

## OJERI-MLRN-UNESCAP Web-seminar 02

### ***Carbon Emissions from Land Use and Management in East and North-East Asia: Linking Desertification, land degradation and climate change***

#### **Concept Note**

15:00 – 18:00 (GMT+9), 15 September 2021

*Jointly organized by OJEong Resilience Institute (OJERI), Mid-Latitude Regional Network (MLRN), Korea University, and UN Economic and Social Commission for Asia and the Pacific East and North-East Office (ESCAP ENEA)*

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#### **Background**

Global land represents an inevitable resource that human civilization cannot do away with. In addition, it stores huge amount of carbon thereby mitigating global warming. However, global land and soils are continuously desertifying, and degrading jeopardizing its ability to support life and sequester carbon. Desertification and land degradation (DLD) is driven by two major forces: i) land use and land management alternatively known as Land use, land use change, and forestry (LULUCF: includes factors such as deforestation, overgrazing of livestock, over-cultivation of crops and inappropriate irrigation. ii) climatic forces (variability in climate and global warming as a result of human-caused greenhouse gas emissions). For instance, agriculture, forestry and other land use (AFOLU) activities accounted for around 13 percent of CO<sub>2</sub>, 44 percent of methane (CH<sub>4</sub>), and 82 percent of nitrous oxide (N<sub>2</sub>O) emissions from human activities globally during 2007-2016. The Intergovernmental Panel on Climate Change (IPCC) Special Report on Climate Change and Land identifies AFOLU sector as a significant net source of Greenhouse gas (GHG) emissions contribute to about 23% of anthropogenic emissions of CO<sub>2</sub> equivalents during the same time period (IPCC, 2020).

Meanwhile, climate change creates additional stress on land and vegetation including extreme weather events, exacerbating existing risks to livelihoods, biodiversity, human and ecosystem health, infrastructure, and food systems. Drought and warming exacerbates evaporation of soil moisture while loss of vegetation cover exposes soil to erosion thereby leading to loss soil fertility and utility. Forest fires whose frequencies are rapidly increasingly globally are responsible for DLD and associated emission of carbon. According to the global assessment report of the Intergovernmental Science – Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2019) land degradation has contributed over 4.4 billion tons of CO<sub>2</sub> from 2000-2009 making it a major contributor to climate change. The assessment also reported that 24 million ha of land is affected by DLD of which 12 million ha is lost to DLD.

The IPCC Report (2019) acknowledges that many interventions (such as sustainable land management, sustainable forest management, etc) to achieve land degradation neutrality (LDN) commonly deliver adaption and mitigation benefits and produce co-benefits to combat desertification and land degradation, and vice versa. Such responses also contribute to halting biodiversity loss with sustainable development co-benefits to society. Addressing DLD will also contribute towards meeting key objectives of global development including the LDN targets, the post-2020 global biodiversity framework, SDGs and Paris

## Climate agreements.

North-East Asian (NEA) region is very vulnerable to DLD due to arid and semi-arid land with high exposure. Under the North-East Asian Subregional Programme for Environmental Cooperation (NEASPEC<sup>1</sup>) member countries aim to develop a subregional approach to create the synergies among actions on addressing DLD and climate change. The ESCAP ENEA Office as the secretariat of NEASPEC has launched a subregional stock-taking study to examine the main methodologies for quantifying the GHG emissions from the land sector and review the relevant mitigation options.

To facilitate knowledge sharing amongst experts from North-East Asia on the interlinkage between DLD and climate change, ESCAP ENEA Office and Mid Latitude Region Network supported by OJERI are co-organizing an expert group meeting to share current status of CO<sub>2</sub> emissions from land use management and responses and solicit expert inputs on the preliminary findings of the subregional stock-taking study.

## Objectives and Outputs

The Expert Group Meeting also as MLRN Series Webinar aims to provide an opportunity to discuss the role of LULUCF emissions at the subregional level and primarily review methodologies. The meeting will focus on the following topics:

- Sharing current status of CO<sub>2</sub> emission from land uses and land management and responses in North-East Asian Counties.
- Challenges and opportunities in mitigating and adapting to DLD and associated CO<sub>2</sub> emissions.

The proceedings of the meeting will be compiled and published as an individual manuscript and shared openly.

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<sup>1</sup> NEASPEC is an inter-governmental environmental cooperation mechanism established by China, the Democratic People's Republic of Korea (DPRK), Japan, Mongolia, the Republic of Korea, and the Russian Federation in 1993

## Tentative Agenda

<b>Theme: CO<sub>2</sub> emissions from land use and management: Linking Desertification, land degradation and climate change</b>	
<b>Wednesday, 15 September 2021, 15:00 – 18:00 (GMT+9)</b>	
<b>15:00 – 15:05</b>	<b>Welcome Remarks</b>  Professor Woo-Kyun Lee, Director of OJEong Resilience Institute (OJERI), Director of Mid-Latitude Regional Network (MLRN)
<b>15:05 – 15:15</b>	<b>Introductory remarks</b>  Dr. Sangmin Nam, Deputy Head, East and North-East Office of UN Economic and Social Commission for Asia and the Pacific (ESCAP ENEA)
<b>15:15 – 15:35</b>	<b>Initial review of main methodologies and suggestions for subregional approach in East and North-East Asia</b>  Dr. Sonam Wangyel Wang, Research Professor, OJERI, Coordinator – MLRN and SDSN Research Group, Korea University  <b>Q&amp;A</b>
<b>15:35 – 16:45</b>	<b>Country presentations with focus on CO<sub>2</sub> emissions from and mitigation options of land use and management</b>
<b>15:35 – 16:05</b>	<ul style="list-style-type: none"> <li>• <b>Russia</b> Pro. German Kust (Institute of Geography, Russian Academy of Sciences)</li> </ul>
<b>16:05 – 16:35</b>	<ul style="list-style-type: none"> <li>• <b>Mongolia</b> Prof. Anarmaa Sharkhuu, (National University of Mongolia, Mongolia)</li> </ul>
<b>16:35 – 17:05</b>	<ul style="list-style-type: none"> <li>• <b>South &amp; North Korea</b> Dr. Song Cholho (OJERI, Korea University, Korea)</li> </ul>
<b>17:05 – 17:35</b>	<ul style="list-style-type: none"> <li>• <b>China</b> Professor Hangnan Yu (Yanbian University, China)</li> </ul>
<b>17:35 – 18:00</b>	<b>Q&amp;A</b>