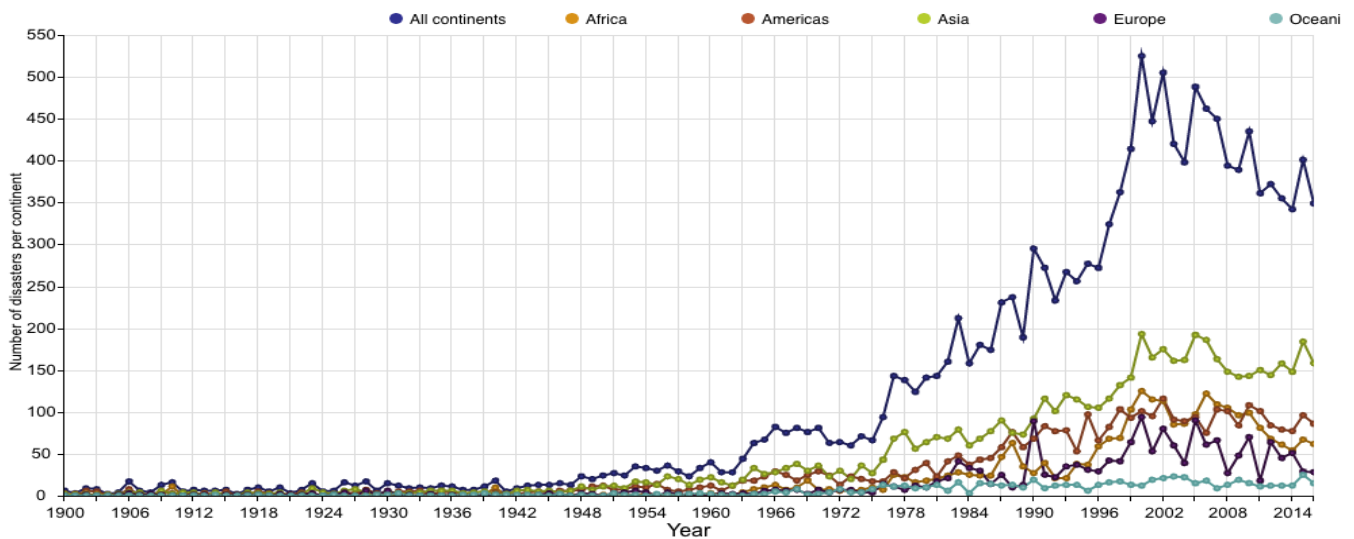
In exploring this niche of interrelationship, this review of some of the key concepts will give us the theoretical handle to understand these phenomena and how they have been defined by different researchers in various contexts. Hence, this chapter is divided into three sections: (1) disasters and climate change, (2) re-reading of Scott’s moral economy of the peasants in the contemporary times, and (3) consequences of rural indebtedness from post-disaster context.

2.1 Disasters and Climate Change: Increasing Trends, Vulnerability and Impacts

Year after year, the world is witnessing record-breaking disasters in terms of its frequency, strength, economic losses, and casualties, among others (Ritchie & Roser 2019). According to UN Secretary General Guterres (2018), Asia-Pacific region holds the highest disaster risk and vulnerability in the global picture. This includes devastating hazards such as typhoon, flooding, drought, tsunami, storm surge, etc. with high probability of hitting low-developing countries in the region.

The Global Risk Report 2018 by World Economic Forum raised an important point on how the unprecedented increase in disaster frequency and intensity disrupt global value chains, which undermines local economies and overall resilience. In 2015, ADB released a report about the global increase in climate-related disasters, and historical data shows that the changing characterization of hazards is largely linked to climate change. In detail, it can be noted that the occurrence of climate-related disasters have increased three-folds, from 1300 emergency events in 1975-1984 , to a staggering number of 3900 events in 2005-2014 (EMDAT 2019)¹.

¹ “The database is made up of information from various sources, including UN agencies, non-governmental organizations, insurance companies, research institutes and press agencies. Priority is given to data from UN, governments, and the IFRC Societies. This prioritization is not only a reflection of



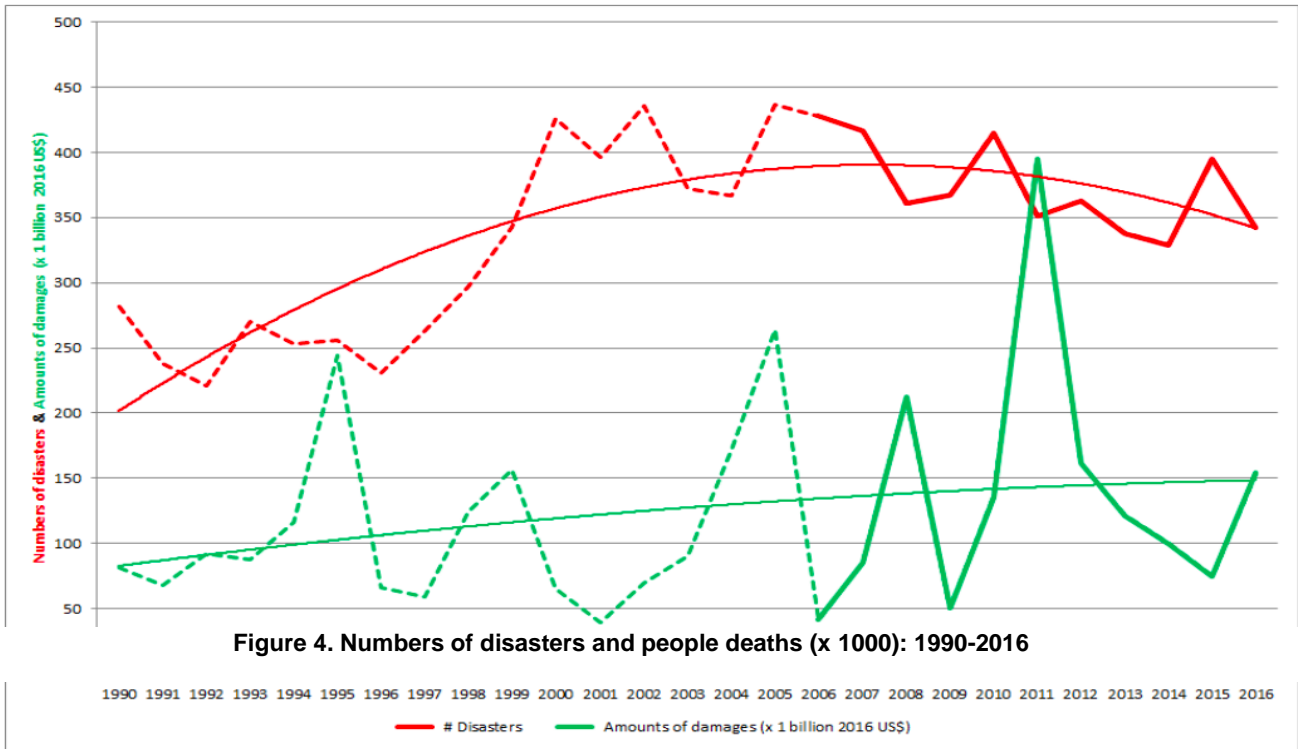
Source: EM-DAT: The Emergency Events Database - Université catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium

Figure 3. Global occurrence of natural disasters by continent (1900-2014)

Figure 3 shows the global trends of climate-related disasters for a 114-year period. It can be gleaned that the aggregated global data clearly shows a steep increase since 1960s. On one hand, looking closely to the continental data, the Asian region consistently holds the highest number of disaster events in each time period. It is to be noted that one fifth of the countries in Asia belong to least-developing group, with high poverty-rates as well as population living in rural areas (UNCDP 2018).

Disaster impacts globally have been consistently rising with record-breaking results year after year (Lewis, King, & Perkins-Kirkpatrick 2017). This could be broken down into two major sectors namely, its human cost and economic losses. Figure 4 shows the comparative data of the global occurrence of disaster and the total number of deaths from 1990-2016 (Guha-Sapir et.al. 2016).

the quality or value of the data, it also reflects the fact that most reporting sources do not cover all disasters or have political limitations that could affect the figures. The entries are constantly reviewed for inconsistencies, redundancy, and incompleteness. CRED consolidates and updates data on a daily basis. A further check is made at monthly intervals, and revisions are made at the end of each calendar year” (EM-DAT The International Disaster Database – CRED, n.d.).



Source: Guha-Sapir et. al 2016 (https://emdat.be/sites/default/files/adsr_2016.pdf)

A report by CRED and UNISDR through their EMDAT database (2015) confirms that from 1993-2014, disasters worldwide had resulted to 1.35 million casualties or 68000 claimed lives yearly. Similarly, records show that economic losses due to climate-related disasters peak year after year, with an estimated value of \$7 trillion from 1900-2016 (BBC 2016). It is also noteworthy to highlight the impacts of drought in the past two decades, which accounts for 1 billion people affected (1994-2013) or 25% of the global total for climate-related disasters (CRED and UNISDR 2015).

To contextualize the relevance of this section to my research, it is also important to highlight the impacts of disasters to the agriculture sector. According to FAO (2015), the agriculture sector suffered 22% of the total economic impact caused by medium and large disasters in developing countries. This is mostly felt by farmers in the crop sector, who absorb 42% of all damage and losses in agriculture (2003-2013). Additionally, the sector also absorbs 85% of all drought-related damages, followed by floods and typhoons with 25%.

With these overwhelming data establishing the fact that climate-related disasters' occurrence, intensity, and impacts have been steadily increasing, it is noteworthy to look into the intricacies of the different functions why a disaster occurs. UNDRR (2017, no page) defines disaster as a 'serious disruption of the functioning of a community or a society at any

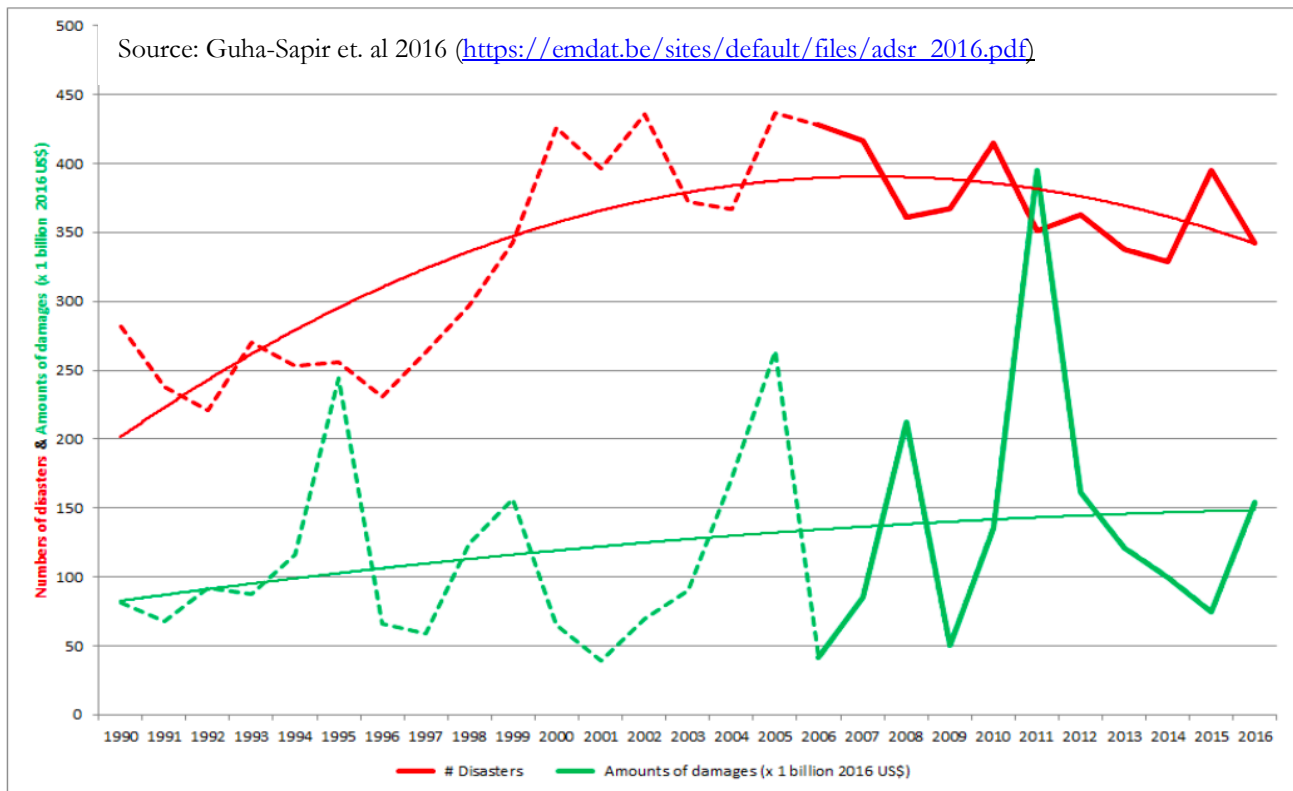


Figure 5. Number of disasters and amount of damages (x 1 billion 2016 US\$): 1990-2016

scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts. In this definition, it is clear that disaster is a function of key factors such as exposure, vulnerability, and capacity of the affected population. In this literature review, I will focus on the pre-existing vulnerabilities of the agriculture sector to argue that disasters’ impacts are dependent on the level of the population’s vulnerabilities. Vulnerability is defined as the reduced ability of an individual or group to prepare for, respond, or recover from a disaster (IFRC n.d.). This is “determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards” (UNDRR 2017, no page).

A study by Ribot (2014) illustrates the multi-layered vulnerabilities of agricultural communities, specifically their limited assets, conditions of exploitation, dependencies, and inequalities in the mode of production and access to social services. Studies on climate-related vulnerabilities often prioritize the question of ‘who is vulnerable’ instead of looking into the causality of it. In understanding how disasters impact the rural and agricultural communities, it is deemed necessary to also understand the environmental-social-economic-political factors why they are vulnerable in the first place. These pre-existing vulnerabilities

result to various struggles and issues among people in the rural and agricultural areas on a day-to-day basis, such as mass poverty, dispossession of assets, and food insecurity among others (Chapagain and Raizada 2017). In the aftermath of a disaster, as impacts are varied among different classes of farmers, their ability to recover is also context-specific and individualized. Some could promptly go back to their farms to clear-up and harvest what's left, while others have been totally wiped out. Some farmers may be able to put aside contingency fund and food stock before a disaster, while some farmers are preyed by loan-sharks and moneylenders just because they have no other choice. The crux of the matter is, in the discourse of disaster impacts, vulnerability analysis is paramount in scrutinizing inequalities and addressing the gaps around it. Hence, the bigger question is, what really happens to these communities when a disaster strikes? This is where the relationship between disaster impacts and pre-existing vulnerabilities become relevant, which offers an explanation why disaster impacts are experienced differentially by different groups/classes of people.

2.2 Re-reading of James Scott's 'Moral Economy of the Peasants' in the Contemporary Times

The moral economy of the peasants as studied by James Scott in the context of Southeast Asia in 1970s is one of the key theories in my research. I used it to unpack how smallholder farmers are affected by the changing patterns of climate-related disasters vis-a-vis the emergence/spread of rural indebtedness. Specifically, my task is to address the question on how subsistence ethics and patron-client relationship manifest in the contemporary era of increasing trends of climate-related disasters, economic liberalization, the rise of agribusinesses, commercialization, and financialization. It is important to note that Scott theorized the peasant's moral economy in the context of their shortage of land, capital, and outside employment opportunities.

Scott's argumentation of the moral economy focuses on "the peasants' notion of economic justice and their working definition of exploitation—their view of which claims on their product were tolerable and which intolerable" (Scott 1976: 3). Moreover, the moral economy of the peasants is a useful theoretical tool in understanding how peasants internalize and exercise social justice in their lived experiences (Mauritz 2014). This is situated under the idea that peasants are usually placed at the subsistence margins, with the primary concern to provide their families just enough for survival. In short, their income must meet the basic needs of the peasant family such as food, rent, production costs, ceremonial obligations, etc. (Scott 1976; Haggis et.al. 1986). Given the fact that peasants are exposed to various pressures

which predispose them to fall below the margins of survival, they are then driven to maintain their relationships with richer peasants and landlords, which we call – patron-client relationship. This is defined as “An exchange relationship between roles--may be defined as a special case of dyadic (two-person) ties involving a largely instrumental friendship in which an individual of higher socioeconomic status (patron) uses his own influence and resources to provide protection or benefits, or both, for a person of lower status (client) who, for his part, reciprocates by offering general support and assistance, including personal services, to the patron” (Scott 1972: 92).

Moreover, reciprocity and subsistence as a social right are pillars to the peasants’ moral economy, which defines the patron-client relationship. This is founded mainly as a standard of justice among peasant communities, stating that “one should return ‘favours’ out of gratitude and that, consequently, equal exchange defines a fair relationship” (Scott 1976: 162). Reciprocity and securing subsistence jointly act as a moral compass in maintaining social relationships among patrons and clients, particularly how this perpetuates the sense of ‘fairness’, when giving or asking for favours. Thus, it is important to engage with the idea - how reciprocity as a norm, surfaces in contexts where considerable inequalities between client and patron exists. Accordingly, credit becomes relevant as it is considered one of the most important favours a client could ask his/her patron in dire times, in exchange of the tenant’s harvest or labour. Then, Scott’s dilemma about unequal exchanges of favours becomes pivotal, questioning “How much protection, for example, would represent a value equal to 20 percent of a tenant’s harvest?” (1976: 162). Hence, the client is in the position to evaluate the value of his/her harvests depending on how much protection he/she would need from the patron. However, this kind of analysis fails to factor in the fact that clients are motivated by their subsistence needs and protection, while the patrons are more interested in profit maximization, which could mean that clients are more dependent to their patrons, than patrons depend to their clients. To put it simply, “The degree of compliance a client gives his patron is a direct function of the degree of imbalance in the exchange relationship of how dependent the client is on his patron's services” (Scott 1972: 5).

Accordingly, the discussion on client-patron relationship in agrarian economy is substantial in analysing the concept of ‘debt sentence’ among farmers, in relation to their dependence to their harvest buyers or patrons. Accordingly, the following discussions will focus on the two pillars of moral economy namely, subsistence and reciprocity, in the context of client-patron relationship, while looking into different departure points/context (1960s vs 2019).

Starting off with the concept of subsistence, Mauritz (2014) defines it as the sense of security that a family or community feels from acquiring sufficient resources to meet their basic survival needs –especially food security, over the long-term. Furthermore, Scott claims that the subsistence of peasants substantially depends in their social relationships, most especially with their relationship with rich and landed farmers (patrons). While it is true that subsistence is also affected and influenced by multiple factors such as the weather, harvest quality, etc., peasants still owe it from their patrons. This patron-client relationship serves both the parties involved. For the patrons – to ensure that farm labour and favours are always available for them, while for the peasants – a security blanket that no matter the situation is, their subsistence will not be threatened. According to Scott’s (1976: 4) account from his research, “Typically, the peasant cultivator seeks to avoid the failure that will ruin him rather than attempting a big, but risky, killing. In decision-making parlance his behaviour is risk-averse; he minimizes the subjective probability of the maximum loss”. Hence, the patron may demand different favours, which could sometimes be exploitative in nature, but as long as the clients’ subsistence is maintained and preserved, the relationship continues.

However, it is also interesting to look into the factors, particularly environmental in nature, that affect the level of subsistence of a typical peasant. Indeed, Scott was clear in his work that disasters or shocks are major threats to a peasant’s subsistence. This is mainly because their harvests are heavily dependent to the weather conditions, thus, major farm disruptions caused by flooding, typhoon, and drought are considered culprits in pushing these peasants below the margins of subsistence. With this being the case, I became interested how subsistence ethics is preserved (or eroded) and how patron-client relationships manifest in the climate change era and the rise of agribusinesses. This has not been extensively elaborated, as to the extent and characterization of climate-related disasters. Linking this with the assumption of my research wherein environmental and economic pressures are steeply increasing, it is then crucial to know its impacts to the level of indebtedness among subsistence farmers.

2.3 Consequences of Rural Indebtedness in Post-Disaster Context

Zooming in to credit/debt in agricultural sector, it is important to identify the different forms that credit manifests, to be able to understand how debt emerges from it. Rural credit economy in broad terms, can be segregated in formal and informal credit markets (Hoff & Stiglitz 1990). Formal credit market is defined as a financing facility provided by legitimate institutions such as banks, microfinance, cooperatives, etc. which offer lower interest rates with

strict repayment schedules. On one hand, informal credit market pertains to the lending activity advanced by individuals (moneylenders, landlords, rich farmers, intermediaries) who most of the time are also members of the same community, characterized by higher interest rates, use of collateral, and serfdom (Chaudhuri 2001). In the Philippines, these two types of credit markets inundate the countryside, as farmers need the constant flow of capital to invest in their livelihoods. It is important to note though that albeit the government's efforts to provide farmers with inclusive financial assistance through formal credit, the informal sources are still thriving, and in some cases are more predominant than its counterpart. Relating this to post-disaster context, an interesting study by Wilson (2002) claims that informal types of credit are more accepted, hence widespread, in a crisis situation (post-disaster or post-conflict) due to the following factors: (1) informal credit is easier to access given the existing social relations in the community, and (2) usually survivors' demands are based on their immediate needs, hence small-sized, short-term and fast loans are preferred. Thus, informal credit is seen as fitting to this specific context. However, with the given characterization of the country's rural credit markets (mostly informal), how does this foster the spread of rural indebtedness?

One plausible explanation points us to the fact that Philippines' credit markets do not really address the financing gaps in the rural areas. Multiple factors contribute to this reality such as (1) hard-to-reach areas due to isolation, (2) increasing need because of poor productivity brought about by climate change and disaster impacts, (3) lack of competitiveness due to economic liberalization, and (4) high inequality among social classes in agricultural communities.

The compendium of these problems has detrimental impacts to the farming communities, considering their dependencies to the capital, market, and weather conditions. The question now is, how does this impact the level of rural indebtedness in the countryside, and what are its consequences? Gerber (2013: 840) defines debt as "the inevitable other side of credit", which comes from a "state of obligation to repay another" (Greenberg 1980: 4). Furthermore, the complexity of credit/debt phenomenon stems from its ambivalence, as it is seen as "survival requirement or a source of formidable potential or the cause of great burden" (Gerber 2014: 729). This definition relates to the promise of credit, noting its three key assumptions on how it can serve as a positive strategy for development: (1) aid poorest people to meet basic needs, (2) improve household economic welfare, (3) promote gender equality as it mostly targets women to participate more in economic activities (UNCDF 2004). What is commonly hidden in the discourse of credit is the reality that its dark side –

debt, exists. Gerber (2013) on his research about the hidden consequences of credit in rural Indonesia, found out that credit – more than a tool for rural development, has also played a significant role in the spread of indebtedness in rural areas. Albeit the fact that credit/debt phenomenon has a long history, the form it has taken in the contemporary economic climate – neoliberalism and free market – continues to reshape the rural economy in ways that has never been seen before. This is not something new in the scholarship of critical agrarian studies, with the extensive theorization on debt and its consequences. Gerber (2014) in one of his researches, outlined the classical theses on the consequences of rural indebtedness as the following: (1) stagnationist – which claims that indebtedness maintains poverty and results in stagnation, (2) formalist – assumes that credit/debt fosters entrepreneurial spirit, which increases productivity and fosters growth, (3) culturalist – which tells us that the moral economy is being eroded as formal credit institutions take over, and (4) exploitation and social differentiation – which emphasizes labour exploitation and social classes that are re-defined (differentiated).

From this extensive review, Gerber (2014) developed four theses on the consequences of rural indebtedness namely, (1) indebtedness restructures ownership relations, (2) indebtedness shapes capitalist rationality and culture, (3) indebtedness undermines community and the environment, and (4) indebtedness is a motor behind the evolution of capitalism. These theses then serve as a guide in looking into how the contemporary realities of rural indebtedness link up to the theoretical debates in the literature. Furthermore, this also gives room to expand the theory on how indebtedness seep into the countryside, and what implications it entails.

Chapter 3 : Methodology

This section discusses the research methodology that was employed in this paper, which covers the following: a) research design, b) survey, c) key informant interview, d) secondary data, e) limitations, f) ethical considerations, and g) positionality.

3.1 Research Design

This study is a descriptive type of research which seeks to analyse how climate-related disasters affect the level of rural indebtedness among smallholder farmers. It also looked into the consequences of rural indebtedness in post-disaster context, particularly the a) farmers' credit-accessing behaviour, b) credit-utilization patterns, and c) role of the government. This research employed a mixed-method approach, specifically survey, key-informant interviews (KII), and secondary data. The survey was used to gather descriptive information on the characteristics of farmers, information on credit and disasters, the role of the government, and the consequences of debt. On the other hand, KII was performed to complement the first technique, validating the outcomes of the survey, as well as to make sense of how these numbers are being experienced by smallholder farmers in real life.

Secondary data was used to build the argument on the increasing occurrence, intensity, and impacts of climate-related disasters in the global and local perspectives, through historical data and trend visualizations.

3.2 Survey

The researcher constructed a semi-structured questionnaire for the survey as the main instrument for this approach. The main consideration in using such instrument is to gain insights into the complex phenomenon being studied, from the perspective of the smallholder farmers (Bernard 2000). Although this method employed a survey questionnaire, this was facilitated by the interviewer to give more flexibility and clarity on the responses of the farmer participants. The questionnaire has four major sections, namely, (1) socio-demographic profile and preliminary questions, (2) information on credit in post-disaster context, (3) role of the government, and (4) the consequences of debt.

The first section asks about relevant information about sociodemographic characteristics of the participants. This is a crucial part of the process, where we build rapport with the farmers, at the same time getting a better grasp of their social and family structures, income and expenses, land ownership, and labour employed in their farms. This is one of

the main bases in looking into the social classes and modes of production of the smallholder farmers who participated in this research.

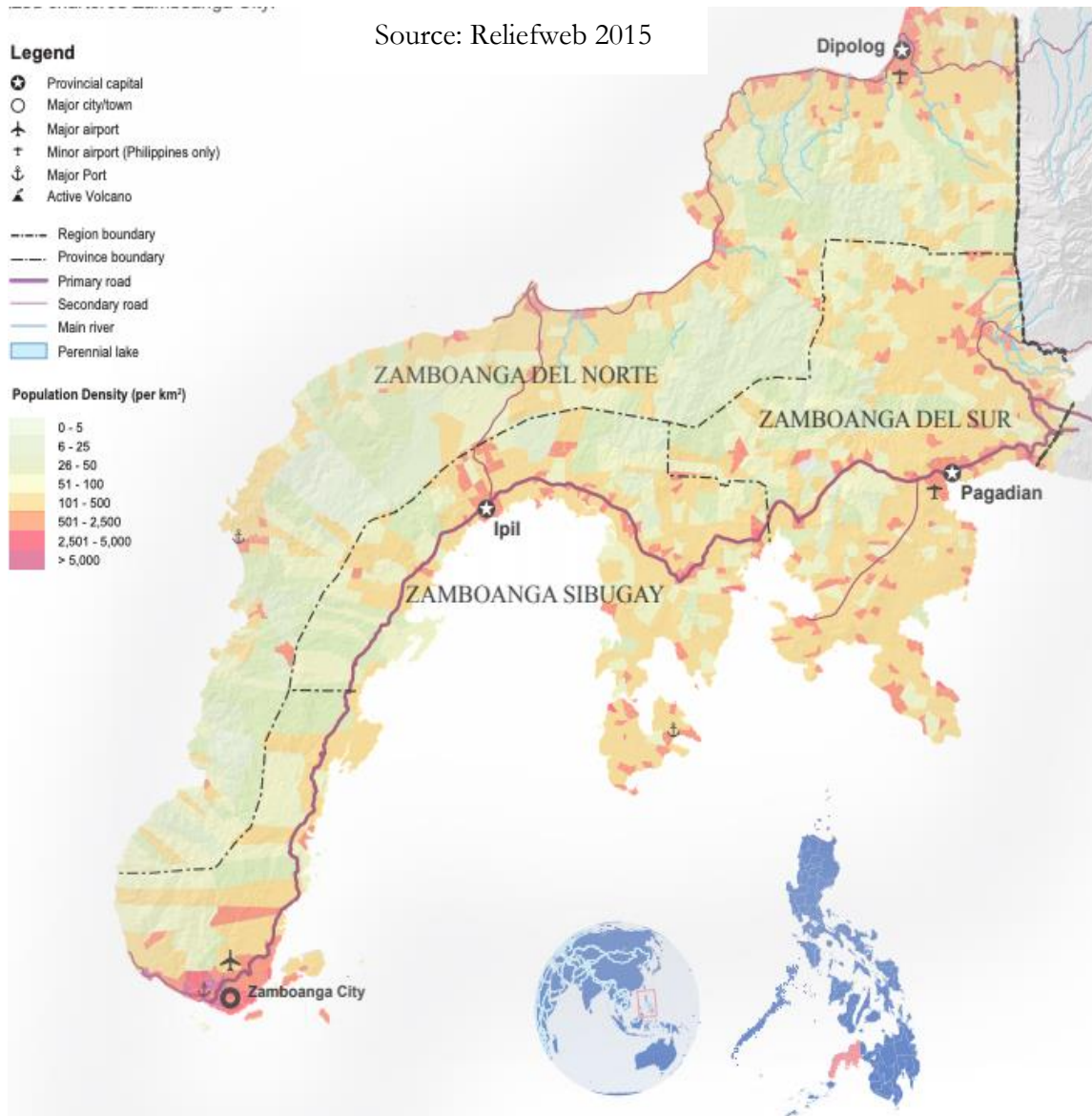
The second part zooms into the information on credit in post-disaster context. This aims to partially address three of the research questions on (1) how they experience the increasing trends of climate-related disasters' frequency, intensity, and impacts; (2) information on credit sources in post-disaster context; and (3) information on credit-utilization patterns after a disaster.

The third section deals with the role of the government in post-disaster situations, more specifically the assistance or the lack thereof, they offer to smallholder farmers. Lastly, the fourth part responds to the research question on the consequences of debt. It also seeks to understand how climate-related disasters intertwine with the concept of 'debt sentence'. What alterations does it result to if the debt is triggered by the occurrence of a disaster as compared to other contributory factors unrelated to disasters. The survey questionnaire is drafted in English, and translated in Filipino for better understanding.

Site Description

The study took place in the province of Zamboanga del Norte, which is situated in the region of Zamboanga Peninsula, Mindanao in Southern Philippines. The province has an estimated land area of 6,471 square kilometre, with a population density projection of 129 persons per square kilometre in 2020. The poverty incidence in the province is also relatively high, which is estimated at 26 of the population based from the 2015 census. (PSA IX, as cited in NEDA 2017: 20). Agriculture is one of the main industries in the region, however, it can be gleaned that the trend of Gross Regional Domestic Product from agriculture has been declining, from 26 percent in 2011 to 19.8% in 2015 (NEDA 2017). The local government of the province believes that climate change and disasters' unpredictability has contributed to the decreasing productivity of their agriculture industry. Records show that the most frequent disasters are climate change-related, such as stronger typhoons, more intense flooding, longer and hotter drought seasons (NEDA 2017). Furthermore, the region is also susceptible to sea-level rise, as "it ranks second in terms of the largest land area most

vulnerable to a one-meter rise in sea level as 40 of its 67 municipalities are highly susceptible to submergence” (PAGASA, as cited in NEDA 2017: 107).



Map 1. Map of Zamboanga Peninsula, Philippines

Selection of Respondents

This study employed purposive sampling technique in the selection of respondents. 40 smallholder farmers took part in the survey, with the following criteria:

1. Household farmers
2. Has a plot of farm land with rice crop as the main input
3. Has been participating in rice farming for the last five years
4. Has accessed to formal or informal type of credit for the last five years
5. Has been staying in the region of Zamboanga Peninsula for the last five years

3.3 Qualitative Data: Key Informant Interview

For the qualitative method of this research, semi-structured interviewing was used as an approach through the use of an interview guide. This offers a good balance of open and closed-ended questions, coupled with follow-up why and how questions (Adam 1994). Similarly, this approach gives an opportunity to build rapport with the smallholder farmers as active participants in the research. The interviews also helped in validating and unpacking the puzzles from the survey findings by having the benefit of flexibility in discussing questions that emerged from it. Alongside this, the process of openly listening to the smallholder farmers' concerns on the topics in question also provided a voice to the survey outcomes.

The flow of the interview guide focuses on four main topics that were also tackled in the survey namely, (1) their experiences on disasters (increasing frequency, intensity, and impacts) since they started farming, (2) information on credit before and after a disaster, (3) the role of the government specifically in post-disaster context, and (4) the notion of being indebted, including the consequences they are facing with the looming amount of debt due to disasters. This approach was followed by an open-ended approach in tackling these topics, giving the participants the freedom to tell their stories based on their personal experiences.

For the qualitative part of the study, there were four informants of the KII, three smallholder farmers, and one representative from National Peasants' Union. They are all female, with the age range of 30-60 years old. The narratives were gathered through series of skype conversations, with follow-up communication through Facebook messenger.

3.4 Secondary Data: Philippine Disaster Profile

The primary objective why this research employed secondary datasets on historical trends of climate-related disasters' is to establish the argument that occurrence, intensity, and impacts of disasters have been consistently increasing throughout the years. To support this claim, the researcher derived a 76-year dataset of the Philippine disaster profile including data on (1) occurrence, (2) total deaths, (3) total affected, and (4) total damage in '000 USD. Initially, the dataset included all forms of natural disasters in the Philippines. However, since this research is mostly interested on climate-related disasters, I further processed the data to only include disasters that pass the criteria to be considered climate-related. Hence, the following climate-related disasters were included in the dataset used for this research: typhoon, flooding, landslide, and drought.

This extensive dataset was derived from EM-DAT: The Emergency Events Database - Université catholique de Louvain (UCL) – Center for Research on the Epidemiology of

Disasters (www.emdat.be). Originally, the dataset is not publicly available (not open-source). However, upon my request to CRED, they willingly provided me access to download the datasets. EM-DAT is a 'global database on natural and technological disasters, containing essential core data on the occurrence and effects of more than 21,000 disasters in the world, from 1900 to present' (CRED n.d.). The database is sourced out from a various sector, including UN agencies, nongovernmental organizations, research institutes, insurance companies, and press agencies.

Generally, the overall approach in employing secondary data through the abovesaid dataset serves to describe the historical trend of climate-related disasters in the Philippines. By visualizing the multi-year dataset available, we are also able to see the changes year by year, allowing this research to establish the argument that climate-related disasters' characteristics are evolving. Specifically, with the ample research on disasters and climate change, supporting it with a rich dataset on its trend evolution, contextualizes the problem being studied.

3.5 Limitations

The main challenges this study has encountered are the following: (1) The inability to be physically present at the study site, hence the employment of research assistants and the use of Voice-over Internet Protocol Technology (Skype), (2) the poor data or internet connection in some of the areas where the surveys and interviews took place, (3) the data gathering procedure was conducted in August-September 2019, which was a busy time for farmers. This period of time is also known as the 'wet-season', which means farmers perform labour-intensive activities such as field preparation and seed transplantation, among others, and (4) related to the third one, this season is also the time when strong rains, typhoons, and flooding incidences occur. Additionally, this research included 40 survey participants and 4 key-informant interviewees, which is a humble representation of the population of interest.

The following are the justifications why I could not be physically present in the data gathering procedure: (1) The research site is known to be a critical hotspot for armed conflict and terrorism, (2) currently, the entire region of Mindanao is placed under martial law which might compromise my position as a civilian and a researcher, (3) alongside the safety risks, budget constraints has also been a limitation to physically carry out the research in the Philippines, considering the expensive flights internationally and domestically, as well as logistical expenses. In relation to the use of secondary data, the only limitation encountered is the missing information for some of the time periods included in the dataset.

3.6 Ethical Considerations

The major ethical consideration of this study was the data collection method, which is mainly distant-gathering, specifically the questions on how to respect the rights to confidentiality and challenges on building rapport with the participants given the voice-over internet protocol technology as an approach to data collection. This was addressed through securing and thorough explanation of informed consent, detailing the rights of respondents to confidentiality and right to discontinue the interviews whenever they want to. Another ethical consideration I have encountered was delineating my multiple identities as a researcher, at the same time as a colleague of these smallholder farmers who participated in my research, given that I once worked and lived with them from my previous development-related job. This process led to uncomfortable and uneasy emotions on my part, listening from the depressing stories of the realities on the ground. Hence, I was also responsible for the emotional triggers this process has brought about to the smallholder farmers who were involved in my research. Processing the narratives and interview findings (post-interview) with the participants helped in culminating the data gathering approach in a positive light.

3.7 Positionality

For a period of one year, from August 2017 to August 2018, I have worked as a Deputy Project Manager in this region where we implemented a project on local resilience. I am well-acquainted with the local culture as well as the language of the area, given the community immersions and partnerships we have forged with different sectors of the region. I have mostly dealt with representatives from the local government units in varying levels (regional, provincial, municipal, barangay), as well as sectoral groups such as farmers and cooperatives.

As part of my positionality as a researcher, I made it clear and delineated my linkages with the Non-Government Organization I have worked with before and my current role as a researcher, to not instil false hopes in relation to getting more local assistance (funding/projects) through this research. Hence, I framed my positionality as a scholar-activist, doing research on the subject matter to understand the nexus of disasters and rural indebtedness, from the perspectives of the smallholder farmers.

Chapter 4 : Data, Findings, and Analysis

This chapter presents an overview of the research findings based on the three approaches used namely, the secondary data, survey, and KIIs. Initially, visualizations of the Philippine climate-related disasters' historical trend on occurrence, intensity, and impacts are shown, to justify the argument that indeed, empirical data supports my research claim about the country's increasing risks to disasters. This is followed by the presentation of the survey findings, focused on the sociodemographic profile of the participants, information on credit in post-disaster context, the role of the government, and the consequences of debt. Accordingly, the quantitative outcomes from the survey is complemented by the qualitative data based on the KIIs. The last sections of this chapter will discuss about the nexus of this new trend of climate-related disasters and rural indebtedness, arguing that this is a potential global crisis in the near future.

4.1 Philippines' Increasing Disaster Risks: Occurrence, Intensity, and Impacts

While it is true that threats from climate-related disasters globally have been steadily increasing over the years (ADB 2015: 1), it is also important to acknowledge that these changes are felt differently in varying regions. To illustrate this, I have chosen the disaster profile of the Philippines, showing the historical trend of climate-related disasters from 1905 to 2019. Figure 6 shows the visualization of typhoon trends in the Philippines for a 114-year period. It can be gleaned below that indeed, the occurrence of typhoon events in the past decades have increased. Specifically, the last 20 years show a different pattern with higher occurrences yearly and record-breaking peaks. Although studies in this field purport that there is no clear increasing trend of typhoons entering the Philippine Area of Responsibility (PAR). On the one hand, records and projections tell us that there is a slight increase in the occurrence of typhoons (with maximum sustained winds greater than 150 kph and above) as reinforced by El Niño events (PAGASA n.d.). Kubota and Chan (2009) studied extensively the historical trend of tropical cyclones in the Philippines. According to their research, since the 1970s stronger typhoons have been observed with increased possibility of landfall due to the rising sea-surface temperature (SST). Similarly according to the Philippine Atmospheric, Geophysical and Astronomical Services Administration (de Guzman 2014), the occurrence of extreme

tropical cyclones does not suggest a clear-cut conclusion on the increasing trend, however, interdecadal variability has been observed in the last decades. This means that every decade, the country experiences a record-breaking typhoon intensity with more devastating impacts.

Harvard Humanitarian Initiative states that the Philippines is entering a new phase in terms of extreme weather events, claiming that Typhoon Haiyan in 2013 (the strongest typhoon to make landfall ever recorded) might become the 'new normal' (Bollentino et.al. 2018). This phenomenon includes the drastic changing weather conditions in Southern Philippines or commonly known as Mindanao, considering that this region in the country is best known to have low risk for climate-related disasters in the past. This is one of the reasons why agriculture sector is one of the major sectors in this region, given the conducive climate and low exposure to hazards. On the other hand, a study about the country's historical tropical cyclone archives suggests that due to climate change, Mindanao region is expected to have more typhoons and flooding situations in the coming years (David et.al. 2013). This is strongly linked to the now prolonged 'warm phase of El Niño Southern Oscillation (ENSO)' which is defined by PAGASA as 'a naturally occurring phenomenon of the climate system resulting from the interaction between the ocean and atmosphere in the central and eastern equatorial Pacific' (Lagsa 2019).

As what Filipinos say about these weather variations 'when it rains, it pours a lot, and when it's dry, it dries so much'. Evidently, if the typhoon records do not clearly show increasing trend patterns, the case for flooding is different. As shown in figure 7, it is imperative that flooding frequency has been steadily rising over the years. One of the reasons why the trends for flooding and typhoon are not congruent could be attributed to the different criteria for these phenomena to be called as such. In detail, typhoon classification is based on wind-speed (more than 150 kilometers per hour), while flooding uses rainfall intensity and area elevation. Both these hazards are very sensitive to the changing atmospheric conditions brought about by ENSO, hence the unpredictable intensities we observe year in year out.

Aside from the projected increase in typhoon and flooding events in the region, ENSO also contributes to more intense and frequent drought situation. This is due to the above-normal warming of sea surface temperature, resulting to below-normal rainfall conditions and increased daytime/night-time temperatures (NDRRMC 2019). PAGASA (n.d.) has done comprehensive analysis of the historical trend of temperature anomalies in the Philippines (1951-2010) and found out that 0.648 degrees Celsius increase has been recorded for that 60-year period. This is a significant climate variation in the geographical context of the Philippines, considering its high exposure and vulnerability to climate change as well as

extreme weather conditions. A case in point - the region of Mindanao, which is also known as the ‘fruit basket’ of the country, the past two decades have confronted the region with a different scenario, with more typhoons entering the Southern area of responsibility, intense rainfall during the wet season, and dry spells/drought events during the dry season.

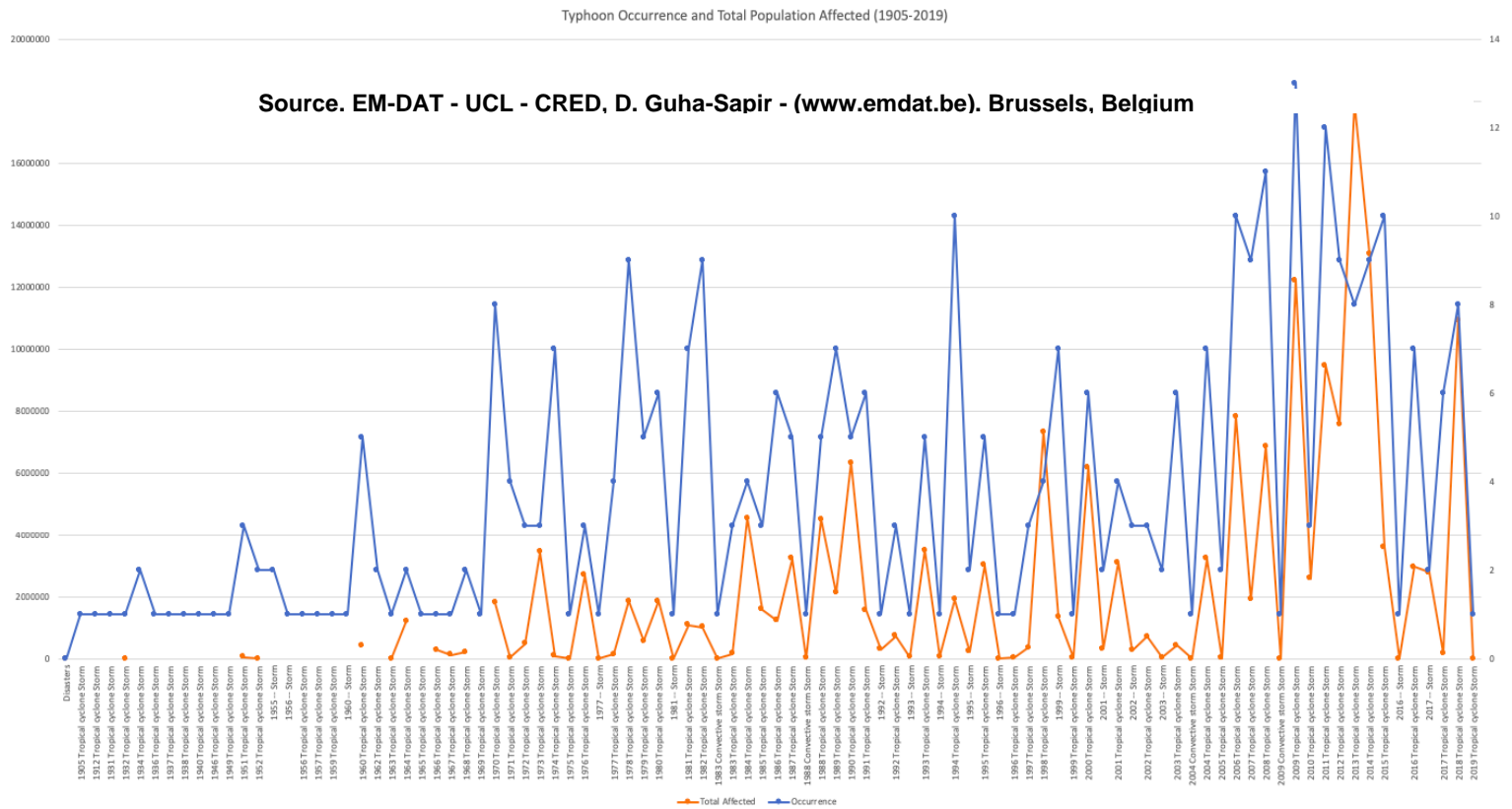


Figure 6. Typhoon occurrence and affected population in the Philippines (1905-2019)

Imminent to the changing patterns of climate-related disasters is the magnitude of its impact to the affected at-risk population. For instance, developing Asia has been named as the most disaster-prone region worldwide (ADBI 2013). In the last ten years, a third of the total number of natural disasters globally has occurred in this region, affecting 1.6 billion individuals living below \$2 per day. Additionally, the high human and economic cost of climate-related disasters for this 10-year period has resulted to an estimated 350000 lost lives and \$500 billion total damages, respectively (Jha et.al. 2018). Zooming into the Philippine context, figures 6 and 7 illustrate the trends of impacts and occurrence for typhoon and flooding, respectively. The dataset used in this research presents us with staggering numbers that depicts the impacts of these climate-related disasters. From 1905-2019 (incomplete data), loss and damage due to typhoon accounts for 49523 deaths, 176.2 million affected population, and total damage which costs \$22.2 billion. On one hand, flood events dataset covers

the period 1968-2019 (incomplete data) showing us estimate values for its impact – 3668 deaths, 33.5 million affected population, and \$3.8 billion value of damages.

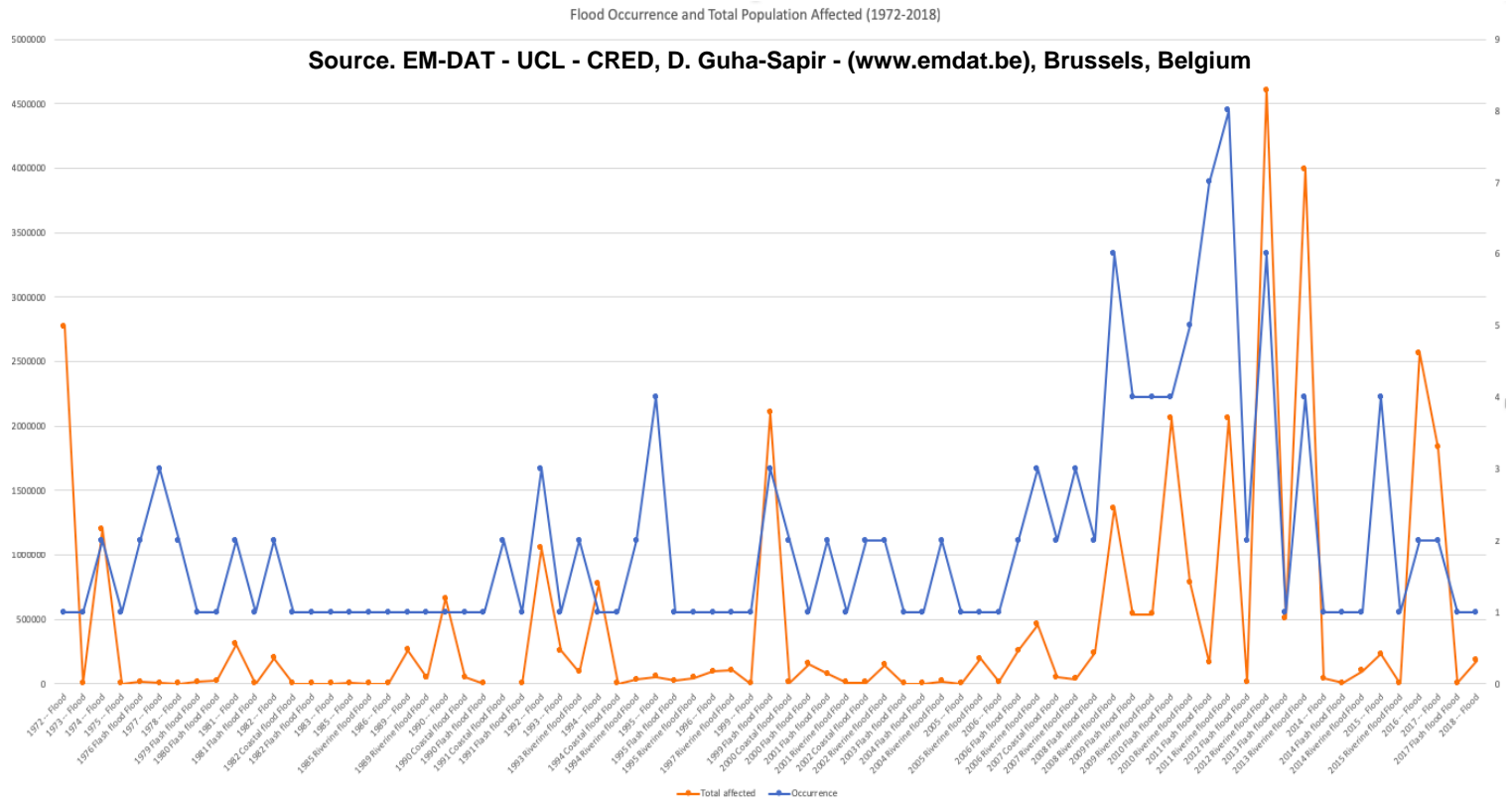


Figure 7. Flooding occurrence and affected population in the Philippines (1905-2019)

Indeed, the exposure and risk levels of the affected population increase as stronger disasters occur more frequent. Specifically, the slightest variations in the weather conditions largely impact the agriculture sector and the livelihoods of the farmers. This includes the changes in agricultural planning, production losses, and overall productivity of farming systems (Tibig 2001, as cited in Comiso et al. 2013).

This leads us to a deeper realization in regard to the differential impacts of disasters in the agriculture sector. Although neoliberal economists would perhaps argue that disasters unequivocally impact everyone inside the affected region of concern, critical agrarian analysts would say otherwise. Abundant evidence from the field exists establishing the fact that indeed, there is an unequal distribution of human and social consequences in disaster context (Sufiyan 2014). Hence, the claim ‘rich or poor, everyone is equally affected when a disaster strikes’ is a very dangerous blanket statement, which disregards the context-specific social and economic (social differentiation) conditions of a given place. This is evident in my research area, Zamboanga Peninsula region in the Philippines, where social differentiation among farming communities is very much defined. From my field observations and field

notes in 2017-2018, it can be gleaned that disaster impacts are experienced differentially among groups of landless farmers, poor farmers, middle farmers, and the rich-landed farmers. The smallholder farmers are the ones who suffer the most in the wake of climate-related disasters. This is justified with the reality that their farms are usually small in size, that when they suffer crop losses after a typhoon or a flooding event, very little or nothing is left for them. On one hand, the landless farmers or tenants, who I thought would incur the worst impact compared to rest of the group, are barely spared due to their dependence to their patrons who would still need their labour for clearing and harvesting what is left from the disaster. Banerjee (2009) has a similar finding on his research about peasants and indebtedness, claiming that poor peasants (usually part-time laborers in bigger farms) have higher adaptive capacity than small-holder peasants (subsistence to middle farmers).

Source: FAOSTAT Database 2019 on Philippine Crops (www.fao.org/faostat/)

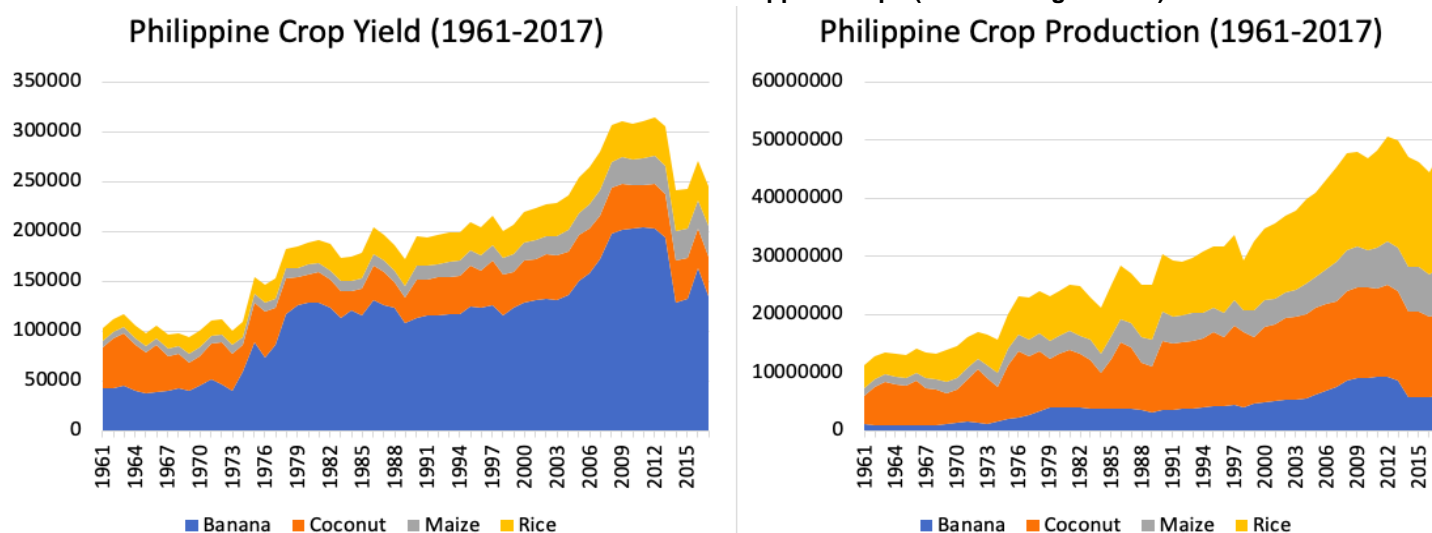


Figure 8. Philippine Crop Production and Yield Output in metric tons (1961-2017)

With this display of the increasing climate change-related disasters' impacts in the agriculture sector, it is then crucial to analyse the factors that have contributed to this complex phenomenon. Accordingly, this reflects how pre-existing (pre-disaster) vulnerabilities and capacities influence the level of impact that is experienced by different social classes among farming communities. Evidently, the level of risk to disasters and its impact should be seen in a cross-cutting combination of vulnerabilities, capacity, and the impending hazard (Wisner et.al. 2004). Hence, in the context of farming communities, looking into their vulnerabilities and capacities largely define the level of impacts they would incur after a disaster. For instance, exploring the social structures and processes among farmers is pivotal, as it defines people's assets, income, productivity, security of subsistence, etc. This largely influences what happens next after a disaster strikes – subsistence farmers might have to leave

their small farms to seek other work opportunities elsewhere, while wealthier farmers can afford to promptly recover from the aftermath of a disaster. This can be supported by Wisner's (et.al. 2004) extensive vulnerability studies, which pointed out contributory factors such as power, access, location, livelihood, which create an unsafe condition and magnified vulnerability. The discourse on 'access to resources (credit)' after a disaster then becomes a crucial aspect, in characterizing not only the short-term impacts but more importantly the long-term. This is further discussed in the sections below from with the findings of this research.

4.2 Respondents' Profile

This section presents the general profile of the smallholder farmers who participated in the survey. The sociodemographic profile of the 40 farmers is shown in table 1.

Examining the sociodemographic profile of my research participants has provided me a picture of the social and economic conditions these farmers are subjected to. This also confirms the group's homogeneity as 'smallholder' farmers, as all 40 farmers have less than four hectares of farm size (with 55% less than two hectares). In terms of household income, it can be gleaned that 97.5% earns below Php 10000, which automatically means they are all below the food threshold of the country set at Php 10481 to meet basic food and non-food needs of a family of five per month (PSA 2019). Moreover, the survey findings show that the typical expenditures of the farmer participants do not solely go to basic food and non-food needs. They also have to think about how they could procure farming inputs and their credit/debt monthly dues.

It is also evident from the survey that these farmers practice crop-diversification, mostly intercropping rice, with corn, root crops, vegetables, and coconut. This is well-connected to their subsistence ethics, given that all farmer participants sell 50-70% of their harvest to their patrons or 'suki'², and the rest is for their consumption. This is a typical farming practice of subsistence farmers, validating their survival and safety-first principles (Scott 1976: 11).

² 'Suki' is the local term for harvest buyers, who also the patrons of smallholder and landless farmers. They are the ones who provide credit/loans to the farmers, and in exchange these farmers are obliged to sell their harvest to them, to the price that the 'suki' dictates.

Table 1. Sociodemographic profile of small-holder farmers (N=40)

Sociodemographic Characteristics	Frequency	Percent (%)
Age Range (30-78)		
30-39	3	7.5%
40-49	10	25.0%
50-59	13	32.5%
60-69	11	27.5%
70-79	3	7.5%
	40	100.0%
Gender		
Male	17	42.5%
Female	23	57.5%
	40	100.0%
Size of the Family (# of members)		
2-4 members	19	47.5%
5-7 members	17	42.5%
8-10 members	4	10.0%
	40	100.0%
Household Income (per month in Philippine Pesos)		
2000-4000	17	42.5%
4001-6000	14	35.0%
6001-8000	4	10.0%
8001-10000	4	10.0%
10001-12000	1	2.5%
	40	100.0%
Income Sources		
Remittances from Family	Wage labor	
Copra/Coconut Farming	Rice Farming	
Small Scale Business	Livestock Farming	
Government Salary	Corn	
Expenses		
Household expenses (Water, food, electricity)		
Education of children		
Farming inputs (pesticides, fertilizers, equipment rentals, wage of workers)		
Payment of loans/credit/debt		

Years in Farming Sector		
10-30 years	5	12.5%
31-60 years	34	85.0%
60 years and above	1	2.5%
	40	100.0%
Types of Crops		
Rice, corn, root crops		
coconut (copra) and root crops		
Corn and vegetables		
Rice and Vegetables		
Rice, copra, and crops		
Farm Size		
1 - 2 hectares	22	55.0%
2.1 - 3 hectares	15	37.5%
3.1 - 4 hectares	3	7.5%
	40	100.0%
Land Ownership		
Owner (CARP Beneficiary)	38	95.0%
Tenant	2	5.0%
	40	100.0%
Number of Farm Workers Employed		
Seasonal (1-2)	33	82.5%
Seasonal (3-4)	4	10.0%
None	3	7.5%
	40	100.0%
Family members helping in the farm		
1-2 members	18	45.0%
3-5 members	20	50.0%
6-8 members	2	5.0%
	40	100.0%
Percentage of the harvest that is sold		
50%	24	60.0%
70%	16	40.0%
	40	100.0%
Disasters that affect the farmers		
Drought	Typhoon	
Landslide	Flood	
Pest		

4.3 Credit on Post-Disaster Context: Access, Utilization, and Issues

Table 2 summarizes the farmers' responses about information on credit in post-disaster context. Furthermore, this section elaborates our question in regard to the credit-seeking behaviours and credit-utilization patterns of smallholder farmers after a disaster. Alongside these

findings, we also gathered relevant information about issues on credit (access, constraints, justification).

According to the survey results, everyone who participated in the survey had been devastated by multiple disasters in the past five years. Most common climate-related disasters that they encounter are drought, typhoon, landslide and flooding. Furthermore, these disasters result to destruction of their farm products (outputs and inputs) and houses.

Part 1: Information on Credit in Post-Disaster Context	Frequency	Percentage
Have you been devastated by disasters recently?		
Yes	40	100%
What damages have you incurred?		
Farm products (livelihood) and house	24	60%
Farm products (livelihood)	16	40%
	40	100%
How did you recover from the disaster-related damages?		
work from other sector (labor/carpentry/livestock)	3	7.5%
Assistance from family members/local government/Farmer's Organization	5	12.5%
Loan	32	80.0%
	40	100%
Did you access any form of loan/credit after a disaster?		
Yes	35	87.5%
No	5	12.5%
	40	100.0%
How much do you usually ask when accessing loans/credit after a disaster?		
Less than 10,000 Pesos	2	5.0%
10,000 - 15,000 Pesos	29	72.5%
15,001 - 20,000 Pesos	4	10.0%
N/A	5	12.5%
	40	100.0%
Where do you usually access these loans/credits?		
Microfinance Institution (CARD)	20	50.0%
Multi-Purpose Cooperative	5	12.5%
Harvest Buyer	10	25%
N/A	5	12.5%
	40	100.0%
Where do you spend the money from these loans/credit after a disaster?		
House repair		
Basic household Needs (Food and clean water)		
Farming inputs		
Common issues/problems in accessing credit/loan?		
Cumbersome/long process and high interest rates	35	87.5%
Do not access due to inability to pay	5	12.5%
	40	100.0%

Table 2. Information on Credit in Post-Disaster Context (N=40)

According to one of the interviewees, this has been a recurring issue for them, as disasters have been more frequent and stronger in their region for the past ten years. As compared to the patterns of disasters that hit the region two to three decades ago, what is happening now is a phenomenon that they are not used to. More typhoons, longer drought season, heavier rainfall, and fiercer dry season, indeed the disasters have become more unpredictable for them and they have not fully adapted to these changes yet.

In relation to their recovery strategies in post-disaster context, 80% of the participants opt to take more loans, while the remaining 20% prefer working outside the sector as well as seek for external help from family relatives/state/organizations. On average, 72.5% of the farmers access new credit amounting to Php 10000-15000, every after a climate-related disaster event. This varies depending on the size and impact of the disaster.

“I applied for some loans/credit, because we are left with nothing, yet we have to live. And this gravely affects us, because we are drained into the deep-well credit cycle. When we harvest and sell off our produce, majority of the income goes directly to repayment of loans and credit. So, sometimes, when another calamity strikes, we have to take new sets of loans/credit, not just to recover, but also to pay previous loans” – farmer 1³

When asked about their credit-seeking behaviours after a disaster, three main credit sources emerged namely, microfinance institution-CARD bank (50%), harvest buyers (25%), and multi-purpose cooperatives/rural banks (13%). It is also known that small-holder farmers do not only access from single creditors, as they often mix-up their loans from different creditors. Most common combination is microfinancing (CARD) and harvest buyers. The

Microfinancing (CARD)	Harvest buyers ('suki')
<ul style="list-style-type: none"> -straightforward/simple process -low interest rates -manageable loans given the short-term repayment schedules (monthly repayment, payable in 6 months) -no collateral -accessible, given that they have satellite offices in small towns -caters mostly to agricultural communities 	<ul style="list-style-type: none"> -they have a strong harvest buyer-farmer relationship (patron-client) -easiest and fastest option to get loan/credit (especially in times of personal emergencies) -easy and flexible repayment schedule due to the common understanding that its timing is dependent to the planting/harvest season -no-interest but 'Suki' dictates the price of the harvest sold to them by the farmers

Table 3. Microfinancing vs harvest buyers from the point of view of farmers

³ See Appendix B for the profile of farmers who were interviewed.

main justifications why most farmers opt to access credit from these sources are the following:

In relation to this, the farmers were also asked about the key considerations that shape their credit-seeking behaviours. This is related to the common issues they encounter with other forms of credit, which include: (1) Cumbersome/long process and high-interest rates (87.5%) and (2) inability to pay/defaulting (12.5%). These results corroborate with Dhakshana and Rajandran's (2018) findings about the challenges and problems that Indian farmers face in accessing credit, which includes-- the length of time before a credit gets released, surety and collateral, high interest rates, and difficulties in repayment. Accordingly, this justifies the findings why the two most opted sources of credit are microfinancing and harvest buyers. Apparently, these two options offer simple process, fast-release, low-interest, and easy repayment schedules.

I would like to expound more on the complex relationship between the harvest buyers and the farmers, to give context why debt is so widespread in this region, as well as some power dynamics that affect the farmers' credit-seeking behaviours.

“we prefer to ask our ‘suki’ for credit, because they give us the money right away, no questions asked. And the expectations have been set already since we have been doing this for a long time. They somehow understand our plight and I can say we have already forged a special relationship. We then try to settle our debts during harvest season, when they buy our crops’ – farmer 3

Based from the survey and the interviews, almost every smallholder farmer has a consistent and constant harvest buyer. This relationship is built overtime and is codependent to their roles, to keep the sector running. Some of these relationship set-ups have been passed on from generation to generation, well-defined as the ‘buyers/patrons’ and the ‘sellers/clients’. Credit provision is one of the core activities in this relationship, as it fits in their transactional activities in buying/selling agricultural outputs. This is one of the reasons why smallholder farmers prioritize to keep their relationship with their “suki” or harvest buyers in good terms, so they can always take credit/loans in times of emergency, be it for personal or livelihood purposes. Another situation where this relationship becomes relevant is during and after a disaster event. These farmers are very vulnerable to crop losses and other damages related to disasters, hence, the need for them to maintain this lifeline for favours in the form of credit/loans.

While this ‘suki-farmer’ relationship might sound beneficial to the farmers’ side, it also has a lot of drawbacks in terms of the unequal exchange of favours to maintain this type of

complex relationship. This breeds inequitable power dynamics among these actors, as the farmers are always at the behest of their 'suki', albeit the unspoken unwritten rules about this relationship. For instance, since credit is always made available by the 'suki' to these farmers, in return, they (suki) get to set the prices of how much they are willing to buy the harvested crops per sack from the smallholder farmers. This then weakens the bargaining power of the farmers, as they know that fighting for higher prices might cost them their credit line with their 'suki'. When asked about the possibility of changing 'suki' to break these unequal transactions, the farmers emphasized that it is not an option for them as they could be branded as 'difficult' partners. One of primary considerations of the farmers is the maintenance of community trust, more specifically the trust of harvest buyers and other farmers. It is under their impression that when they shift to a different 'suki' because of price disagreements or unsettled debts, this might result to gossips about them, hence could breed a sense of distrust within the community.

“We do not usually talk about interest rates with the kind of credit that we get from our harvest buyers. As long as we need money for any reason, it is always available and will be settled when harvest season comes. However, the biggest problem we cannot confront is the power dynamics in this relationship. In exchange of this always-available credit, our harvest buyers get to dictate the price of our output that they buy from us. For example, the usual price per sack of rice (with other consolidators) is Php 700-800, but because we are indebted from our harvest buyers, they just buy it for Php 500. And then they still have to deduct the loaned money. This is the reason why sometimes, we're left with almost nothing, then we are forced to take credit again. It is indeed a cycle that never ends” – farmer 1

We have to understand that the 'suki'-farmer relationship is more than just a transactional relationship. More so, it reflects an oppressive form of the 'moral economy', which supports the findings of my research in a sense that the client-patron relationship is more of a parasitic than symbiotic characterization (Mauritz 2014). This deviates from Scott's ideation of moral economy which is founded in conviviality and justice, “as reflected in the social pressures on the relatively well-to-do within the village to be open-handed toward their less fortunate neighbours, pressures that are characteristic of Southeast Asian village life' (1976: 176). Hence, the client-patron relationship is built from the idea of subsistence as fundamental social right, quoting one of the sharecroppers from Scott's fieldwork, “A man of his means was supposed to loan his tenants rice and help when times were hard. That is part of being a landlord” (1976: 176). However, the findings on my research does not fully manifest this.

This is evident in the interview narratives of farmers, where they claim there are times that they sell almost everything to their 'suki' because of their accumulated debt. As a result, just a meagre portion of their harvest is left for their household consumption. Thus, this is changing the food security landscape of the farmers, as one farmer painfully told me:

‘As food producers, it hurts to realize that we have to buy rice from a store, maybe the same rice that we harvested a few weeks ago, because we have to sell majority of what we harvest just to make ends meet’ – farmer 2

Moerman’s research in Northern Thai Villages on peasant agriculture provides a strong evidence to substantiate farmers’ prioritization of subsistence over profitability. He further claims, “No one would take advantage of the high price of ordinary rice by planting it so he may sell it and buy back glutinous rice to eat” (1968: 69). However, this practice could be disrupted with the accumulation of debt among peasants, which forces them to plant and sell ordinary rice for profit and use the money to buy glutinous rice and settle his debt (Moerman 1968). This is a clear threat to farmers subsistence, which deviates from the safety-first principle in Scott’s (1976) moral economy approach. However, this threat to the clients is somehow resolved by staying in the relationship with their patrons albeit the exploitative nature of their relationship, as long as credit is promptly available whenever they need it to maintain subsistence. This is the part where Scott’s arguments hold true, justifying the patron’s burdensome favours to their clients given that their patrons continuously provide security and subsistence to them (Mauritz 2014). Accordingly, the patron-client ties observed in this case portray an ambivalent role in the peasants’ life. Granting that patrons could ensure social insurance to their clients in times of subsistence crisis, patrons could then demand from their clients’ resources – which the clients are strapped to meet (Scott 1976). Thus, the patron-client relationship is most of the time exploitative in nature, given the power of the patron and the vulnerability of the client, which go against the common standards of justice.

When it comes to their credit-utilization patterns in post-disaster context, survey results show that the priorities of farmers are mostly focused in basic household needs and farming inputs. This goes beyond the common perception that farmers solely use the credit/loan for the recovery of their livelihoods. This is well-supported from the narratives of the farmers, especially in post-disaster context where basic needs come first before anything. The fact that these farmers are also victims (survivors) of disasters is commonly left-out in the credit discussion, as credit provision is mostly focused in restoring the economic activities. A similar trend in India has been explored by Sarangi (2011) who understands the drivers of rural indebtedness based on their credit-utilization patterns. It can be gleaned tha

the non-agricultural expenses of a typical peasant family are increasing. Additionally, the agricultural financing scheme in this context mainly serves agriculture-related activities and resources, but in reality, smallholder and landless farmers are impelled to use it for other post-disaster survival reasons (Dacles 2019). This is one of the reasons why credit-market in agriculture sector has not succeeded in improving the wellbeing in the countryside, given that the credit/loan failed to consider the survival needs of these farmers.

This could be linked to the type of disaster response the state (and other actors) offer to the affected population. The lack of comprehensive understanding on the needs of the farmers could result to ineffective response strategies. Hence, the easiest option for farmers to address both personal and livelihood needs is to take out credit/loans in the guise of their livelihood recovery. This challenge is also well-documented in other countries, such as India, where indebtedness is a major problem in the countryside. A study by Sidhu and Gill (2006) claims that 34% of the total outstanding loans at all-India level are widely used for the purpose of consumption-smoothing. Furthermore, because these non-productive loans do not usually generate income, the repayment capacity of the farmers also decreases.

4.4 Role of the Government in Post-Disaster Context

This section primarily presents the data gathered in relation to the role of the government in assisting smallholder farmers affected by climate-related disasters. There were only two questions asked to the participants, (1) the type of assistance the government offers, and (2) if the assistance is sufficient or not. An overwhelming majority (80%) expressed they usually do not receive anything from the government after a disaster, while 20% of the responses usually receive farm inputs and materials. As a result, all the participants expressed that the government is not doing enough to assist them in post-disaster context.

Part 2: Role of the government	Frequency	Percentage
Assistance from the government after a disaster		
DA: Seedlings, Fertilizers, Materials	5	12.5%
PCA: Pesticides and Fertilizers	3	7.5%
Did not receive anything	32	80.0%
	40	100.0%
Do you think the government assistance is enough?		
No	40	100%

Table 4. Role of the government in Post-Disaster Context (N=40)

Moreover, it has also been highlighted in the interview responses that even the government assistance is highly politicized, given that patronage politics is still widely predominant in these regions (Tadem & Tadem 2016). According to one of the farmers, even if an assistance package is made available to farmers, the distribution is usually discretionary based on the recommendations of the Mayor. Similarly, if you have personal connections with some local government employees, chances are higher that you will be in the beneficiary list. This poses a serious problem in implementing effective response, recovery, and rehabilitation strategies, considering that the approach is grounded based on the actual and specific needs of each farmer/survivor.

“Totally insufficient. like technology in farming, we were waiting for tractors but no support. not even subsidies. So we just rent tractors per hour which adds up to the expenses in farming” – farmer 1

Corruption in relief assistance was also brought up by the farmers, which is considered as one of the root causes to ineffective aid in post-disaster context. Apparently, government offices extort a percentage of the farmers’ harvest, in exchange of the assistance package that comes from the regional and national government.

“When the local government announces that there is some sort of assistance for livelihood and farm recovery, they would call us to the office to receive the package, which usually consists of seedlings and chemical inputs. However, before signing the disbursement list, they tell us that this comes with a price in the form of our harvest outputs. In short, we have to go back to their offices and give them a part of our harvest, just because they included us in the beneficiary list. It hurts us because we know that the assistance is from the national government and is supposed to be free to help us recover, but corruption is widespread here, especially in times of disasters” – Farmer 2

This makes the aid conditional and unjust, as the farmers are forced to share their limited harvest to corrupt government officials, for their personal gains. Accordingly, this is one of the reasons why formal resistance is uncommon in the region. However, everyday resistance is very much present in the community as manifested by people’s gossips against the corrupt officials/employees as well as the rotten system. This is linked to Scott’s (1989: 53) concept of ‘everyday forms of resistance’ which he defines as “when a subordinate group finds the claim or exaction, they are resisting unjust and yet are intimidated by the fear of retaliation from any open, public protest of that injustice. It is this sense of injustice that is responsible for the tacit cooperation that develops among the resisters”. This is manifested through peasants gossiping around about the ill-political climate in their area, which includes

the people in power and the ‘preferred’ group who always receives relief aid in the wake of disasters. Consequently, everyday resistance is indeed weaved in the fabric of the peasant life, and it is important to highlight that this gets aggravated in critical times (disaster). Hence, class struggles in peasant societies get more defined in post-disaster context due to the unequal distribution of impacts as well as unequal access to aid and credit.

4.5 ‘Debt Sentence’ by Disasters?: Consequences of debt and Strategies to get out from it

This part tackles the big question, do disasters lead to ‘debt sentence’ among smallholder farmers? In doing so, this section thoroughly discusses the ‘debt sentence’ phenomenon, the consequences of debt, and what strategies farmers employ to ease out these debts. To support this argument, it is deemed necessary to find out if disasters force farmers to acquire

Part 3: Consequences of debt	Frequency	Percentage
Do disasters usually force you to acquire credit/loans?		
All the time	8	20%
Most of the time	32	80%
	40	100%
Why are you forced to acquire credit/loans after a disaster?		
No choice		
Absence/lack of assistance from the landlord/government		
For capital investment (farm)		
Family members are also unable to help due to poverty		
Is indebtedness a problem or a burden for you? Why?		
Yes, uncertain if they can repay the debt	12	30%
Yes, we are already indebted before a disaster	28	70%
	40	100%
Disasters as the main or one of the reasons why you are indebted?		
Yes, lack of support from the government	40	100%
What do you do to get out or to repay these credit/debt?		
Acquire other credit to pay previous debt and invest in farm activities (microfinance)	10	25%
Acquire other credit to pay previous debt and invest in farm activities (family members)	3	7.5%
Acquire other credit to pay previous debt and invest in farm activities (harvest buyer/richer farmers/lending)	10	25%
Look for other sources of income (apart from farming)	7	17.5%
Sell livelihood assets (land, farm animals, farm equipment)	10	25%
	40	100%
Is there an organization/group that helps you manage/pay these debt?		
None	35	87.5%
Philippine Coconut Authority	5	12.5%

Table 5. Consequences of Debt in Post-Disaster Context (N=40)

(more) credit/loans. It turns out that 80% of the participants apply new credit/loan every after a major disaster. This information is substantial in understanding the level of rural indebtedness in the region, as climate-related disasters are now more frequent and intense. While studies support that access to credit among farmers in post-disaster context is crucial in reducing their vulnerabilities and increasing their overall resilience, it is also important to nuance the kind of credit which are made available in these critical situations (FAO 2017).

Another helpful schema in exploring the relationship of disasters and the level of debt is the motivational aspect of it. The most common justifications include (1) left with no choice, (2) absence/lack of external assistance, (3) capital for livelihood recovery, and (4) extreme poverty. These findings reflect the complex nature of a disaster event, with differential impacts depending on the level of pre-existing vulnerabilities. The question goes deeper into the root causes of being indebted, why in the first place these smallholder farmers need to access credit. This is clear in the Ribot's (2014) study about vulnerability and climate in the Anthropocene, where he argues that it is inevitable to disregard the conditions of precarity (social, political, economic, environmental) of a given population in studying the differential impacts of a disaster. Hence, vulnerability analysis is paramount in identifying the root causes problems related to disasters.

“Yes of course. it is hard, our lives are hard. we are indebted for the rest of our lives. The life of poor Filipino farmers is really hard, it is a cycle. We are already indebted before a crisis, then a disaster comes, which results to more credit and debt, we are really indebted” -Farmer 3

When it comes to the presumption about indebtedness as a burden for farmers, results show that majority of the participants strongly agree to this claim (70%) due to the fact that they were already indebted even before a disaster strikes. The remaining 30% also agrees to the statement, mainly because of the ‘sense of uncertainty’ it gives them if they can still ever get out of the debt cycle. With this outcome, disasters are considered as tipping points that put the farmers on the ‘debt cycle’ or ‘debt sentence’. This is one of the main claims of this paper, to argue that - disasters are major contributory factors why smallholder farmers are over-indebted, so deep that they could no longer get out of it in their lifetime. Hence, the term ‘debt sentence’ to highlight the unique characteristics of being indebted due to high exposure and risks to disasters (occurrence, intensity, impacts), as compared to indebtedness that emerged from other factors. Since it has been established that subsistence farmers are indeed dependent to credit after a disaster, it is substantial to know then, how this phenomenon contributes to rural indebtedness in the long run. The survey and interview findings

tell us that the cycle of debt has always been there even before a disaster strikes. But it is a different story when we incorporate major disasters in the picture, which is an exact manifestation of Scott's (1976: 1) claim, "the position of the rural population is that of a man standing permanently up to the neck in water, so that even a ripple is sufficient to drown him". Hence, disruptions brought about by disasters could trigger tipping points, where people from the margins could be pushed further, forcing them to accumulate debt, thus the emergence of 'debt sentence'.

To get a better grasp about the consequences of debt to smallholder farmers in post-disaster context, it is necessary to explore the different strategies they employ to pay off/ease out their debts. Survey results show that majority of the participants (57.5%) opt to acquire other (additional) credit/loans to pay or settle previous debt and invest in farm activities. Other strategies these farmers employ to ease out their debts include selling of their livelihood assets (25%) and leaving the farmlands for other income generating activities (17.5%).

Using Gerber's (2014) first, second, and third theses on the consequences of debt allow us to critically unearth the phenomenon of 'debt sentence' caused by climate-related disasters as experienced by smallholder farmers. Hence, the following discussion will focus on the dilemma, 'how do disaster-reinforced debts differ from debts caused by other factors? Does it have a different manifestation in relation to its consequences to smallholder farmers?'

Based from the responses, it is straightforward that the farmers' strategies to look for other sources of livelihood and selling of farm assets confirms Gerber's (2014) first thesis on the consequences of debt. Clearly, being an indebted farmer also means leaving the land, being dispossessed of farm assets, and bounded labor impacts. The survey results confirm this with 25% of farmer participants sell their livelihood assets to manage their debts.

Accordingly, this is a classic manifestation of a restructured means of production and ownership. Surprisingly, this is a consequence that confronts majority of the smallholder farmers in this region. Being indebted also puts them in a risky situation, where they could lose their most-valued assets such as ancestral farmlands, farm animals, and equipment. Based on the narratives of the farmers, the common culprits who dispossess them of their assets are the harvest buyers and the richer farmers.

"We have been farming for a long time, but two years ago my husband got sick after Typhoon Vinta. We had to get him treated, with all the medical treatment and medicine expenses, we had to ask our 'suki' to lend us money so we can get out of the hospital. Our farm income is not enough to pay our debt, so we had to sell carabaos and our motorcycle to reduce our outstanding debt balance" – Farmer 3

This is common when the debt has already ballooned to a level that they can no longer manage, hence the sequestration of these assets. Some farmers do not see this as an extreme threat, since they only sell a part of their lands and keep the rest for their livelihood. But on the other side, it is also true that some farmers started to sell a part of their land at one time, then another part because of an unexpected event, which puts them in a risky situation where they can be entirely dispossessed of their lands. Putting it clearly, debt could be instrumental in restructuring the means of production and social processes in the countryside, from smallholder farmers to landless farmers, to migrant workers off the land.

“I will never forget 2012, when Typhoon Pablo devastated our town, we lost almost all of our expected crop harvest. It was a very difficult time because our house and farm were flooded (destroyed), there was a massive food and water shortage, and everyone was desperate. We needed the money, so we asked our harvest buyer for a loan. However, we have been working hard since then, to repay our debts while survive from our basic needs, but it’s not just enough. So last year, we had to sell one hectare of our land to our harvest buyer” – Farmer 1

As mentioned earlier, 57.5% of the participants acquire more credit to repay/settle their debts as well as to invest in farm activities. This is an unexpected outcome from this research, as the cycle of being indebted reveals itself clearer, manifested by ‘new credit for debt repayment’ scheme. Another angle of analysis says that most farmers do not use all the credit/loan money to settle existing debt, as they also prioritize the capital investment, they need for livelihood recovery. Furthermore, it is also important to note that in this context, farmers have multiple sources of credit such as microfinance, family members, and ‘suki’. Hence, the strategy wherein farmers acquire credit for capital investment purposes (to increase productivity) gives credence to Gerber’s (2014) second and third theses on the consequences of indebtedness.

The second thesis states that credit-debt relations force farmers to produce more, hence the need to work more for longer hours (drudgery) to generate more income. From his theoretical proposition, a farmer who enters an interest-bearing and guarantee-based credit contract, is disciplined to increase overall productivity and income in order to meet credit/debt obligations (Gerber 2014). Here, we notice that the motivations of the farmer to produce and earn more is dictated by the repayment obligations he/she has to the patron. Looking into how this transpires in post-disaster context based from the data collected, the farmers who are most like to fall into this consequence are those who are more economically stable. The farmers who have higher income (in pre-disaster) usually have ample experience

in increasing their productivity, hence it is easier for them to manifest the capitalist rationality. However, it must be clear that this capitalist rationality is not motivated by profit, but by their personal basic needs and debt repayment obligations.

“I and my husband used to work full-time in the farm before, but because the harvest is not always good, due to flooding or sometimes it’s too hot, we have to do other jobs. I sell rice cakes and other food items, while my husband sometimes goes fishing, while still looking after our farm. We have to do this because we also have monthly due dates from CARD microfinance for our loans, while our household and farm input expenses are getting higher as well. It is very difficult for us, that is why even if it’s tiring, we need to do it anyway” – Farmer 2

Another consequence of rural indebtedness causes farmers to focus more on their own lands, farm productivity, potential outputs, and calculated income, which breeds individualization and weakens traditional community bonds. This is explicit from the farmers’ narratives, specifically the major shift from collective to individual farming. The pressure from being heavily indebted shape/reshape the farming practices among farmers, in the context of my research. Evidently, this shift is similar to van der Ploeg’s (2017) findings in the Dutch context, where family farming is slowly transitioning to entrepreneurial farming. He argues that this transition is largely influenced by the modernization project of the states, to align its motives to the interests of agricultural and food industries. Undeniably, this is also what is happening in the Philippines - heavy indebtedness might be a contributory factor on the shift from family farming to entrepreneurial farming.

The last item that was tackled in the data collection deals with the role of community-based organizations in easing out farmers’ debts in post-disaster context. Accordingly, almost all of them claimed ‘none’ since local organizations and cooperatives do not usually meddle when it comes to personal credit/debt of farmers. However, five farmers said, they consider the Philippine Coconut Authority (PCA) as the sole actor that extends assistance on debt repayment. In line with this, I dug deeper into the discourse of organizing/unionizing in the agriculture sector specifically in this microcosm through their narratives from the interviews. Mainly, I wanted to uncover the key constraints why organizing/unionizing is not a priority among smallholder farmers, especially if this gives them better positioning when it comes to price negotiation and bargaining. A research conducted by Caenagem et al. (2015) explains, that indeed improvements in farmgate returns are possible when farmers collaborate and collectively negotiate with wholesalers and consolidators. On the other hand, it is also important to look into different factors that may or may not foster collectivization among

farmers. For instance, in the Philippine context, FAO (2016) found out that transparency issues within cooperatives and the lack of capacity in farmer's organizations are key factors that can hinder efficient negotiation and bargaining in the bigger market.

Thus, it is imperative to address why the farmers in Southern Philippines do not take advantage of collectivization through their organizations and cooperatives? Apparently, this is linked to the interdependency between the 'suki' (creditor) and the farmer (debtor). Based from the interviews (farmers 2 and 3), they could not risk join an organization that sets agenda for better prices of their agricultural products, because this is a blatant opposition against the motives of their harvest buyers. Ultimately, their utmost priority is to maintain this relationship to avoid the pressure of prompt debt settlement, as well as to be able to continuously acquire credit in times of emergencies. Hence, from the poor farmers' perspectives, the benefits they acquire from this relationship outweighs the subservience they are subjected to (Adam 1986). Thus, the patron-client system discourages farmers from nurturing horizontal bonds among other farmers, as a strategy to lessen the chances of clients to resist from this inequality (Leonard et.al. 2010).

4.6 Increasing Climate-Related Disaster Risk and Rural Indebtedness: The next global crisis?

The evidences presented in this paper, as well as the innumerable studies around the world show that climate change is real, making it a major reason behind the 'new normal'. This term has been used to describe the current trends of climate change and disasters globally (Lewis, King, & Perkins-Kirkpatrick 2017). So far, this new terminology has helped to better communicate the current global situation on climate emergency and very extreme weather events. Along with the increasing trends of climate-related disasters' occurrences and intensity, the bigger question is 'how would this impact and reshape different societies all over the world?'. The full picture of the impacts of this climate and disaster emergencies is still unknown, as it evolves faster than the capacity of humans to adapt.

In the recent decade, scholars from the global south have been exploring the phenomenon of farmers' (rural) indebtedness, mainly looking into the factors that cause or shape it (Dutta 2009; Banerjee 2009). Their findings show that multiple factors contribute to the phenomenon of rural indebtedness, such as (1) deregulation of input markets through neoliberal economic regime leading to falling of crop prices, (2) financial liberalization leading to inaccessibility of credit facilities (Banerjee 2009), (3) overall farmers' poverty, and (4)

inherited debts (Pujari 2011). With all these triggers, plus the current climate emergency and extreme disaster trends, I then argue that small-holder and poor farmers are tipped to fall into serious crisis - 'debt sentence'.

While it is true that there is a dearth of researches about the linkage of the increasing climate/disaster trends and the spread of rural indebtedness among farmers, there have been some efforts (mostly coming from the global south) to explore this niche. A similar case in Northern Philippines found out that at the wake of Typhoon 'Harurot', the median debt balance per farm household was Php 7,000. The following cropping cycle after the devastation, this median debt balance went up to Php 23,000. This corroborates with the traders' investments in outstanding loan, from 10-15% before the typhoon, to 20-35% in the aftermath (Huigens & Jens 2006). In the African context, Burton (2001) argues that climate change impacts such as more intense and longer drought and decreased rainfall, have driven smallholder farmers to extreme poverty and massive debt burdens (as quoted in Kurukulasuriya & Rosenthal 2003:75). Similarly in Guatemala, another layer of debt complexity threatens farmers' land ownership, as 46% of the smallholder farmers' granted titles have already been 'collateralised' or sold their lands due to massive debts. This problem is attributed to the country's increasing risks and volatility to climate change (Hamel 2017). Another strong evidence that supports my argument is the case of Russia's deadliest drought in 2012. This resulted to a 25% drop in their national grain harvest, causing food prices to rocket. This led to a major debt blow to the farmers, as one of them states (Oxfam 2013):

"In 2010, we were not so bound by loans, we had fewer debts, but now the situation is completely different. We had to take money from the mafia, and now that we go to bed, we are afraid that either they could cut off our heads or the bailiffs could come and take everything from our homes. Today, we could basically declare ourselves bankrupt and close down the farm" - Alexander D., from Altai region

The last case, which is also the most recent and well-documented, is the Indian context. Earlier this year, Investigative Journalist Hetieta (2019) released a report about climate change's draining effect to vulnerable Indian farmers. India, being one of the most climate/disaster at-risk country in the world, suffers from extreme climate variability. This means disrupted rainfall patterns and fiercer droughts, which has direct negative impacts to the livelihoods in agriculture. In India, farmers are already indebted even before a calamity strikes. So, an unexpected disruption to their productivity could mean additional debt and delays in repayment schedule. The internal (household/basic needs, family) and external (debt obligations, community) pressures that these farmers are subjected to may get even

worse than just a ‘debt sentence’, but a ‘death sentence’. According to the National Crime Records Bureau, the 2474 out of the 3000 farmer suicides in 2015, have unsettled debts from local banks (as quoted in Hetieta 2019:10).

Accordingly, all these cited evidences speak about the implications of the complex relationship between environmental pressures and rural indebtedness, in all levels (horizontally and vertically) – individual, household, community, governments and states. Hence, the question I posed earlier has been answered. Climate emergency-increasing disaster risks and spread of rural indebtedness-‘debt sentence’, is not the next global crisis, because it is already happening, it is already here. We are living in an era that fosters conducive conditions, which continuously tips our planet’s biophysical limits, as manifested by the climate emergency that is accelerating faster than most scientists expected. This global crisis is coupled with continuous growth, commercialization, and financialization of the agriculture sector, shooing peasants off their lands, as they are encroached by bigger agribusinesses and plantations. Farmers who survive these pressures, then get victimized by debt traps and ‘debt sentence’.

Chapter 5 : Conclusion

My research began with the question: How do the changing trends of climate-related disasters contribute to the emergence/spread of rural indebtedness among small-holder farmers in Southern Philippines? This is the quick answer: Agriculture is highly dependent and highly sensitive to alterations in our climate/weather conditions. With the continuously increasing trends of climate-related disasters' occurrence, intensity, and impacts, the farmers and their livelihoods are at the forefront of the receiving end, absorbing most of the negative consequences of this phenomenon. With extreme climate conditions (wetter wet seasons and dryer dry seasons), annual cropping cycles have been reduced, crop yield and production have drastically plummeted, farm incomes have gone unviable. This is even made worse by the reigning social, political, and economic regimes of neoliberalism, which translates to free marketization, trade liberalization, and tariffication of crops. As a result, prices of farm inputs and basic goods/needs have also increased dramatically. This imbalance within the climate/weather and economic systems, therefore, force the smallholder farmers to fall into the 'debt sentence', trying to survive at the margins of precarity.

However, it is also important to nuance the differential impacts of climate-related disasters to different social classes among farmers. While it is true that disasters indeed could result in massive perturbation to the agricultural livelihoods, it is also crucial to qualify the variations of these impacts and explore why some groups are more devastated than the others. This is where the discussion on pre-existing vulnerabilities come in. Accordingly, layers (social, political, economic, physical, environmental) of vulnerability determine the magnitude of impacts to the farmers. Smallholder and poor farmers have higher vulnerability as compared to middle-rich landed farmers, given the wide gap in their capacities, such as assets, income, social capital, etc. Similarly, this also manifests at the wake of the disaster, where different levels of adaptive and recovery capacities determine the risks and threats these farmers are confronted with.

For smallholder farmers, credit is considered as an instrumental tool for livelihood recovery and consumption smoothing in post-disaster context. However, with the absence of an inclusive and subsidized state-led credit facility, farmers turn to commercial microfinancing and their harvest buyers or 'suki'. Focusing in 'suki' as a key credit provider to smallholder farmers, we saw that Scott's (1976) theorization of the moral economy, particularly the ethics of subsistence and patron-client relationships, have manifested differently in post-

disaster context. It can be gleaned that credit provision is used by the patrons as their leverage to the clients to instigate unequal exchange of favours. For instance, in exchange of credit accessibility and availability offered by the patrons, they also get to dictate the price of the harvest output their clients sell to them. This oppressive relationship creates a perfect scenario where farmers constantly acquire new credit, in exchange of their patrons' protection. However, accounts show that the most important pillar of Scott's interpretation of the moral economy – subsistence ethics, is threatened by the heavy indebtedness (sell most of their harvest) of the farmers to their 'suki'.

Farmers' credit-utilization patterns in post-disaster context was also examined in this research to understand the motivations of farmers in accessing credit. As opposed to the notion that credit is mainly for the purpose of economic gains, this paper proves that this is not the case in post-disaster context with high poverty rates. Accordingly, consumption smoothing and household expenses, are the priorities of farmers in critical situations. When these are already secured and in place, livelihood recovery comes next.

This is linked with the pivotal role of the state in critical scenarios. It is within their mandate to protect and assist its constituents in times of distress, thus the absence or lack of this have negative impacts to the wellbeing of the affected population. This study found out that the unresponsiveness of the state to the post-disaster needs of its constituents can increase the level of rural indebtedness in the area. The lack or absence of relief aid (food and non-food items, as well as farm seedlings and inputs), fully transfer the burden to the shoulders of the survivors. Hence, this force them to acquire more credit, which increases their risks to being 'debt sentenced'.

In terms of the consequences of rural indebtedness in post-disaster context, this research established that indebtedness in this context: (1) restructures the means of production and ownership caused by asset-sequestration due to debt defaulting, (2) forces farmers to produce more and reconfigures their priorities to be more materially productive, considering the debt burden, and (3) could lead to depeasantization since the pressure of being indebted disciplines the farmers to become more individualized/entrepreneurial, hence the erosion of family farms. These findings are congruent to Gerber's (2014) first, second, and third theses on the consequences of rural indebtedness. What was not captured in the theoretical application, which has been found in this research is the characterization and magnitude of being indebted, as reinforced by the worsening impacts from climate-related disasters. It can be gleaned that the inclusion of the environmental aspect in the analysis of rural indebtedness

is deemed relevant in unpacking its causation, as well as its consequences, considering that this factor is permanent and recurring.

Increasing climate/disaster trends and the rapid proliferation of rural indebtedness are on its own two of the most pressing global issues we are facing today. Thus, the intersection of these two phenomena brings in a more complex and convoluted problematization of the current world order, which merits to be considered as a global crisis. This is a cross-cutting crisis at the heart of climate justice and agrarian justice, shaping/reshaping social, economic, political, environmental (biophysical) systems, with different paces depending on the adaptive and absorptive capacities of the states and its people. Hence, the nexus linking climate emergency issues and rural indebtedness, requires a twin-integrated approach of agrarian climate justice (Borras & Franco 2018). It is impossible to talk about agrarian justice without tackling climate justice, same as it is impossible to tackle climate justice imperatives without considering agrarian politics (Borras & Franco 2017). This research only covered one region in the Philippines, plus a select group of evidence from Latin America, Africa, Eastern Europe, and South Asia. Presumably that climate emergency impacts are seeping in faster than expected, then it is only a matter of time before indebtedness could cause major changes not only in the countryside, but also in a global scale.

As a final point, I would like to suggest one promising direction for future research in agrarian climate justice. I would like to ask: how the ecological debt and the economic debt fit into the discourse of global climate-agrarian nexus? The concept of ecological debt stems from the historical imbalance of the distribution of ecological goods and bads, which is defined as “The debt accumulated by the Northern industrial countries towards the Third World countries on account of resource plundering, environmental damages, and the free occupation of environmental space to deposit wastes, such as greenhouse gases” (Accion Ecologica, as cited in Raina & Samiti 2005: 8). Rich countries use more resources for their development and overexploit the resources of poor countries, while the poor countries suffer from negative impacts from the overexploitation of their own resources. The rich countries owe a massive ecological debt to the poor countries, to offset negative environmental impacts caused by the former (Sebastien n.d.). In terms of economic debt, it is the other way around - poor countries massively owe the rich countries. In 2018, the developing countries’ external economic debt to rich countries and financial institutions has been recorded at \$7.8 trillion (Worldbank 2019). Accordingly, most of these poor countries who struggle to pay their external economic debt, are also the same countries with high rates of rural indebtedness, for the same reason that they are also the ones who suffered from the unsettled

ecological debt of the rich countries to them. Hence it will be critical to ask, would economic debt defaulting be enough to settle the longstanding ecological debt? Wouldn't this be a way to acknowledge both issues of climate emergency and rural indebtedness? My hope is that both the economic and ecological debts will be tackled together on the national and international scene. Hence, more scholar-activist research will be needed along this line.

Appendices

Appendix A: Survey Questionnaire/Interview Guide

Respondent No. _____ Date: _____
Barangay _____ Time started: _____ Time ended: _____

My name is _____. I am a research assistant for a research project by a graduate student from the International Institute of Social Studies. As part of completing his Masters in Development Studies, I am doing an investigation on how disasters affect the level of rural indebtedness among smallholder farmers in Zamboanga Peninsula.

Your participation in this investigation is completely voluntary. If you decide to participate, I will go through a questionnaire. This takes approximately 30 minutes and would complete your participation in the survey. You indicate your voluntary participation by answering the questions. You can end your participation or refuse to answer individual questions at any time. All information you give us will be kept confidential. We do not share personal information from this survey with anyone. We will use this information to understand more about the occurrence/spread of rural indebtedness in post-disaster context, and its consequences to farming households.

Will you help us by participating in this questionnaire? a) (YES) b) (NO)

Information of the participant/household:

1. Name (Optional): _____
2. Age: _____
3. Sex: M/F
4. How many household members do you have? _____
5. Household income (per month)
 - (1) Amount _____ Source _____
 - (2) Amount _____ Source _____
 - (3) Amount _____ Source _____
 - (4) Amount _____ Source _____
6. Household expenses (per month)
 - (1) _____
 - (2) _____
 - (3) _____
 - (4) _____

Preliminary Questions:

7. How many years have you been farming in the region of Zamboanga Peninsula?
8. What are the usual disasters that you experience, which affects your farming livelihood?

9. How much land for rice farming (mainly) do you:
 - a. own? _____ hectares

- b. lease in/rent in? _____ hectares
10. How many employees does your farm employ in total?
Permanent _____ Seasonal _____
11. How many members of your family help you in the farm? _____
12. What share of your production do you and your family sell (and not consume yourselves)?
1. We sell nearly everything 2. We sell most 3. We sell about half 4. We sell less than half

Part 1. Information on Credit in Post-Disaster Context:

13. Have you been affected by a disaster/s (typhoon, flooding, drought) in the past three years?

14. What damages have you incurred with the onslaught of these disasters? (eg. House, livelihood, source of income, injuries, etc.)

15. How did you recover from the impacts of disasters? (eg. Through credit/loan)

16. Have you applied for a loan or credit (formal or informal) after a disaster/s in the past three years?

17. Currently, how much credit/loan do you have in general?
18. Where did you acquire this credit or loan?
- Family, relatives, friends, or neighbors
 - Land lord/farm employer
 - Pawnshop
 - Money lenders
 - Paluwagan
 - Rural banks
 - Cooperatives, federations, or unions
 - Government
 - Others: _____
19. For what purposes do you use the credit/loan money in post-disaster context?
- For farming/livelihood purposes (seeds, fertilizer, pesticides, feeds, etc)
 - repair of livelihood physical assets (farm)
 - personal/household expenses:
 - house repair
 - daily life expenses
 - education of children
 - healthcare
 - others: _____
 - pay-off other debt
 - Start a new livelihood/source of income
 - Others: _____
20. Based from your answer above (post-disaster), what are the usual constraints that you encounter when accessing loans?
- High interest rates
 - Short loan term (maturity)

- c. Excessive collateral requirements
 - d. Lengthy application process
 - e. No lending financial institution in convenient proximity to my business/residence
 - f. High risks – uncertain of own ability to pay interest and repay principal
 - g. Did not know could receive credit from a financial institution
 - h. Issues with other members of group credit/loans
 - i. Other (please specify)
-

Part 2. Role of the Government

- 21. What does your government usually do to help its constituents in the agriculture sector, after a disaster?
 - a. Providing relief aid (food and non-food items)
 - b. Providing farm inputs (seeds, fertilizer, pesticides, feeds, etc.)
 - c. Providing capital to farmers for their livelihoods
 - d. Providing capacity-building activities for farmers (trainings/alternative livelihoods)
 - e. nothing
 - f. Others: _____
 - 22. Do you think the assistance from government is enough? Elaborate on issues and constraints.
-

Part 3. Consequences of Debt

- 23. Based from your experiences, do disasters usually force you to acquire credit/loans? _____
- 24. Is indebtedness a problem or a burden for you? Why? _____
- 25. Do you consider the occurrence of disasters as the main or one of the reasons why you are indebted? Why? _____
- 26. What do you do to get out or to repay these credit/debt?
 - a. acquire other credit/loans to pay previous debt (formal or informal sources)
 - b. A member(s) migrate to neighboring towns to look for other jobs
 - c. Look for other sources of income (apart from farming)
 - d. Work more in the farm to produce more and increase income (more time)
 - e. Sell livelihood assets (land, farm animals, farm equipment, etc.)
 - f. Decrease personal/household expenses (less food, stop children's education, etc, no celebration on special occasions like birthday, fiesta, etc.)
- 27. Is there an organization/group that helps you manage/pay these debt? Please elaborate.

Appendix B: Profile of Participants Interviewed

Table 6. Profile of the participants who were interviewed

Profile:	Farmer 1	Farmer 2	Farmer 3	Union Representative
Date of Interview	September 10, 2019	September 15, 2019	September 15, 2019	September 5, 2019
Age	54	62	65	31
Sex	Female	Female	Female	Female
Years of farming	40+ years	50+ years	50+ years	N/A
Size of land	3 hectares	2 hectares	3 hectares	N/A
Main crops	Rice and vegetables	Rice and coconut	Rice and corn	N/A
Estimated income per month	Php 9,000	Php 10,000	Php 9,500	N/A

Appendix C: Philippine Disaster Profile

Year and Disaster Type	Occurrence	Total affected	Total damage ('000 US\$)	Year and Disaster Type	Occurrence	Total affected	Total damage ('000 US\$)
1905 Tropical cyclone Storm	1			1994 Coastal flood Flood	1	2762	37
1912 Tropical cyclone Storm	1		10000	1994 Landslide Landslide	2	73843	24000
1931 Tropical cyclone Storm	1			1994 Riverine flood Flood	2	34821	2455
1932 Tropical cyclone Storm	1	2500		1994 Tropical cyclone Storm	10	1917659	138413
1934 Tropical cyclone Storm	2			1995 -- Flood	4	57000	142
1936 Tropical cyclone Storm	1			1995 -- Storm	2	248848	394
1937 Tropical cyclone Storm	1			1995 Flash flood Flood	1	24485	700300
1938 Tropical cyclone Storm	1			1995 Riverine flood Flood	1	47700	500
1940 Tropical cyclone Storm	1			1995 Tropical cyclone Storm	5	3027964	317100
1946 Tropical cyclone Storm	1			1996 -- Flood	1	96000	
1949 Tropical cyclone Storm	1			1996 -- Storm	1	800	4150
1951 Tropical cyclone Storm	3	60000		1996 Landslide Landslide	2	8	
1952 Tropical cyclone Storm	2	452	50000	1996 Tropical cyclone Storm	1	36828	38000
1955 -- Storm	2			1997 Riverine flood Flood	1	105000	76
1956 -- Storm	1			1997 Tropical cyclone Storm	3	366770	7500
1956 Tropical cyclone Storm	1			1998 Drought Drought	1	2600000	
1957 Tropical cyclone Storm	1			1998 Tropical cyclone Storm	4	7322999	235437
1959 Tropical cyclone Storm	1			1999 -- Flood	1	1300	
1960 -- Storm	1			1999 -- Storm	7	1345357	54687
1960 Landslide Landslide	1			1999 Flash flood Flood	3	2103716	24000
1960 Tropical cyclone Storm	5	425000	32000	1999 Landslide Landslide	4	45	
1962 Tropical cyclone Storm	2			1999 Tropical cyclone Storm	1	41933	1800
1963 Tropical cyclone Storm	1	2000		2000 Coastal flood Flood	2	11758	
1964 Tropical cyclone Storm	2	1225546	43000	2000 Flash flood Flood	1	153885	4080
1965 Tropical cyclone Storm	1			2000 Subsidence Landslide	1	2838	
1966 Tropical cyclone Storm	1	286000	1000	2000 Tropical cyclone Storm	6	6187431	83464
1967 Tropical cyclone Storm	1	137000	26500	2001 -- Storm	2	332712	1700
1968 -- Flood	1			2001 Flash flood Flood	2	79300	8000
1968 Tropical cyclone Storm	2	226643	9600	2001 Riverine flood Flood	1	12000	
1969 Tropical cyclone Storm	1			2001 Tropical cyclone Storm	4	3117725	97361
1970 Tropical cyclone Storm	8	1812547	258399	2002 -- Storm	3	268153	6870
1971 Tropical cyclone Storm	4	46511	1290	2002 Coastal flood Flood	2	10559	
1972 -- Flood	1	2770647	220000	2002 Drought Drought	1		453
1972 Tropical cyclone Storm	3	492678	48000	2002 Riverine flood Flood	2	145008	1842
1973 -- Flood	1	5000	493	2002 Tropical cyclone Storm	3	714041	6664
1973 Tropical cyclone Storm	3	3445024	7000	2003 -- Storm	2	35445	73
1974 -- Flood	2	1201823	17800	2003 Flash flood Flood	1	3500	
1974 Tropical cyclone Storm	7	103653	55300	2003 Landslide Landslide	1	217988	7000
1975 -- Flood	1	99		2003 Tropical cyclone Storm	6	430816	35229
1975 Tropical cyclone Storm	1	5224	2161	2004 Convective storm Storm	1	4504	
1976 Flash flood Flood	2	15878	1553	2004 Flash flood Flood	1	1500	

Table 7. Philippine Disaster Profile from Raw EM-DAT Dataset

1976 Tropical cyclone Storm	3	2704570	178426	2004 Landslide Landslide	1	6	
1977 -- Flood	3	7299	1913	2004 Riverine flood Flood	2	20194	
1977 -- Storm	1	2500		2004 Tropical cyclone Storm	7	3236774	138867
1977 Tropical cyclone Storm	4	155719	4425	2005 -- Flood	1	100	
1978 -- Flood	2	2500		2005 Riverine flood Flood	1	192946	515
1978 Drought Drought	1	3665		2005 Tropical cyclone Storm	2	20011	2000
1978 Landslide Landslide	1	7		2006 -- Flood	1	15000	
1978 Tropical cyclone Storm	9	1858914	190084	2006 Avalanche Landslide	1	1200	
1979 Flash flood Flood	1	16000	6983	2006 Flash flood Flood	2	257641	9600
1979 Tropical cyclone Storm	5	585521	26450	2006 Landslide Landslide	2	13451	2203
1980 Drought Drought	1	1002100		2006 Riverine flood Flood	3	459868	4557
1980 Flash flood Flood	1	25980		2006 Tropical cyclone Storm	10	7821808	330921
1980 Tropical cyclone Storm	6	1866965	118391	2007 Coastal flood Flood	2	50034	2520
1981 -- Flood	2	307500	27000	2007 Drought Drought	1		
1981 -- Storm	1	32	2000	2007 Riverine flood Flood	3	36713	4080
1981 Flash flood Flood	1	122		2007 Tropical cyclone Storm	9	1922309	10215
1981 Landslide Landslide	1			2008 Flash flood Flood	2	240763	4088
1981 Tropical cyclone Storm	7	1101513	88384	2008 Landslide Landslide	1	5028	
1982 -- Flood	2	200232		2008 Riverine flood Flood	6	1362126	35489
1982 Coastal flood Flood	1	818	60	2008 Tropical cyclone Storm	11	6851979	441625
1982 Flash flood Flood	1	35		2009 Convective storm Storm	1	100	5
1982 Tropical cyclone Storm	9	1019615	118605	2009 Flash flood Flood	4	541692	22960
1983 -- Flood	1	1835	3	2009 Landslide Landslide	1	16	
1983 Convective storm Storm	1	100		2009 Riverine flood Flood	4	541584	6354
1983 Drought Drought	1	1691060		2009 Tropical cyclone Storm	13	12221563	932698
1983 Tropical cyclone Storm	3	170430	4320	2010 Flash flood Flood	4	2059862	50589
1984 Tropical cyclone Storm	4	4535206	336490	2010 Landslide Landslide	1	927	78
1985 -- Flood	1	5000		2010 Riverine flood Flood	5	787073	
1985 Riverine flood Flood	1	444		2010 Tropical cyclone Storm	3	2595545	284420
1985 Tropical cyclone Storm	3	1603974	83033	2011 Flash flood Flood	7	162272	179247
1986 -- Flood	1	615	56	2011 Landslide Landslide	3	889	
1986 Tropical cyclone Storm	6	1242736	86460	2011 Riverine flood Flood	8	2056556	23540
1987 Drought Drought	1	1002100		2011 Tropical cyclone Storm	12	9468676	527238
1987 Tropical cyclone Storm	5	3237632	193700	2012 Flash flood Flood	2	13000	
1988 Convective storm Storm	1	20000		2012 Landslide Landslide	1	23	
1988 Landslide Landslide	2			2012 Riverine flood Flood	6	4601628	75330
1988 Tropical cyclone Storm	5	4497505	403016	2012 Tropical cyclone Storm	9	7560480	918137
1989 -- Flood	1	260011	6000	2013 Flash flood Flood	1	507769	2800
1989 Landslide Landslide	3	1277		2013 Riverine flood Flood	4	3992569	2231988
1989 Riverine flood Flood	1	47500		2013 Tropical cyclone Storm	8	17944571	10136563
1989 Tropical cyclone Storm	7	2136865	171085	2014 -- Flood	1	42175	
1990 -- Flood	1	662500		2014 Flash flood Flood	1	3770	
1990 Coastal flood Flood	1	50000		2014 Riverine flood Flood	1	99185	

1990 Drought Drought	1	254282	64000	2014 Tropical cyclone Storm	9	13068983	1062899
1990 Flash flood Flood	1	236	43	2015 -- Flood	4	230429	200
1990 Tropical cyclone Storm	5	6319583	388500	2015 Drought Drought	1	181687	84399
1991 Coastal flood Flood	2			2015 Riverine flood Flood	1	880	
1991 Flash flood Flood	1	823	1300	2015 Tropical cyclone Storm	10	3606205	1881367
1991 Tropical cyclone Storm	6	1571865	275000	2016 -- Flood	2	2563098	9320
1992 -- Flood	3	1053832	74200	2016 -- Storm	1	8809	
1992 -- Storm	1	733096		2016 Tropical cyclone Storm	7	2962703	170754
1992 Tropical cyclone Storm	3	313198		2017 -- Flood	2	1834000	8100
1993 -- Flood	1	258080	2600	2017 -- Storm	2	2785085	121901
1993 -- Storm	1	70000	40000	2017 Flash flood Flood	1	8000	
1993 Landslide Landslide	1			2017 Tropical cyclone Storm	6	180963	10874.92
1993 Riverine flood Flood	2	90004	37000	2018 -- Flood	1	180000	
1993 Tropical cyclone Storm	5	3511327	257442	2018 Tropical cyclone Storm	8	10937509	655253
1994 -- Flood	1	774000	1650	2019 Drought Drought	1	16000	
1994 -- Storm	1	73558	2400	2019 Tropical cyclone Storm	1	13160	

References

- Adam, W. (2015) 'Conducting semi-structured interviews', in Newcomer, K. Hatry, H. & Wholey, J. *Handbook of Practical Program Evaluation*. San Francisco: Jossey-Bass. Accessed 14 September 2019. < <https://doi.org/10.1002/9781119171386.ch19>>
- Adams Jr., R.H. (1986) *Development and Social Change in Rural Egypt*. Syracuse, NY: Syracuse University Press.
- Alliance of Rice Farmers Against Rice Tarrification (2019) 'No to Rice Trade Liberalization Law, An Anti-Farmer Measure!'. Accessed 19 October 2019 <<https://focusweb.org/no-to-rice-trade-liberalization-law-an-anti-farmer-measure/>>
- Asian Development Bank (2015) 'Global Increase in Climate-Related Disasters', ADB Economics Working Paper Series No. 466. Manila, Philippines: Asian Development Bank. Accessed 8 September 2019. <<https://www.adb.org/sites/default/files/publication/176899/ewp-466.pdf>>
- Banerjee, A. (2009) 'Peasant Classes, Farm Incomes and Rural Indebtedness: An Analysis of Household Production Data from Two States', CDS working papers No.410. Trivandrum: CDS. Accessed 15 October 2019 < <https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/3127>>
- Bernard, R. (2000) 'Social Research Methods: Qualitative and Quantitative Approaches'. Thousand Oaks, CA: Sage publications. Accessed 14 September 2019. <<http://letrunghieutvu.yolasite.com/resources/w-lawrence-neuman-social-research-methods-qualitative-and-quantitative-approaches-pearson-education-limited-2013.pdf>>
- Bernstein, H. (2010) *Class Dynamics of Agrarian Change*. Virginia: Kumarian Press.
- BBC (2016) 'Economic losses from natural disasters counted'. Accessed 11 September 2019. <<https://www.bbc.com/news/science-environment-36078527>>
- Borras, S.M. & Franco, J. (2018) 'Agrarian climate justice: Imperative and opportunity', TNI Working Paper. Amsterdam: Transnational Institute. Accessed 6 November 2019 <https://www.tni.org/files/publication-downloads/wp_agrarian_climate_justice_final.pdf>
- Borras, S.M. & Franco, J. (2018) 'The challenge of locating land-based climate change mitigation and adaptation politics within a social justice perspective: towards an idea of agrarian climate justice', *Third World Quarterly* 39(7): 1308-1325. Accessed 6 November 2019 <DOI: 10.1080/01436597.2018.1460592>

- Bundnis Entwicklung Hilft and Ruhr University Bochum (2018) 'World Risk Report 2018'. Germany: Bundnis Entwicklung Hilft and Ruhr University Bochum. Accessed 14 May 2019
<<https://reliefweb.int/sites/reliefweb.int/files/resources/WorldRiskReport-2018.pdf>>
- Caenegem, W. Taylor, M. Cleary, J. & Marshall, B. (2015) 'Collective Bargaining in the Agricultural Sector'. Canberra, Australia: Rural Industries Research and Development Corporation. Accessed 2 November 2019
<https://www.researchgate.net/publication/281871476_Collective_Bargaining_in_the_Agricultural_Sector>
- Chapagain, T. & Raizada, M. (2017) 'Impacts of natural disasters on smallholder farmers: gaps and recommendations', *Agriculture and Food Security* 6(39): 1-16. Accessed 9 September 2019.
<<https://agricultureandfoodsecurity.biomedcentral.com/track/pdf/10.1186/s40066-017-0116-6>>
- CRED & UNISDR (2015) 'The human cost of weather related disasters 1995-2015'. Center for Research on the Epidemiology of Disasters (CRED) and the United Nations Office for Disaster Risk Reduction (UNISDR). Accessed 14 July 2019.
< https://www.unisdr.org/files/46796_cop21weatherdisastersreport2015.pdf>
- Cuevas, A. & Sumalde, Z. (2015) 'Costs of Agricultural Credit and Interest Rate Sensitivity of Small Farmers: An Empirical Study', Department of Agriculture Agricultural Credit Policy Council: Research Studies. Accessed 9 November 2019 < <http://www.acpc.gov.ph/research-studies/>>
- Dhakshana, A. & Rajandran, K. (2018) 'Challenges and Problems on Farmers' Access to Agricultural Credit Facilities in Cauvery Delta, Thanjavur District', *St. Theresa Journal of Humanities and Social Sciences* 4(1): 50-62. Accessed 29 October 2019
<https://www.researchgate.net/publication/326412711_Challenges_and_Problems_on_Farmers%27_Access_to_Agricultural_Credit_Facilities_in_Cauvery_Delta_Thanjavur_District>
- Dutta, S. (2009) 'Dynamics of rural indebtedness in North East India: An empirical analysis with reference to Nagaland'. Accessed 5 May 2019.
<<http://hdl.handle.net/10603/93066>>
- Easterling, W.E., Aggarwal, P.K., Batima, P., Brander, K.M., Erda, L., Howden, S.M., Kirilenko, A., Morton, J., Soussana, J.-F., Schmidhuber, J. and Tubiello, F.N. (2007) 'Food, fibre and forest products', in Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J. & Hanson, C.E. (eds) *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, pp. 273-313. Cambridge, UK: Cambridge University Press.

Ebora, R., Eusebio, J., Decena, F., Retuta, A. and Custodio, C. (2018) 'A paper presented to the Regional Expert Consultation on Agricultural Biotechnology – Scoping Partnership to Improve Livelihoods of Farmers in Asia-Pacific. May 29-31, 2018, Rama Gardens Hotel, Bangkok'. Accessed 7 May 2019. <http://www.apaari.org/web/wp-content/uploads/downloads/2019/RegionalExpertConsultation_StrategicandCountry_Status_Report_26_2_2019_FINAL.pdf>

EM-DAT The International Disaster Database – Center for Research on the Epidemiology of Disasters (n.d.) 'Frequently Asked Questions', *EM-DAT* The International Database. Accessed 15 September 2019. <<https://www.emdat.be/frequently-asked-questions>>

Food and Agriculture Organization (2015) 'The impact of natural hazards and disasters on agriculture and food security and nutrition: A call to action to build resilient livelihoods'. Rome, Italy: FAO. Accessed 10 September 2019. <<http://www.fao.org/3/a-i4434e.pdf>>

Food and Agriculture Organization (n.d.) 'Agriculture'. Accessed 13 May 2019. <<http://www.fao.org/3/ae946e/ae946e03.htm>>

Food and Agriculture Organization (2016) 'Multi-sectoral study on the Agribusiness Venture Arrangement policy and implementation under the Comprehensive Agrarian Reform Program'. Rome, Italy: Food and Agriculture Organization of the United Nations. Accessed 1 November 2019 <<http://www.fao.org/3/a-i6239e.pdf>>

Food and Agriculture Organization (2017) 'The impact of disasters on agriculture: Addressing the information gap'. Rome, Italy: Food and Agriculture Organization of the United Nations. Accessed 9 May 2019. <<http://www.fao.org/3/a-i7279e.pdf>>

Food and Agriculture Organization (2017) 'Benefits of farm level disaster risk reduction practices in agriculture: Preliminary findings'. Rome, Italy: Food and Agriculture Organization of the United Nations. Accessed 1 November 2019 <<http://www.fao.org/3/a-i7319e.pdf>>

Food and Agriculture Organization (2017) 'The impact of disasters on agriculture Addressing the information gap'. Rome, Italy: Food and Agriculture Organization of the United Nations. Accessed 6 November 2019 <<http://www.fao.org/3/a-i7279e.pdf>>

Food and Agriculture Organization (2018) 'The impact of disasters and crises on agriculture and food security'. Rome, Italy: Food and Agriculture Organization of the United Nations. Accessed 9 May 2019. <<http://www.fao.org/3/I8656EN/i8656en.pdf>>

Food and Agriculture Organization of the United Nations (2019) 'FAOSTAT Statistical Database'. Rome: FAO.

- Garrity, D., Kummer, D. and Guiang, E. (1993) 'The Philippines' in National Research Council *Sustainable Agriculture and the Environment in the Humid Tropics*, pp. 549-624. Washington, DC: The National Academies Press.
- Gerber, J.-F. (2013) 'The Hidden Consequences of Credit : An Illustration', *Development and Change*, 44(4): 839–860.
- Gerber, J.-F. (2014) 'The role of rural indebtedness in the evolution of capitalism', *Journal of Peasant Studies*, 41(5): 729-747.
- Global Facility for Disaster Reduction and Recovery (2018) 'Philippines'. Accessed 12 May 2019 <<https://www.gfdr.org/en/philippines>>
- Gomez, N. (2015) 'Farmers vulnerability to climate change and production of Maize, Banana and Durian in Southern Philippines', *International Journal of Current Science*, 18(110-111). Accessed 3 November 2019
<<https://pdfs.semanticscholar.org/2ab1/6298656502378371bda172bf8812a09b4419.pdf?ga=2.151229307.379391988.1572972638-1699033123.1568809803>>
- Greenberg, M. (1980) 'A theory of indebtedness', in K.J. Gergen, M.S. Greenberg, R.H. Willis (eds) *Social Exchange*. Boston, MA: Springer.
- Guha-Sapir, D. (2019) 'The Emergency Events Database'. Brussels, Belgium: Universite catholique de Louvain (UCL) - Center for Research on the Epidemiology of Disasters (CRED). Accessed 16 July 2019 <www.emdat.be>
- Guha-Sapir, D., Hoyois, Ph., Wallemacq, P. & Below R. (2016) 'Annual Disaster Statistical Review 2016: The Numbers and Trends'. Brussels: CRED. Accessed 9 September 2019. <https://emdat.be/sites/default/files/adsr_2016.pdf>
- Hamel, R. (2017) 'Tracking Promises: Analyzing the Impact of Feed the Future in Guatemala'. Washington, DC: Center for Strategic and International Studies. Accessed 3 November 2019
<<https://nutritionconnect.org/sites/default/files/uploads/resources/2019-06/Tracking%20Promises%20-%20Guatemala.pdf>>
- Hetieta, A. (2019) 'Climate change is draining India's farmers', *The Investigative Journal*. Accessed 5 November 2019 <<https://investigativejournal.org/wp-content/uploads/2019/07/Hetieta-1.pdf>>
- Hoff, K. & Stiglitz, J. (1990) 'Imperfect Information and Rural Credit Markets: Puzzles and Policy Perspectives', *World Bank Economic Review* 4(35):235–250. Accessed 19 October 2019
<<http://documents.worldbank.org/curated/en/552841468767072501/pdf/multi-page.pdf>>

- Huigen, M. & Jens, I. (2006) 'Socio-Economic Impact of Super Typhoon Harurot in San Mariano, Isabela, the Philippines', *World Development*, 34(12): 2116-2136. Accessed 5 November 2019
<<http://www.sciencedirect.com/science/article/pii/S0305750X06001598>>
- International Federation of Red Cross and Red Crescent Societies (n.d.) 'What is vulnerability'. Accessed 10 September 2019. <<https://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/what-is-a-disaster/what-is-vulnerability/>>
- Israel, D. and Briones, R. (2013) Impacts of Natural Disasters on Agriculture, Food Security, and Natural Resources and Environment in the Philippines. Eria Discussion Paper Series. Accessed 10 May 2019. <<http://www.eria.org/ERIA-DP-2013-15.pdf>>
- Lagsa, B. (2019) 'Northern Mindanao suffers agriculture damage due to El Niño', *Rappler* 13 March. Accessed 20 October 2019 < <https://www.rappler.com/nation/225588-northern-mindanao-agriculture-damage-el-nino>>
- Lautze, S., Raven-Roberts, A., Sotomayor, D., Seid, F., & Martin-Greentree, M. (2012) Agriculture, Conflict and Stability: A call for renewed focus on protection and conflict sensitive programming in agriculture and food and nutrition security. Rome: High level expert forum on food insecurity in protracted crises. Accessed 4 May 2019.
<http://www.fao.org/fileadmin/templates/cfs_high_level_forum/documents/Agri-culture-ConflictStability_Lautze_01.pdf>
- Leonard, D.K., Brass, J. N., Nelson, M., Ear, S., Fahey, D., Fairfield, T., Gning, M.J., Halderman, M., McSherry, B., Moehler, D.C., Prichard, W., Turner, R., Vu, T. & Dijkman, J. (2010) 'Does Patronage Still Drive Politics for the Rural Poor in the Developing World? A Comparative Perspective from the Livestock Sector', *Development and Change* 41: 475-494. Accessed 3 November 2019 <doi:10.1111/j.1467-7660.2010.01647.x>
- Lewis, S.C., King, A.D. & Perkins-Kirkpatrick S.E. (2017) 'Defining A New Normal for Extremes in a Warming World', *Bulletin of the American Meteorological Society* 98: 1139-1151. Accessed 4 November 2019 < <https://doi.org/10.1175/BAMS-D-16-0183.1>>
- Mauritz, E.D. (2014) 'Moral Economy: Claims for the Common Good', PhD thesis. Michigan: Michigan State University. Accessed 8 October 2019 <<https://d.lib.msu.edu/object/etd:3255/datastream/OBJ/download>>
- McDermott, T. (2012) 'The effects of natural disasters in human capital accumulation', *SSRN (Social Science Research Network)*. Accessed 15 July 2019.
<<https://poseidon01.ssrn.com/delivery.php?ID=918113104022126105095096019066074097020018019037026034118071006098071019010123112031035097127107114000118007026122004069110064112094001030086096102095003120087108067081052041088005120110006127072010017073093116067022099027068025065017095024108126024081&EXT=pdf>>

- Mitra, K. Roy, D. & Mishra, S. (1986) 'Rural indebtedness : concept, correlates and consequences: a study of four tribal villages in the North Lakhimpur subdivision, Assam', *NEHU Journal of Social Sciences and Humanities* 4(4):37-43. Accessed 20 October 2019 <<http://mpr.ub.uni-muenchen.de/1824/>>
- Moerman, M. (1968) *Agricultural Change and Peasant Choice in a Thai Village*. Berkeley & Los Angeles: University of California Press.
- National Economic Development Authority Region IX (2017) 'Zamboanga Peninsula Regional Development Plan 2017-2022'. Pagadian City, Zamboanga Peninsula: National Economic Development Authority Region IX. Accessed 10 November 2019 <<http://www.neda.gov.ph/wp-content/uploads/2018/02/9-Zamboanga-Peninsula-RDP-2017-2022.pdf>>
- Oxfam (2013) 'After the Drought: The 2012 drought, Russian farmers, and the challenges of adapting to extreme weather events', Oxfam Case Study. Accessed 4 November 2019 <https://www-cdn.oxfam.org/s3fs-public/file_attachments/cs-russia-drought-adaptation-270913-en_0.pdf>
- Philippine Statistics Authority (2017) 'Farmers, Fishermen and Children consistently posted the highest poverty incidence among basic sectors – PSA'. Manila, Philippines: Philippine Statistics Authority. Accessed 15 May 2019. <<https://psa.gov.ph/poverty-press-releases/nid/120251>>
- Philippine Statistics Authority (2018) 'Proportion of Poor Filipinos registered at 21.0 percent in the First Semester of 2018'. Accessed 30 October 2019 <<http://www.psa.gov.ph/poverty-press-releases/nid/138411>>
- Philippine Statistics Authority (2018). 'Employment situation in October 2018'. Accessed 14 May 2019. <http://www.psa.gov.ph/content/employment-situation-october-2018>
- Philippine Statistics Authority (2019) 'Urban Population in the Philippines (Results of the 2015 Census of Population'. Manila, Philippines: Philippine Statistics Authority. Accessed 15 May 2019. <<https://psa.gov.ph/content/urban-population-philippines-results-2015-census-population>>
- Pujari, Y. (2011) 'Rural Indebtedness : Causes and Consequences', *Indian Streams Research Journal*, 1(1): 124-127.
- Raina, V. & Samiti, B.G.V. (2005) 'Ecological Debt: An enormous Debt the North owes the South'. Accessed 9 November 2019 <<http://www.cadtm.org/IMG/pdf/ecodebtpaper-18may.pdf>>
- Reliefweb (2015) 'Philippines: IX (Zamboanga Peninsula) Profile'. Accessed 10 November 2019 <https://reliefweb.int/sites/reliefweb.int/files/resources/phl-ocha-r9_profile-a3_final.pdf>

- Republic Act 11203 (2018) 'An act liberalizing the importation, exportation and trading of rice, lifting for the purpose the quantitative restriction on rice, and for other purposes'. Accessed 18 October 2019
<<https://www.officialgazette.gov.ph/downloads/2019/02feb/20190214-RA-11203-RRD.pdf>>
- Ribot, J. (2014) 'Cause and response: vulnerability and climate in the Anthropocene', *Journal of Peasant Studies*, 41(5): 667-705. Accessed 9 September 2019.
<<https://www.tandfonline.com/doi/pdf/10.1080/03066150.2014.894911?needAccess=true>>
- Ritchie, H. & Roser, M. (2019) 'Natural Disasters'. Accessed 9 November 2019
<<https://ourworldindata.org/natural-disasters>>
- Sarangi, T. (2011) 'Rural Indebtedness and Practices of MFIs in Andhra Pradesh'. Lucknow, India: Centre for Microfinance Research. Accessed 1 November 2019
<http://bird.bird-cpec.in/wp-content/uploads/2015/10/AP_Study_Rural-Indebtedness_Final-approved-report.pdf>
- Sebastien, L. (n.d.) 'Ecological debt'. Environmental Justice Organisations, Liabilities and Trade. Accessed 5 November 2019 <<http://www.ejolt.org/2013/05/ecological-debt/>>
- Scott, J. (1972) 'Patron-Client Politics and Political Change in Southeast Asia', *The American Political Science Review*, 66(1): 91-113. Accessed 10 November 2019 <<https://www.jstor.org/stable/1959280>>
- Scott, J. (1976) *The Moral Economy of the Peasant : Rebellion and Subsistence in Southeast Asia*. New Haven: Yale University Press.
- Sidhu, R. & Gill, S. (2006) 'Agricultural Credit and Indebtedness in India: Some Issues', *India Journal of Agricultural Economics* 61(1): 11-35. Accessed 2 November 2019
<<https://pdfs.semanticscholar.org/8b78/2388f26972e6c5206113b4d4ec2d99cb550b.pdf>>
- Tadem, T. & Tadem E. (2016) 'Political Dynasties in the Philippines: Persistent Patterns, Perennial Problems', *South East Asia Research* 24(3): 328–340. Accessed 9 November 2019 <doi: 10.1177/0967828X16659730>
- United Nations Capital Development Fund (2004) 'Microfinance Programme Impact Assessment 2003'. Accessed 28 June 2019 <<http://web.undp.org/execution/pdf/Main%20Report.pdf>>
- United Nations Committee for Development Policy (2018) 'List of Least Developed Countries (as of December 2018)'. Accessed 9 November 2019
<https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/ldc_list.pdf>

- United Nations Office for Disaster Risk Reduction (2017) 'Terminology'. Accessed 13 September 2019. <<https://www.unisdr.org/we/inform/terminology>>
- United Nations (2018) 'Asia-Pacific World's Most Disaster-Prone Region, Secretary-General Tells Ministerial Conference, Urging Greater Investment in Risk Reduction'. Accessed 9 September 2019
<<https://www.un.org/press/en/2018/sgsm19126.doc.htm>>
- van der Ploeg, J. (2017) 'The importance of peasant agriculture: a neglected truth'. Wageningen, Netherlands: Wageningen University and Research. Accessed 2 November 2019 <<https://edepot.wur.nl/403213>>
- Warren, J. and Murdoch University (n.d.) 'Typhoons in the Philippines: A historical Review'. Accessed 14 May 2019.
<<https://www.arcgis.com/apps/MapJournal/index.html?appid=586f9150ae87491a8c7f1b86db7952a9>>
- Wilson, T. (2002) 'Microfinance during and after armed conflict: Lessons from Angola, Cambodia, Mozambique and Rwanda', Durham: The Springfield Centre for Business in Development. Accessed 19 October 2019
<<https://www.microfinancegateway.org/sites/default/files/mfg-en-paper-microfinance-during-and-after-armed-conflict-lessons-from-angola-cambodia-mozambique-and-rwanda-mar-2002.pdf>>
- Worldbank (2019). 'Debt Stocks of Developing Countries Rose to \$7.8 Trillion in 2018: World Bank International Debt Statistics'. Accessed 5 November 2019
<<https://www.worldbank.org/en/news/press-release/2019/10/02/debt-stocks-of-developing-countries-rose-to-78-trillion-in-2018-world-bank-international-debt-statistics>>
- World Economic Forum (2019) 'Global Risks Report 2019 14th Edition'. Accessed 11 September 2019.
<http://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf>
- 'Philippines: GDP share of agriculture' (2017) Accessed 5 March 2019.
<https://www.theglobaleconomy.com/Philippines/Share_of_agriculture/>