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Geospatial information applications for rice monitoring in CLM countries

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**Geo-Informatics and Space Technology
Development Agency (Public Organization)**

Thailand



Lancang-Mekong Cooperation Special Fund Project

Project Title : Geospatial information applications for agricultural monitoring in CLM (Cambodia, Lao PDR and Myanmar) countries

Implementing Agency : Geo-Informatics and Space Technology Development Agency (Public Organisation)/ GISTDA

Implementing Partner: the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)

Participating LMC Countries: Cambodia, Lao People's Democratic Republic, Myanmar

Project Duration: 2 years (until December 2023)

Proposed Commencement Date: January 2022

Objective



- To strengthen food security and livelihoods of vulnerable countries at the national and provincial levels through enhanced capacity in use of geo-referenced monitoring, crop area, crop stress and production through using the crop monitoring system as an entry point.

Expected Outputs and Outcomes

Outputs

- Geo-Intelligent based Web Application for Agricultural Management for Cambodia, Lao PDR and Myanmar
- Capacity Building Activities for Cambodia, Lao PDR and Myanmar

Outcomes

- The expected outcome is that government officials at the national and sub-national levels use the expanded and customized crop monitoring system for the effective development of agricultural management

Project Team

Technical Operation

Capacity Building



Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand



United Nations Economic and Social Commission for Asia and the Pacific



Project Description

The project will be achieved through two streams of activities:

- **Technical program:** Enhancing and expansion of a rice monitoring system and supporting data, information and applications. This stream will support outputs to improve access to accurate space-derived data, information and applications.
- **Capacity building program:** Building the awareness and capacity of the government of participating countries to utilize the space applications for agricultural. This will support outputs on capacity building to use space and geospatial information applications

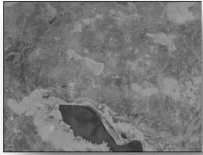
Technical program



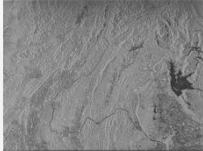
1. Data preparation

SAR Image

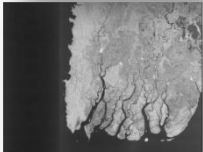
Cambodia



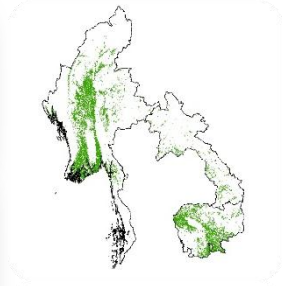
Lao PDR



Myanmar

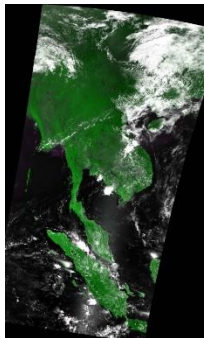


GIS Data

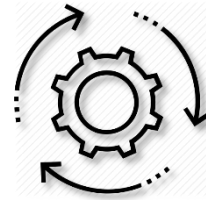


- Administrative Boundary
- Landuse of rice

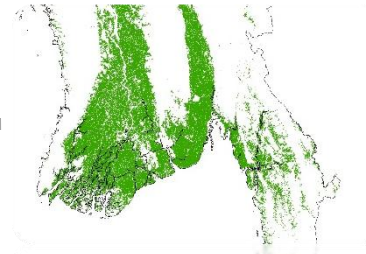
Optical Image



2. Rice area monitoring



Rice Classification Tools



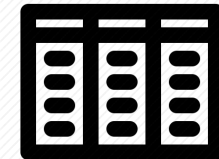
Present rice plantation map

3. Field data collection



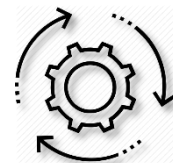
- Location (Lat/Long)
- Stage of rice
- Health
- Photos
-

5. Productivity Estimation



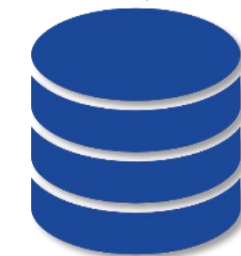
Statistics yield data

4. Rice crop health analysis



Multispectral indices and biophysical parameters analysis

Rice status and health

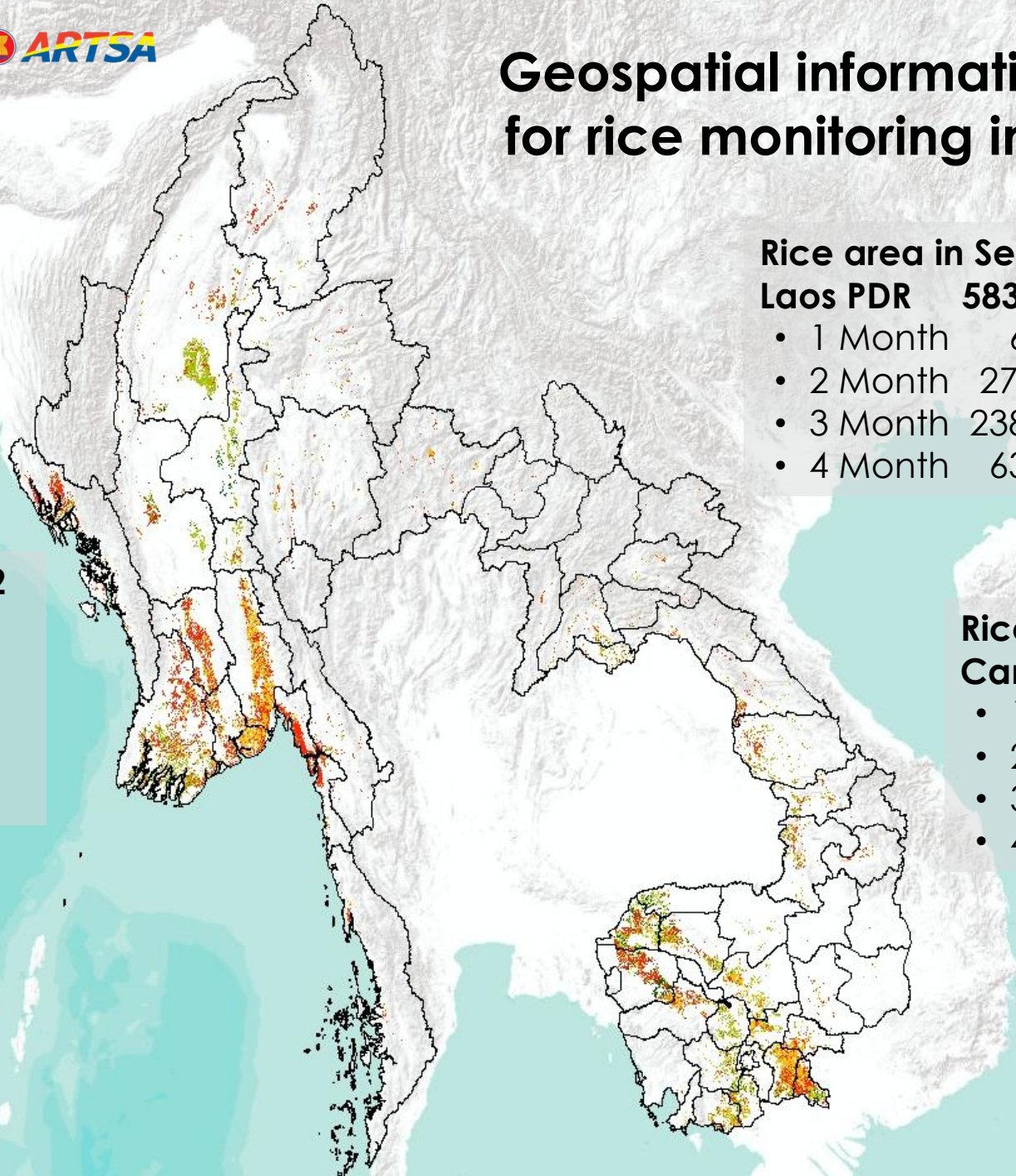


Geo-Spatial Database

1. Monthly updated of rice area mapping for each country
2. Seasonal rice status and health mapping
3. Rice productivity estimation for each country



Geospatial information applications for rice monitoring in CLM countries



Rice area in September 2022

Myanmar 3,779,695 ha

- 1 Month 83,915 ha
- 2 Month 1,118,665 ha
- 3 Month 1,890,810 ha
- 4 Month 686,306 ha

Rice area in September 2022

Laos PDR 583,132 ha

- 1 Month 6,146 ha
- 2 Month 274,661 ha
- 3 Month 238,492 ha
- 4 Month 63,833 ha

Rice area in September 2022

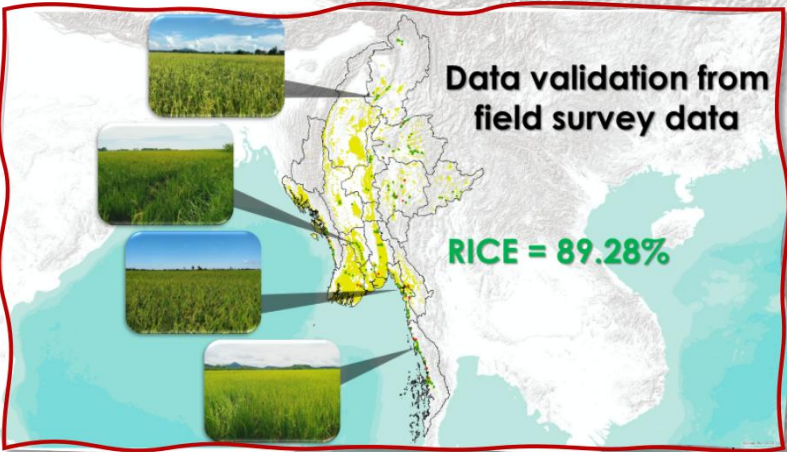
Cambodia 2,182,523 ha

- 1 Month 182,442 ha
- 2 Month 771,244 ha
- 3 Month 680,015 ha
- 4 Month 548,821 ha

Rice Age

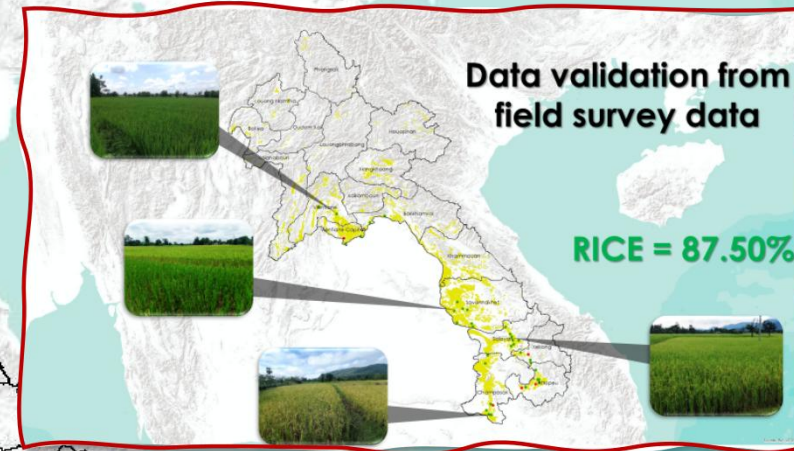


Myanmar

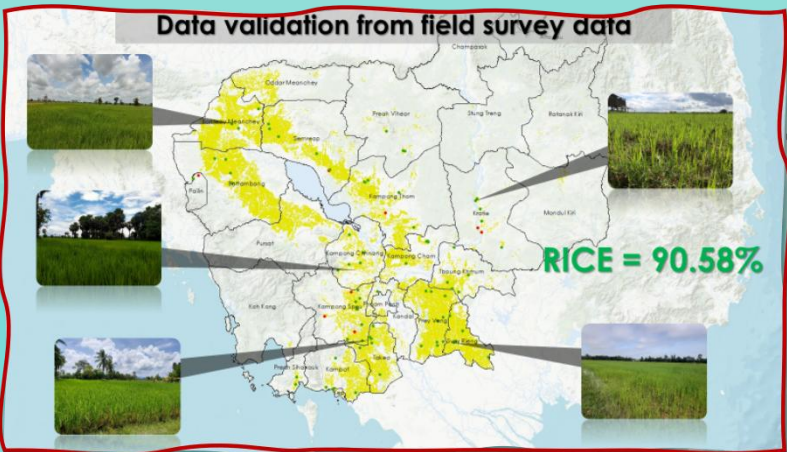


Data Validation and Vegetation Index anomaly analysis for crop health/crop stress in rice plantation area.

Lao PDR



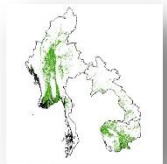
Cambodia



Rice Health	
	Good (+)
	Normal
	Poor (-)

Geospatial information applications for rice monitoring in CLM countries Platform

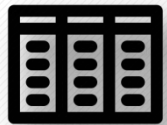
Geo-Spatial Database



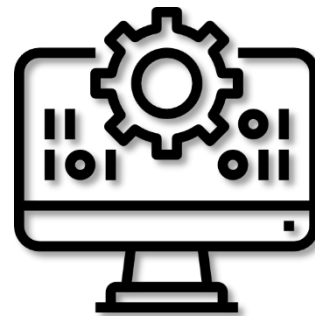
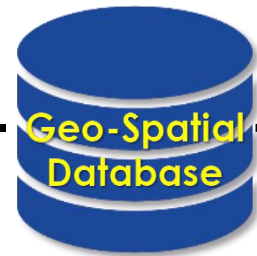
Monthly updated of rice area mapping for each country



Seasonal rice status and health mapping



Rice productivity estimation for each country

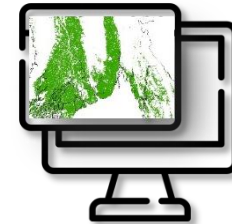


Portal

System for rice monitoring and productivity estimation



Dashboard



Web application



Mobile application

The Geospatial Information Applications for Rice Monitoring in CLM Countries

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Rice area and Health

Rice Production

Download

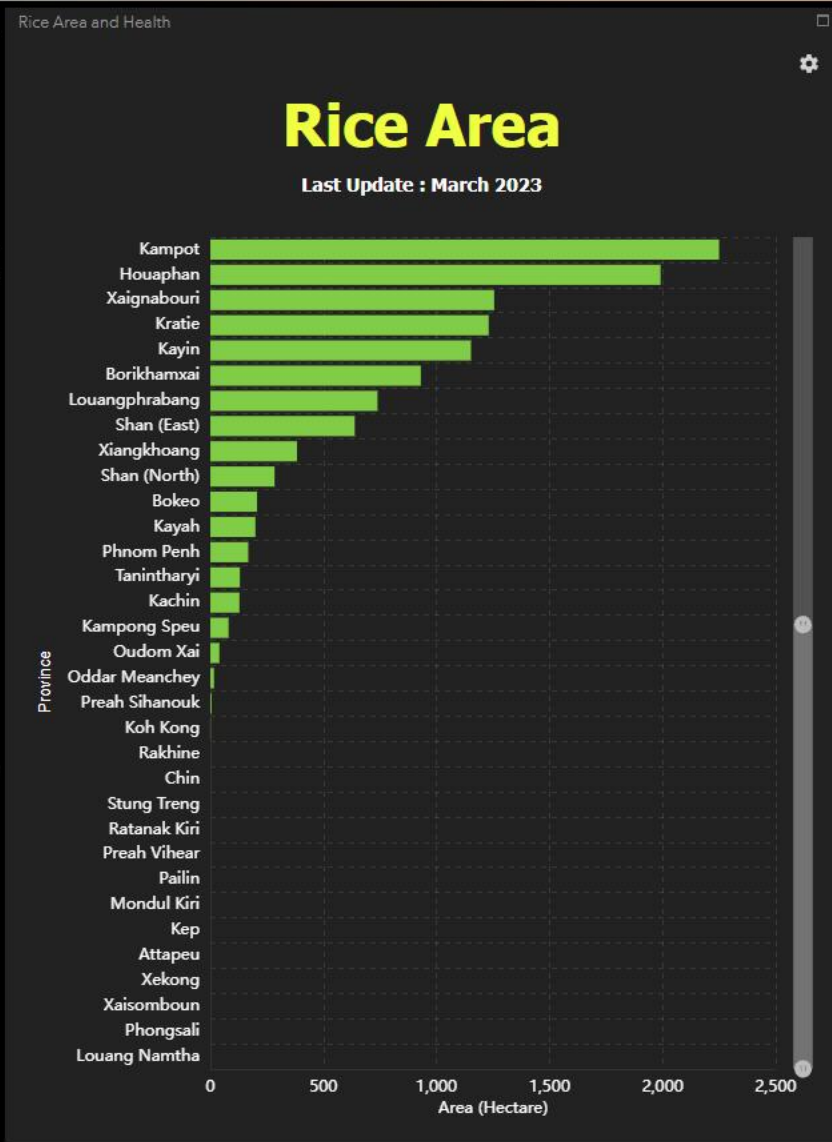


Country

CLM Rice area

Country:

Province:

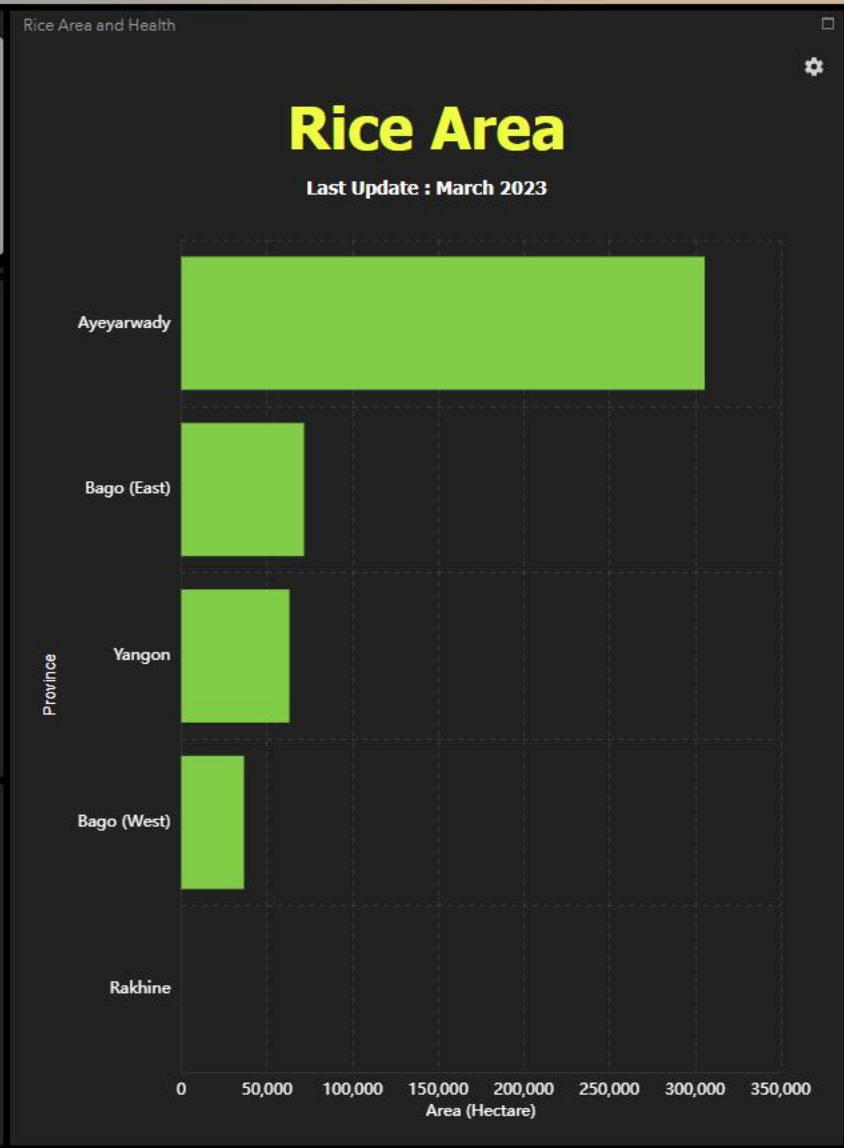
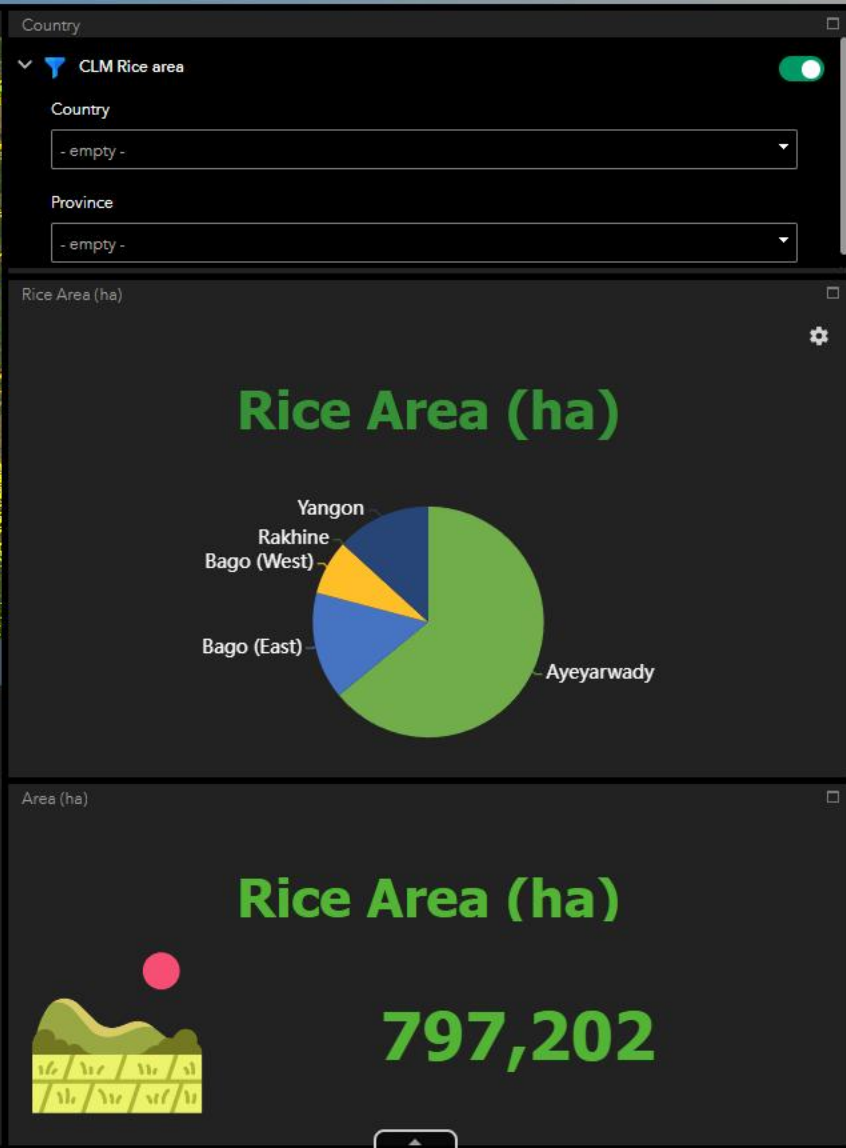
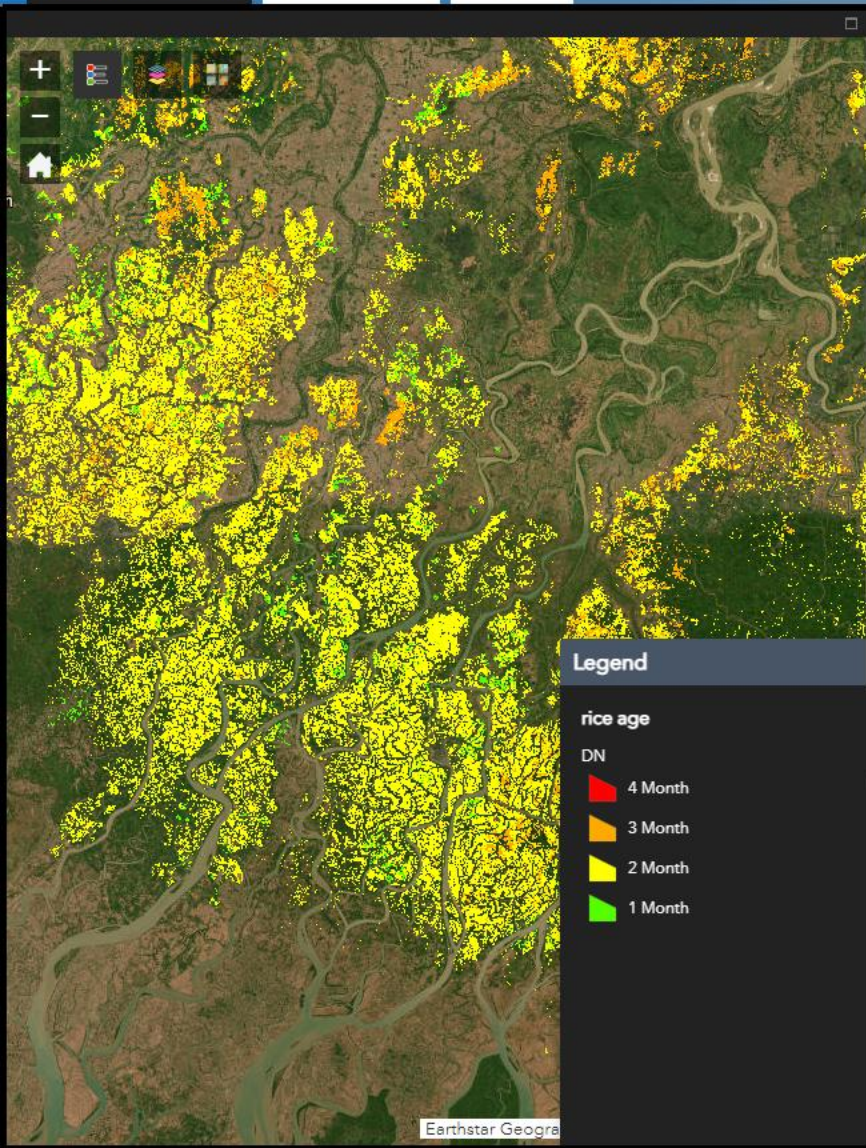


The Geospatial Information Applications for Rice Monitoring in CLM Countries

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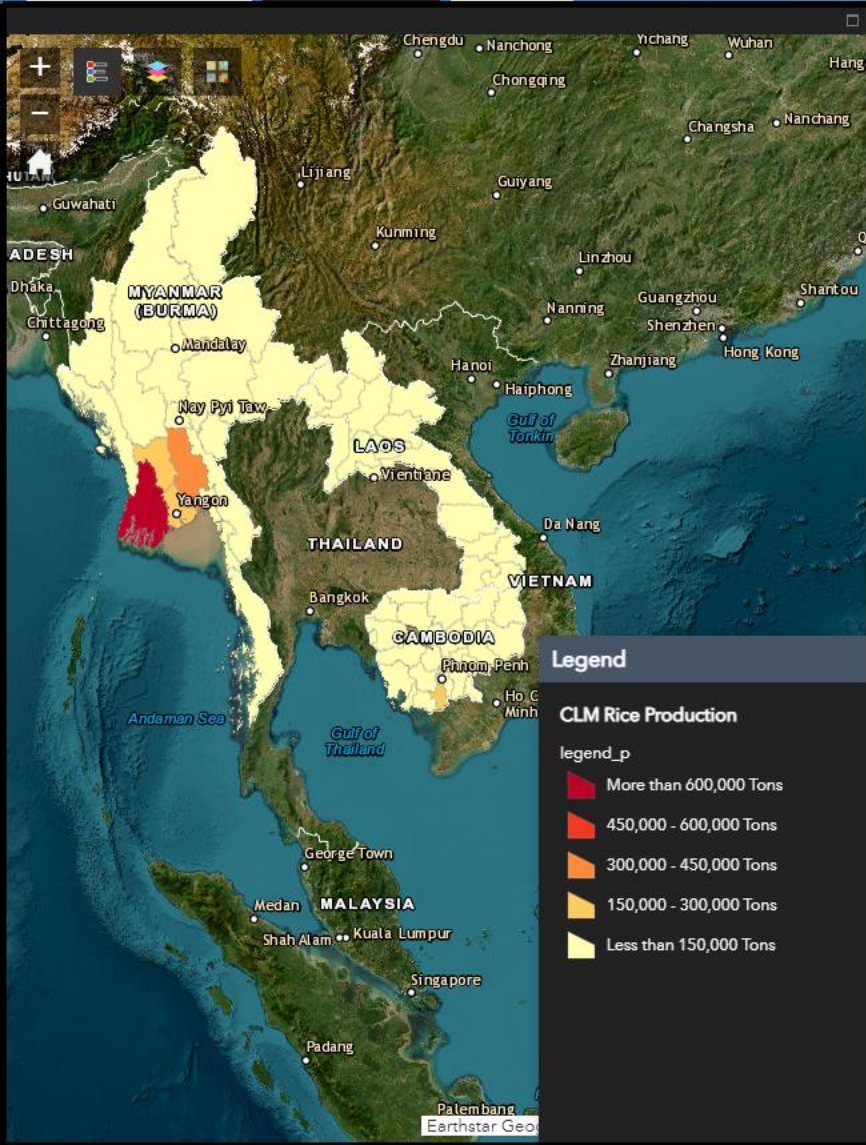
Rice area and Health | Rice Production | Download



The Geospatial Information Applications for Rice Monitoring in CLM Countries

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Rice area and Health | **Rice Production** | Download

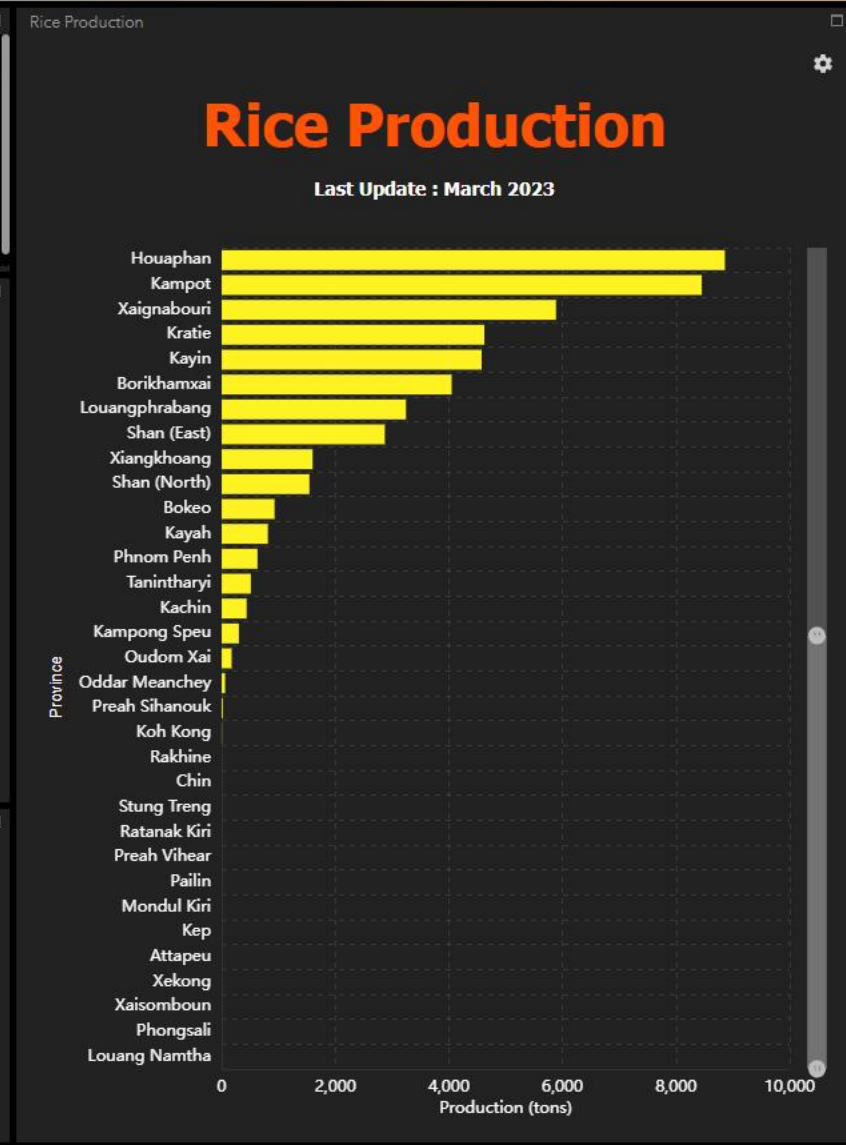
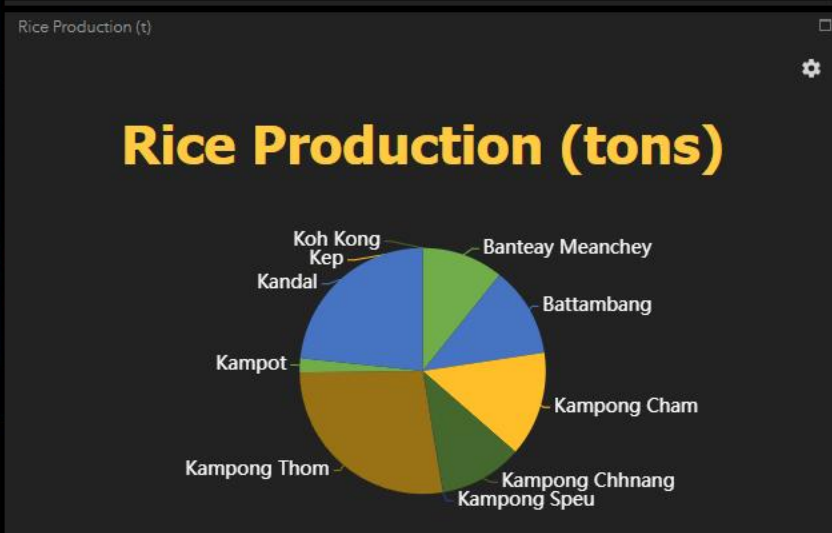


Country

CLM Rice Production

Country:

Province:



Capacity Building program



Myanmar



Lao PDR



Cambodia

1st Training

23-26 August 2022
at GISTDA Training Center
Bangkok **(Completed)**

10-13 January 2023
in Vientiane
(Completed)

24-27 January 2023
in Phnom Penh
(Completed)

2nd Training

20-23 December 2022
at Space Krenovation
Park, Chonburi, Thailand
(Completed)

4-7 April 2023 in Pakse,
Lao PDR **(Completed)**

20-23 June 2023
(Confirm)
in Siem Reap

3rd Training (Online)

29-30 June 2023
(Tentative)

6-7 July 2023
(Tentative)

13-14 July 2023
(Tentative)

Workshop In Thailand

October – November 2023 (Tentative)
at Space Krenovation Park, Chonburi

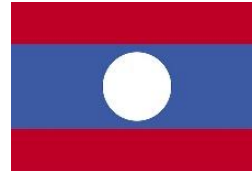
Capacity Building (Completed Activities)



1st Training 23 -26 August 2022 at GISTDA Training Center Bangkok and 1-day field trip at Chachoengsao Rice Research Center



2st Training 20-23 December 2022 at Space Krenovation Park, Chonburi, Thailand and 1-day field trip at Thailand Rice Science Institute



1st Training 10 – 13 January 2023 at Department of technology and innovation Department, Vientiane capital



1st Training 24 – 27 January 2023 at Sunway Hotel Phnom Penh, Phnom Penh



Capacity Building (Completed Activities)

2nd Training 4 – 7 April 2023 at Department of technology and innovation Department, Pakse, Champasak



THANK YOU

