

KJWA Workshop:

**“Improved soil carbon, soil health and soil fertility
under grassland and cropland as well as
integrated systems, including water
management”**

**Country experiences of ASEAN Member States
SB 50 UNFCCC World Conference Bonn
18 June 2019**

Guide Questions

1. What are your countries experiences with improving soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management?
2. How did your country address co-benefits and synergies with multiple objectives when improving soil carbon, soil health and soil fertility?
3. How did your country set goals and measure progress in improving soil carbon, soil health and soil fertility?
4. Which challenges did your country face in improving soil carbon, soil health and soil fertility, and how can the Koronivia Joint Work on Agriculture and UNFCCC constituted bodies help to address these challenges?

The Association of Southeast Asian Nations (ASEAN)



- ASEAN was established August 8, 1967 in Bangkok, Thailand
- Comprised of 10 member states: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam
- Motto: **One Vision, One Identity, One Community**

ASEAN

Economic Community
at a Glance



ASEAN ECONOMY

A Highly Competitive Economic Region

With an average annual real growth rate of **5.3%**, between 2007 and 2015, collectively ASEAN economy was the **6th largest in the world** and the **3rd largest in Asia** in 2015.



ASEAN INVESTMENT

A Preferred Investment Destination

In 2015, ASEAN attracted **US\$ 121 billion** of FDI with **intra-ASEAN** constituting the **largest share** of inflows.



ASEAN TRADE

A More Integrated Market

Total trade increased by **US\$ 700 billion** between 2007 and 2015, with **intra-ASEAN** trade comprising **the largest share** of ASEAN's total trade.



ASEAN PEOPLE

A Dynamic and Vibrant Community

In 2015, ASEAN was the **3rd** largest by population with **more than half** under the age of 30 and **47.7%** living in urban areas.



one vision
one identity
one community

CLIMATE RISK INDEX (CRI) THE 10 COUNTRIES MOST AFFECTED FROM 1996 TO 2015

SOURCE: GLOBAL CLIMATE RISK INDEX 2017 BY GERMANWATCH



Four ASEAN Member States belongs to the top 10 countries most affected by climate change based on a 20 year period. This comprises **50%** of the total ASEAN population of 630 Million (WB 2016 data)

Food security is threatened

- a large proportion of Southeast Asia's workforce is engaged in agriculture, forestry, and fisheries—**sectors which are especially vulnerable to climate change.**

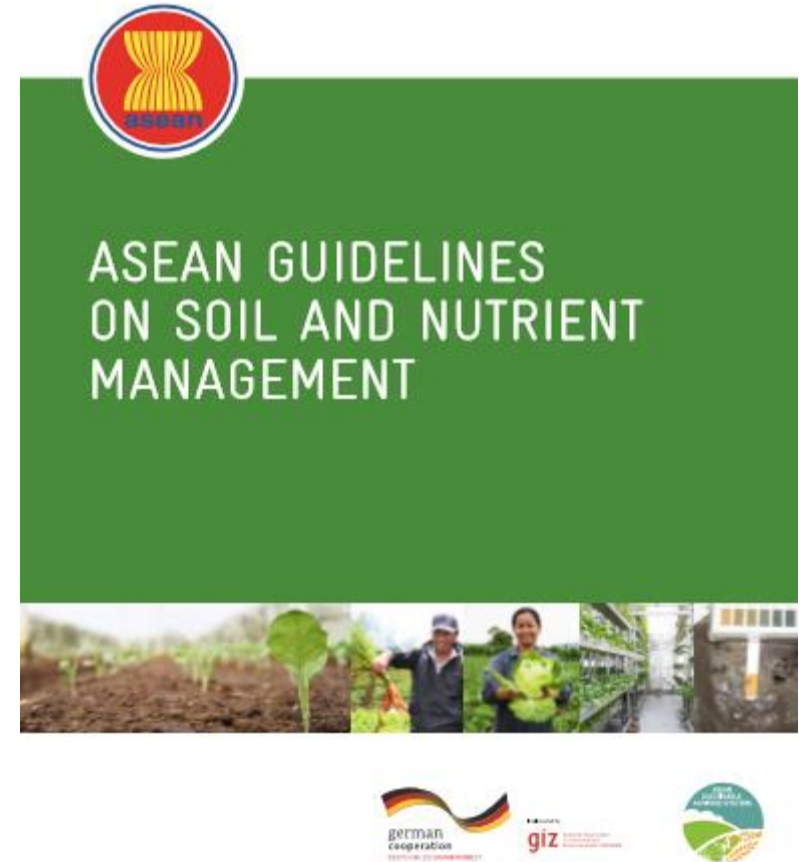
Example:

Rice yields and GDP in ASEAN countries are projected to decline 50% and 6.7% by 2100, respectively.

<https://www.wri.org>

Topic 2c: Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management

- [ASEAN Perspective](#): Soil and nutrient management is important to optimize crop production. Integrated systems on soil and water management enhances crop intakes of nutrient and water, it improves soil carbon storage, improves organic matter content and helps control pests and diseases
- Developed last May 2017 in partnership with GIZ the [ASEAN Guidelines on Soil and Nutrient Management](#) that promotes climate resilient agricultural production systems while maintaining the functional capacity of the soil resource necessary to support ecosystem functions and services



Soil Constraints to Land Use with impacts to Soil Carbon, Soil Health, and Soil Fertility (including the direct causes of land degradation)

- Chemical and physical characteristics of the soil can affect crop growth thus proper management is needed to achieve sustainable production.
 - a. Problem Soils: acid sulphate soils, peat soils, sandy soils, skeletal soils, and contaminated and disturbed soils
 - b. Specific Soil Constraints: Acidity, Alkalinity, Sodicity, Salinity, Low nutrient retention, High phosphorus fixation, Waterlogging, Low plant available water, Hard-setting, Compaction and Susceptibility to erosion
- Deforestation, mining, destructive farming practices, natural causes, urbanization, improper crop and soil management, industrial activities, coastal pollution = land degradation

Two parallel streams to address these soil constraints:

1. Site/Soil Specific Nutrient Management

- The use of relevant soil information/local wisdom, and amelioration/mitigation options to identify soil constraints to crop production in specific site
- Target yield is used to determine nutrient managements (which can come from the soil itself, inorganic fertilizers, organic materials like crop residues, composts and manures)

2. Integrated Nutrient Management

- Utilizes all available nutrient sources as effectively as possible
- The ultimate goal is to maximize crop recovery of applied nutrients minimizing off-site nutrient loss

Climate Resilient Agricultural Production Systems

Good soil management practices

1. Principles of sound soil management for climate-smart agriculture
2. Indigenous knowledge and local wisdom
3. Interaction of good soil and land management practices
4. Managing soil constraints

Good nutrient management practices

1. Integrated plant nutrient management
2. Site specific nutrient management
3. Source and form of nutrients (inorganic and organic)
4. Sound practices for utilising inorganic, organic and bio-fertilizers

Standards and Regulations including Monitoring

Standards

- Soil classification: FAO-UNESCO system
- Soil Database: Landscape position, Profile morphology, Soil chemical properties

Regulations

- Lab Quality Assurance / Quality Control Systems
- Fertilizer/ amendment labelling compliance

Monitoring

- Integrated Communication Technology

Promoting convergence of programs within the region to develop synergies by implementing framework for Soil and Nutrient Management in the ASEAN Region

1. Spatial characterization of soil resources and constraints
2. Harmonized approach to site specific nutrient management
3. Standardization of soil test kit methodology and interpretation
4. Harmonising standards and labelling requirements for fertilizers and supplements
5. Formalising quality assurance/quality control in soil and plant testing laboratories
6. Development of a regional ICT strategy to support policy, planning and support services for soil and nutrient management

Linkages of initiatives related to the UNCCD, CBD and the SDGs

The ASEAN Member States are implementing national plans that examines natural and human-induced factors and existing framework relevant to **Sustainable Land Management (SLM)**.

Example: The Aligned Philippine National Action Plan to Combat Desertification, Land Degradation and Drought (NAP-DLDD) 2015-2025.

- this is a working document that showcases and discusses inter-related environmental concerns signifying the synergies among the three Rio Conventions (UNFCCC, UNCCD, and CBD)

SDG 15

Sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss

Target 3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a **land degradation-neutral world**

“At the heart of the Land Degradation Neutrality strategy are **Sustainable Land Management practices** that help close yield gaps and enhance the resilience of land resources and communities that directly depend on them while avoiding further degradation” (UNCCD)

Source: LDN Technical Guide – Draft -12Vers 25-5 Eng

Challenges in program implementation and how KJWA and the UNFCCC Constituted Bodies can help address this challenges

- Improving soil carbon, soil health and soil fertility need more standardized quantification methodologies.
- There's a need for the establishment of more technology demonstration and learning sites across a variety and typology of environments and generation of more knowledge in order to provide more science- and evidence-based results.
- The KJWA and UNFCCC CBs can help address existing challenges through facilitating scaled up mobilization, access to, and actual provision of means of implementation for soil and water management of developing countries.



ASEAN AGRICULTURE

Thank you!