



**Workshop on the Development of a Philippine STI Foresight  
and 30-year Strategic Plan (2019-2050)  
6 June 2019, Hotel Jen, Pasay City**

**“PROBLEM TREE ANALYSIS” TO UNDERSTAND  
SUSTAINABILITY DEVELOPMENT AND  
INCLUSIVE GROWTH ISSUES**

**LOURDES J CRUZ**

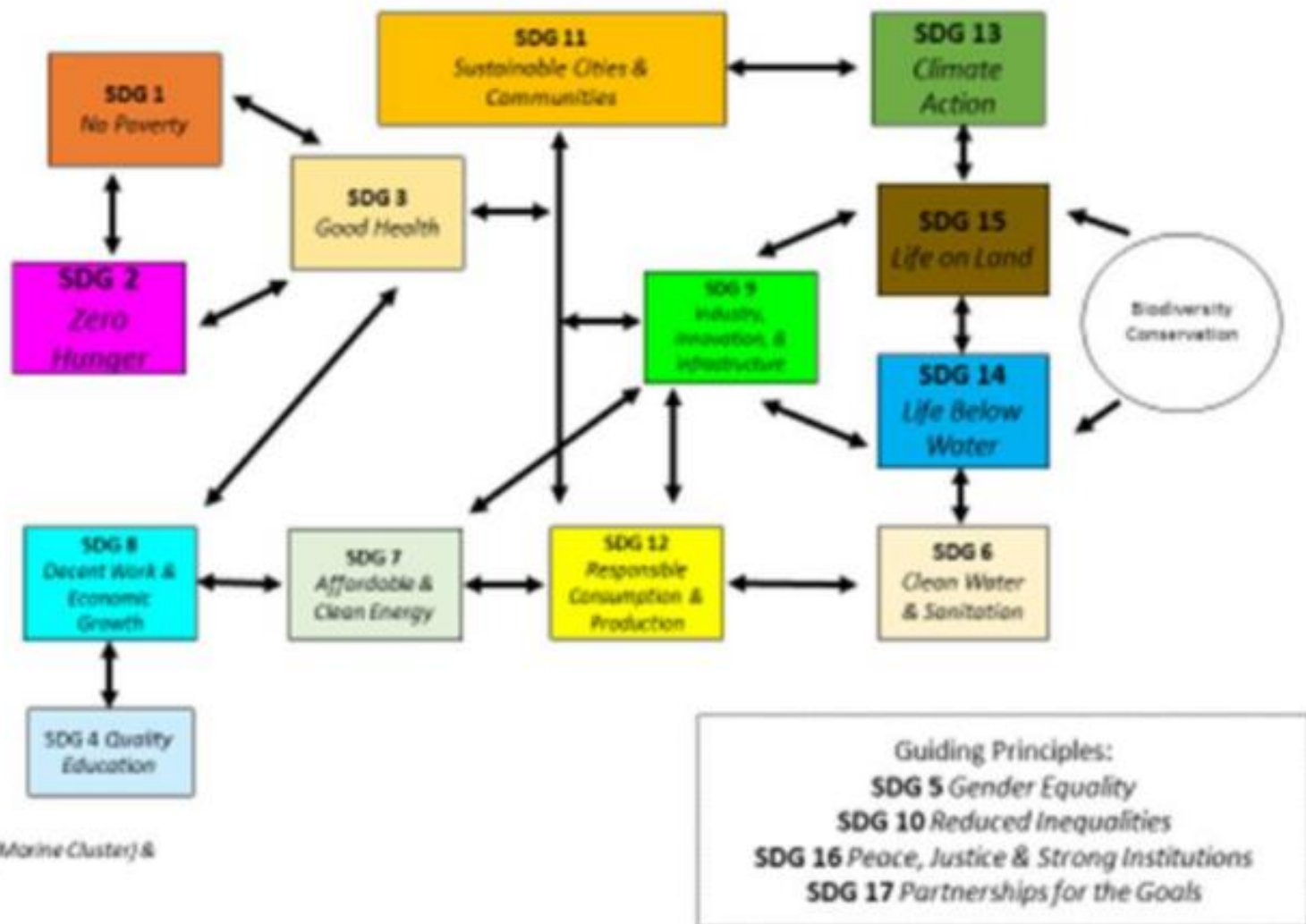
**MPSD, NAST**



DOST – NAST- NRCP- PCIEERD

**To improve overall capability to attain  
the SDGs and Ambisyon Natin 2040  
thru  
through Knowledge to Action Programs  
(KAPS)**

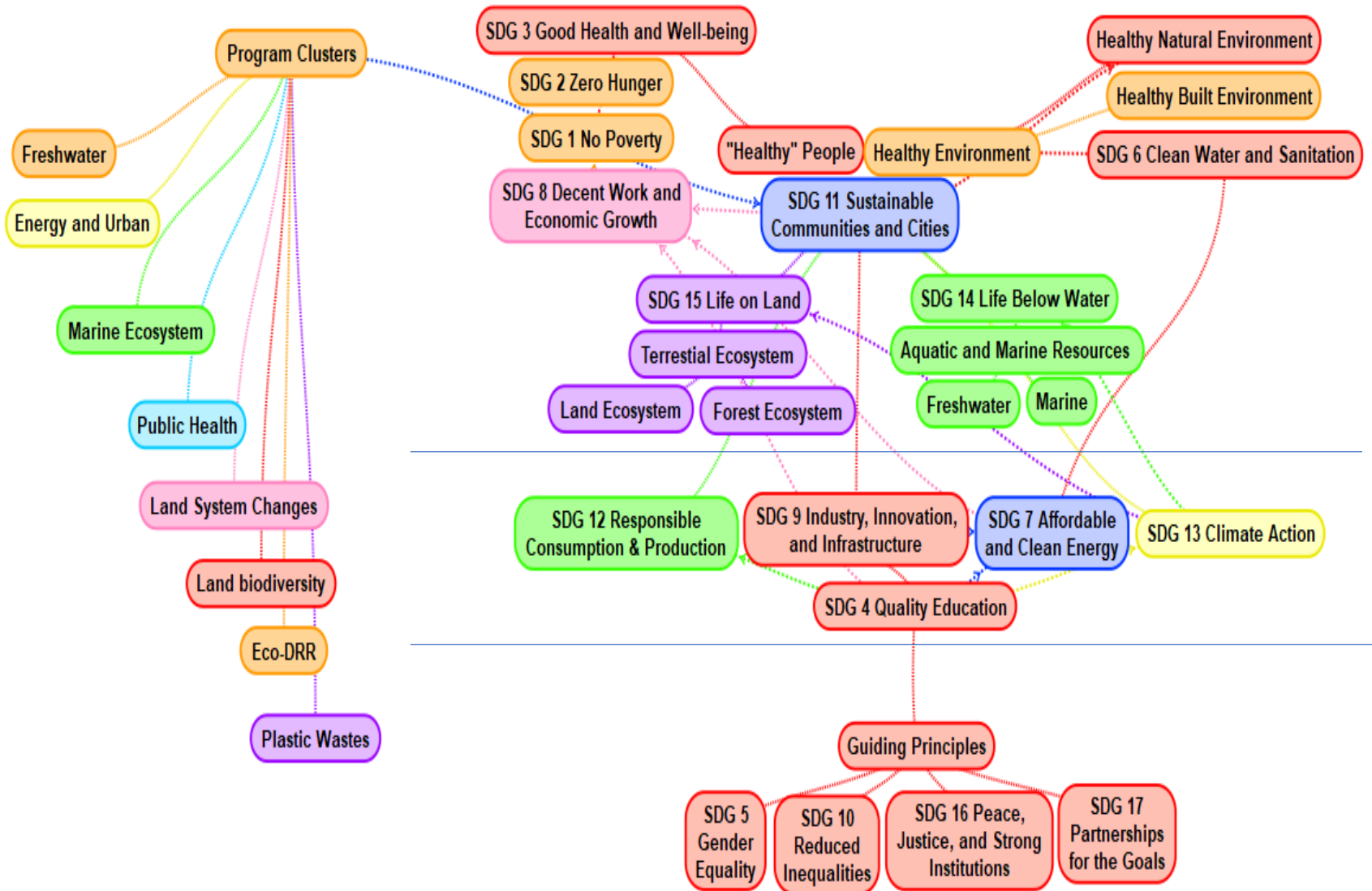
## Sustainable Development Goals (SDGs) Perspective/ Interrelationships



*RVAzonzo for SIMSEA- FEPP (Marine Cluster) &  
 NAST STI Strat Plan  
 April 2019*

**Figure 3. Sustainable Development Goals (SDGs)  
 Perspectives/Interrelationships**

# SDGs and Program Clusters



What we want to attain

Interventions

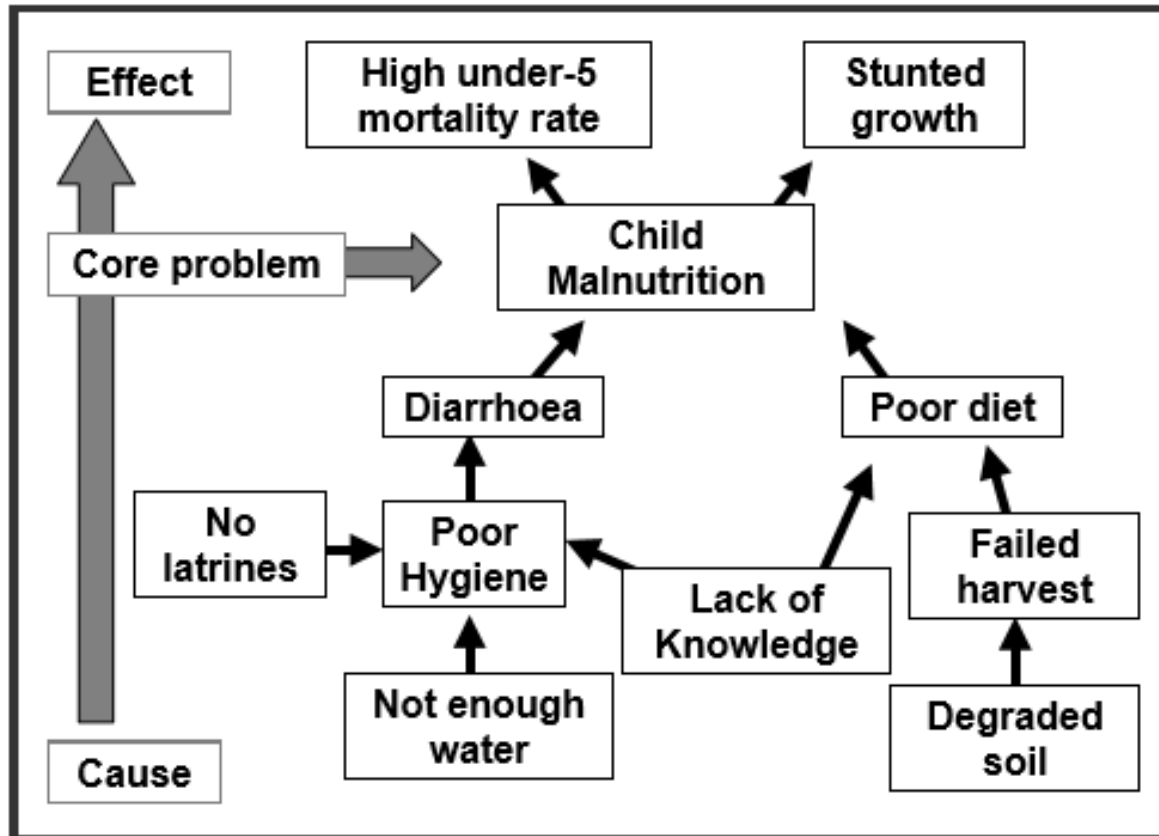
Guiding Principles

# 3 PILLARS OF SUSTAINABLE DEVELOPMENT (UN)



**Approach: Transdisciplinary, Inclusive**  
**Challenge: Agility**

# Problem Tree Analysis



*A Simple Problem Tree*



# Problem Tree-Solutions Configuration and Outcomes (PT-SCO) Analysis of Plastic Wastes Pollution in the Philippines

## FEPP Plastic Wastes

Cluster	
Acd Fabia Ayrit	Dr Gregorio del Pilar
Acd Ernesto del Rosario	Dr Aleli B. Bawagan
Acd Alvin Culaba	Dr Leslie Joy L. Diaz
Acd Evelyn M. T. Mendoza	Dr Michael Y. Roleda
Acd Virginia Cuevas	Dr Deo Florence L. Onda
NS Lourdes J. Cruz	Dr Irene B. Rodriguez
Ma. Aleta C. Nunez, LLM	EMB Staff

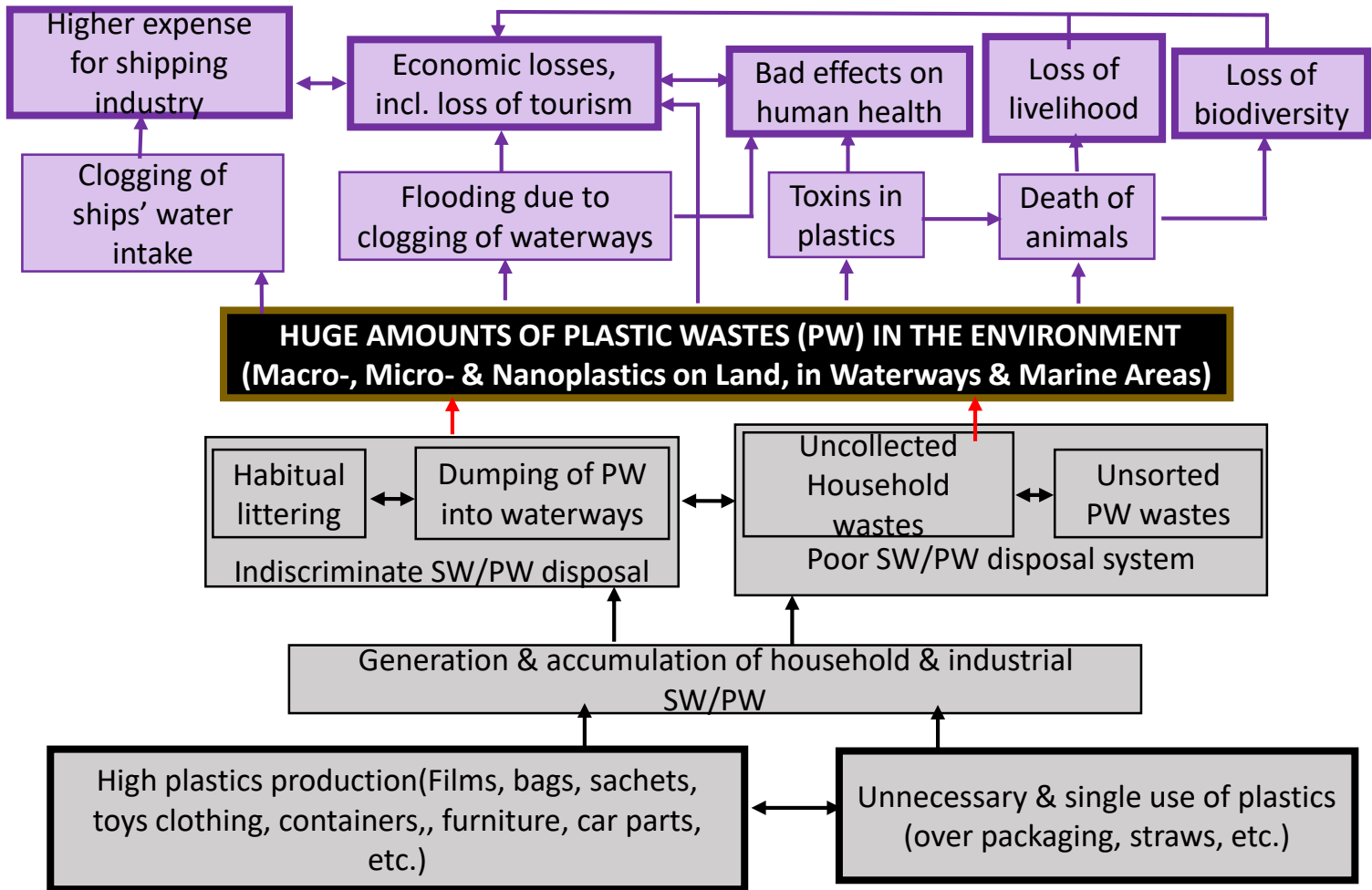
**PLASTIC WASTES PROBLEM TREE**

**SDG 12: Sustainable Consumption & Production**

EFFECTS

PROBLEM

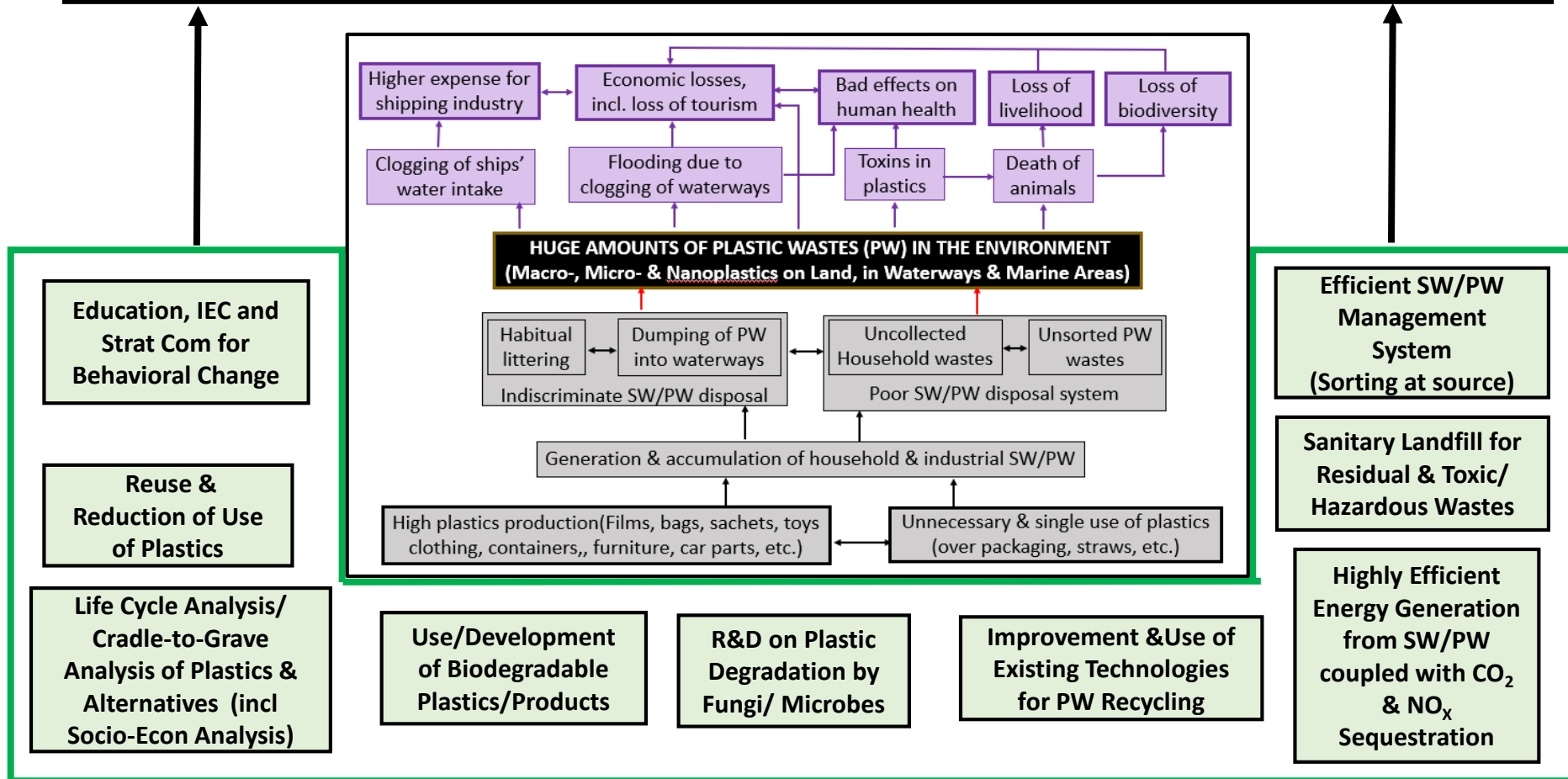
CAUSES





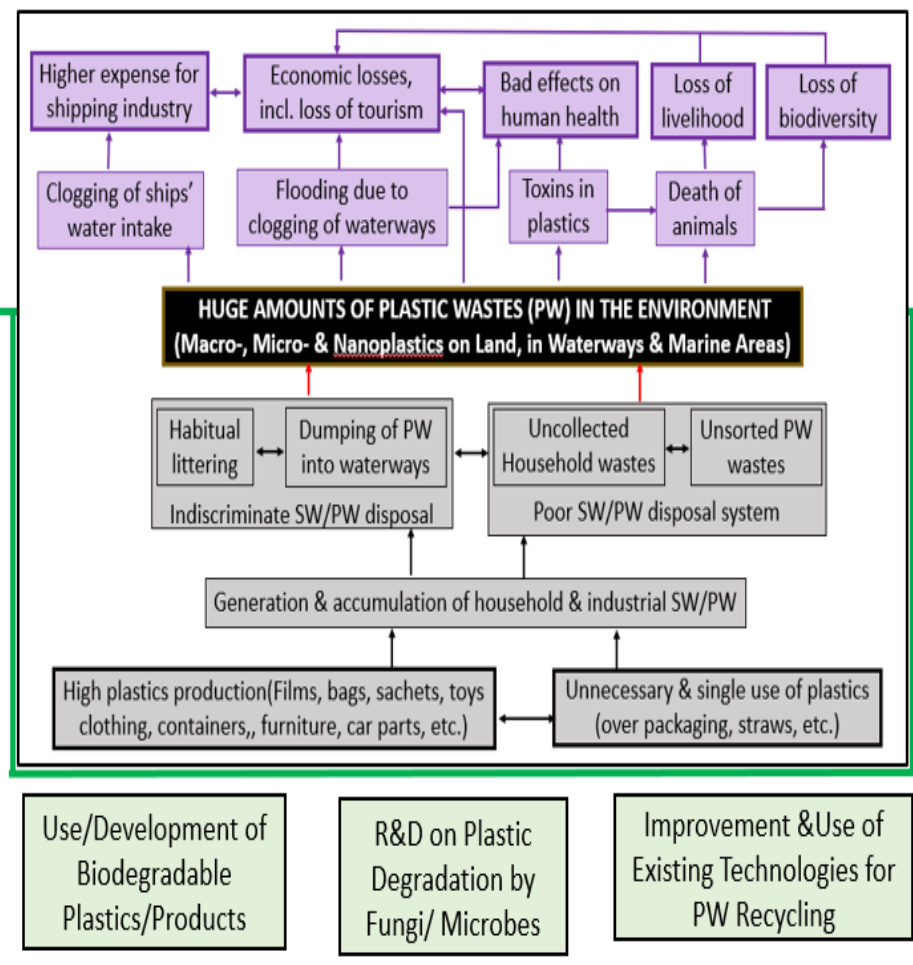
# PT-SCO Analysis of the Plastic Wastes Problem: Solutions Configuration & Outcomes

**LOWER:** levels of plastic waste in the environment, economic losses, death of birds & marine animals from plastic ingestion  
**IMPROVED:** tourism industry, earnings from coastal livelihood, human health & well-being



## Plastic Wastes PT-SCO and SDGs

**LOWER:** levels of plastic waste in the environment, economic losses, death of birds & marine animals from plastic ingestion  
**IMPROVED:** tourism industry, earnings from coastal livelihood, human health & well-being



Education, IEC and Strat Com for Behavioral Change

Reuse & Reduction of Use of Plastics

Life Cycle Analysis of Plastics (incl. Socio-Economic Analysis)

Use/Development of Biodegradable Plastics/Products

R&D on Plastic Degradation by Fungi/ Microbes

Improvement & Use of Existing Technologies for PW Recycling

Efficient SW/PW Management System (Sorting at source)

Sanitary Landfill for Residual & Toxic/ Hazardous Wastes

Highly Efficient Energy Generation from SW/PW coupled with CO<sub>2</sub> & NO<sub>x</sub> Sequestration

SDG 12  
Responsible consumption & Production

SDG 14  
Life below water

SDG 6  
Clean water & sanitation

SDG 15  
Life on land

SDG 3  
Good health and well-being

SDG 1  
Decent work & economic growth

SDG 11  
Sustainable communities & cities

SDG 4  
Quality education

Guiding Principles  
SDG 5 & SDG 17

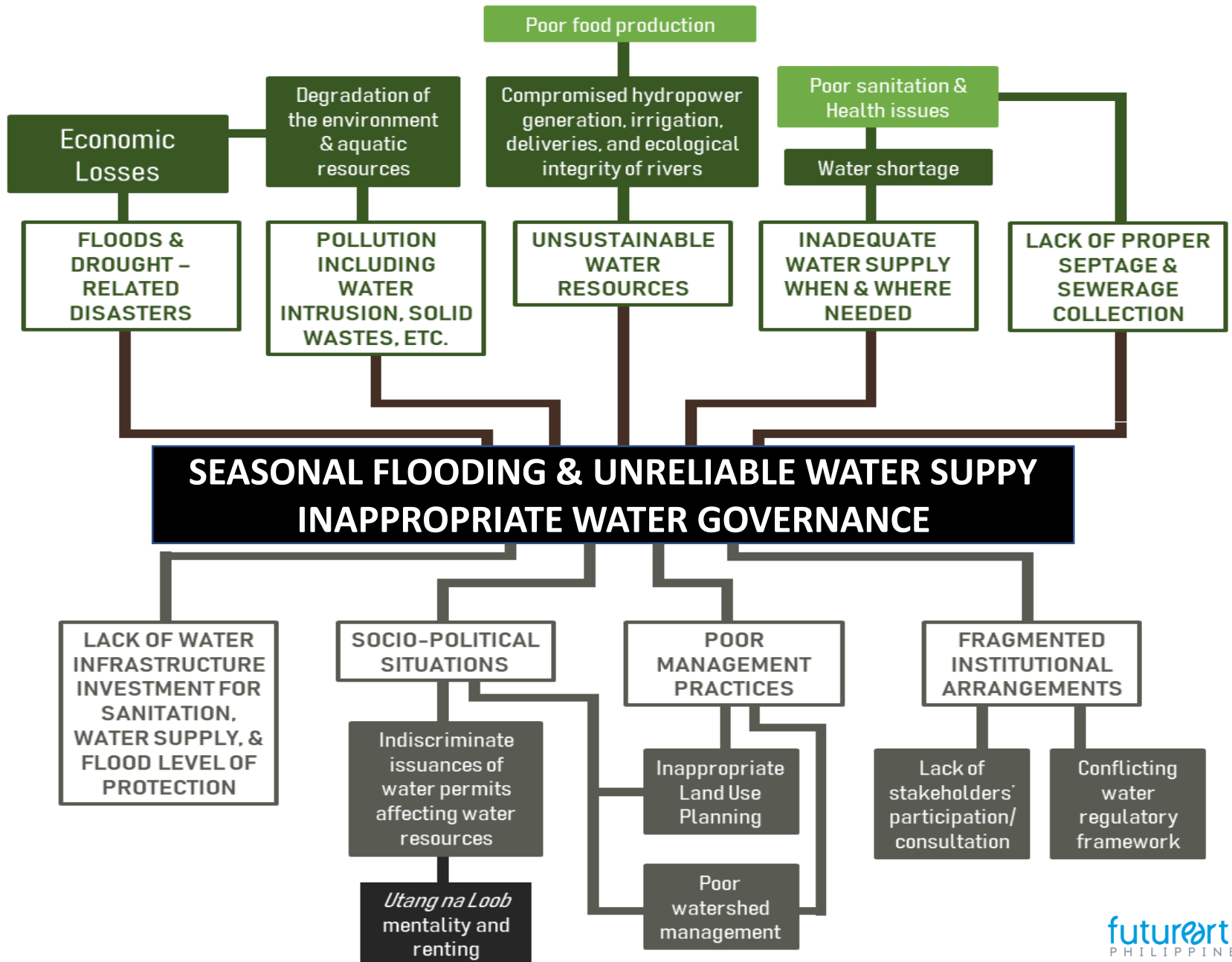


futurearth  
PHILIPPINES

PROBLEM TREE-  
SOLUTIONS  
CONFIGURATIONS &  
OUTCOMES (PT-SCO)  
ANALYSIS OF THE  
FRESH WATER SUPPLY  
AND HYDROLOGIC CYCLE

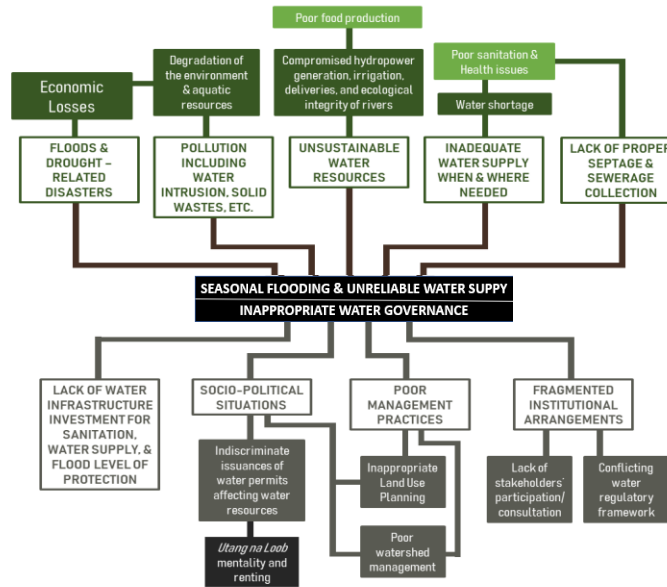
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# PT-SCO Analysis for Fresh Water Supply and Hydrologic Cycle: Solution Configuration and Outcomes

**Outcome: Reliable water quantity and suitable quality when and where needed.**



**Implement water demand - water supply management strategies**

**Determine & project water demands according to population, demographics and socio-economic developments**

**Develop reliable, resilient and sustainable water supply system with properly matched water source - water quality - water user allocation**

**Employ conjunctive use of surface water and groundwater resources**

**Conduct monitoring and continuous analysis of collected data**

**Investment in proper sanitation infrastructure & proper wastewater management**

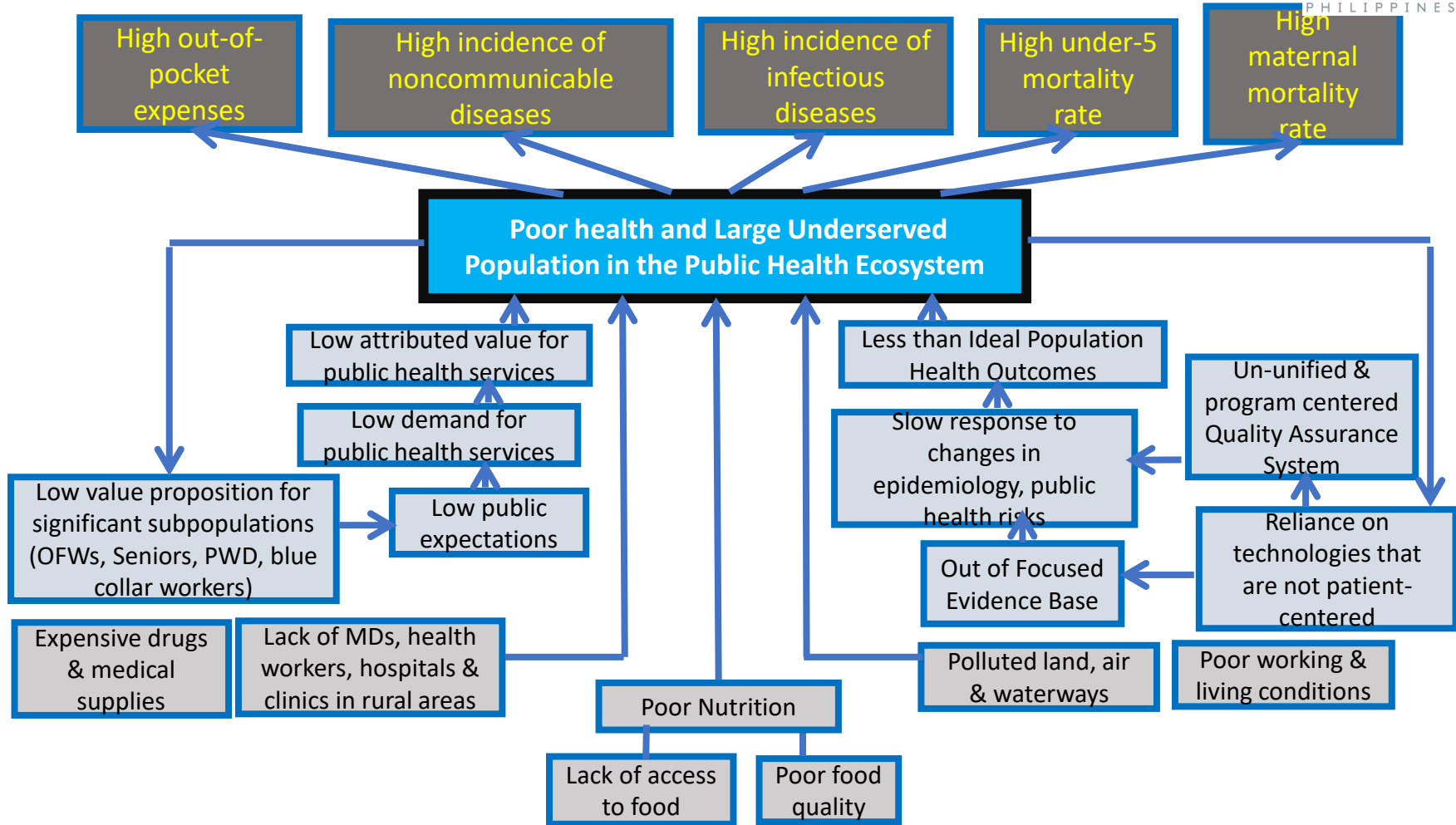


# Problem Tree- Solutions Configuration and Outcomes (PT- SCO) Analysis of the Public Health Ecosystem

## FEPP Health Cluster

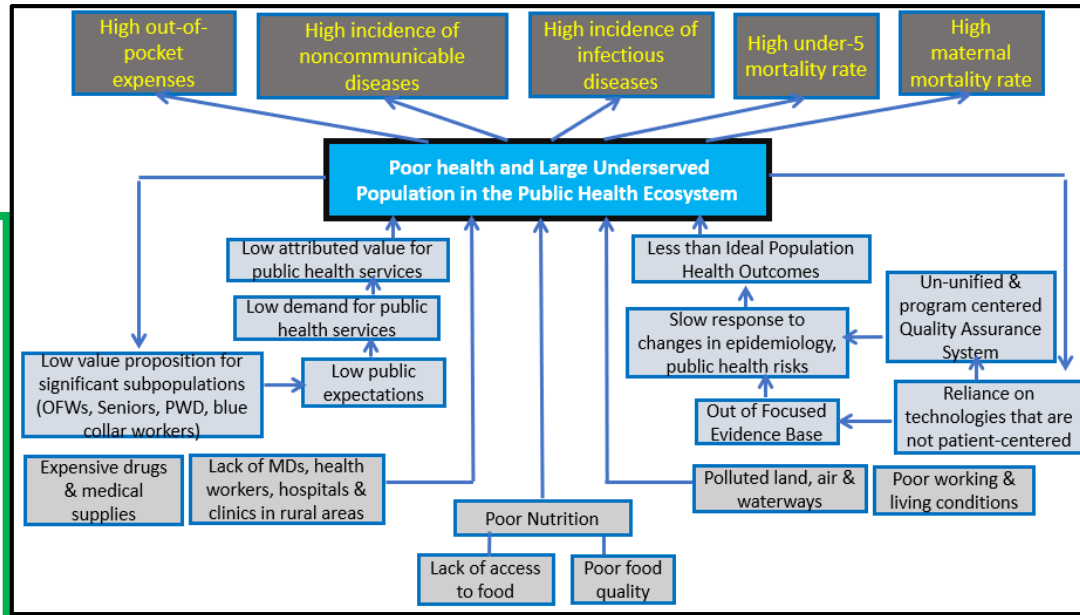
Hilton Y. Lam, PhD  
Jaifred Lopez, MD  
Lourdes J Cruz, PhD  
Francisco Heralde, PhD  
Isidro Sia, MD  
Andrew Arriola, Business Coach  
Ma. Luisa Enriquez, PhD  
Jennifer M. Nailes, MD  
Monet M. Loquias, PhD  
Marco Nemesio E. Montano, PhD

**PROBLEM TREE OF THE PUBLIC HEALTH CLUSTER**



## PT-SCO Analysis of the Public Health Ecosystem: Integrated Solutions and Outcomes

**LOWER:** out-of-pocket expenditure, incidence of noncommunicable diseases, incidence of infectious diseases, under-5 mortality rate, maternal mortality rate



- Expanded use of Telehealth
- Safe, effective, affordable drugs and natural products
- Patient centered QA system and tools

Data analytics re morbidity & environmental conditions

More inclusive health promotion and education

More inclusive disease prevention programs

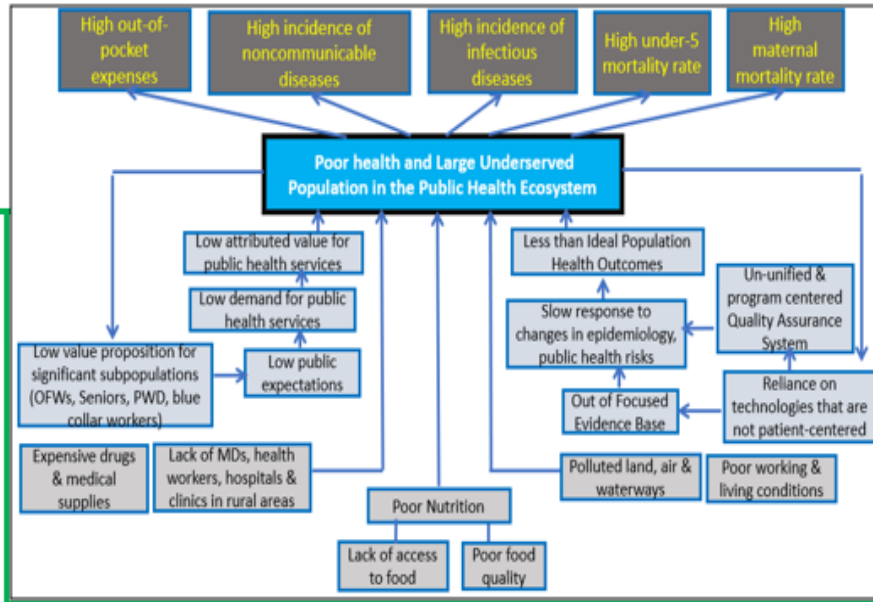
Maintaining community-based health programs

- More funds and equitable distribution of resources
- More and better professionals
- More and better facilities



## Public Health Ecosystem PT-SCO and SDGs

**LOWER:** out-of-pocket expenditure, incidence of noncommunicable diseases, incidence of infectious diseases, under-5 mortality rate, maternal mortality rate



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SDG 3  
Good health and well-being

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Clean water & sanitation

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Guiding Principles  
SDGs 5, 10 & 17