

# The Global Agricultural & Disaster Assessment System (GADAS)

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**U.S. Department of Agriculture (USDA)**  
**Foreign Agricultural Service (FAS)**

Sunflowers and Corn in Ukraine:  
Photo Courtesy of Katie McGaughey taken July 2019

## Foreign Agricultural Service (FAS)

- FAS is primarily responsible for USDA's:
  - Overseas activities with attachés located at 93 offices covering 171 countries
  - Market development
  - International trade agreements and negotiations
  - Collection and analysis of statistics and market intelligence information



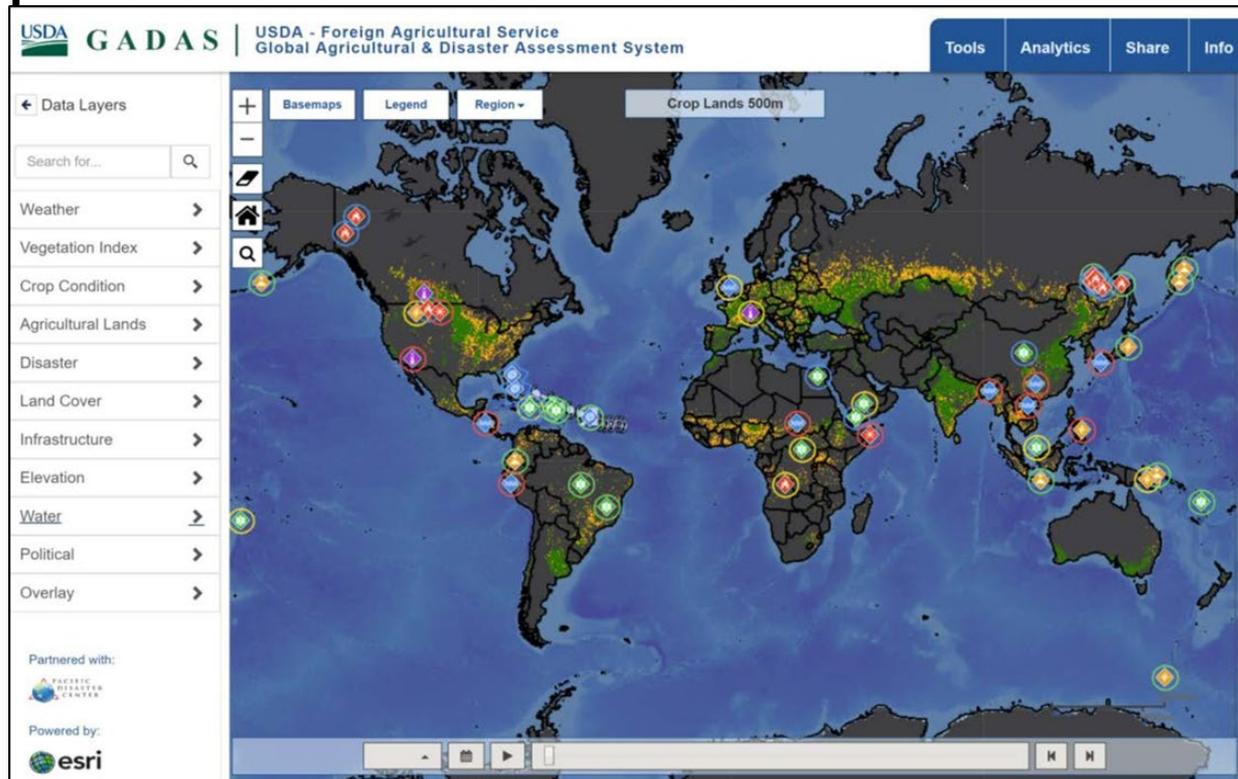
*Linking U.S. agriculture to the world to enhance export opportunities and global food security...*

# Overview

- 1. Introduction to GADAS**
- 2. Growing Season Scenario:  
Russia Winter Grains Planting,  
Establishment and Winterkill for the  
2021 crop season**

# Global Agricultural Disaster Assessment System (GADAS)

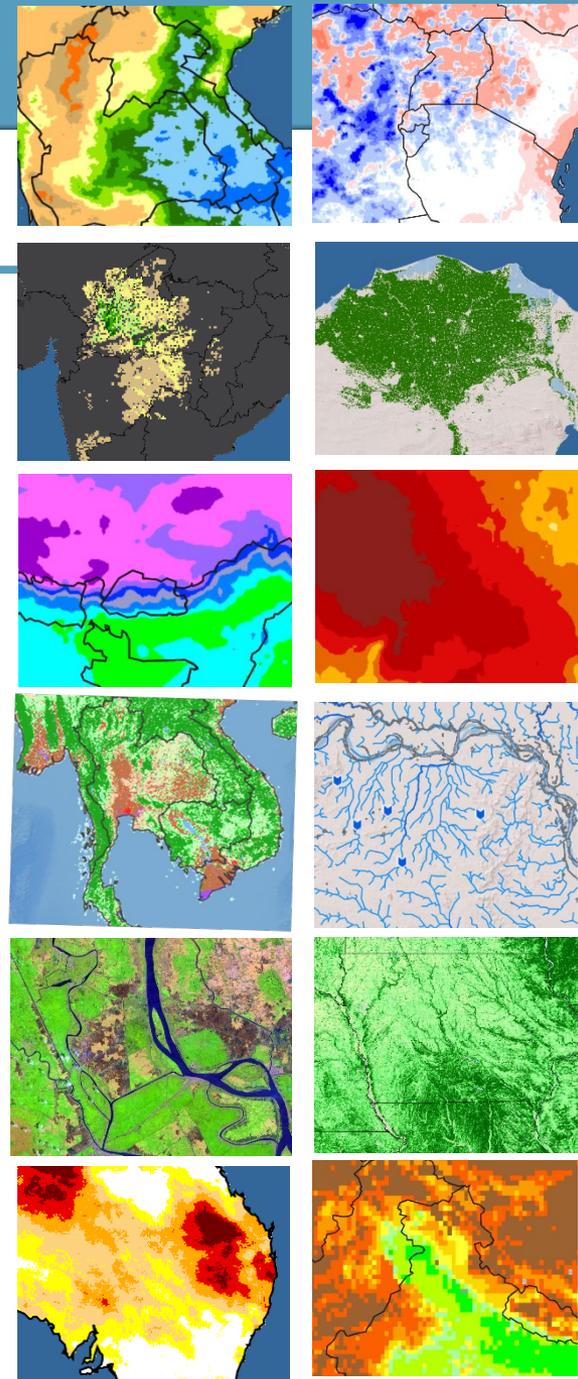
Global interactive web Geographic Information System portal combining comprehensive real-time earth observation data and tools



<https://geo.fas.usda.gov/GADAS/index.html>

# Overview

- Global agricultural monitoring & commodity forecasting
- Comparative climatic & satellite-derived vegetation analysis
- Drought monitoring
- Natural disaster assessment & analysis
- Tracking current & historical disaster events
- Delineation of major land-use categories worldwide
- Regional planning and field-based assessments
- Crop Classification



# GADAS Welcome Page

**Public Website**

**Interactive**

**Web GIS**

**Data Rich**

**Use Chrome**

**Helpful Introductions**

Welcome to GADAS Release 2.20!

GADAS is an interactive global web analysis system, capable of displaying, comparing, analyzing, and sharing geospatial data. If you'd like an introduction to GADAS and its features, you can select **Take the Tour** to read an overview of the application, or you can select **Story Map** to familiarize yourself with the GADAS tools and features. We've also provided a **GADAS Story Map** which provides examples of how GADAS supports its users using a wealth of global agricultural, disaster, and climate data. Feedback is welcome! Please contact us if you have any questions or suggestions. Thank you for using GADAS. Please see our [change log](#) for the most recent changes.

Don't show me this again

Take the Tour

Story Map

About GADAS

Get Started

# **Growing Season Scenario:**

## **Russia Winter Grain Planting, Establishment and Winterkill for the 2021 crop season**

# **Scenario: Russia winter grain analysis**

- 1. How to find the country's crop calendar?**
- 2. What were conditions at planting?**
- 3. What were conditions at establishment?**
- 4. Were there many instances of winterkill?**
- 5. Share the map with a colleague**

# Russia Crop Calendars

**1. Open Ag Profile**

**2. Click on the box**

**3. Draw a small box on the map for the country of interest**

**4. Result in next tab**

**GADAS: Regional Agricultural Profile**  
 Global Agriculture and Disaster Assessment System

**Crop Calendars - by Country**

**Russia**

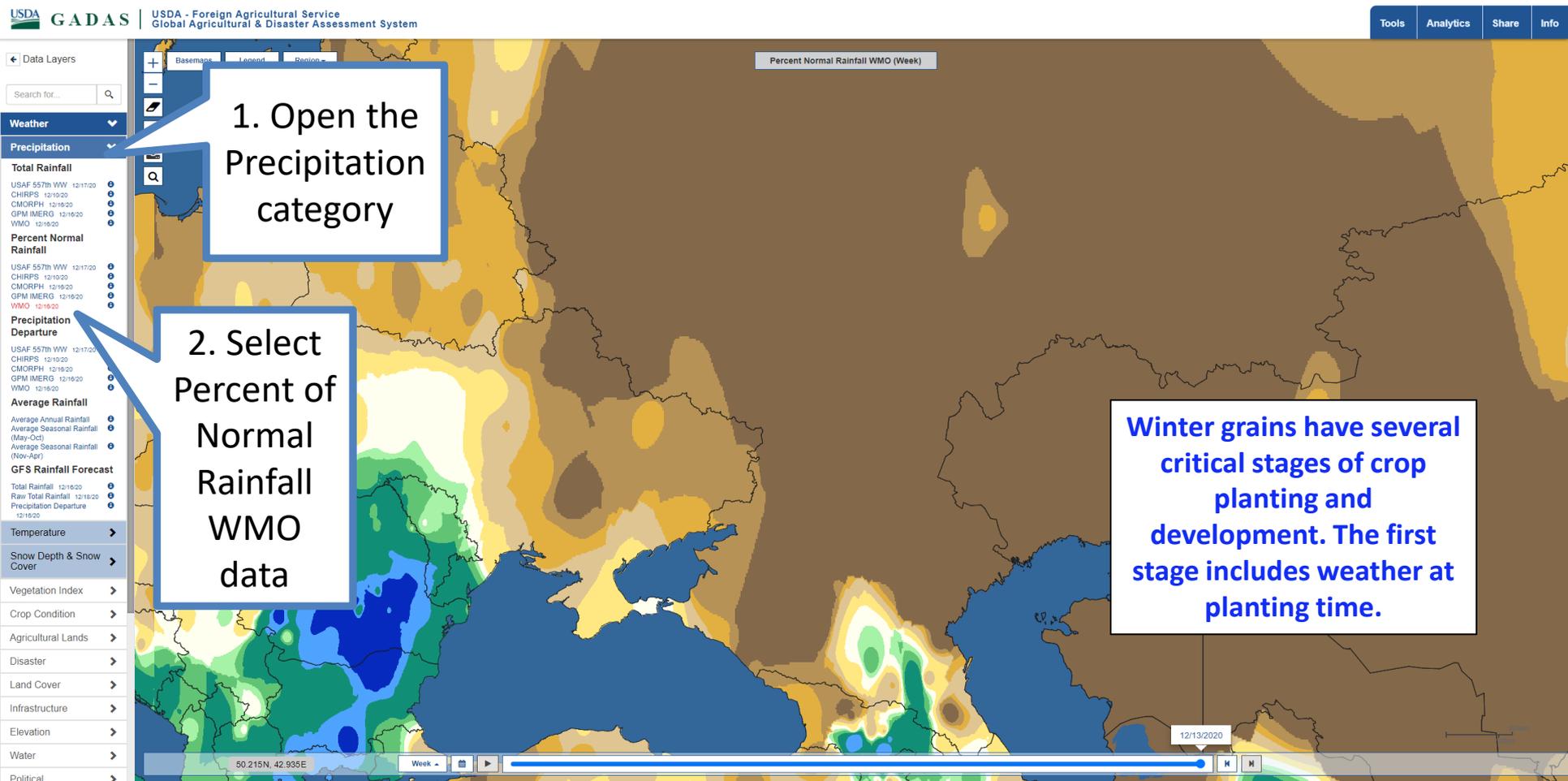
**Crop Calendar**

Crop	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Wheat (Spring Alta)												
Wheat (Spring Bashkir)												
Wheat (Winter Kursk)												
Wheat (Spring Orenburg)												
Wheat (Winter Saratov)												
Wheat (Winter Stavropol)												
Barley (Spring Alta)												
Barley (Spring Chelyabinsk)												
Barley (Spring Novosibirsk/...)												
Barley (Spring Rostov)												
Barley (Spring Stavropol)												
Oats (Alta)												
Oats (Chelyabinsk)												
Oats (Novosibirsk/Omsk)												
Oats (Rostov)												
Oats (Stavropol)												
Rye (Alta)												
Rye (Chelyabinsk)												
Rye (Novosibirsk/Omsk)												
Rye (Saratov)												
Millet (Alta)												
Millet (Stavropol)												
Buckwheat (Alta)												
Corn (Rostov)												
Corn (Voronezh)												

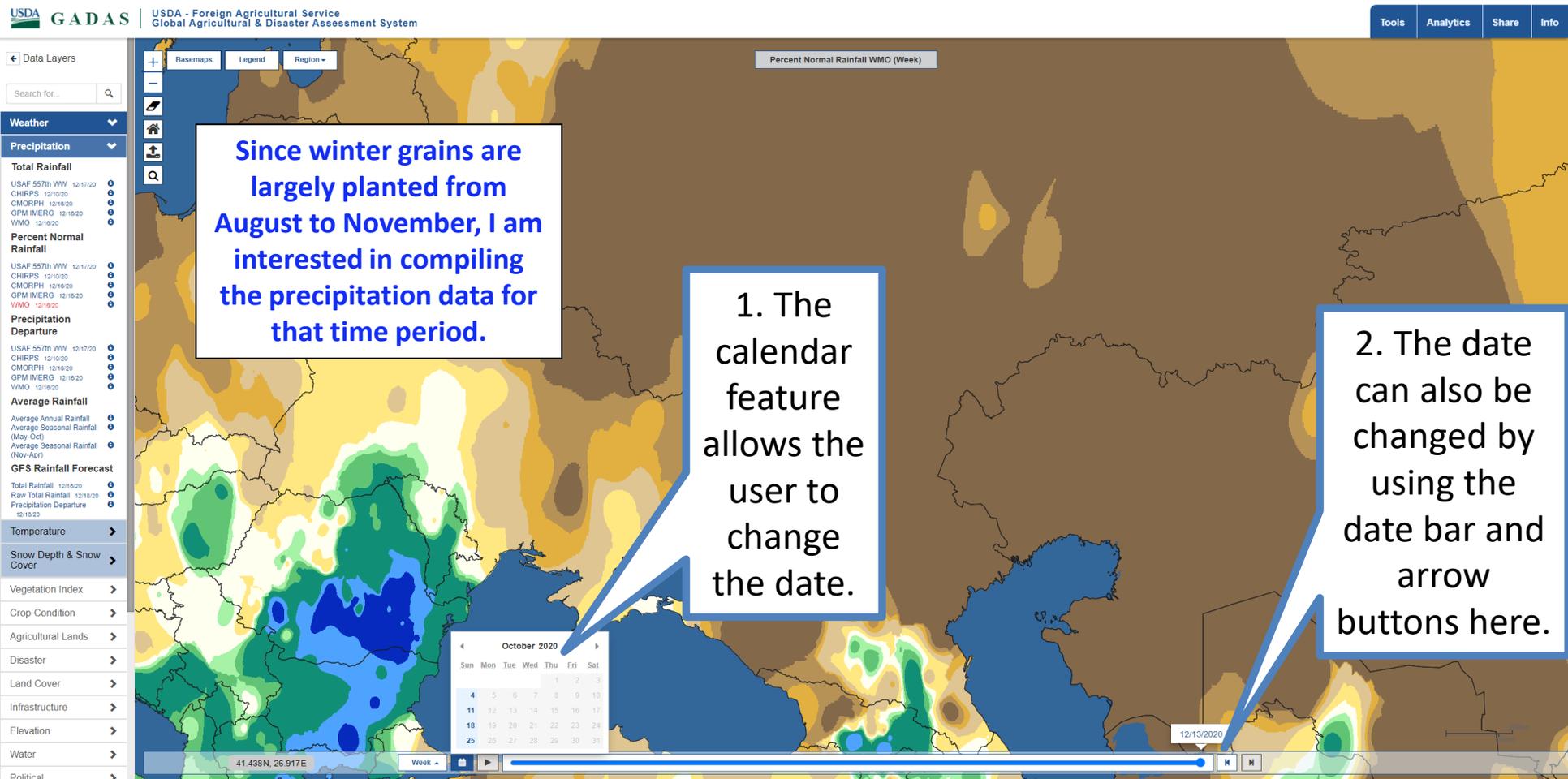
■ Planting ■ Mid-Season ■ Harvest

**For Russian winter grains, planting typically begins in August and is complete by the end of November.**

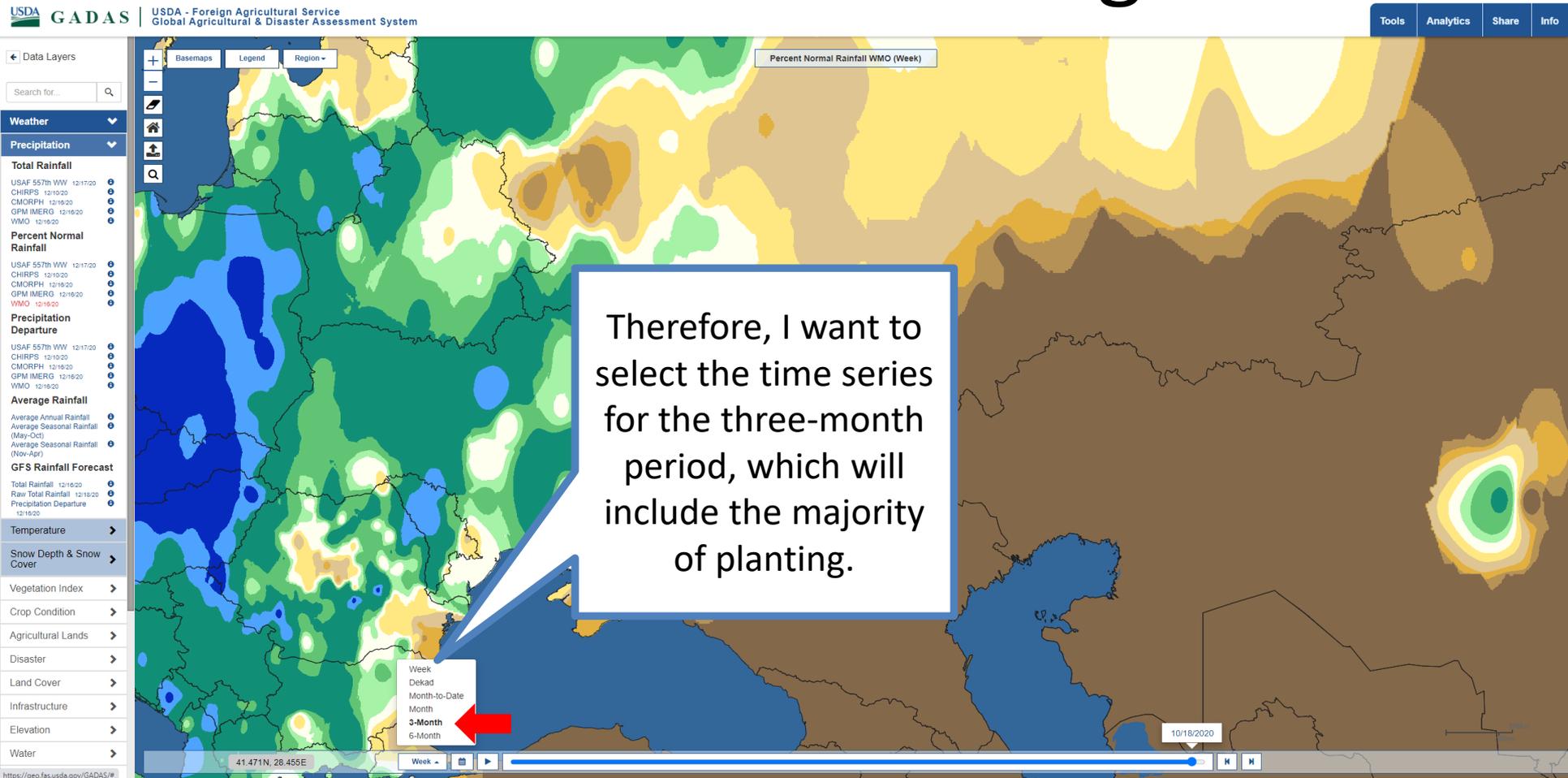
# Rainfall at Planting



# Rainfall at Planting

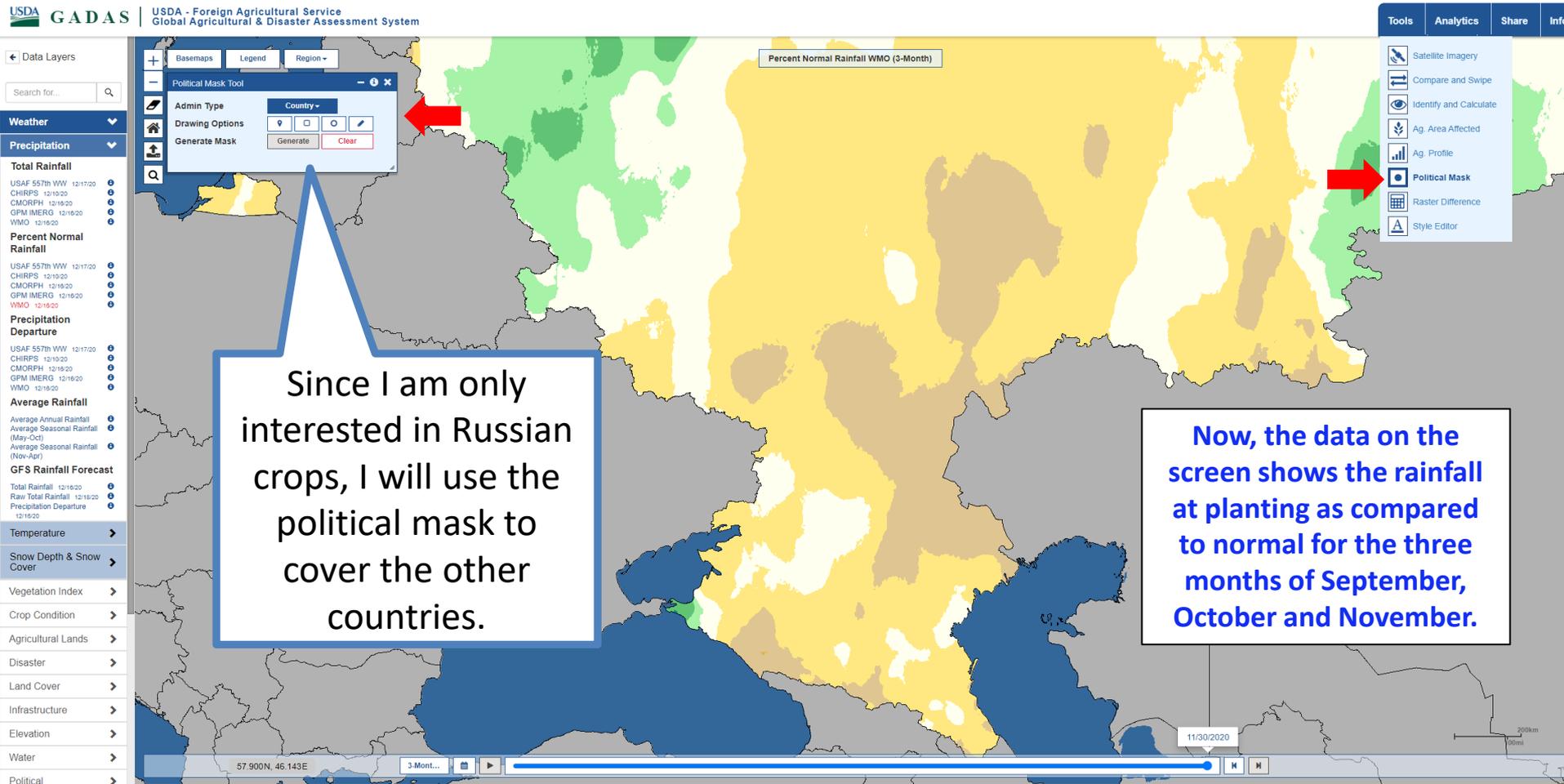


# Rainfall at Planting

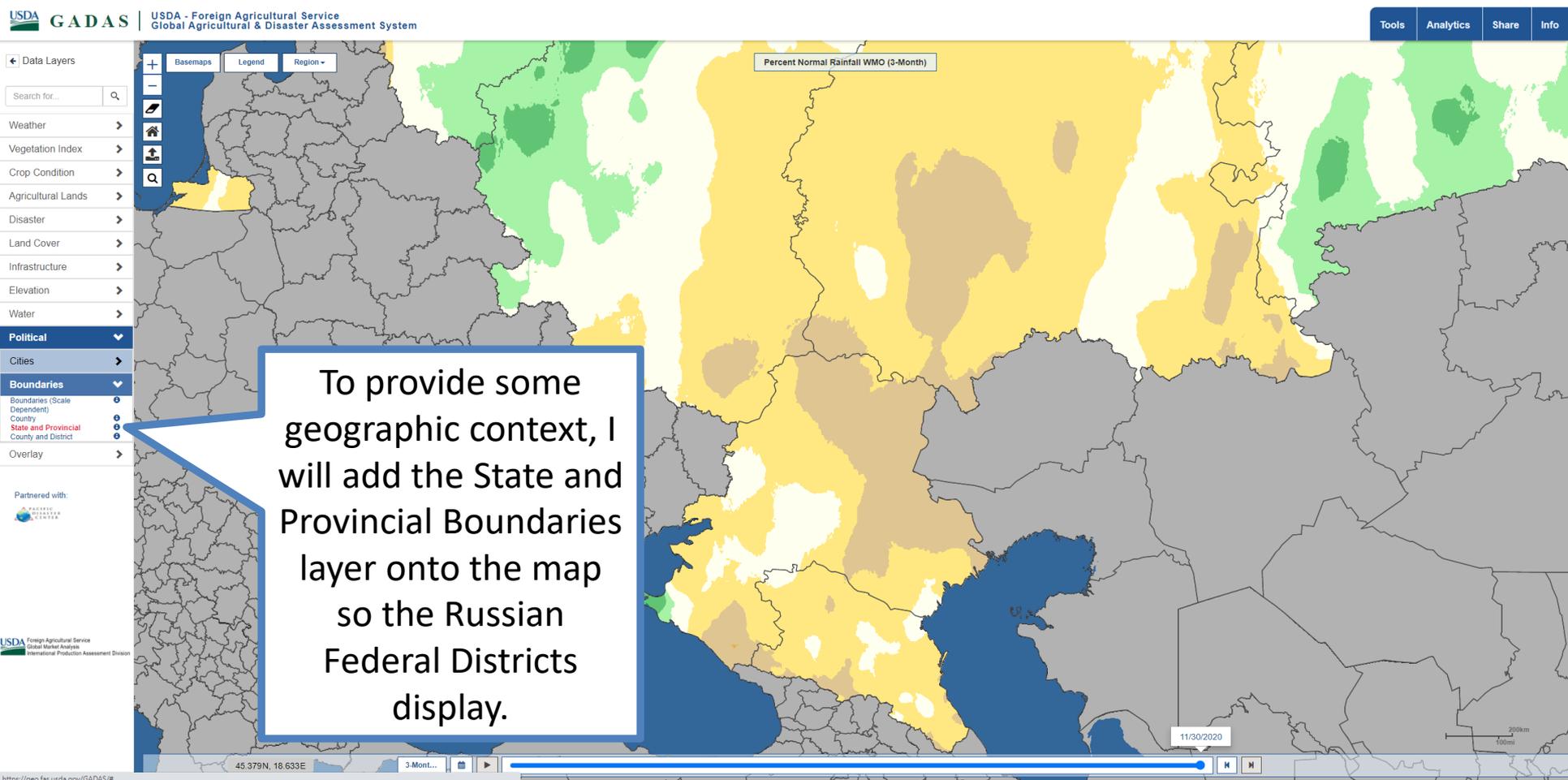




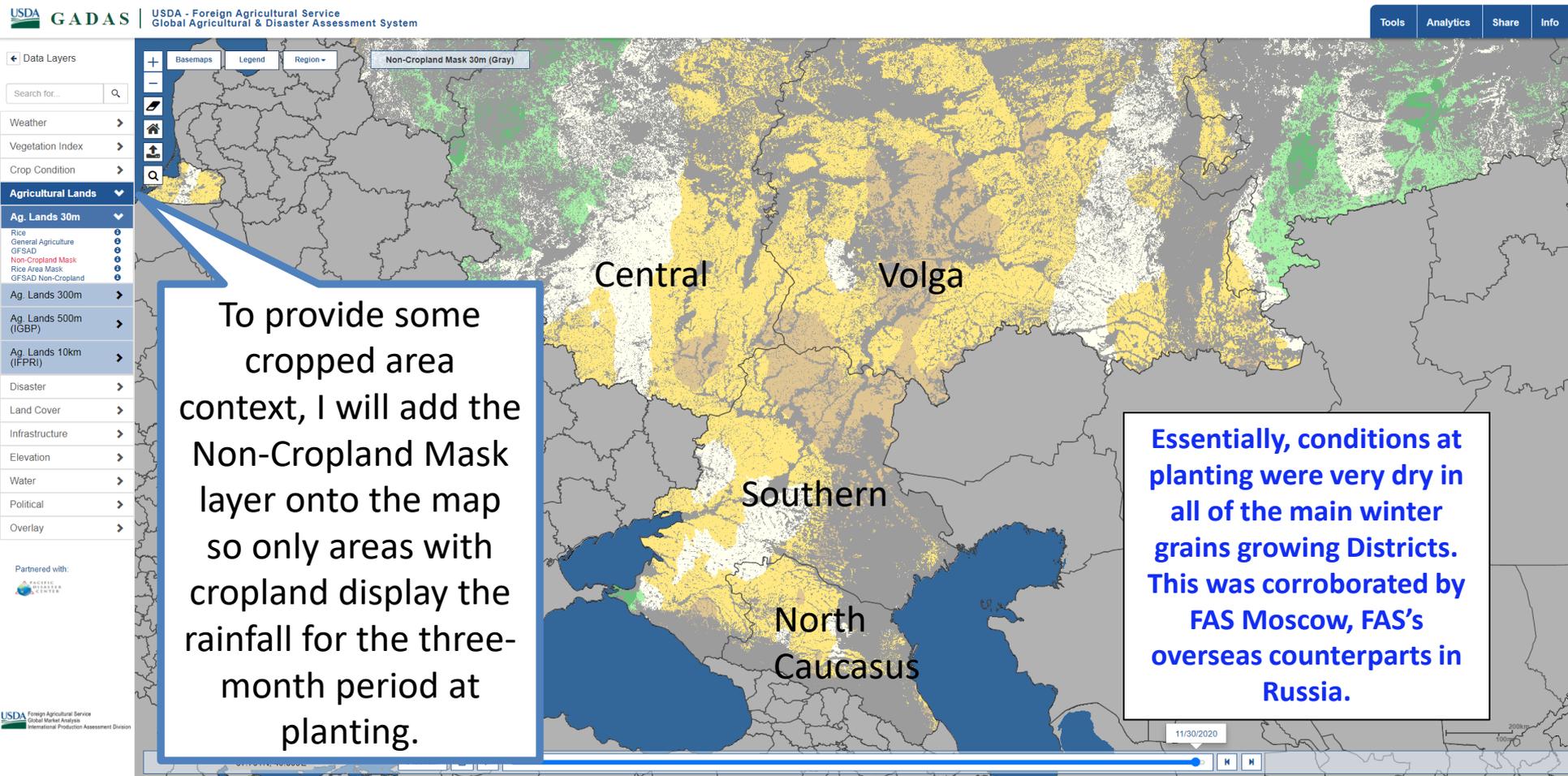
# Rainfall at Planting



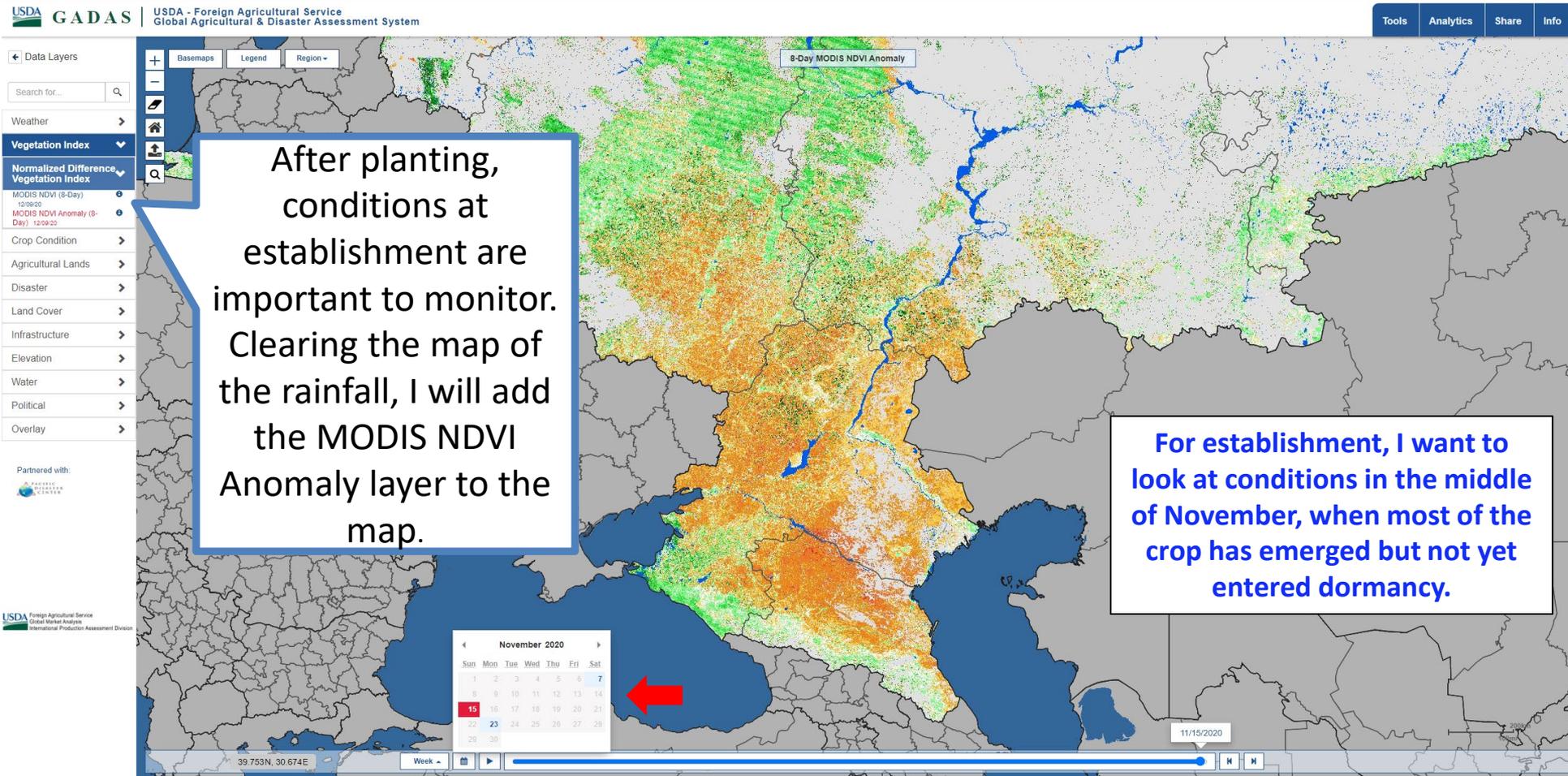
# Rainfall at Planting



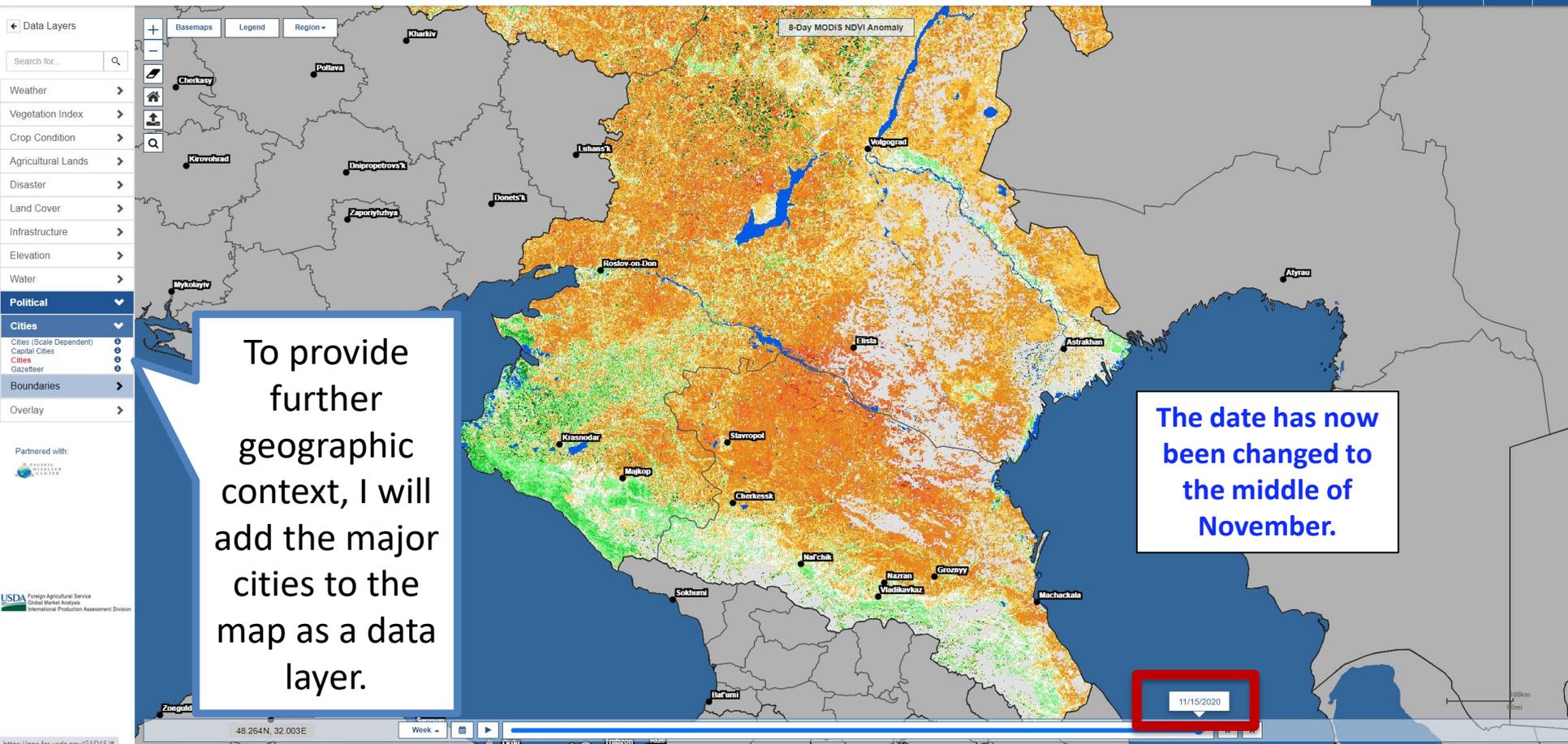
# Rainfall at Planting



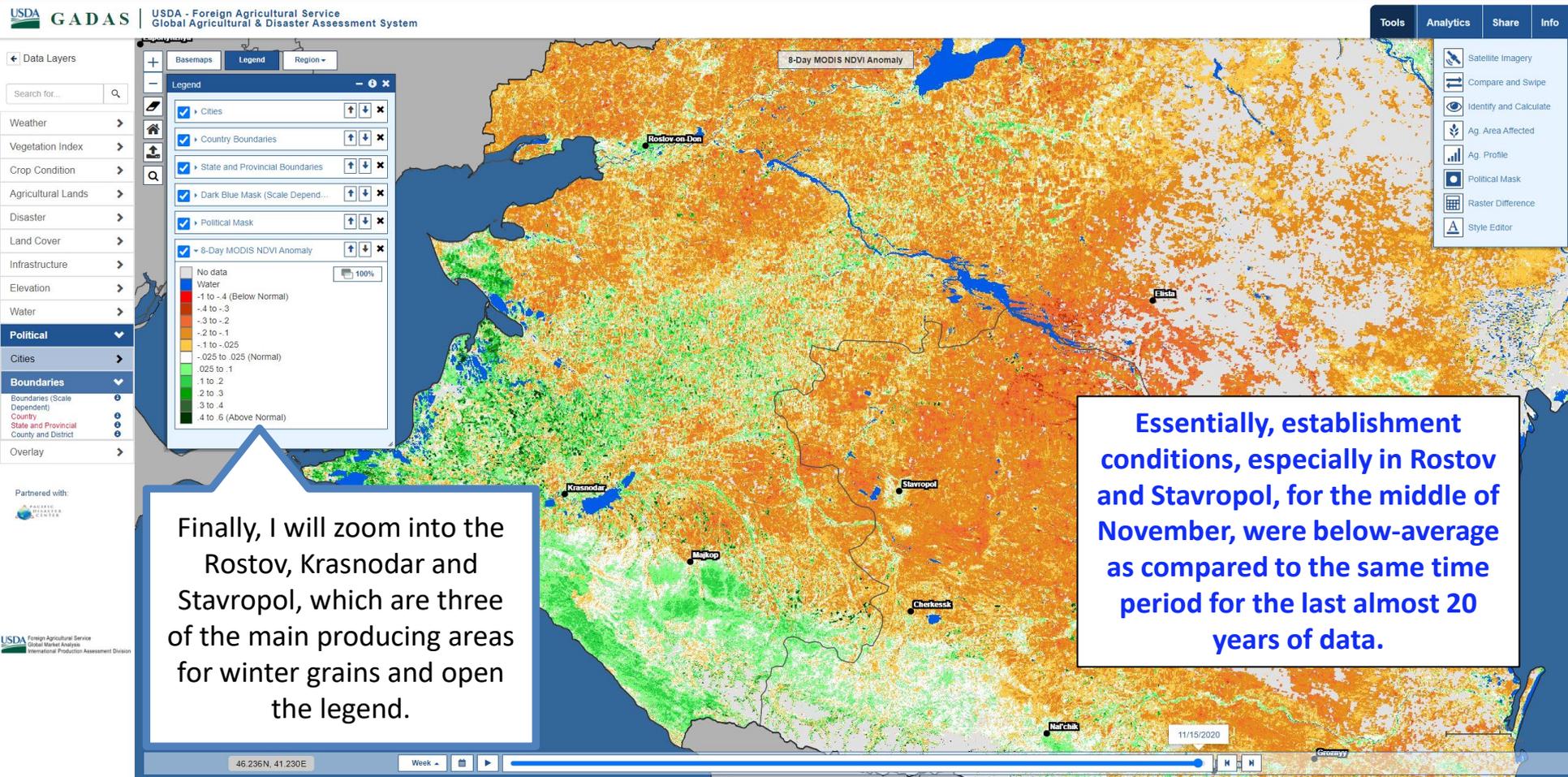
# Establishment Conditions



# Establishment Conditions



# Establishment Conditions



# Winterkill Assessment:

Mid-December Example

The screenshot displays the USDA GADAS web application interface. At the top left, the USDA logo and 'United States Department of Agriculture Foreign Agricultural Service' are visible. The main header reads 'USDA - Foreign Agricultural Service Global Agricultural & Disaster Assessment System'. The interface includes a 'Data Layers' panel on the left with categories like Weather, Vegetation Index, Crop Condition, Agricultural Lands, Disaster, Land Cover, Infrastructure, Elevation, Water, Political, and Overlay. A 'Compare and Swipe Tool' window is open, showing 'Compare View' with 'Vertical' and 'Horizontal' options. A red arrow points to the 'Compare and Swipe' tool in the right-hand 'Tools' menu. The main map area shows a world map with various data layers overlaid. A text box in the center of the map contains the following text: 'After monitoring planting and establishment conditions, monitoring winterkill conditions comes next and is typically conducted from December through the break of dormancy in the spring.' The bottom of the interface shows a coordinate display (75.418N, 162.158E) and navigation controls.

# Winterkill Assessment:

Mid-December Example

**USDA GADAS** | USDA - Foreign Agricultural Service  
Global Agricultural & Disaster Assessment System

Tools Analytics Share Info

Data Layers

Search for...

**Weather**

Precipitation

**Temperature**

Minimum Temperature

USAF 557th WW 12/17/20

WMO 12/16/20

Maximum Temperature

USAF 557th WW 12/17/20

WMO 12/16/20

**Extreme Minimum Temperature**

USAF 557th WW 12/17/20

WMO 12/16/20

**Extreme Maximum Temperature**

USAF 557th WW 12/17/20

WMO 12/16/20

Minimum Temperature Departure

USAF 557th WW 12/17/20

WMO 12/16/20

Maximum Temperature Departure

USAF 557th WW 12/17/20

WMO 12/16/20

Average Temperature

USAF 557th WW 12/17/20

WMO 12/16/20

GFS Temperature Forecast

Min. Temperature 12/16/20

Max. Temperature 12/16/20

Average Temperature Departure

USAF 557th WW 12/17/20

WMO 12/16/20

Snow Depth & Snow Cover

Vegetation Index

Crop Condition

Agricultural Lands

Disaster

55.575N, 20.566E

75.352N, 35.622E

First, I will activate the left map and add the extreme minimum temperature WMO layer to the map.

# Winterkill Assessment:

## Mid-December Example

USDA GADAS | USDA - Foreign Agricultural Service  
Global Agricultural & Disaster Assessment System

Tools Analytics Share Info

Region Legend Basemaps

Data Layers

Search for...

Weather

Precipitation

Temperature

Snow Depth & Snow Cover

Snow Depth  
USAF 557h WW 12/13/20

Vegetation Index

Crop Condition

Agricultural Lands

Disaster

Land Cover

Infrastructure

Elevation

Water

Political

Overlay

Partnered with:

USDA Foreign Agricultural Service  
Global Market Analysis  
International Production Assessment Division

Extreme Minimum Temperature WMO (Week)

FINLAND

Gulf of Finland

ESTONIA

LITHUANIA

RUSSIA

BELARUS

U

MOLDOVA

ROMANIA

SERBIA

BULGARIA

GEORGIA

ARMENIA

UZBEKISTAN

TURKMENISTAN

TAIJIK

KAZAKHSTAN

GREECE

TURKEY

SYRIA

IRAQ

IRAN

AFGHANISTAN

12/13/2020

51.203N, 21.138E

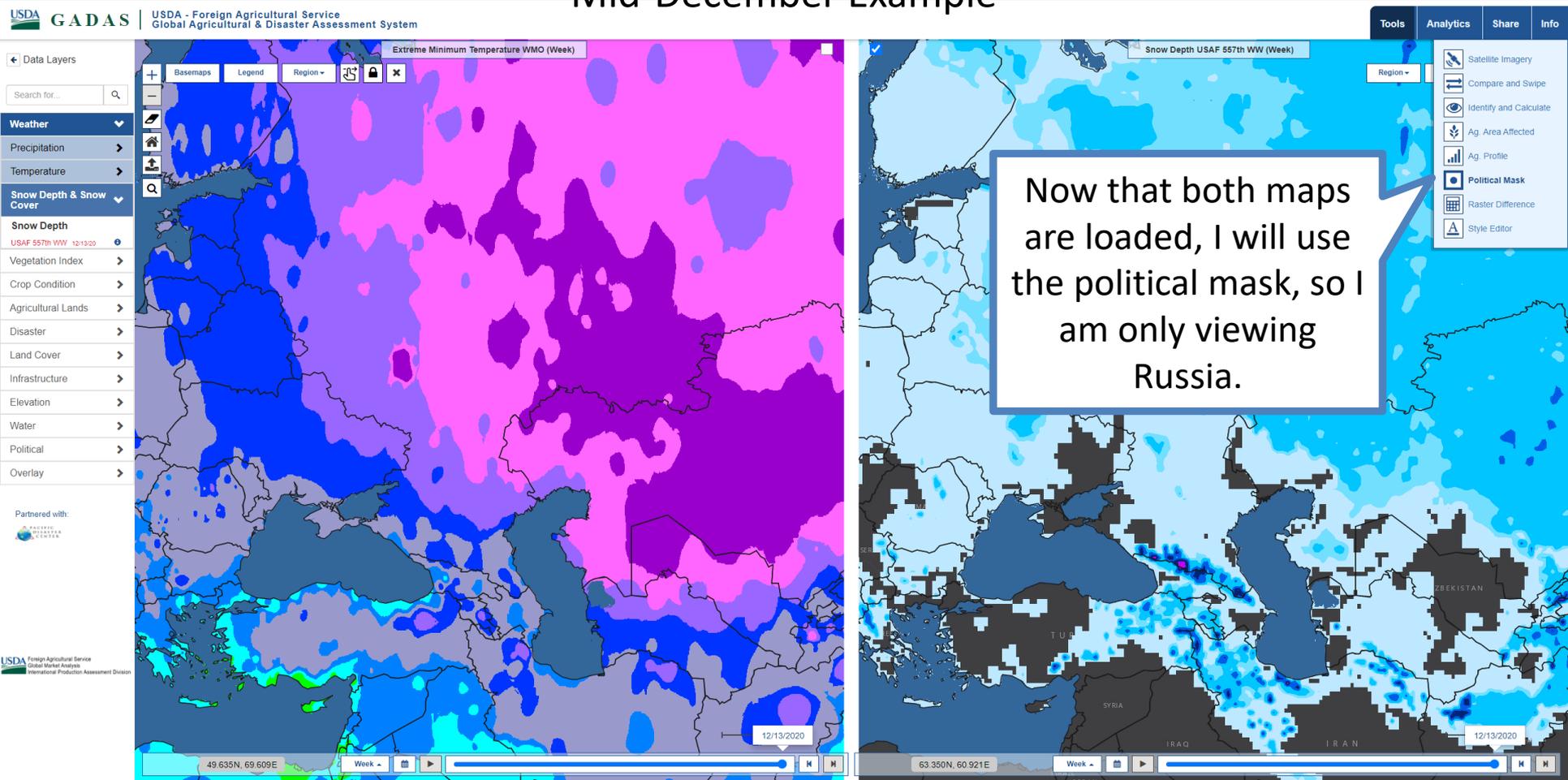
63.993N, 20.579E

https://geo.fas.usda.gov/GADAS/#

Next, I will activate the right map and add the USAF Snow Depth layer to the map.

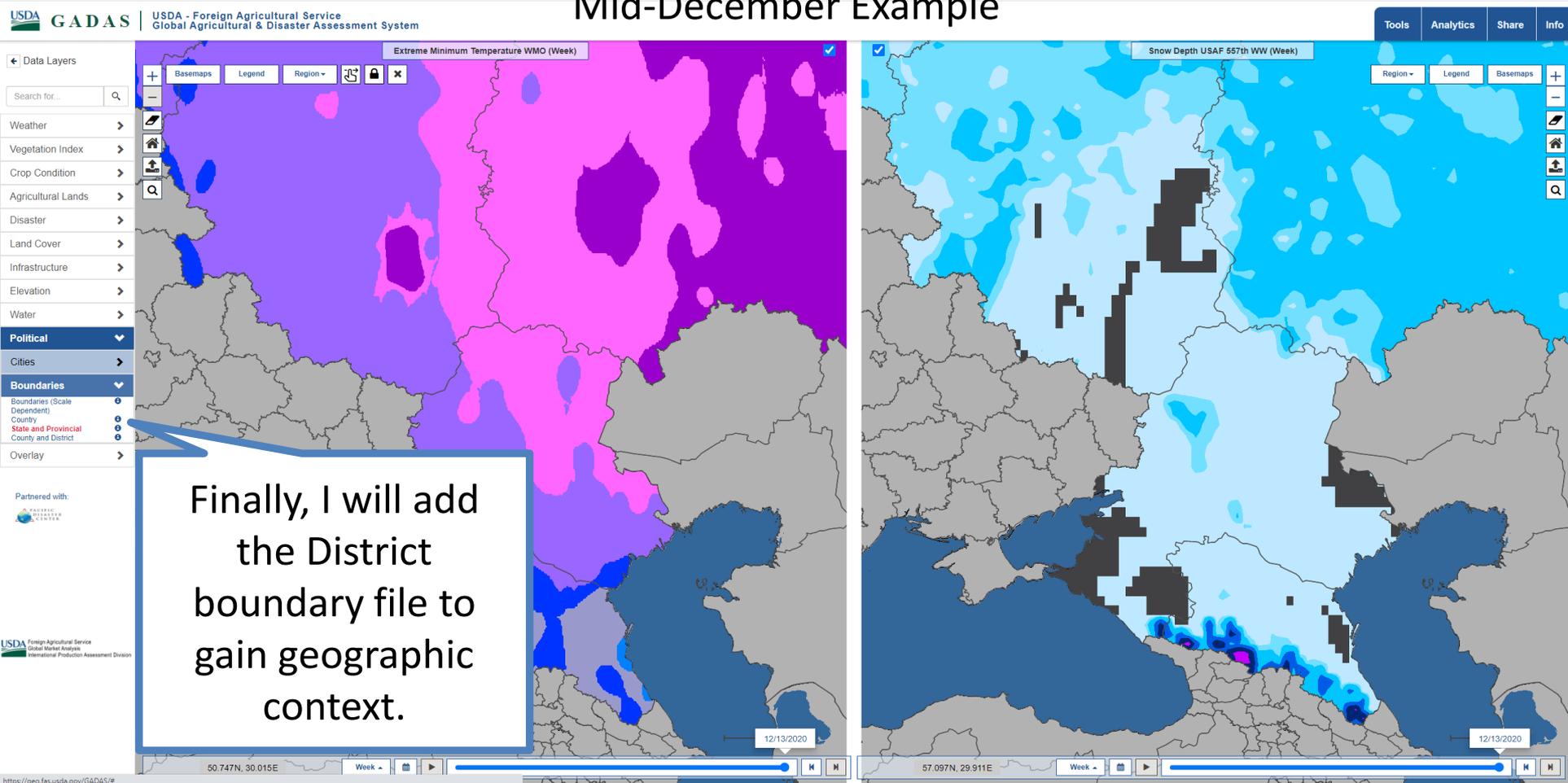
# Winterkill Assessment:

## Mid-December Example



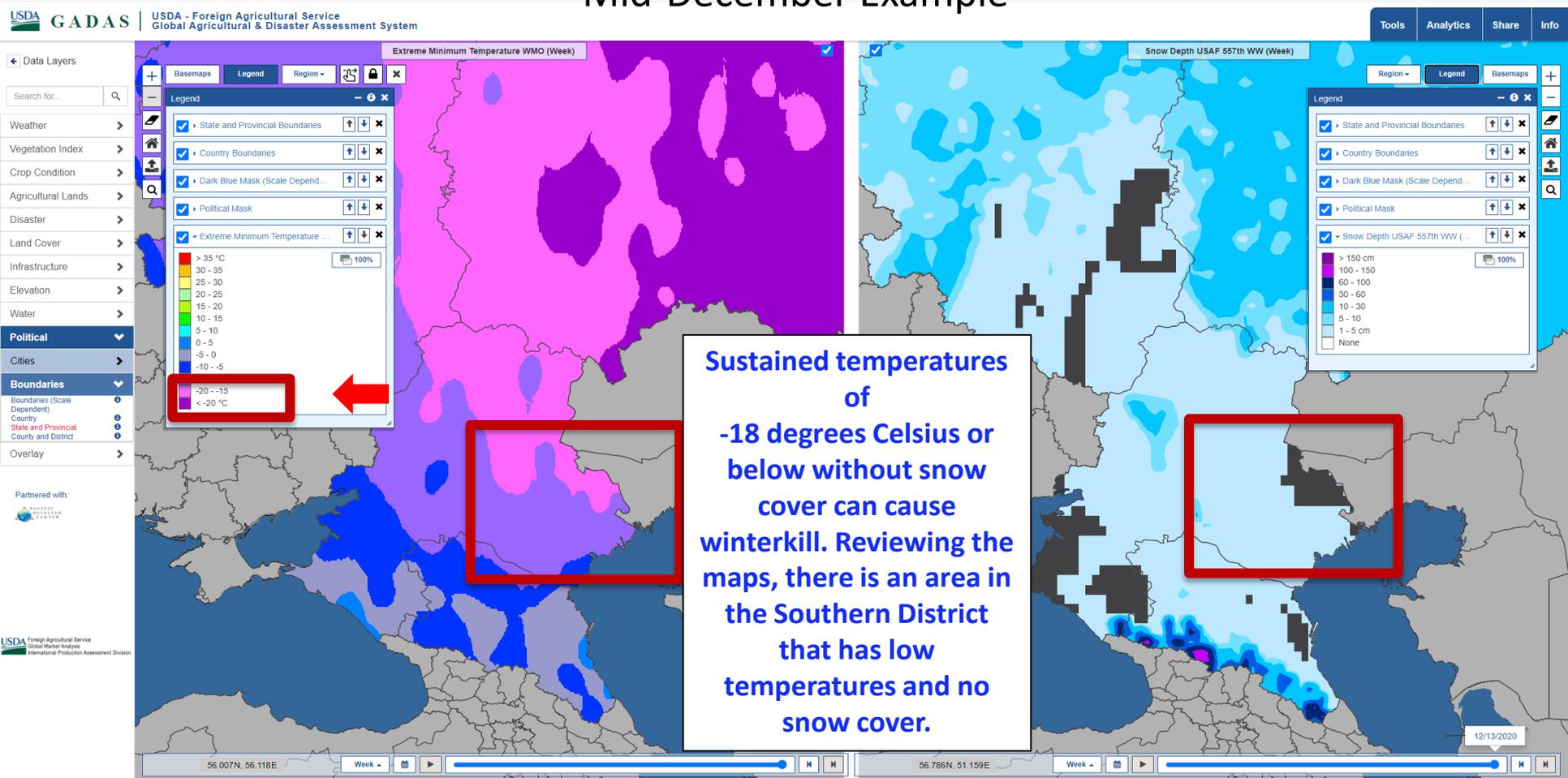
# Winterkill Assessment:

Mid-December Example



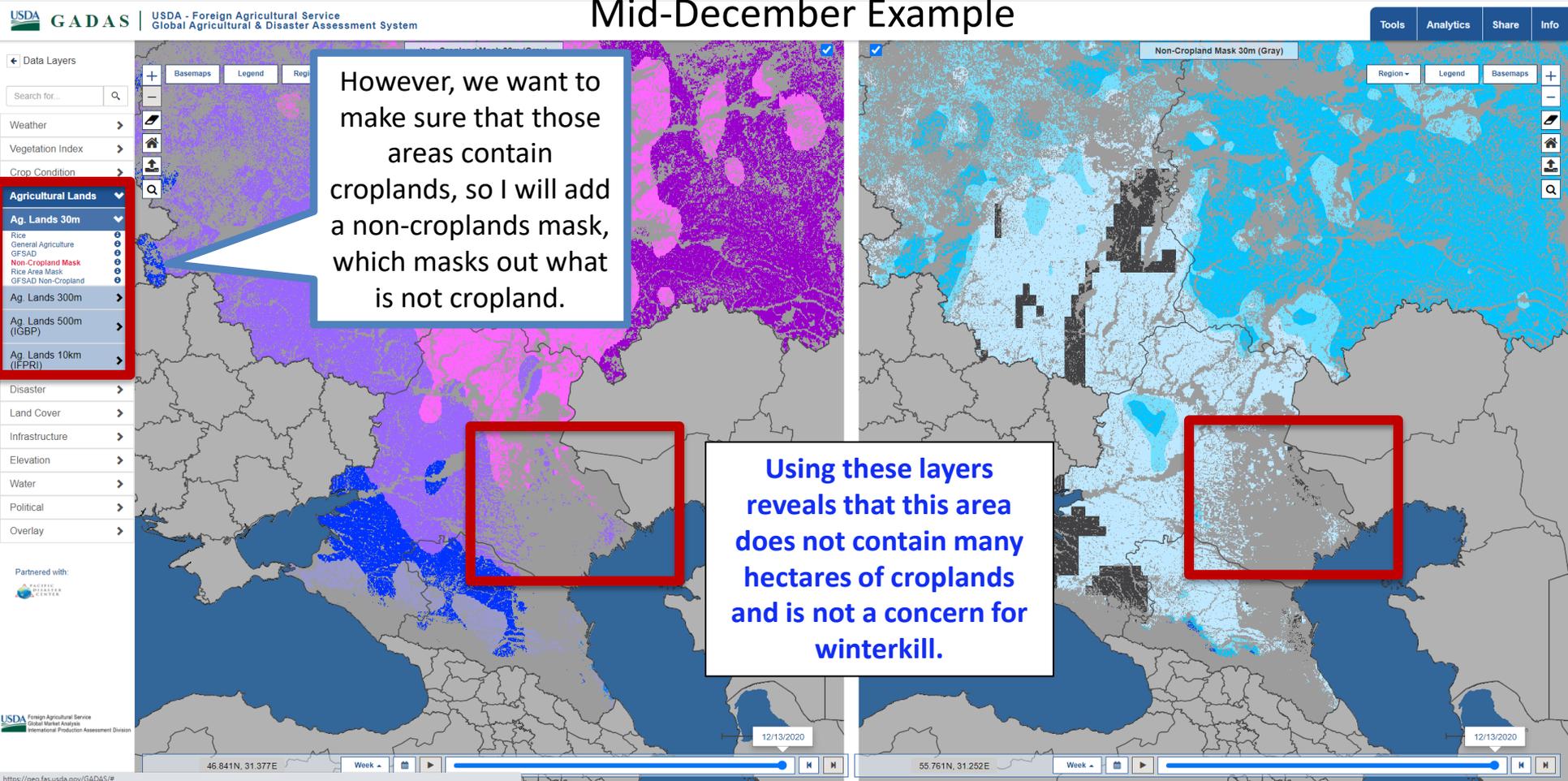
# Winterkill Assessment:

Mid-December Example



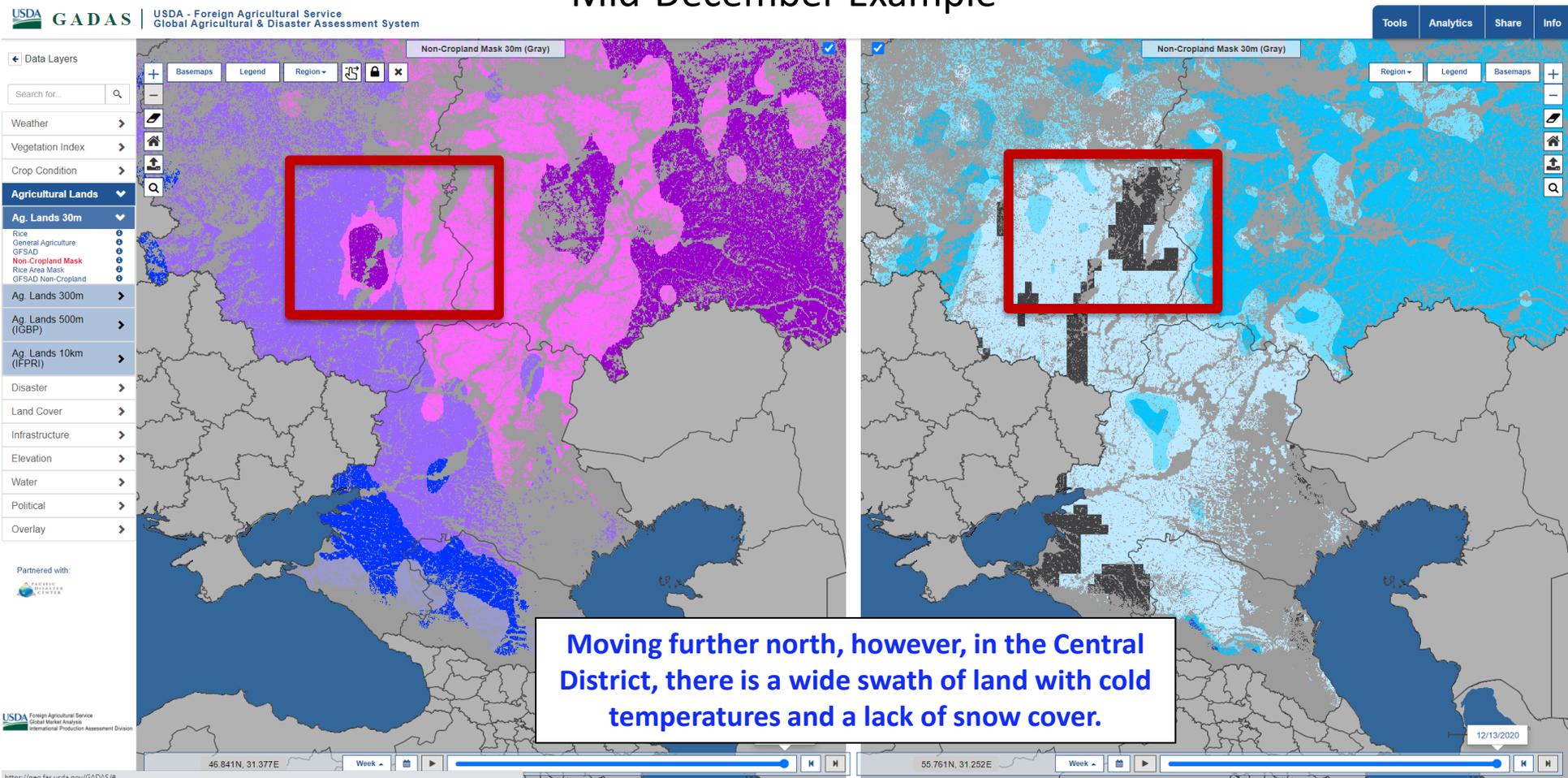
# Winterkill Assessment:

## Mid-December Example



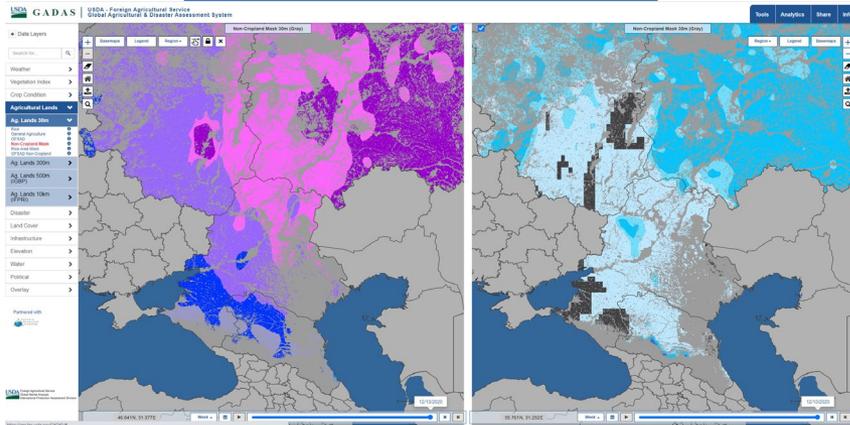
# Winterkill Assessment:

Mid-December Example

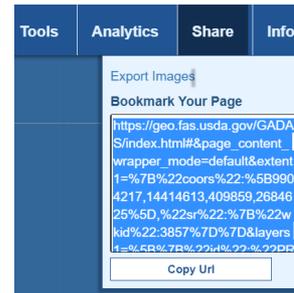


Finally, I'd like to share this map with my overseas counterparts in FAS Moscow to corroborate the data with on the ground information.

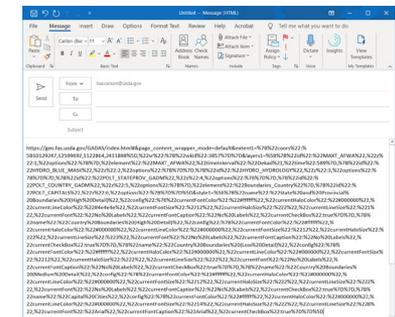
**1. Make a map**



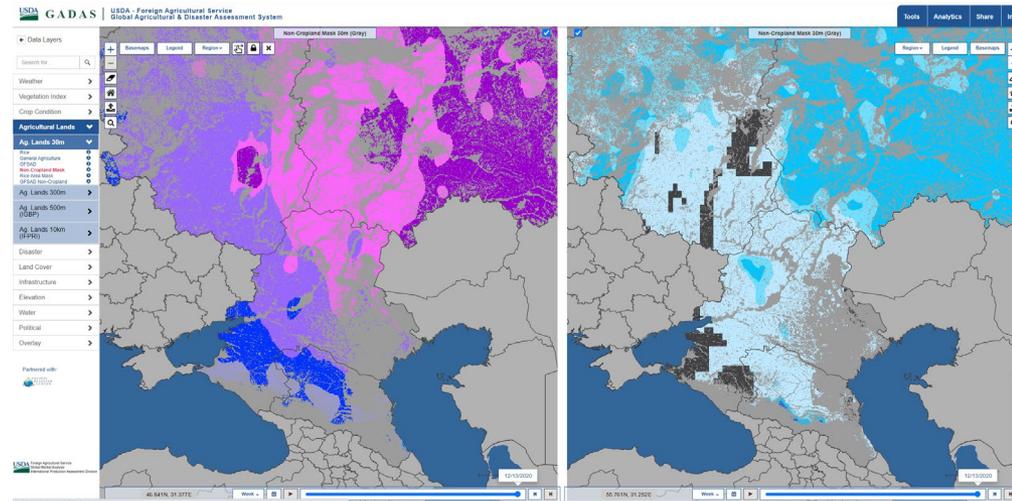
**2. Click Share: Bookmark Your Page**



**3. Paste the url in an email to your colleague**



**4. Your colleague opens the link in Chrome and immediately sees the same map**



# More information on FAS:

**1. Please visit FAS's virtual exhibit booth to access additional FAS information and data products available to the public.**

- 2. The virtual booth will be accessible during the official program which begins on Thursday, February 18 at 8:10 a.m. ET and ends on Friday, February 19 at 5:00 p.m. ET.**
- 3. All virtual meeting content will also be available on-demand for a minimum period of 12 months following the broadcast.**



United States Department of Agriculture  
Foreign Agricultural Service

***A few websites:***

GADAS: <https://geo.fas.usda.gov/GADAS/#>

IPAD Homepage: <https://ipad.fas.usda.gov/>

Crop Explorer: <https://ipad.fas.usda.gov/cropexplorer/>

IPAD Circular: <https://www.fas.usda.gov/data/world-agricultural-production>

WASDE: <http://www.usda.gov/oce/commodity/wasde/>

*Thank you!*

**Katie McGaughey**

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[GMA.GADAS@usda.gov](mailto:GMA.GADAS@usda.gov)

Rice in Panama:

Photo Courtesy of Katie McGaughey taken October 2019