



E-agriculture Solutions Forum 2018, Nanjing 15-17 November

CropWatch cloud for agronomic information Ownership

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Outline

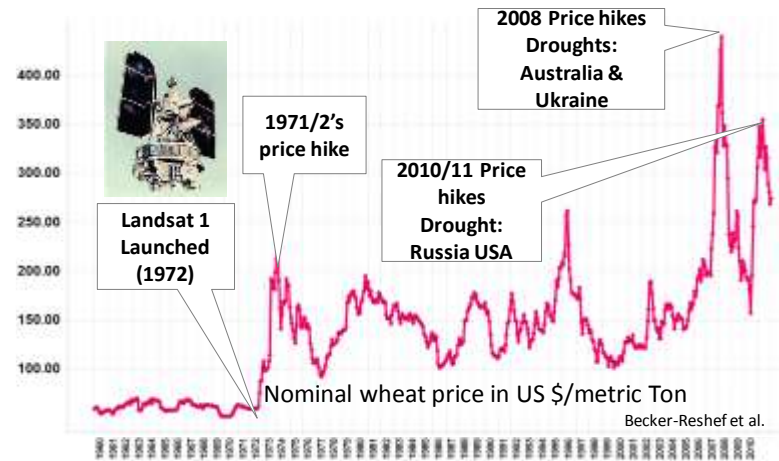
- ❖ **Agronomic information gap**
- ❖ CropWatch Cloud
- ❖ Practices for interest of countries
- ❖ Outlook

Food security

More mouth to feed

- ◆ By 2050 the world's population will reach 9.8 billion, **29 percent higher** than today.
- ◆ Nearly all of this population increase will occur in **developing countries**.

Food Price Volatility



We have to producing **70 percent more food** for **an additional 2.2 billion people** by 2050(FAO. How to Feed the World in 2050)





Goal 2: Zero Hunger

- Pledges to end hunger, achieve food security, improve nutrition and promote sustainable agriculture
- require an integrated approach
 - Sustainable Food Production and
 - Resilient Agricultural Practices
 - Ensure Stable Food Commodity Markets and
 - **Timely Access to Information**

**SUSTAINABLE
DEVELOPMENT
GOALS**



Information gap is a big issue

- The paucity of adequate capacity in obtain and accessing up-to-date staple crop production information, which is essential for a country economic governance and securing food supply.
- Over-dependence on information provided by third parties and often poses the danger of taking decisions based on delayed and on not easily verifiable information.
- Big financial input and operational cost as well as adequate technical skills constrain developing countries to set-up, operate, and maintain such crop monitoring facilities.

Outline

- ❖ Agronomic information gap
- ❖ **CropWatch Cloud**
- ❖ Practices for interest of countries
- ❖ Outlook

CropWatch® Mission

- Release first bulletin in August, 1998;
- Release first English bulletin in November, 2013.
- CropWatch aims at improving food information availability, quality and transparency
 - To improve access to global information about the worldwide production of major cereals and soybean
 - To provide additional, reliable information for developing countries to fight against hunger, as a science-based Chinese voice on global food security perception
 - Offer Cloud-based services so that developing countries do not need to take big financial input and operational cost

CropWatch® Cloud



Cropwatch Pro

Enter

CropWatch-Pro

- An online tool for people to produce crop monitoring products at any time and anywhere.



CropWatch Explorer

Enter

CropWatch-Explore

- An online interface for people to explore and analysis all the crop information data easily.



Cropwatch Project

Enter

CropWatch-Project

- An online platform for people to create and write the crop bulletin.



Cropwatch Bulletin

Enter

CropWatch-Bulletin

















- An webpage for people to read CropWatch bulletin.

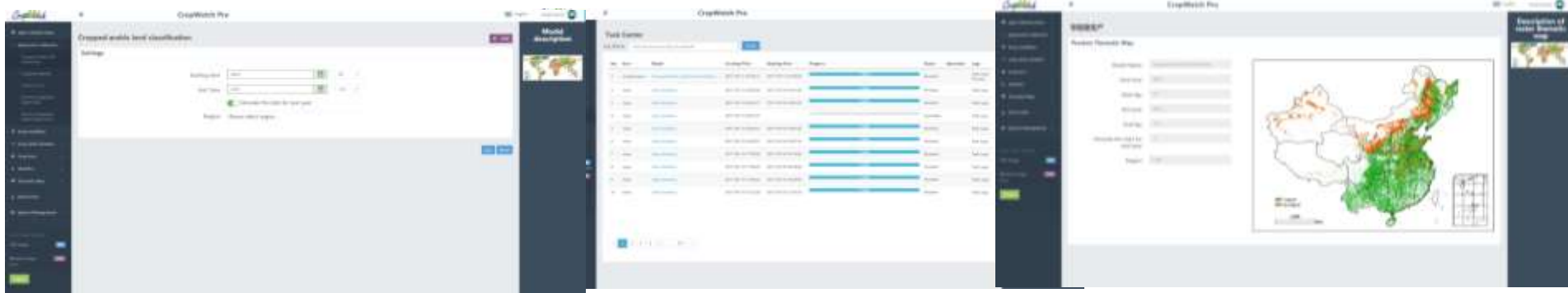
The screenshot displays the CropWatch website interface. At the top, there is a navigation menu with links for Home, About, Update, Bulletin, Methodology, Publications, and Contact Us. Below the menu, a featured article titled "CropWatch Training for Mozambique" is visible, with a "Bulletin" link. The main content area is titled "CropWatch Sub System" and contains four tiles: "CropWatch Pro" (with an "Enter" button), "CropWatch Explore" (with an "Enter" button), "CropWatch Analysis" (with an "Enter" button), and "CropWatch Bulletin" (with a "Go Webpage" button). Below this, there are three sections: "About" (showing a group of people), "Bulletin" (showing various bulletin covers), and "Publications" (showing a person reading a bulletin). Each section has a "More" link at the bottom.



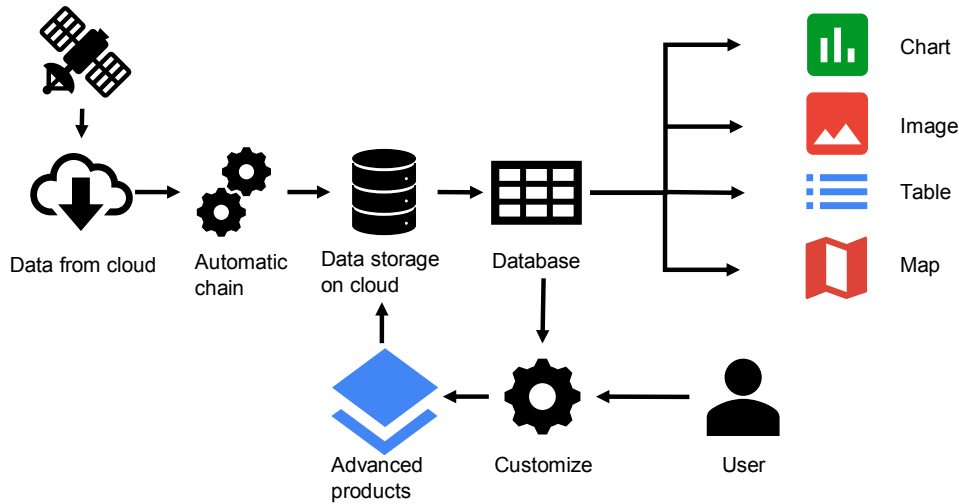
CropWatch-Pro

Models / Algorithms on Cloud

Agro-climatic Index	Agronomic Indicators	Crop Condition	Popular models
 Rainfall index	 Maximum VCI	 Crop Condition based on NDVI anomaly	 Remote Sensing Index Model
 Temperature Index	 Minimum Vegetation health Index	 Crop Condition Classification	 Area Estimation based on CALF
 PAR Index	 Cropped arable land classification	 Crop condition clustering	 Statistics
 Biomass	 Cropping intensity	 Minimum Vegetation health Index(China)	 Produce Thematic Map

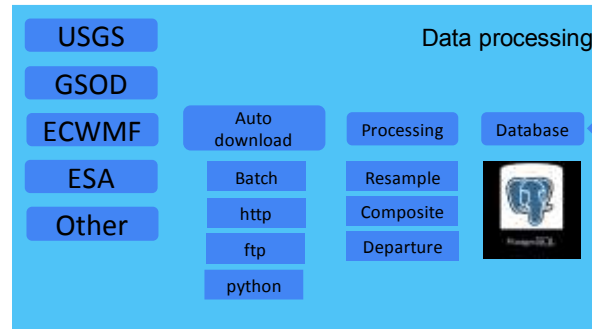
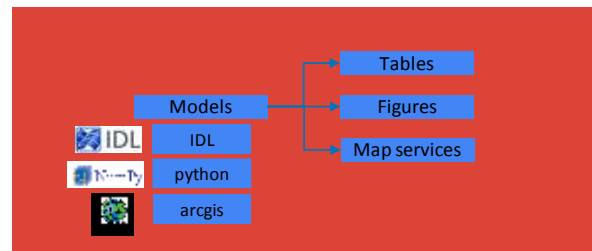


Automatic data converging and processing



Data automatic converging

Automatic processing flow





CropWatch-Pro

CropWatch

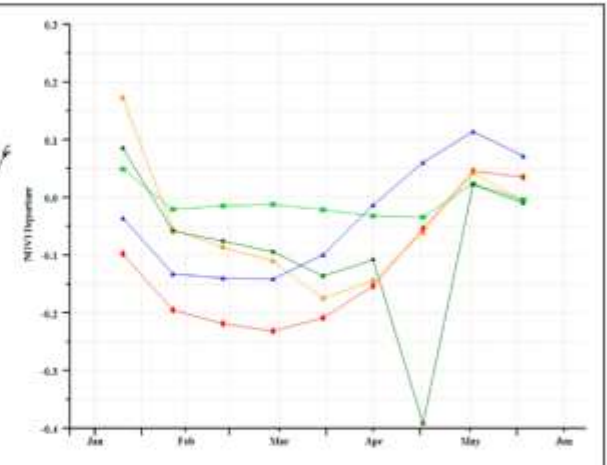
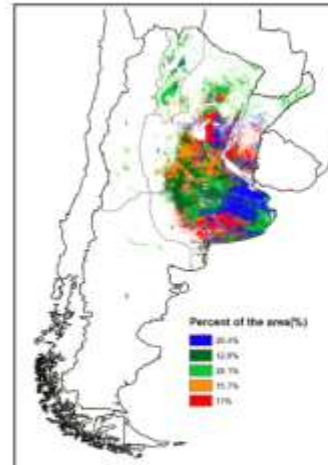


CropWatch Pro

专题图生产

Preview Thematic Map

Model Name	Crop condition clustering
Indicator Type	Ndvi
Region Type	Country
Region Name	ARG
Start Year	2018
Start day	17
End year	2018
End day	145
Calculate type	departure



Agro-climatic Index

Data composition

Agronomic Indicators

Crop Condition

Crop yield variation

Crop Area

Statistics

Thematic Map

Task Center

System Management

Server Status Details

CPU Usage 3%

Memory Usage 22%

Details

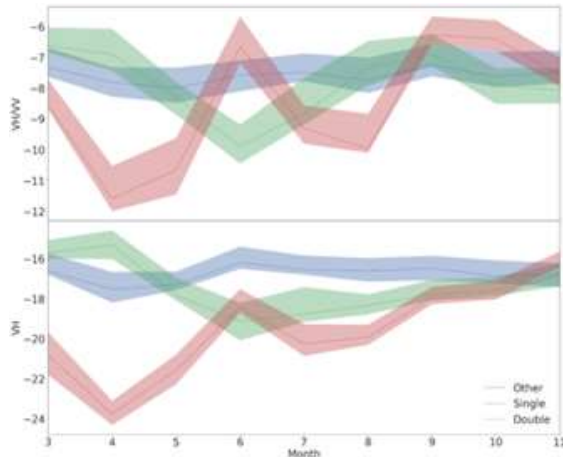
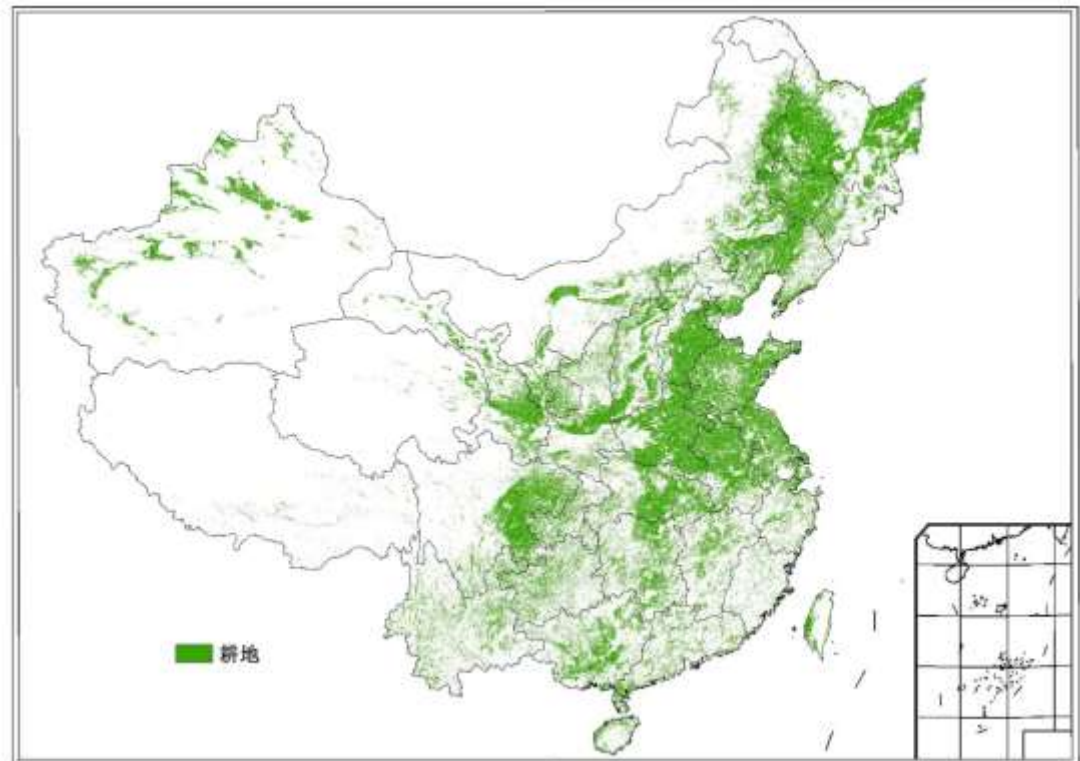
Cropland and croptype mapping on Cloud

Decision tree using backscatter coefficient / vegetation index at key stage, from transplanting to post flowering



National 10m cropland was extracted using ~20,000 S1, S2 on Google Earth Engine, and ~2,000 China GF-1/2, ZY-3 imageries

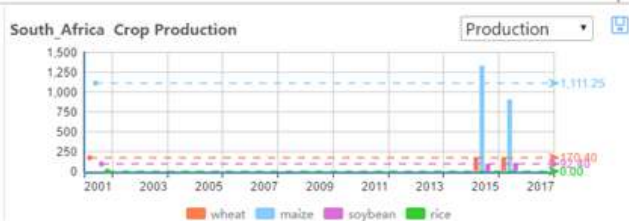
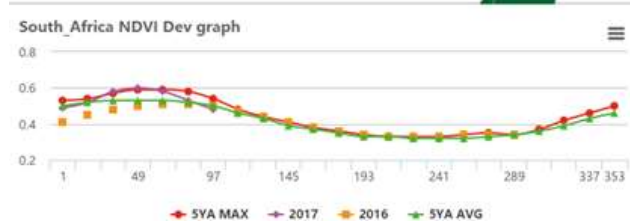
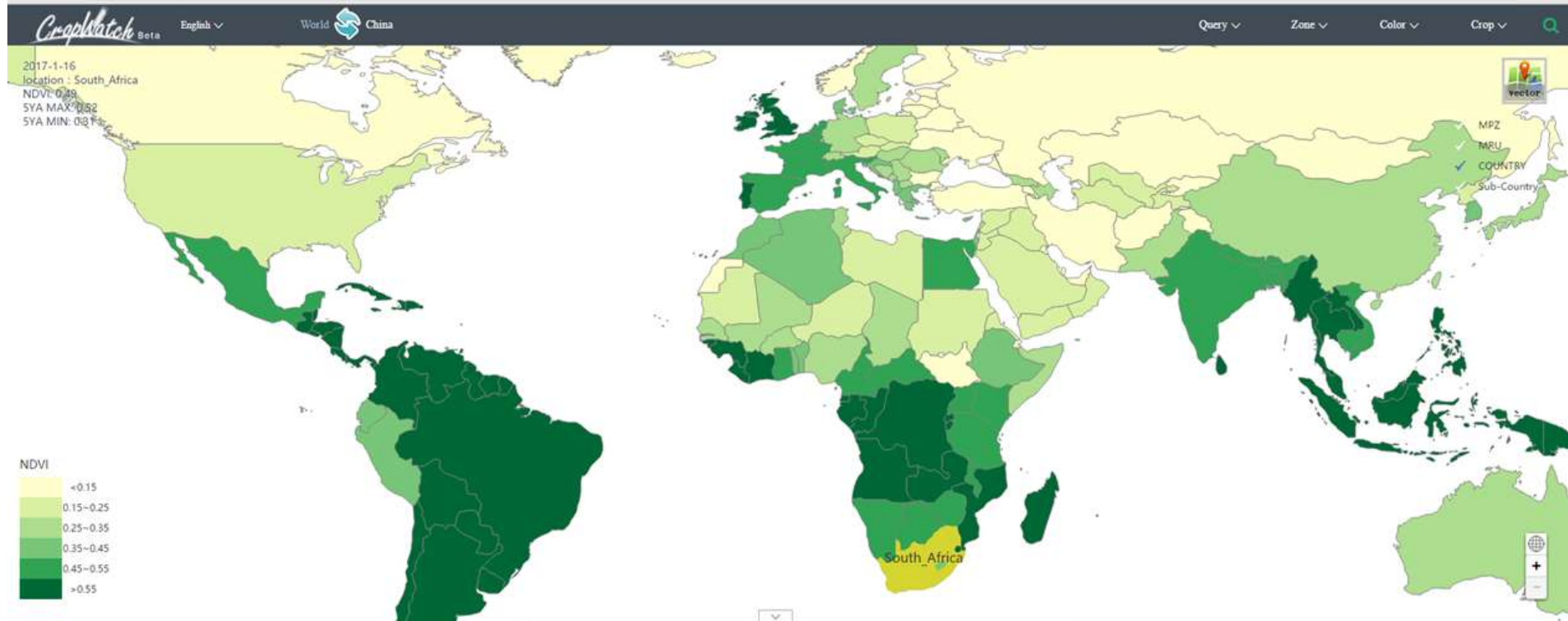
Sentinel-1 composite and process on GEE



Backscatter change from transplanting to flowering

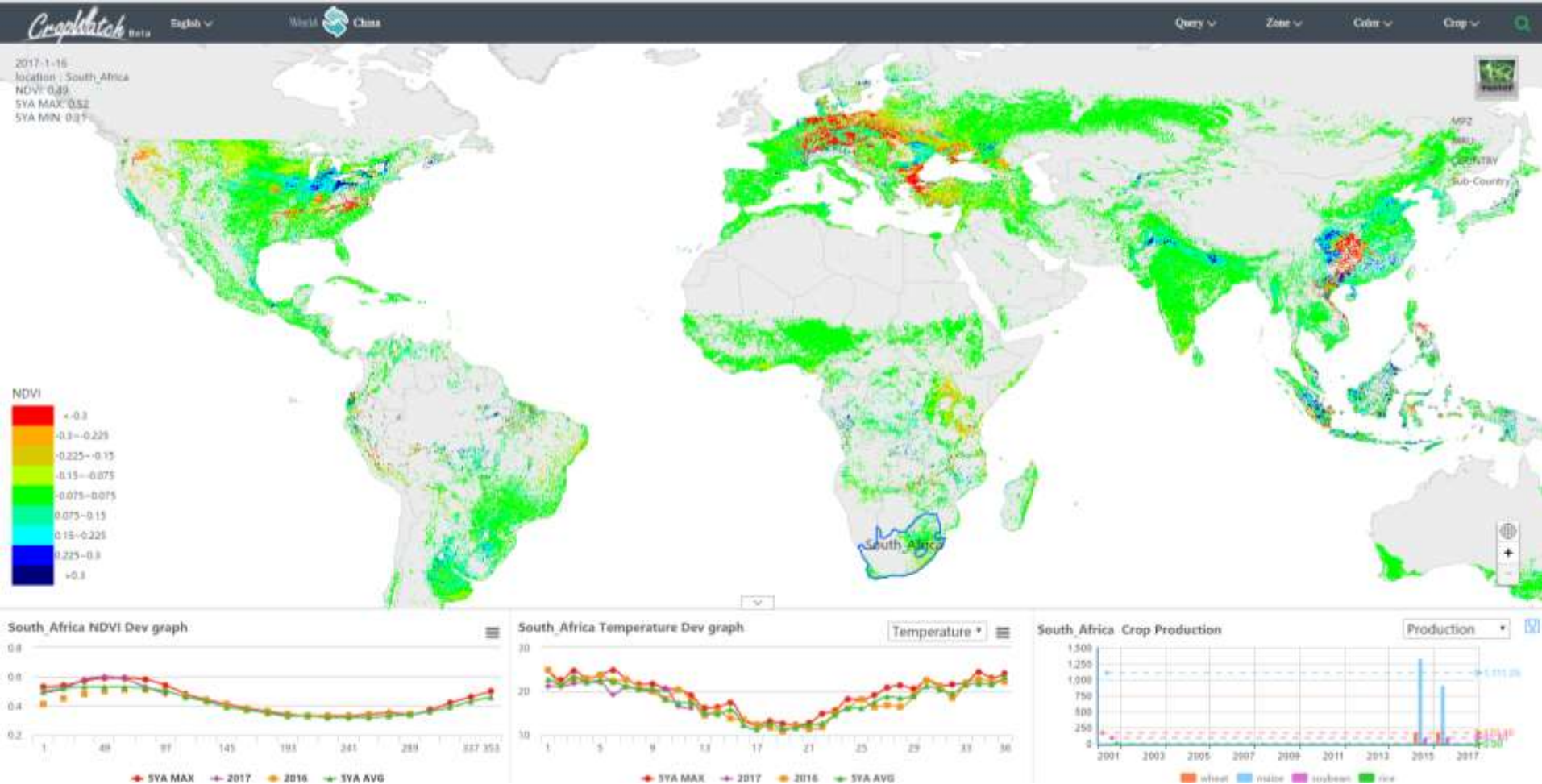


CropWatch-Explore-vector





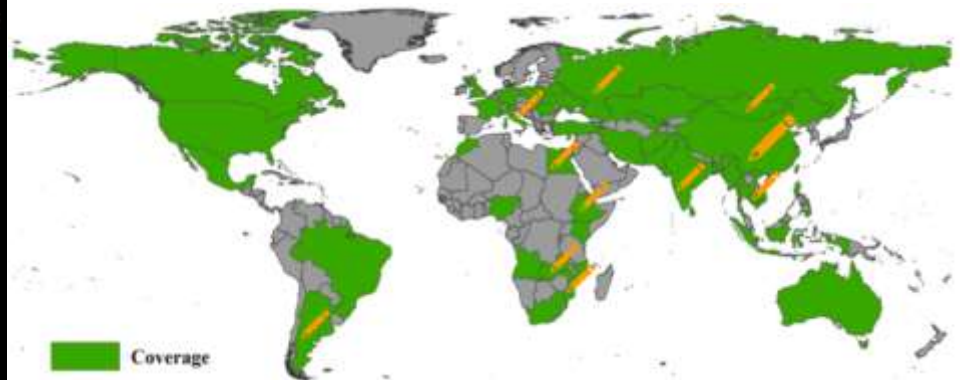
CropWatch-Explore-raster





CropWatch-Analysis

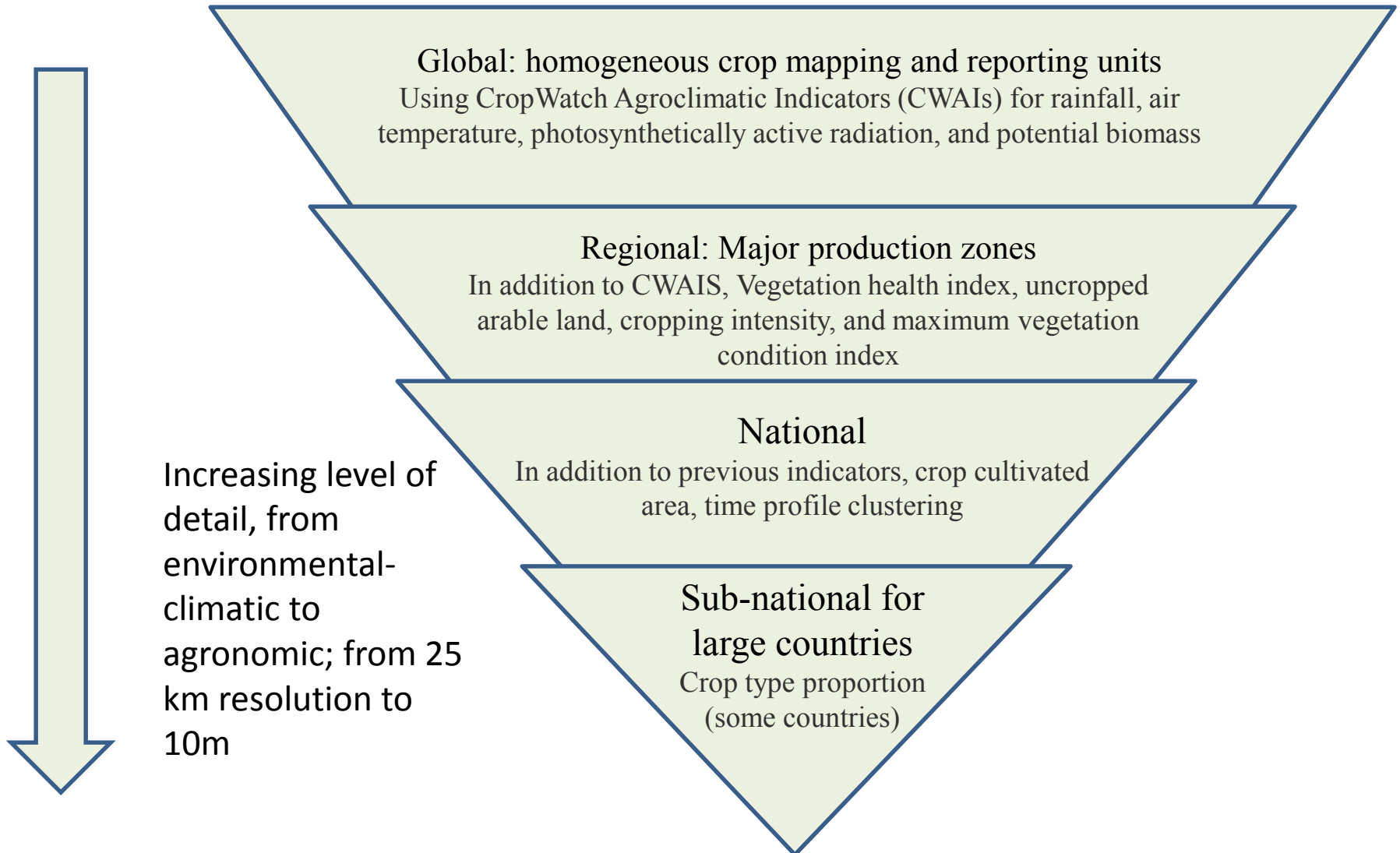
CropWatch Analysis is cloud based participatory tool for the CropWatch teams or invited people from over the world analyzing their CropWatch indicators anywhere. It provides create document, allocate and manage tasks, monitor schedule and publish the document online functions which let people over the world finish their documents together on the cloud platform.



CropWatch Team + Experts over the world

The country analysis of each bulletin was finished by 37 experts for 42 countries.

CropWatch Hierarchical approach





CropWatch-Analysis

Task assignment

The screenshot displays the CropWatch-Analysis web application interface. The top navigation bar includes a hamburger menu, a notification bell, and the user's name 'Milo' in English. The main content area is titled 'August 2018 CropWatch bulletin' and shows a list of tasks assigned to the user 'Changsheng'. The tasks are organized into four sections: 'Executive summary', 'Global agroclimatic patterns', 'Crop and environmental conditions in major production zones', and 'Main producing and exporting countries'. Each task entry includes a table with columns for '#', 'Section', 'Author', 'Status', and 'Options'. The 'Status' column indicates whether the task is 'Published' or 'Draft'.

Home / Reports / August 2018 CropWatch bulletin

August 2018 CropWatch bulletin

Changsheng created at 2018-08-06 15:48:43 - current status is **Draft**

Executive summary

#	Section	Author	Status	Options
1	Executive summary	changsheng rene	Published	

Global agroclimatic patterns

#	Section	Author	Status	Options
1	Global agroclimatic patterns	rene mitchem	Published	

Crop and environmental conditions in major production zones

#	Section	Author	Status	Options
1	Overview	rene	Published	
2	West Africa	rene	Published	
3	North America	changsheng	Published	
4	South America	reubelle	Published	
5	South and Southeast Asia	mitchem	Published	
6	Western Europe	zhouwen	Published	
7	Central Europe to Western Russia	tingting	Published	

Main producing and exporting countries

#	Section	Author	Status	Options
1	Overview	rene	Published	
2	Country analysis	changsheng	Published	
3	Argentina	reubelle	Published	
4	Australia	tingting	Published	
5	Bangladesh	mitchem	Published	
6	Brazil	Miao	Published	
7	Canada	zhidian	Published	
8	Germany	zhouwen	Published	
9	Egypt	Mikael	Published	



CropWatch-Analysis

Write and revise the analysis using the products (maps, graphs, tables, etc) as well as internal thematic products

The screenshot displays the CropWatch-Analysis web interface. On the left is a dark sidebar with navigation options: Home, Report, Work, Settings, Audit, and Tag. The main content area is titled "#10 Ethiopia" and contains a rich text editor with the following sections:

- Country analysis:** Ethiopia experiences two main agricultural seasons: Meher and Belg. Meher is the main crop season and farmers cultivate cereals like wheat, teff, maize and barley. This reporting period corresponds to Belg harvesting time and Meher land preparation and planting (the season covers crops harvested from August to the end of December). Agroclimatic indicators were below average (RAIN - 9%, TEMP -0.4°C), and radiation (RADPAR) was stable, resulting in a minor BIOMSS potential drop of 2% compared to average. On average, VCIx was 0.87 with about half of cropped areas at values lower than 0.8. VCIx exceeding 1, indicating unusually favourable conditions was mostly distributed in small regions along eastern and central part Oromia and northern Tigray. National NDVI values were below average. According to spatial NDVI departure clusters areas with above average NDVI (about 24.5% of arable lands) are located in the central Oromia region, which is coincident with the high VCIx values. Generally, based on below average indicators the crop outlook was unfavorable. The production of wheat is estimated to decrease by 3.8% and Maize decreased by 6.6% during the 2018 production year.
- Regional analysis:** Ethiopia can be subdivided into five agro-ecological zones: the semi-arid pastoral zone, southeastern highlands, southeastern mixed-maize zone, western mixed maize regions, and central-northern maize-teff highlands. In the **Western mixed maize zone**, maize was the most cultivated crop during the Belg and early meher seasons. Agroclimatic variables were below average with RAIN -14%, TEMP -0.3°C and RADPAR -1%, which resulted in a BIOMSS drop of 7%. Overall even though the maximum VCIx at 0.911% was good, the NDVI-based Crop condition development graphs was below average to that of past five years average. Based on the agreements of agronomic and Agro climatic indicators with addition to the NDVI based crop condition development over all the western maize zone there was no favorable condition. In general, during the reported period the crop Phenology of planting of Meher and harvest of Belg was Not conducive.
- South-eastern Mendebo highlands:** The southeastern Mendebo highlands are major maize and teff producing areas. It received 473 mm with slight above average of rainfall (RAIN, 1%). Hence the temperature was decreases by 0.6 oc from average. There was no reduction in RADPAR. Due to slight above average of rainfall The Cropped arable land fraction (CALF) dropped 3% below the recent five-year average. Even though during the reported period the AEZ had maximum VCIx at 0.97, the NDVI crop condition development graph still described the temporal difference: above average during April and May, and below average from Mid-May to end of July during the grain feng stage. Over all the NDVI crop condition graph was below

On the right side of the interface, there are several data visualization components:

- A table showing agroclimatic indicators for the months of May through March.
- A chart titled "(a) Phenology of major crops" showing a seasonal cycle with a peak in August.
- A line graph titled "(b) Crop condition development graph based on NDVI" comparing the 2018 season (red dots) with a 5-year average (blue line) and a 5-year maximum (magenta line). The 2018 data points are generally lower than the average and maximum lines.
- A map of Ethiopia at the bottom right, with a red box indicating a specific region of interest.



CropWatch-Bulletin



Home >> Bulletin >> August 2018 CropWatch bulletin (Vol. 18, No. 3)

August 2018 CropWatch bulletin (Vol. 18, No. 3)

All bulletins >>



August CropWatch Bulletin is based mainly on current remote sensing inputs in addition to detailed and spatially accurate reference data about crops and their management. The scope is global and comprehensive. Focusing on the months of April to July 2018, chapters cover global, national, and regional-level agroclimatic variations and the condition of crops that were growing or harvested during this time. For China, the bulletin presents China crop production, crop conditions for each of seven key agro-ecological zones, regional impacts of pests and diseases as well as trade prospects (import/export) of major crops. The focus section reports on food production estimates, recent disaster events with an impact on agriculture, and the possibility of an El Niño event.

Full report

中文全文

sign up for the mailing list

Key messages from the report:

- There are dry conditions in North American western coastal areas, significant warming in northern high latitude areas and relatively wet conditions in the dominant area extending from northern Africa (Sahel) across the Arabian Peninsula to Mongolia and beyond. Large monitoring areas had below average sunshine, resulting in a global sunshine drop of 2% over all agricultural areas and drought prevailed at high latitudes in both hemispheres.
- Global crop production: CropWatch estimates the global 2018 production of the major commodities at 1011 million tons of maize, down 0.1% from 2017, 727 million for rice (up 1.7%), 702 million tons of wheat (with a 2.4% decrease below 2017 output) and 320 million tons of soybeans, down 1.0%.
- China crop production: The total annual crop production is estimated at 577 million tons down 0.9% from 2017 (2.46 million tons decrease). CropWatch forecasts the rice production for China at 198 million tons, 2% below 2017 and soybean production at 14.2 million tons (+3% from 2017).
- Disaster: Drought is reported from several areas across all continents. Floods happened in the Horn of Africa and surrounding regions, together with several areas in Asia. The situation of cyclones was relatively calm during the reporting period.
- El Niño: El Niño conditions have been neutral across the Pacific Ocean during the second quarter of 2018.

Introduction

This version summarizes global crop condition developments and agroclimatic factors from April 1 to July 31, 2018 through 4 zooms in from a global overview of agroclimatic indicators (Chapter 1) to detailed descriptors of crop and environmental conditions in large production zones (Chapter 2), in individual country analysis covering 41 major producers and exporters including agro-ecological zones (Chapter 3) and China (Chapter 4). A special focus section is included in Chapter 5, covering crop production for 2018, disaster events, and an update on El Niño. The first part of the report includes the cover, table of contents, abbreviations, a short overview of the different sections of the bulletin and executive summary.

Download

Executive summary

Chapter 1. Global agroclimatic patterns

Chapter 1 describes the CropWatch Agroclimatic Indicators (CWAIs), rainfall (RAIN), temperature (TEMP), and radiation (RADPAR), along the agronomic indicator for potential biomass (BIOMSS) in sixty-five global Monitoring and Reporting Units (MRUs). Rainfall, temperature, and radiation indicators are compared to their average value for the same period over the last fifteen years (called the "average"), while BIOMSS is compared to the indicator's average of the recent five years. Indicator values for all MRUs are included in Annex A table A.1. For more information about the MRUs and indicators, please see Annex C.

Download

Chapter 1. Global agroclimatic patterns

Chapter 2. Crop and environmental conditions in major production zones

Chapter 2 presents the same indicators—RAIN, TEMP, RADPAR, and BIOMSS—used in Chapter 1 and combines them with agronomic indicators—cropped arable land fraction (CALF), maximum vegetation condition index (VCI), and minimum vegetation health index (VHI)—to describe crop and environmental conditions in six global major production zones (WPZ): West Africa, North America, South America, South and southeast Asia, Western Europe, and Central Europe to western Russia (See also Annex C for more information about these zones).

Download

Chapter 2. Crop and environmental conditions in major production zones

Chapter 3. Main producing and exporting countries

Chapter 3 offers a closer look at individual countries. This chapter assesses the situation of crops in 41 key countries that represent the global major producers and exporters or otherwise are of global or CropWatch relevance. First, the overview section (3.1) pays attention to all countries worldwide, to provide some spatial and thematic detail to the overall features described in section 1.1. In section 3.2, more detail is provided for each of the CropWatch monitored countries, including analysis by key agro-ecological zones within the country. For each country, maps are included illustrating NDVI-based crop condition development graphs, maximum VCI, and spatial NDVI patterns with associated NDVI profiles. Additional information about indicator per country is provided in Annex A, while Annex B provides 2018 production estimates for select countries at provincial/state level.

Download

Chapter 3. Main producing and exporting countries

Chapter 4. China

After a brief overview of the agroclimatic and agronomic conditions in China over the reporting period (section 4.1), Chapter 4 describes the China crop production (4.2) and the situation by region, focusing on the seven most productive agro-ecological regions of the east and south: Northeast China, Inner Mongolia, Huanghuaihai, Loess region, Lower Yangtze, Southwest China, and Southern China (4.3). Section 4.4 presents the results of ongoing pests and diseases monitoring, while sections 4.E describe trade prospects (import/export) of major crops. Additional information on the agroclimatic indicators for agriculturally important Chinese provinces is listed in table A.11 in Annex A.

Download

Chapter 4. China

Chapter 5. Focus and perspectives

Building on the CropWatch analyses presented in chapters 1 through 4, this chapter presents initial CropWatch food production estimates for 2018 (section 5.1), as well as sections on recent disaster events (section 5.2), and an update on El Niño (5.3).

Download

Chapter 5. Focus and perspectives



CropWatch-Bulletin

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MAIN PRODUCING AND EXPORTING COUNTRIES

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- Mexico
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- Romania
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- Turkey

Figures



AUGUST 2018 CROPWATCH BULLETIN

[Download](#)[All](#) [cropwatch](#) [China](#)

Executive summary Executive summary

Author: [zenghongwei](#) [rens](#) Editor: [Changsheng](#)[cropwatsb](#)

Executive summary

The current CropWatch bulletin is based mainly on remote sensing tools and methods for both climatic and crop condition data. It focuses on crops that were growing or have been harvested between April and July 2018. The bulletin covers prevailing weather conditions, including extreme factors, at different spatial scales, starting with global patterns in Chapter 1. Chapter 2 focuses on agro-climatic and agronomic conditions in major production zones in all continents. Chapter 3 covers the major agricultural countries that, together, make up at least 80% of production and exports (the "top 30") while chapter 4 zooms into China. Detailed data and narratives about crops and environmental conditions are exposed in both chapters. Special attention is paid to the major producers of maize, rice, wheat, and soybean. The bulletin then presents a global production estimate for crops to be harvested throughout 2018 (Chapter 5.1), revised from our first estimate published in May 2018; 90% of the current estimates are based on modeled data and 10% are based on statistical projections. Subsequent sections of Chapter 5 describe the global disasters that occurred from April to July 2018.

This bulletin is issued at a time when almost all winter crops in the northern hemisphere, including China, have been harvested and summer crops are in their late stages; in the southern hemisphere winter crops are growing and the planting of the summer season/monsoon season will start in a month or so,

resulting mainly from adequate rainfall during the previous monitoring period.



Figure X Crop calendar for Brazil



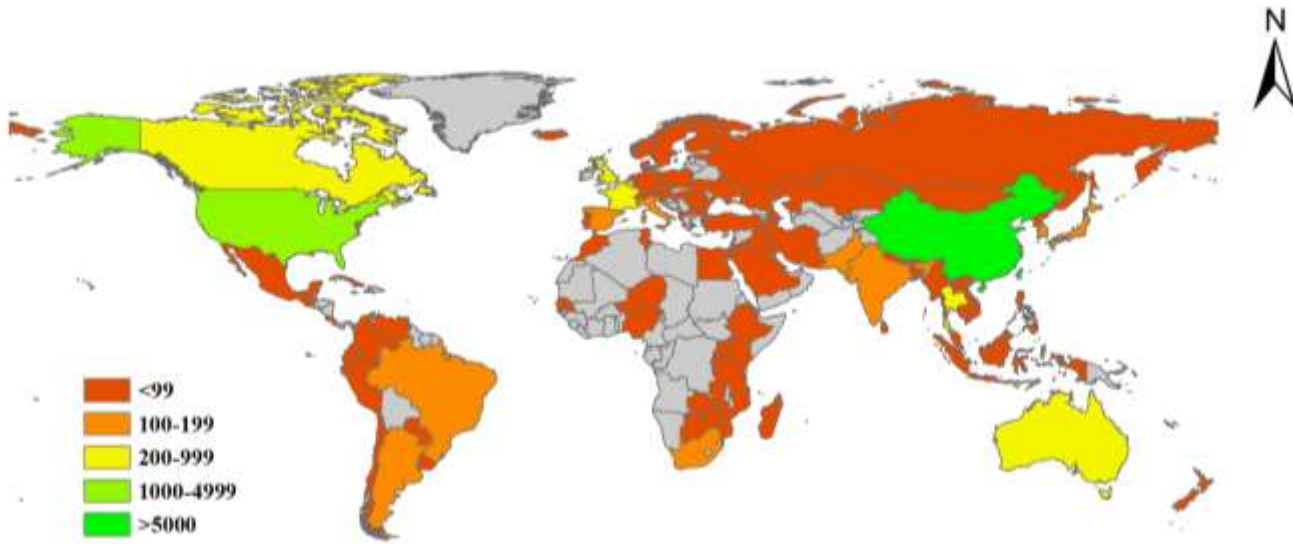
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Section navigation

Figure navigation

CropWatch bulletin served for 149 countries

- ❑ CropWatch already provided information services for 149 countries, and obvious enhance the transparency of global agricultural monitoring.

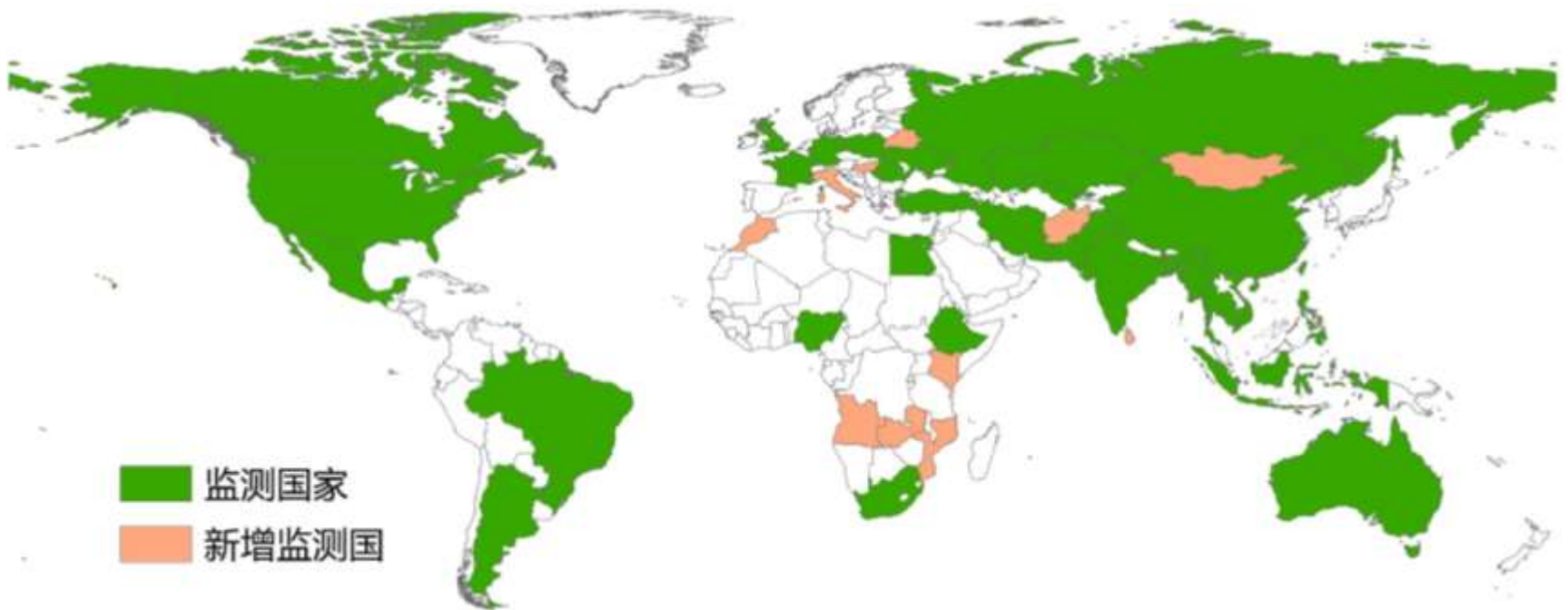


Outline

- ❖ Agronomic information gap
- ❖ CropWatch Cloud
- ❖ **Practices for interest of countries**
- ❖ Outlook

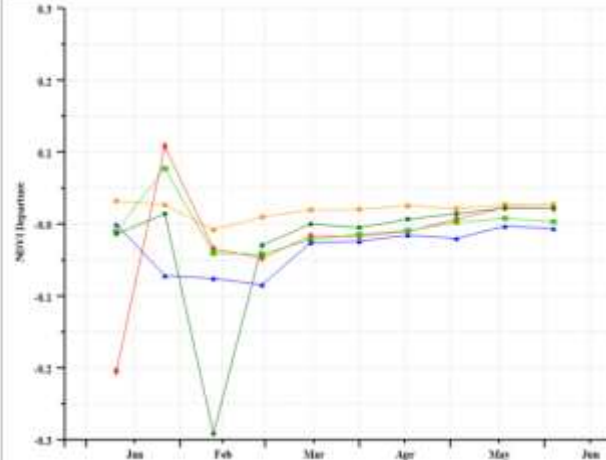
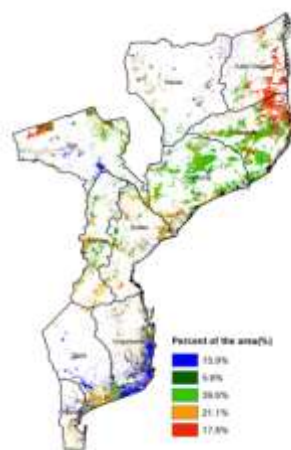
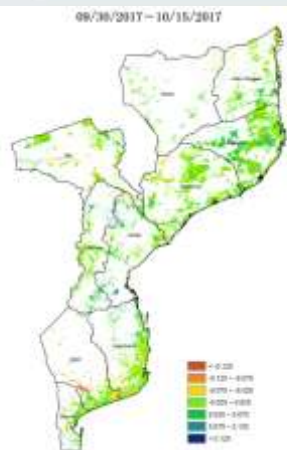
CropWatch monitoring for B&R

- In 2018, the focus countries by CropWatch increased from 31 major countries to 42 countries, the all new countries are located within B&R region.



Customization for Mozambique

Working with partner from the MOA of Mozambique, customization of CropWatch cloud for Mozambique since Dec. 2017.



Customization for Mozambique



DIRECÇÃO NACIONAL DE AGRICULTURA E SILVICULTURA - MASA
DEPARTAMENTO DE CULTURA E RURAL-PROTECÇÃO

BOLETIM AGROMETEOROLÓGICO

Em Foco

- Região de agricultura mediana elevada do nordeste do Moçambique em 2017 e 2018 e análise de desempenho agrícola (maize e milho) - avaliação de impactos de 2017 e 2018 (Mapa 2017)
- Região de norte do centro do ZIM do Nordeste do centro-sul do Moçambique em 2017 e 2018 (Mapa 2017)
- Plan. Respostas de emergência de emergência cultural - agricultura de emergência - Agosto 2018
- Região de agricultura mediana elevada do nordeste do Moçambique em 2017 e 2018 (Mapa 2017)

PREVENÇÃO DE SECURAS E ACUMULAÇÃO DE OBTURANTES DE OUTUBRO DE 2017 A MARÇO DE 2018

Os dados sobre precipitação e temperatura de 2017 foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018. Os dados foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018. Os dados foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018.

PREVENÇÃO DE SECURAS E ACUMULAÇÃO DE OBTURANTES DE OUTUBRO DE 2017 A MARÇO DE 2018

Em geral, a precipitação registada entre os meses de Outubro e Dezembro de 2017 foi superior à média histórica do normal no nordeste do Moçambique. No entanto, a precipitação registada entre os meses de Outubro e Dezembro de 2017 foi inferior à média histórica do normal no nordeste do Moçambique. No entanto, a precipitação registada entre os meses de Outubro e Dezembro de 2017 foi superior à média histórica do normal no nordeste do Moçambique.

EVOLUÇÃO DA CAMPANHA AGRÍCOLA 2017/2018

A campanha agrícola 2017/2018 teve início em Outubro de 2017 e terminou em Março de 2018. Durante este período, foram registadas precipitações superiores à média histórica do normal no nordeste do Moçambique. No entanto, a precipitação registada entre os meses de Outubro e Dezembro de 2017 foi inferior à média histórica do normal no nordeste do Moçambique.

IMPACTO DAS ADVERSIDADES CLIMÁTICAS E DOS FENÓMENOS DE EXTREMO

Os dados sobre as adversidades climáticas e os fenómenos de extremo foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018. Os dados foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018. Os dados foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018.

ÍNDICE DE SUSTENTABILIDADE HÍDRICA DAS CULTURAS

O Índice de Sustentabilidade Hídrica (ISH) das culturas de 14 meses em geral foi considerado bom para a região Norte, médio para a região Centro e mau para a região Sul do país (Fig. 2).

Na Região Sul, os dados de 14 meses foram inferiores ao nível de alerta. Em geral, o Índice de Sustentabilidade Hídrica das culturas de 14 meses em geral foi considerado bom para a região Norte, médio para a região Centro e mau para a região Sul do país (Fig. 2).

Na Região Centro, os dados de 14 meses foram inferiores ao nível de alerta. Em geral, o Índice de Sustentabilidade Hídrica das culturas de 14 meses em geral foi considerado bom para a região Norte, médio para a região Centro e mau para a região Sul do país (Fig. 2).

Na Região Norte, os dados de 14 meses foram superiores ao nível de alerta. Em geral, o Índice de Sustentabilidade Hídrica das culturas de 14 meses em geral foi considerado bom para a região Norte, médio para a região Centro e mau para a região Sul do país (Fig. 2).

ANÁLISE DE RISCO

A análise de risco dos dados de cultura de milho em 14 meses em geral foi considerada boa para a região Norte, média para a região Centro e má para a região Sul do país (Fig. 3).

ANÁLISE E DESEMPENHO DA CAMPANHA AGRÍCOLA 2017/18

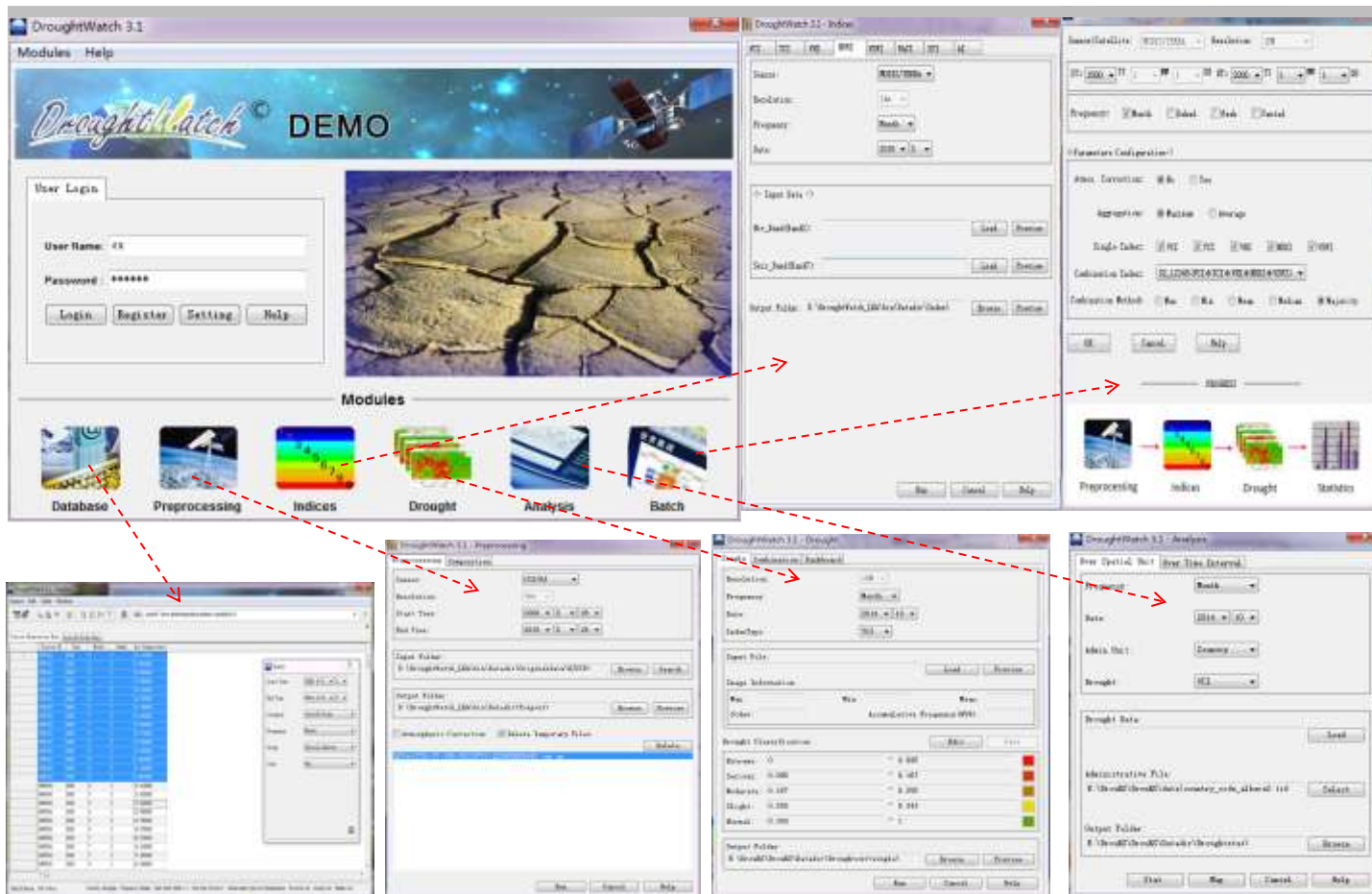
Os dados sobre o desempenho da campanha agrícola 2017/18 foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018. Os dados foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018. Os dados foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018.

COLABORAÇÕES

Os dados sobre as colaborações foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018. Os dados foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018. Os dados foram analisados para a prevenção de secas e acumulação de obturantes no nordeste do Moçambique em 2017 e 2018.

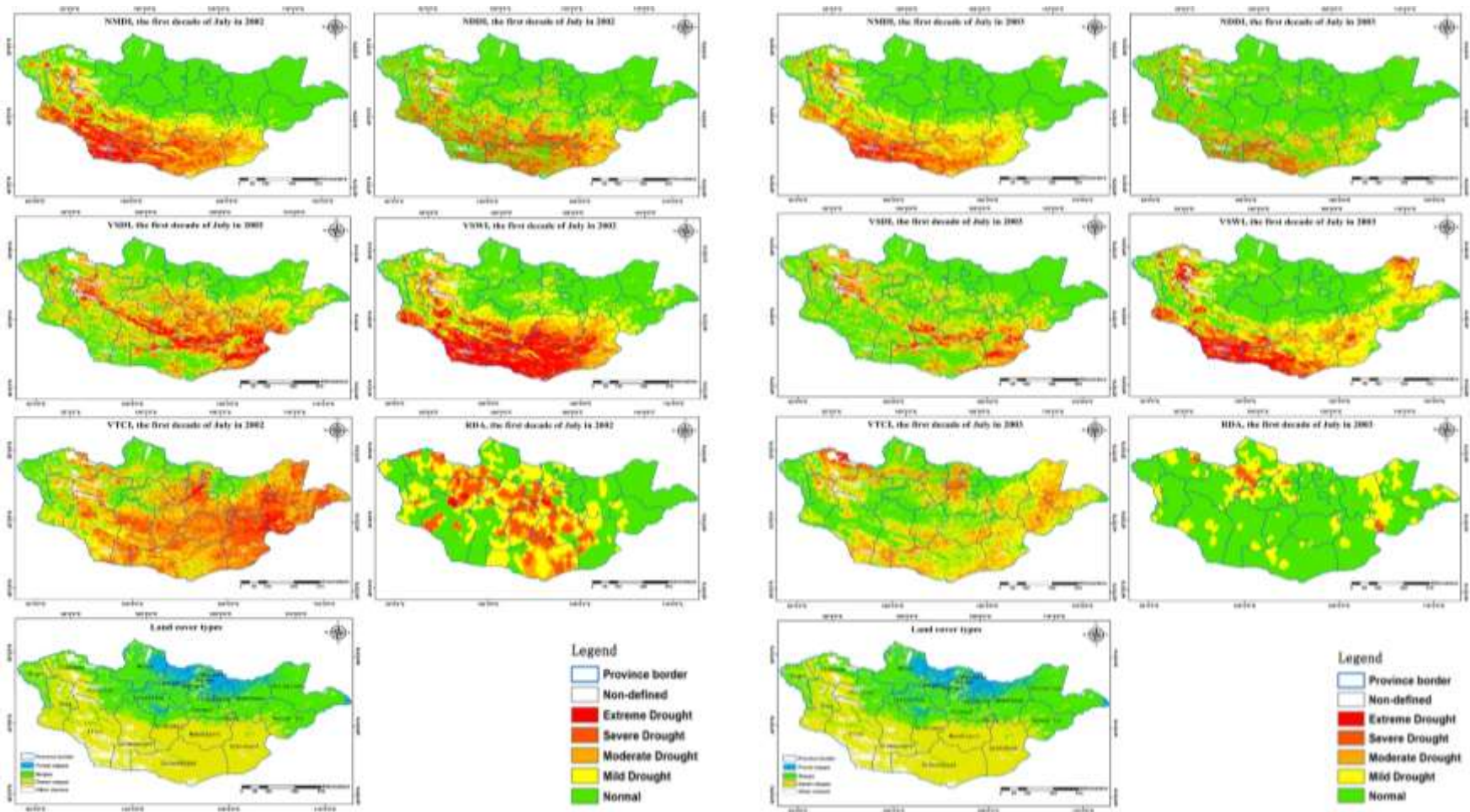
DroughtWatch for Mongolia

To address the gap of drought in Mongolia, CropWatch team customized the drought watch for Mongolia which include 10 indicators.



Drought demonstration in Mongolia

Currently, Drought Watch was already operated routinely in Mongolia.



Drought demonstration in Mongolia

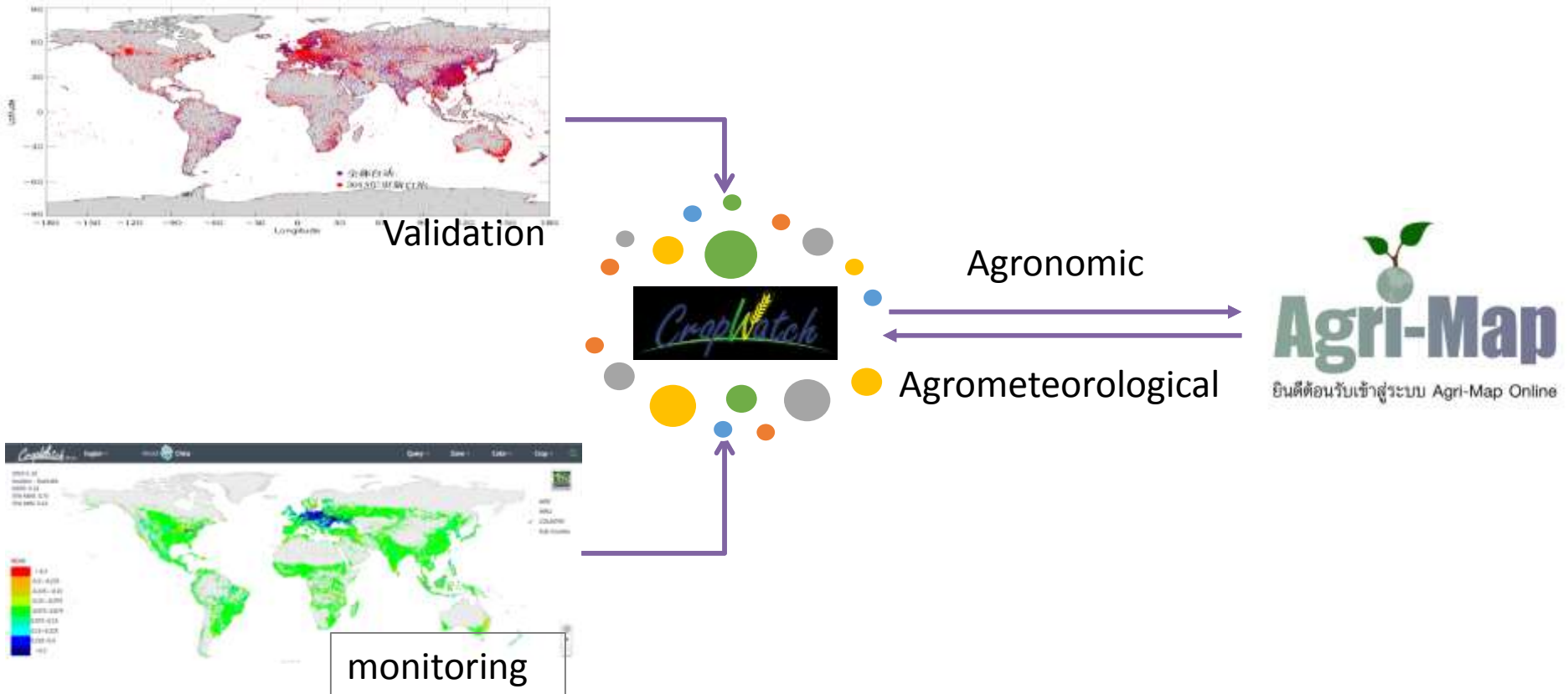
On September 17, 2018, the DroughtWatch-Mongolia was officially handed over to the Mongolian National Remote Sensing Center (NRSC)

The image displays a screenshot of the DroughtWatch-Mongolia web interface. On the left, the URL <http://irimhe.namem.gov.mn> is shown above the logo of the Information and Research Institute of Meteorology, Hydrology and Environment. The interface includes a search bar, navigation tabs, and a main map area displaying a satellite-style image of a region. A sidebar on the right contains several icons for different data layers and tools. A red box highlights a section of the sidebar. On the right side of the image, a separate screenshot of the www.icc.mn website is shown, featuring a grid of small maps. Below this, the www.eic.mn website is displayed, which includes an 'Environmental Database' section. A blue box at the bottom of this section contains the text: 'Drought product dissemination to local meteorological departments by internal network'. At the bottom left, the text 'Servicing to organizations' is followed by logos for the Ministry of Food, Agriculture and Light Industry and the Ministry of Nature, Environmental and Tourism. At the bottom center, there is a logo for the Mongolian National Remote Sensing Center (NRSC) with the text 'MONGOLIAN NATIONAL REMOTE SENSING CENTER' and '101 105'.



Build the bridge for Thailand

Based on the extensibility of cloud-based system, CropWatch will provide the communication port for existing agronomic monitoring system, allow them to the public and share the monitoring information.

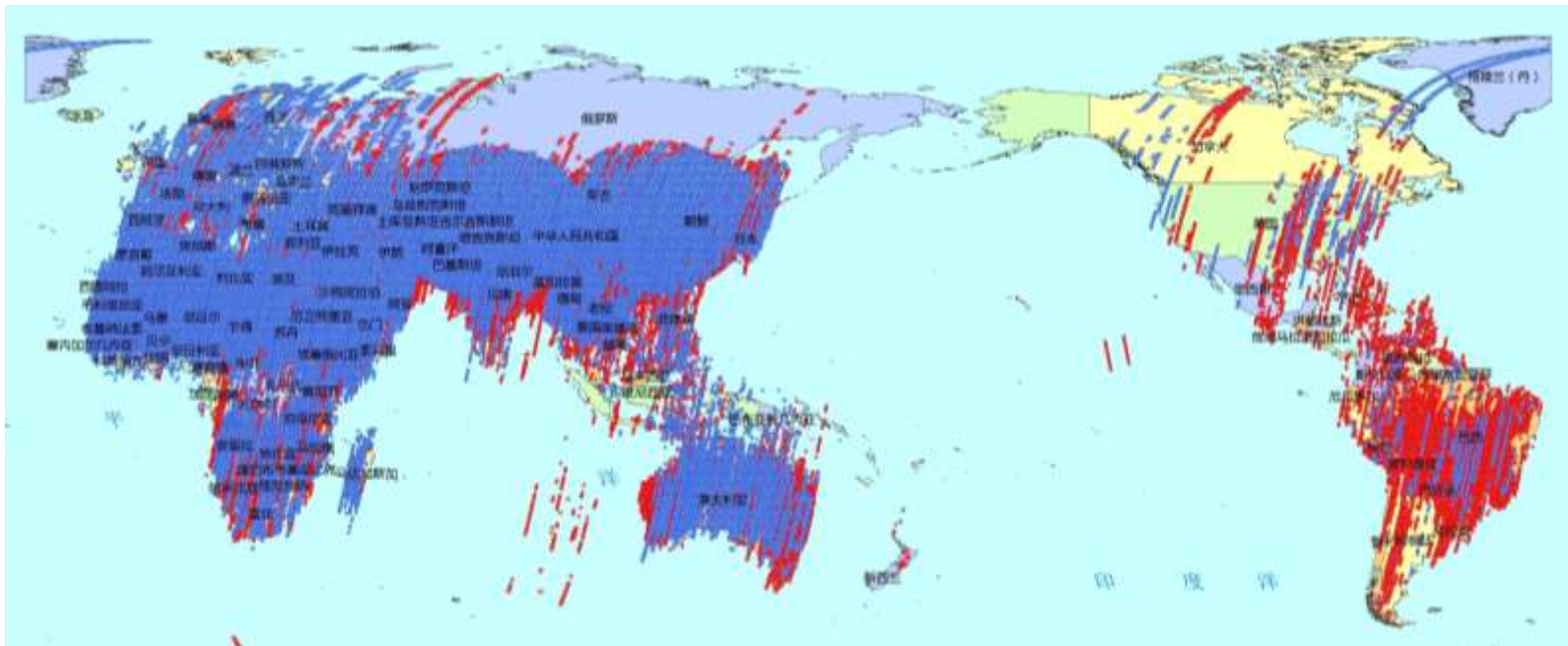


Outline

- ❖ Agronomic information gap
- ❖ CropWatch Cloud
- ❖ Practices for interest of countries
- ❖ **Outlook**

Fine agronomic information will be coming soon

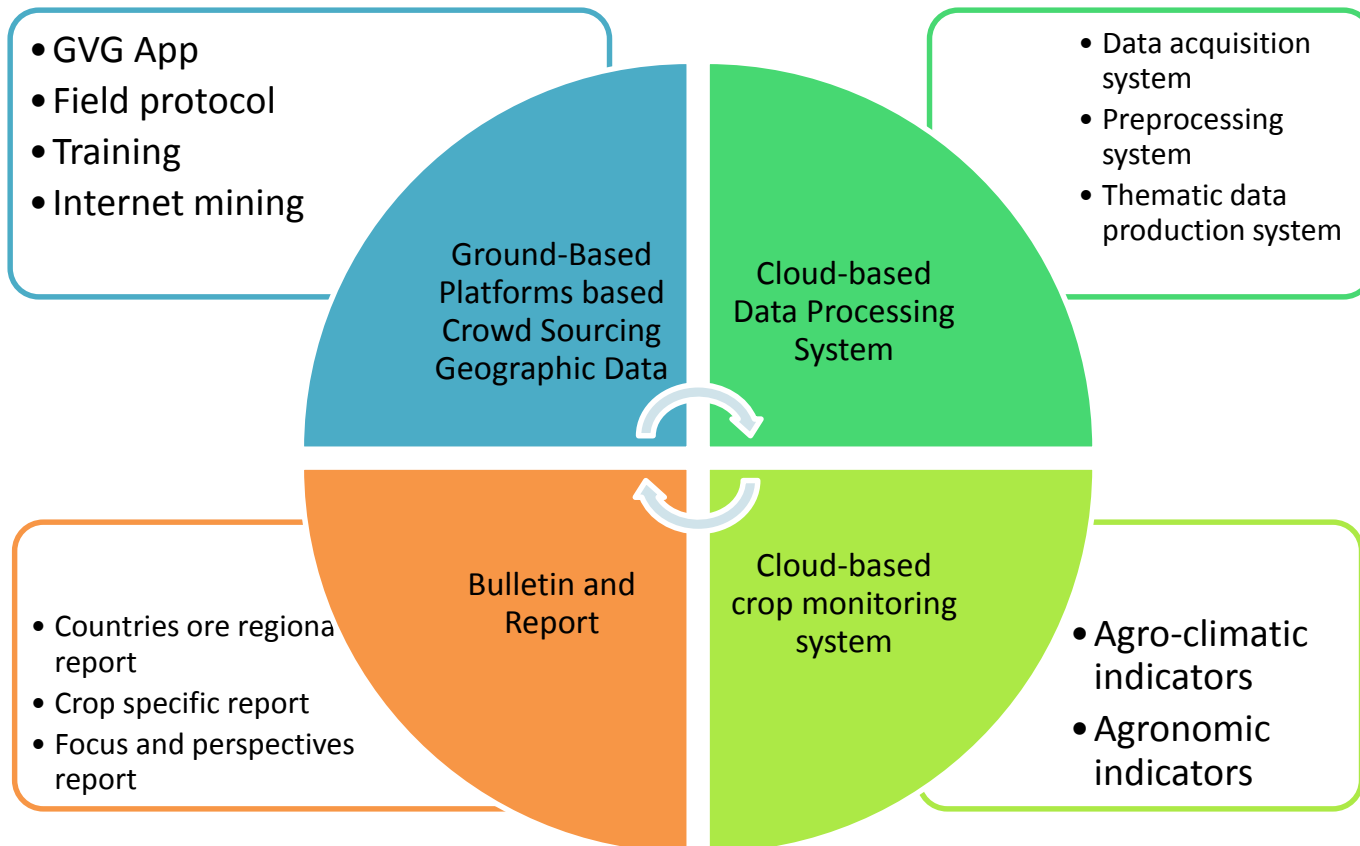
- ❑ 5m ZY-3 data covering one belt and road will be shared with public, address: http://cloud.satimage.cn/EN/data_push
- ❑ CropWatch will provide more fine information for B&R countries using ZY-3 data.



Source: www.sasmac.cn

How to work with country?

- CropWatch Cloud services
 - Integration with local technical system
- Customization and localization
Utilization of local knowledges



Thank you for your attention!