

Opportunities and gaps for shallow coastal ecosystems monitoring in the Philippines

Dr. Venus E. Leopardas

Mindanao State University at Naawan

2 Parts of the Short Talk

- Seagrass ecosystems
- Gleaning Fisheries

Status of seagrass ecosystems research in the Philippines

- Fragmented
- Short-term
- Variables: Species richness, community structure, vegetation structure, areal coverage, genetics
- Not much published works yet on: Seagrass ecosystems in the context of socio-ecological systems (SES), Blue carbon (still in its infancy), policy analysis, and on long-term biomonitoring

Fast Facts about Reef Gleaning

Gleaning as mostly Subsistence Fisheries



- Gleaning on shallow reef flats
 - “Panginhas” in Visayas & Mindanao;
“Pamumulot” in Luzon
 - Traditional, chronic activity during low tides
 - Mostly carried out by women & children (but men increasingly engage)
 - Mainly for food (‘subsistence’) but also for supplemental income; in some areas for commercial gain (e.g. in Western Visayas)
- An ‘informal sector’ (LeBlanc 1997)
 - Under- or unreported (Siar 2003; Palomares et al. 2014; De Guzman et al. 2016)
 - Undervalued (Chapman 1997; Mills et al. 2011; De Guzman 2019)



LIMITED RESEARCH

Distribution of Invertebrate Gleaning Reports (ca. 2022)

33 sites

15 provinces

12 Regions

*Limited work on fisheries,
economic, nutritional, and
ecosystem values of gleaning
that can be used for
management*



LIMITED MONITORING WORK

- Most work had been “one-time surveys”, except perhaps:
 - Del Norte-Campos et al. 2000, 2005 – Panay, including Banate Bay
 - Del Norte-Campos et al. 2003 - Malalison Is., Antique
 - Villarta et al. (2018-2020) - Malalison Is., Antique
 - Del Norte-Campos et al. 2023 - Batan Bay, Aklan
 - De Guzman et al. (2015-16) - 4 sites in Mindanao;
1 site in Bohol
 - De Guzman (2021-2022). - reprised Laguindingan
and Lopez Jaena sites
- Need for more research – BECAUSE OF OVERHARVESTING AND also to call the attention of government to support this work toward sustainable gleaning fisheries



THE SOCIAL, ECONOMIC, AND ECOSYSTEM VALUES OF GLEANING FISHERIES

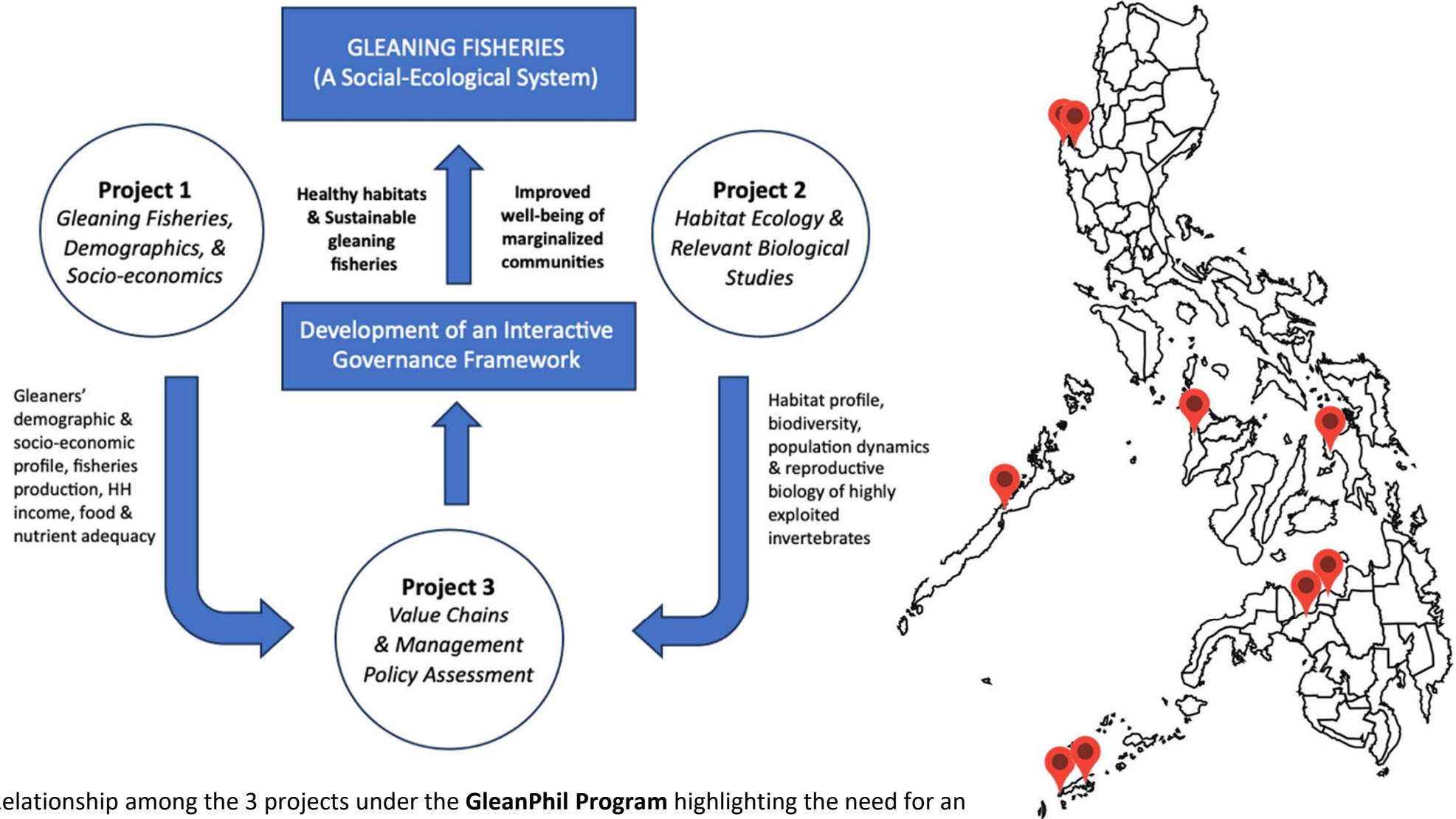
**A Comprehensive and Holistic Research Program Toward Improved Resource
Governance in the Philippines**

(GleanPhil Program)

Subject for review this 2024 through DOST-PCAARRD

Obtain reliable estimates and characterizations of the social, economic, and ecosystem values and assess the management status of invertebrate gleaning fisheries in major gleaning sites in the Philippines

GleanPhil Program FRAMEWORK



Relationship among the 3 projects under the **GleanPhil Program** highlighting the need for an interactive governance framework to manage gleaning fisheries as a complex social-ecological system (diagram above modified from Ostrom 2009)

GleanPhil Program EXPECTED IMPACTS



- Inputs for **poverty alleviation and domestic food security**
- **Prioritization of gleaning fisheries management** in local to national management agenda
- Supports in **securing sustainable and equitable futures of gleaning fisheries**, particularly in how it contributes to food security, adequate nutrition, household economy, potential ecosystem impacts, and in sustaining populations of high-value and overexploited species
- **Increase the visibility of women's contribution** to household food and nutrition security
- Linking local and scientific knowledge through ethnoecological and inclusive approaches can also offer unique **opportunities for the long-term assessment, management, and sustainability of gleaning fisheries**
- Enhance the **environment and community resilience**



Research Team in GleanPhil



VENUS LEOPARDAS
PROGRAM LEADER (MSUN)
LEAD, PROJECT 1



ASUNCION DE GUZMAN
ADVISOR/CONSULTANT
(MSUNFSTDI INC.)



KAREN VILLARTA-LANE
LEAD, PROJECT 2 (UPV)



ALICE JOAN FERRER
LEAD, PROJECT 3 (UPV)



MARIE ANTONETTE MENEZ
PROGRAM MEMBER (UP-MSI)



LOTUS PATILUNA
PROGRAM MEMBER (WPU)



RICHARD MUALIL
PROGRAM MEMBER (MSU-TCTO)



MARIEFE QUINONES
PROGRAM MEMBER (MSUN)



MARNELLE SORNITO
PROGRAM MEMBER (MSUN)



ALLYN DUVIN HINOQUIN
PROGRAM MEMBER (MSUN)



DONNA GUARTE-VALIDA
PROGRAM MEMBER (VSU)

IN A NUTSHELL

- Lack of long-term monitoring for Philippine seagrass ecosystems
- Also lacks science-based works on seagrass as a BCE, part of SES, & policy analysis
- Philippine gleaning fisheries had long been unpopular on funding agencies --- but is getting increase in attention these days