Agriculture, Forestry and Other Land Use (AFOLU)

Hands-on Exercises

IPCC TFI TSU

Baku, Azerbaijan – 4-6 Septemebr 2024

INTERGOVERNMENTAL PANEL ON climate change

WMO

UN environment programme

AFOLU as Agriculture & LULUCF sectors in the NGHGI

- IPCC categories 3.A
  Livestock — entirely in **Agriculture**
- IPCC categories 3.B
  Land — entirely in **LULUCF**
- IPCC categories 3.C
  Aggregate sources and non-CO_2 emissions sources on land — **Agriculture** & **LULUCF**
- IPCC categories 3.D
  Other *(as* ***HWP****)* — entirely in **LULUCF**

Goals

Get familiar with the IPCC Inventory Software Environment

- ✓ Navigate the *Software* **interface** and **worksheets**
- ✓ Enter **Activity Data** and select **Emissions Factors** for selected categories
- ✓ Stratify categories by using:
  - ➢ the **Livestock Manager** (3.A, 3.C.6)
  - ➢ The **Land Use Manager**
  - ➢ The **Land Representation Manager** (3.B, 3.C.1, 3.C.4 *limited to N mineralization*, 3.C.8, 3.C.9, 3.C.10, 3.C.11, 3.C.13)

Goals

Be able to calculate emissions and removals using the IPCC Inventory Software

- ✓ Enteric Fermentation & Manure management (basic & enhanced characterisation)
- ✓ Annual net carbon stock change in resident Carbon pools in land (Gain and Loss & Stock-Difference approach)
- ✓ CO_2 fluxes from organic soils (2006 IPCC Guidelines & 2013 Wetlands Supplement)
- ✓ non-CO_2 emissions from sources on land (2006 IPCC Guidelines & 2013 Wetlands Supplement)
- ✓ GHG emissions from aggregate sources (2006 IPCC Guidelines & 2013 Wetlands Supplement)

Approach

Morning Session

- ✓ Hands-on Exercise on **Livestock** (3.A.& 3.C.6), from **09:00** to **10:30**
- ✓ Hands-on Exercise on **Land Representation** (3.B, 3.C.1) from **11:00** to **12:30**

Afternoon Session

- ✓ Hands-on Exercise on **Carbon Stock Changes** (3.B& 3.C.1), from **14:00** to **15:30**
- ✓ Hands-on Exercise on **other emissions** (3.C.x) from **16:00** to **17:30**

Step-by-step Hands-On Practice

Data are to be downloaded from the EDG at *https://www.ipcc-nggip.iges.or.jp/forumtree/login/*

Username: software

Password: workshop

Scenarios of AFOLU Exercises

Case Study for Livestock - Cattle

❑ **3 Regions with**

- **3 climate zones**
  - A. Annual Average Temperature 26°C
  - B. Annual Average Temperature 20°C
  - C. Annual Average Temperature 14°C
- **2 Livestock Characterisations**
  - I. Basic (Tier 1) – Dairy cows, Other cattle
  - II. Enhanced (Tier 2) – Mature Dairy Cows, Growing Cattle, Other Mature Cattle
- **4 Manure Management Systems**
  1. Pasture/Range/Paddock *(Region A only)*
  2. Pasture/Paddock (6 months) + Solid Storage & Spread *(All Regions)*
  3. Liquid Slurry *(6 months)* + Spread *(Region B only)*
  4. Anaerobic Digester *(Region B only)*

Case Study for Land

- **3 Regions with**
  - **3 Approaches for land representation**
    1. Approach 1
    2. Approach 2
    3. Approach 3

- **Region 1**, *3 land categories*:
  - ✓ *Managed Forest Plantation;*
  - ✓ *Grazed Managed Grassland;*
  - ✓ *Settlements (Other) Buildings*
- **Region 2**, 9 land categories:
  - ✓ *Managed Forest Plantation; Unmanaged Primary forest; Unmanaged Mangroves Forest*
  - ✓ *Lotus Annual Cropland; Oil Palm Perennial Cropland*
  - ✓ *Managed Tidal Marshes Wetlands; Unmanaged Tidal Marshes Wetlands*
  - ✓ *Settlements (Other) Harbor; Settlements (treed) Park*
- **Region 3**, 3 land categories in rotation:
  - ✓ *Maize Annual Cropland*
  - ✓ *Rice Annual Cropland*
  - ✓ *Poplar Perennial Cropland*

Case Study for Land Representation

❑ Land dynamic

- **Region 1**, *3 land categories*:
  - ✓ *Forest land is first expanded on Grassland, and then deforested likely for Settlements*
  - ✓ *Settlements is expanded likely on Grassland, and then likely on Forest land*
  - ✓ *Grassland is subject to prescribed burning*
- **Region 2**, *9 land categories*:
  - ✓ *Primary forest converted to Forest plantation; area converted is affected by a wildfire event in 2020*
  - ✓ *Mangrove forest is deforested to urban park, and a fraction subsequently abandoned to Tidal marsh*
  - ✓ *Oil Palm plantation is converted to Lotus cultivation; thus, land is rewetted*
  - ✓ *Tidal marshes excavated and converted to Harbor*
- **Region 3**, *3 land categories in rotation*:
  - ✓ *Rotation:*
    - *Rice (1y) – Maize (1y) – Poplar (5y) established (1996-2005) on land cultivated at rice for long-term;*
    - *then replaced (2006 onward) with a rotation Rice (2y) – Maize (2y) – Poplar (10y)*

FOR YOUR ATTENTION

STAY IN TOUCH


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