



CACIP platform

Country consultations of Central Asian Climate Information
Platform: Tajikistan

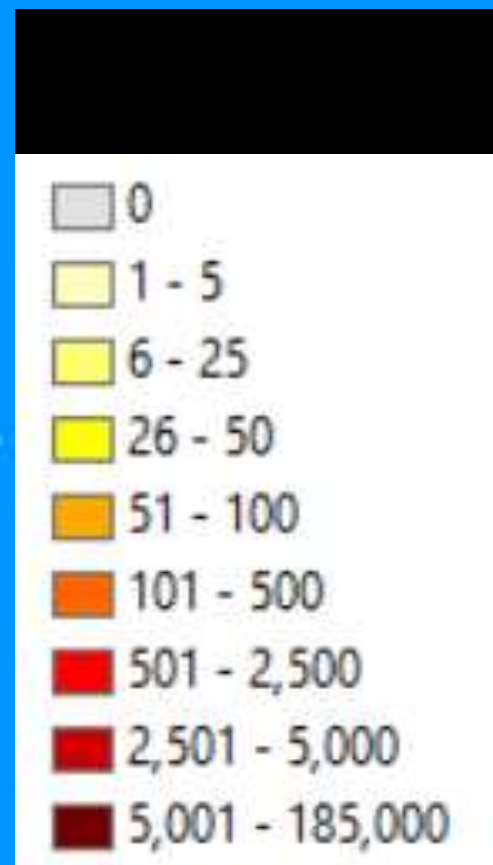
version 4

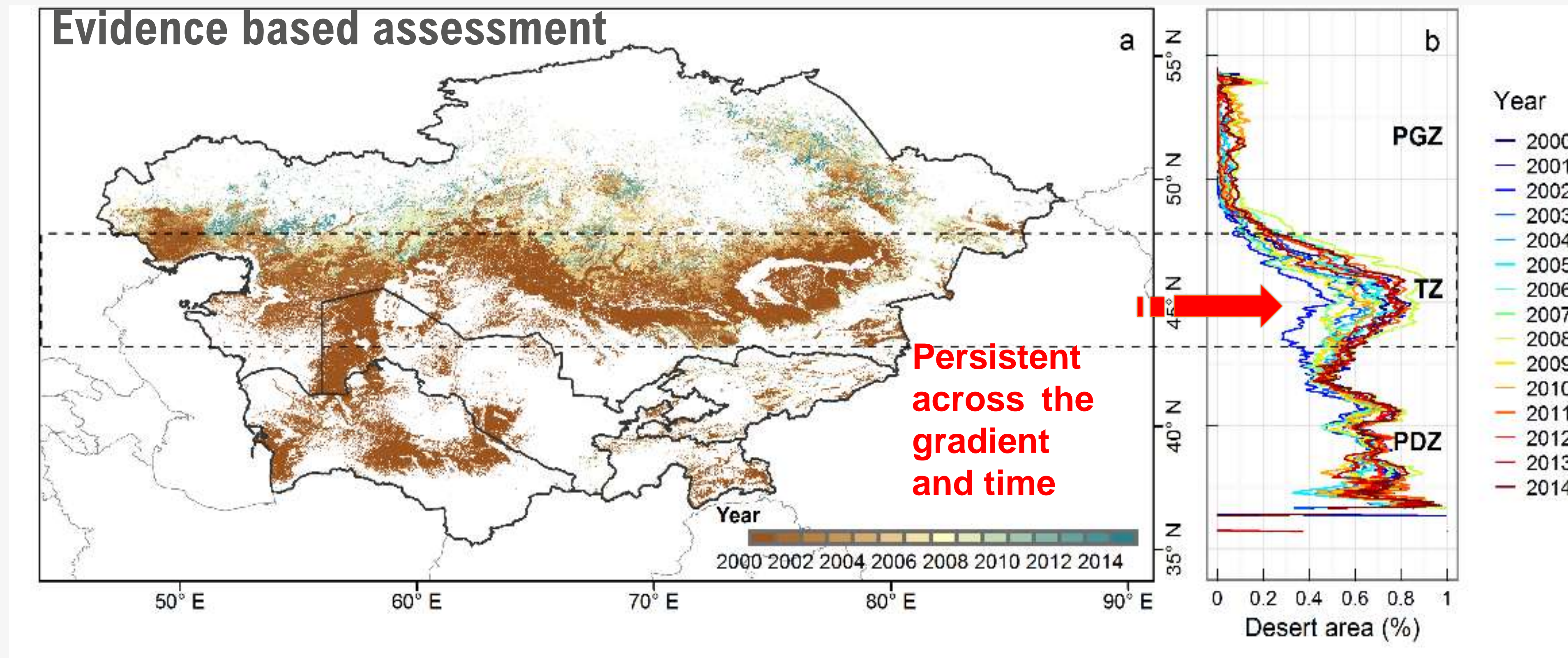
Ram C. Sharma (ICARDA)
Akmal Akramkhanov (ICARDA)
Rustam Ibragimov (ICARDA)
Simone Maffei (iMMAP)

Dushanbe 15 July 2019
Rohat Hotel

introduction

**It's estimated nearly 1.5 billion people
will be on “move” in next 5-10 years time**



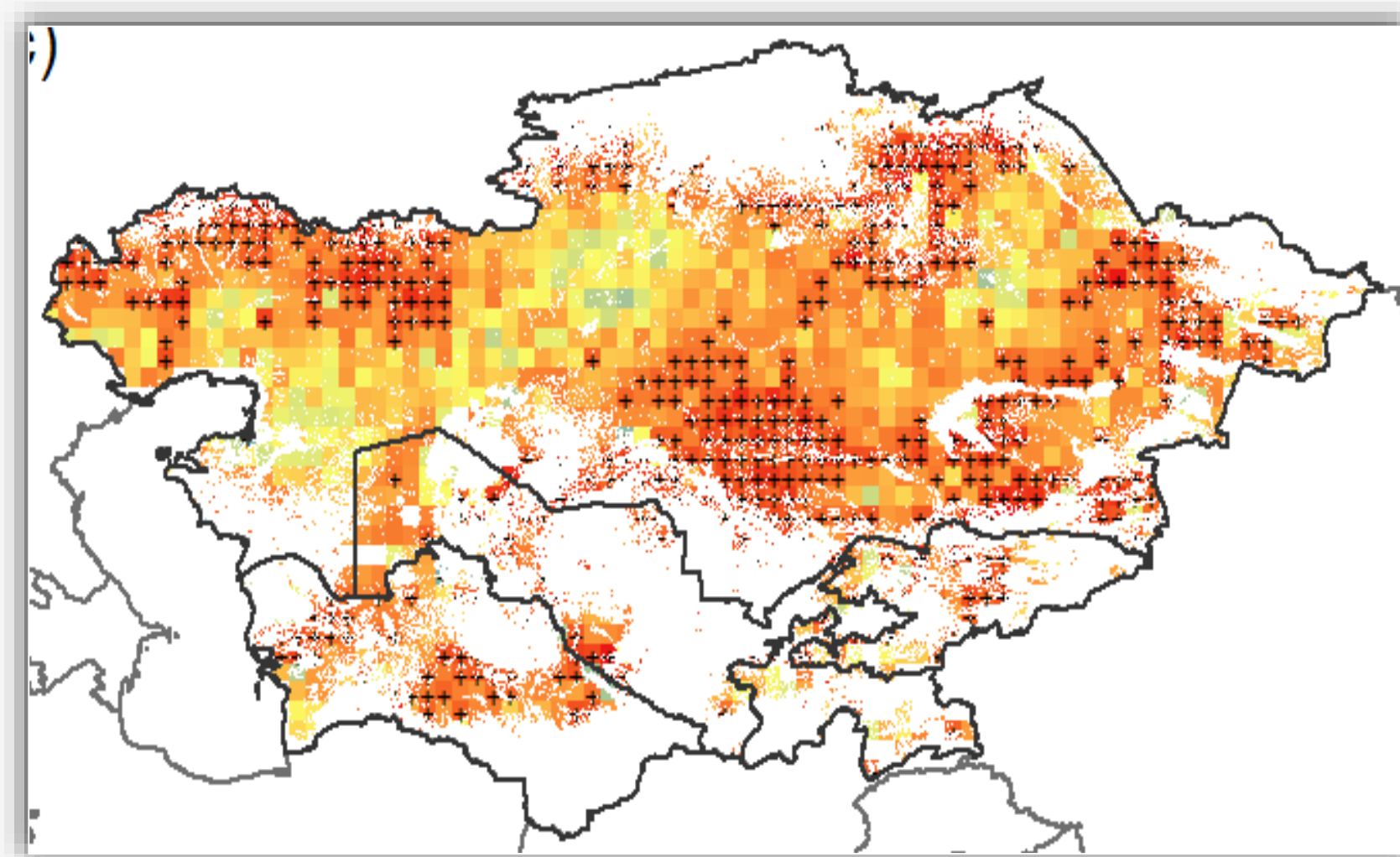
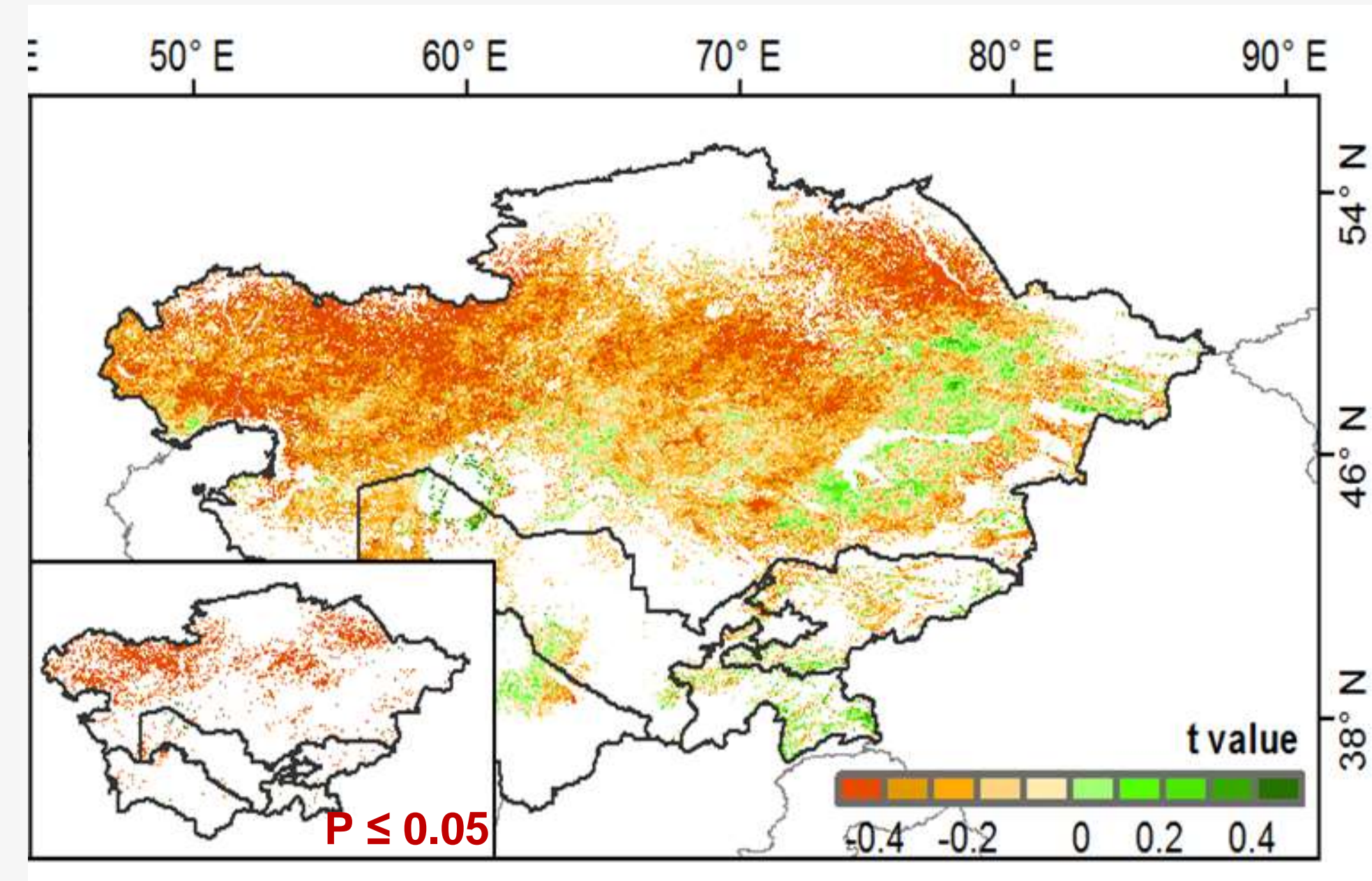


- The change analysis indicated that **grassland area** in Central Asia decreased (**12.5%**) in the **past 15 years**, especially significant within a latitude range of 43-48°N.
- Trend of gradual delay from south to north (profile), indicating the **northward extension of desertification regime**, which led to the large decrease in grasslands.

Climate Change in Central Asia

5

- Spatial patterns showed an overwhelming land degradation across the central Asia,
- Persistent across the landscape and **severe in the northern Kazakhstan**



- Under CC, land degradation is **expected to exacerbate** in Central Asia in future.
- The identification of **sensitive and fragile regions** can help **prioritize and effectively mitigate** desertification in Central Asia.

Challenges of adaptation to climate change

Complex in nature, depends on environmental as well as socio-economic aspects

Environmental, for example:

- Context - drylands, high reliance on irrigated agriculture
- Drought is not sudden, 'creeping phenomenon'
- No single indicator for monitoring, high uncertainty – and there is no single coping intervention

Socio-economical, for example:

- Impacts poorly understood - little documentation, not systematic
- Strategies not mainstreamed – decision-support tools are not tailored to policy and management decisions



Impact Assessment

CROP	COUNTRY	IRRIGATION	CHANGE OF YIELD ACROSS ALL MGMT. LEVELS AND FUTURES (%)	
			A1B	A2
WHEAT	KAZAKHSTAN	RAINFED	8	9
		SI	10	10
	KYRGYZSTAN	SI	8	8
		RAINFED	24	24
	TAJIKISTAN	SI	5	5
		RAINFED	24	29
	UZBEKISTAN	SI	14	14
		FULL IRRIG.	14	14
COTTON	KYRGYZSTAN		6	0
	KAZAKSTAN		9	9
	TAJIKISTAN		-18	-14
	UZBEKISTAN		-11	-16
POTATO	KAZAKHSTAN		-3	-5
	TAJIKISTAN		57	68
	UZBEKISTAN		19	15

Glazirina et al. 2012. Model simulations CropSyst for wheat; DSSAT for cotton and potato

Impact Assessment: Yield

Effects of climate change on crop yields 2040-2050 relative to current yields in Uzbekistan under high impact scenario

<i>Irrigated/Rainfed</i>	<i>Crop</i>	<i>Desert and Steppe East</i>	<i>Desert and Steppe West</i>	<i>Highlands South</i>	<i>Piedmont zone East</i>	<i>Piedmont zone Southwest</i>
Irrigated	Alfalfa	3	2	3	27	1
	Apples	-22	-14	-19	-24	-19
	Cotton	-10	-8	0	-9	-9
Rainfed	Grassland	10	-9	3	28	-5
	Potatoes	-10	-11	-13	-12	-11
	Tomatoes	-16	-12	0	-10	-15
	Winter Wheat	-8	-5	-2	19	-19
	Spring Wheat	-31	-16	-30	-12	-29

Note: Results are average changes in crop yield, assuming no adaptation and no irrigation water constraints and no effect of carbon dioxide fertilization, under high impact scenario. Declines in yield are shown in shades of orange, with darkest representing biggest declines; increases are shaded green, with darkest representing the biggest increases.

➤ Effects are not always negative, positive for some crops/areas

the agenda

- **introduction** to Central Asia Climate Information Platform and Regional Framework (CAMP4ASB)
 - **platform concept**, design framework and main building blocks
 - **action plan, participation and suitability**
 - **informative survey**, distribution of forms, filling
-
- coffee break*
- **group discussion by focus area** on available on **data / communication channels / ...**
 - **plenary restitution** of results of the group discussion
-
- lunch*
- **one-to-one meeting**



the project team...



Enrico Bonaiuti - ICARDA
Key Expert: Team Leader



Chandrashekhar Biradar - ICARDA
Key Expert: Climate Knowledge



Jim Jaspe - IMMAP
Key Expert: IT



Simone Maffei - IMMAP
Technical Documentation Specialist



Akmal Akramkhanov - ICARDA
Knowledge Management - Central Asia



Ram Sharma - ICARDA
Head of ICARDA Program for Central Asia and Caucasus



Bastian Mueller - ICARDA
Technical E Learning - Communication Training Officer



Fabian Loew - ICARDA
Research Officer



Sanobar Khudaybergenova - ICARDA
Communications Specialist

Rustam Pulatovich Ibragimov - ICARDA
Deputy Head of Representative Office

Farhod Khamraev - ICARDA
Administrative Assistant

Valerio Graziano - ICARDA
Learning & Open Access Consultant

Aya Mousa - IMMAP
Junior Documentation Specialist



The International Center for Agricultural Research in the Dry Areas (ICARDA) is an international organization undertaking research-for-development. We provide innovative, science-based solutions for communities across the non-tropical dry areas. In partnership with research institutions, NGOs, governments, and the private sector, our work advances scientific knowledge, shapes practices, and informs policy.



iMMAP is an international not-for-profit organization that provides information management services to humanitarian and development organizations, enabling partners to make informed decisions that ultimately provide high-quality targeted assistance to the world's most vulnerable populations.

platform concept

the objectives ...

The **project CACIP** was born with the aim of building a platform to share information, knowledge, data, tools related to the climate in Central Asia.

to be a gateway for
climate relevant information

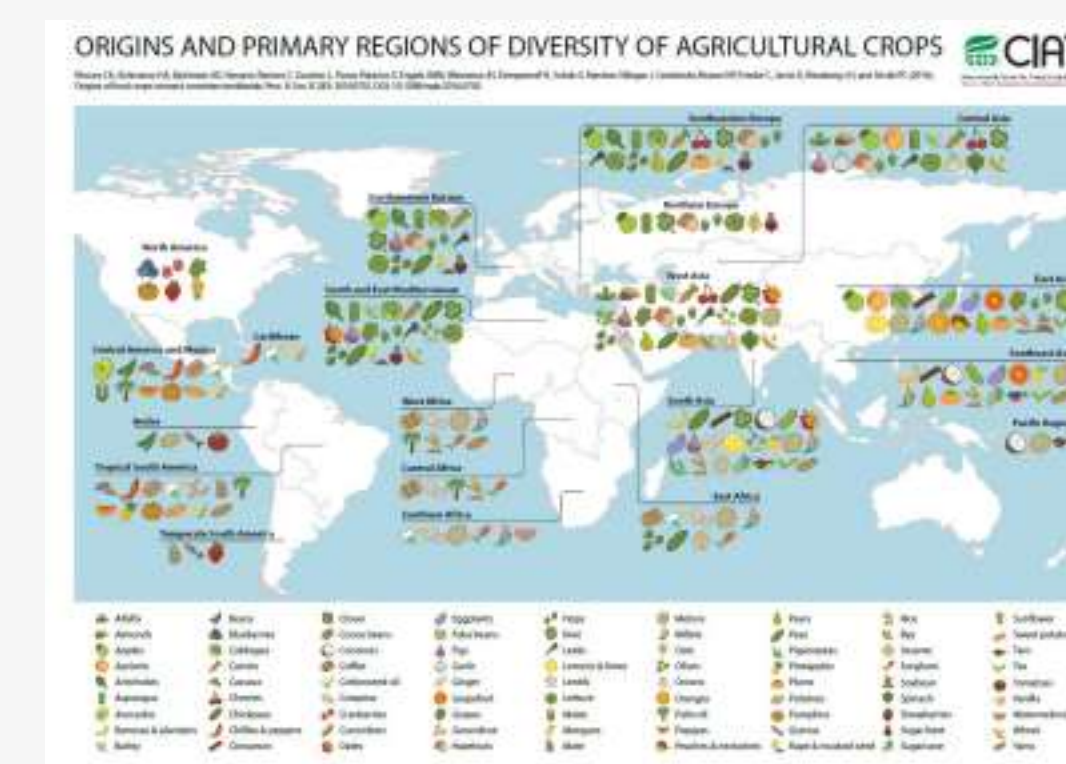
common for all
Central Asia

to make available
comprehensive and up-to-date relevant data and information (relevant to the issues related to climate change), linked to high-quality datasets (including time series and spatial information)

to provide
analytical tools and interfaces for the visualization and interpretation
of data and information



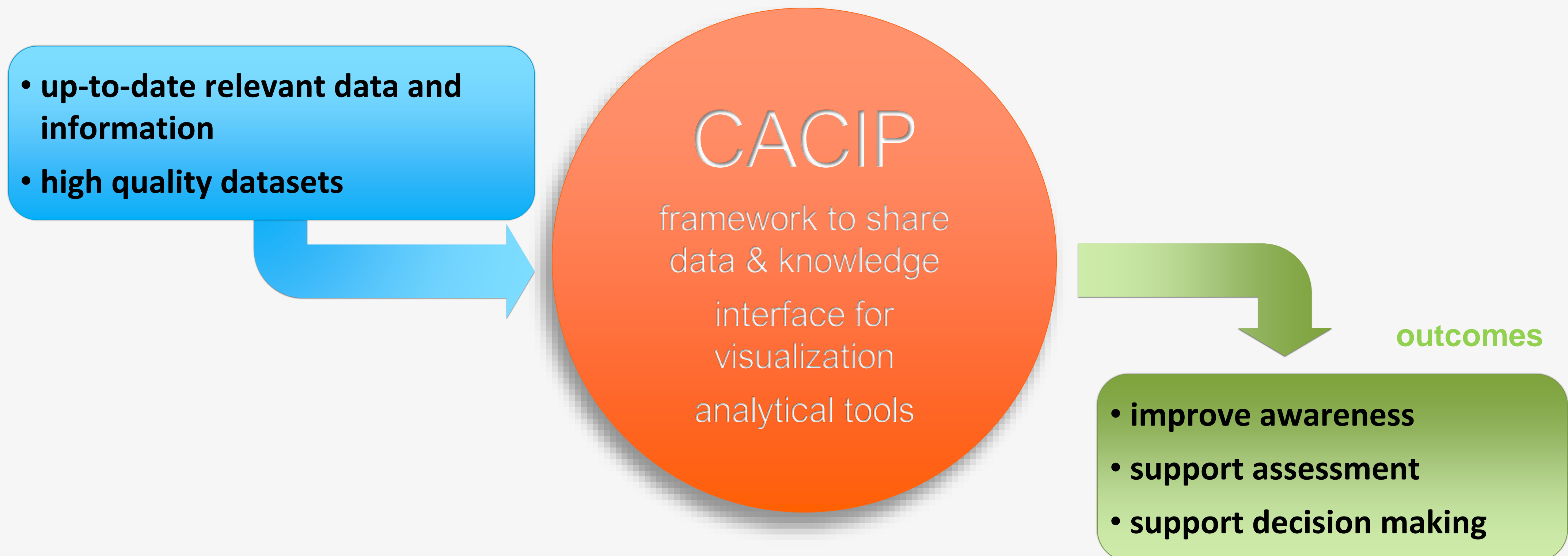
<https://towardsdatascience.com>



<https://blog.ciat.cgiar.org>

the platform ...

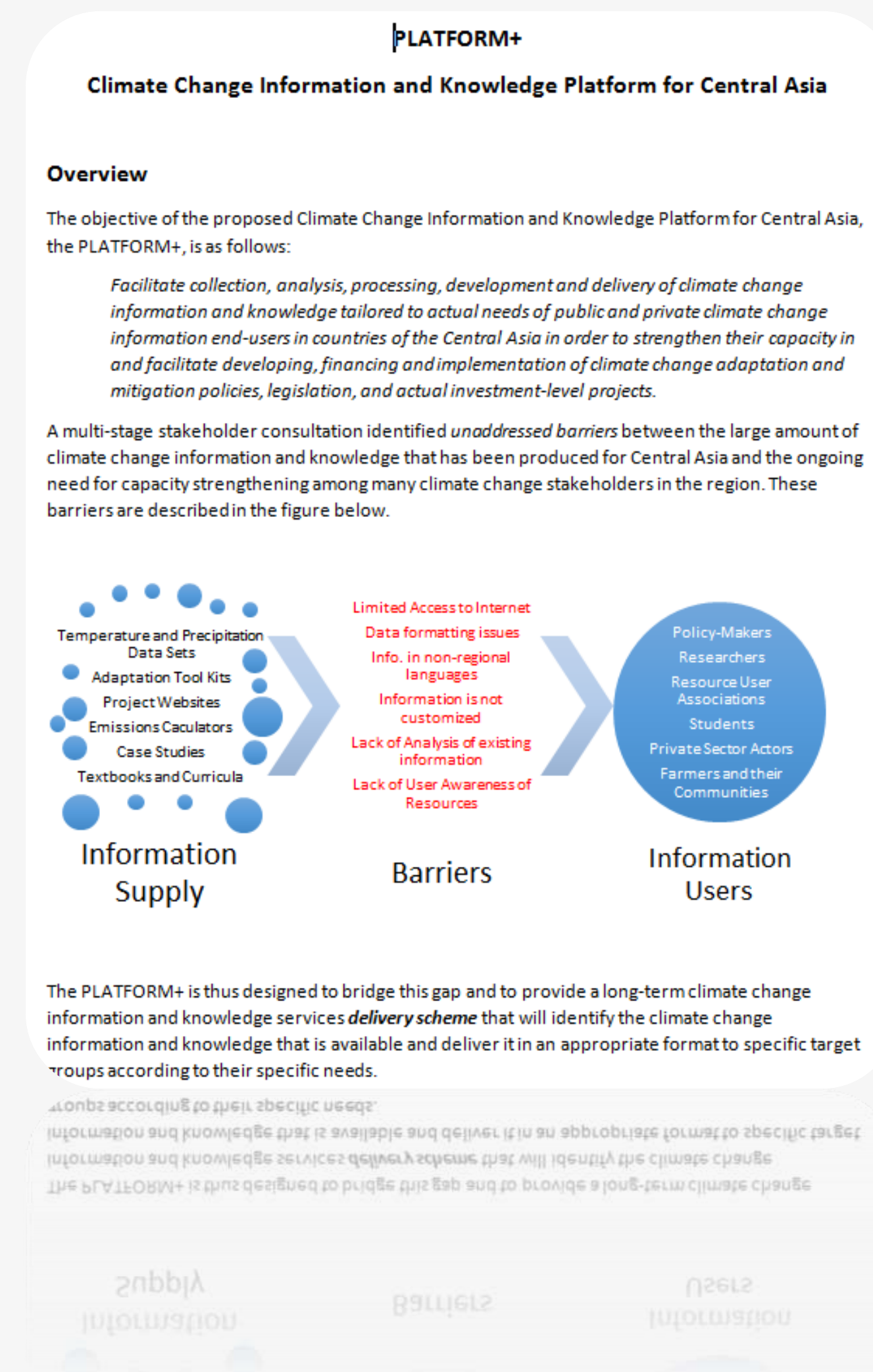
CACIP (Central Asia Climate Information Platform) is a platform which will help stakeholders to access, analyze and visualize public-domain data and knowledge to support improved awareness, assessment and decision support.c



the background ...

A previous feasibility study, carried out on behalf of CAREC, after having analyzed the opportunities of development of a climate change platform in Central Asia, highlighted some key points:

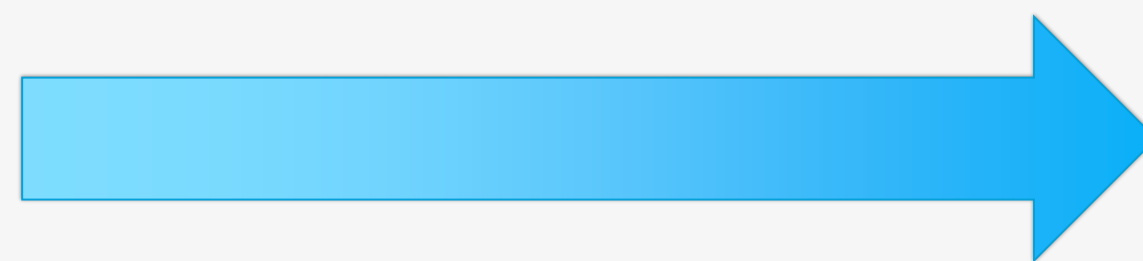
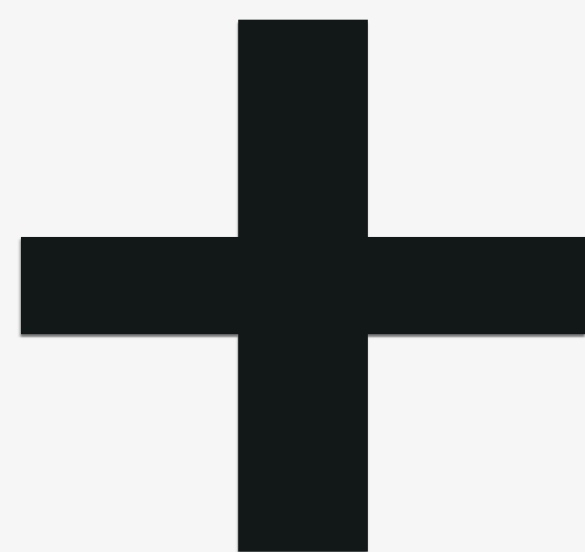
- long-term duration
- re-use of what is existing
- care to the **accessibility**
- facilitation of the establishment of a **network**
- **human factor as the core of the platform** (in the document was called PLATFORM+, where “+” is the human factor)



the human factor ...

To be effective, CACIP (=PLATFORM+) must **last over time** ...
and to last over time, the **human factor is decisive and crucial**

- in the **back-end** skilled Experts should supervise PLATFORM+
- in the **dissemination phase** local “subjects” should help disseminating information
- at the **front-end** users/stakeholders should contribute with their contents
users should keep used=alive the PLATFORM+



starting from the name ...

CENTRAL ASIA

CLIMATE INFORMATION

CEPLATFOM ASIA

summary

PLATFORM vs WEBSITE

DESIGN PRINCIPLES

LOGICAL ARCHITECTURE

CLIMATE INFORMATION

CENTRAL ASIA

PARTICIPATION PLAN

SUSTAINABILITY PLAN

platform

**PLATFORM
CLIMATE INFORMATION
CENTRAL ASIA**

platform ... the social meaning

website

a website is a collection of resources able to provide information to **USERS**

platform

a platform supports **COMMUNITIES** sharing contents and services

WEBSITE Platform



PLATFORM vs WEBSITE

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platform ... making community

COMMUNITY NEEDS A PLACE

the platform CACIP will be this place

COMMUNITY GROUPS PEOPLE WITH COMMON INTERESTS

for all subjects interested in **climate change** (policy makers, environmental agencies, research and training institutions, entities implementing and financing CC mitigation and adaptation projects, regional organizations, donors, experts, individuals)

PEOPLE MUST FIND WHAT THEY NEED and SHARE WHAT THEY HAVE

information, data, publications, best practices, maps, interactive tools, media, case studies, news, expertise, reports

platform ... design principles ^{1/2}

SUSTAINABILITY, LONG-TERM SERVICES

- long-term provision of free, public-domain climate information
- minimize cost of O&M
- many people involved in the platform

RE-USE

- max use of existing information, knowledge, expertise
- max use of existing infrastructure

NETWORK

- facilitation of in-country, regional, international cooperation and information sharing

PLATFORM vs WEBSITE

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platform ... design principles ^{2/2}

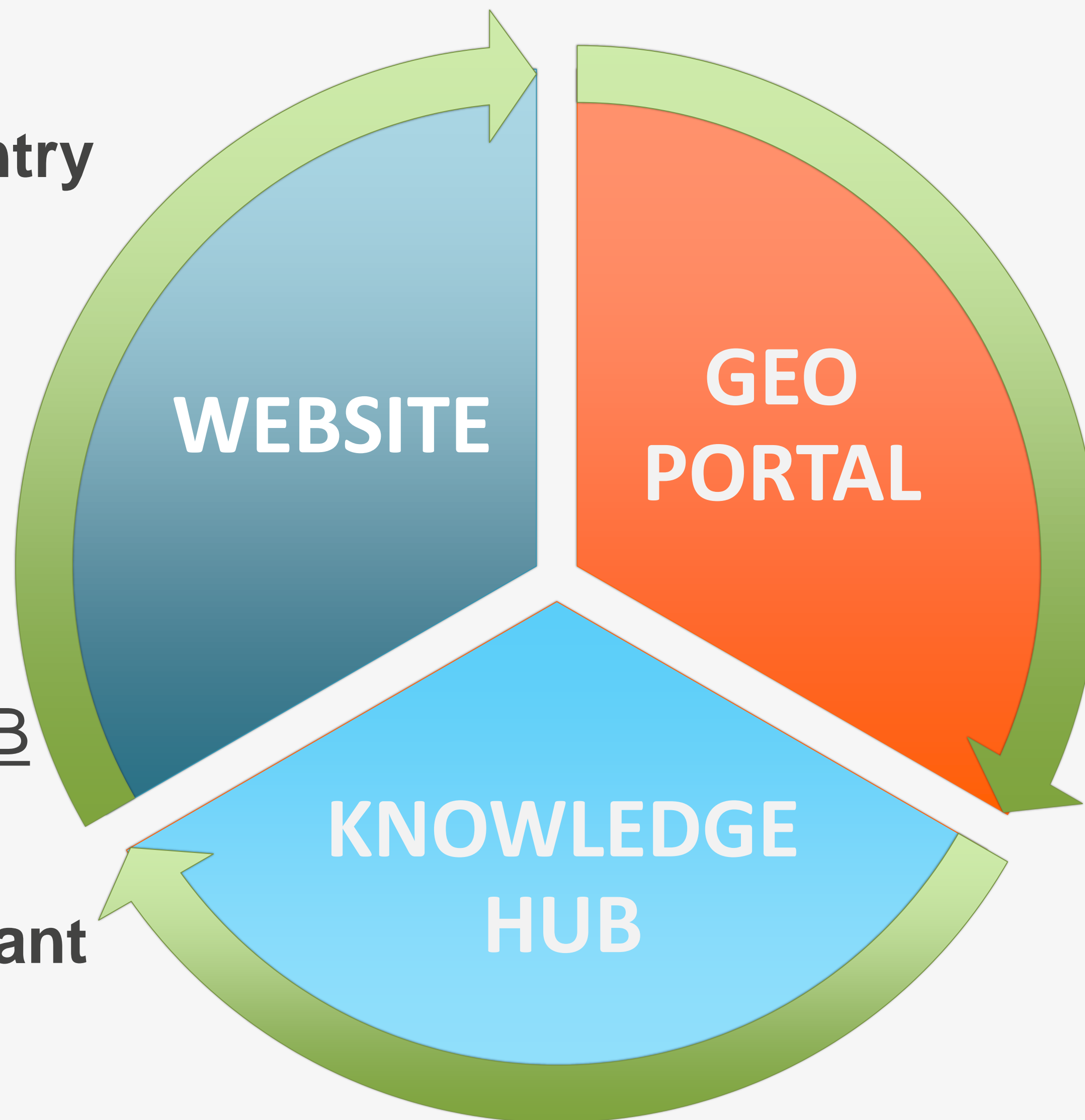
ACCESSIBILITY

- the main language is **Russian**, with key components in English
- accessible in all digital platforms (computers, tablets, smartphones)
- facilitate the **linkage to modern decision support systems**
- delivery of information in **analysis-ready** format
- support for **off-line knowledge products** (by including in the platform contents easy-printable)

platform ... logical architecture

the WEBSITE is the **entry point** of the platform

the KNOWLEDGE HUB collects, store and provides docs, ideas, contacts, and **all relevant information**



the GEO PORTAL collects manages and displays **geographical data** and includes **analysis tools**

PLATFORM vs WEBSITE

DESIGN PRINCIPLES

LOGICAL ARCHITECTURE

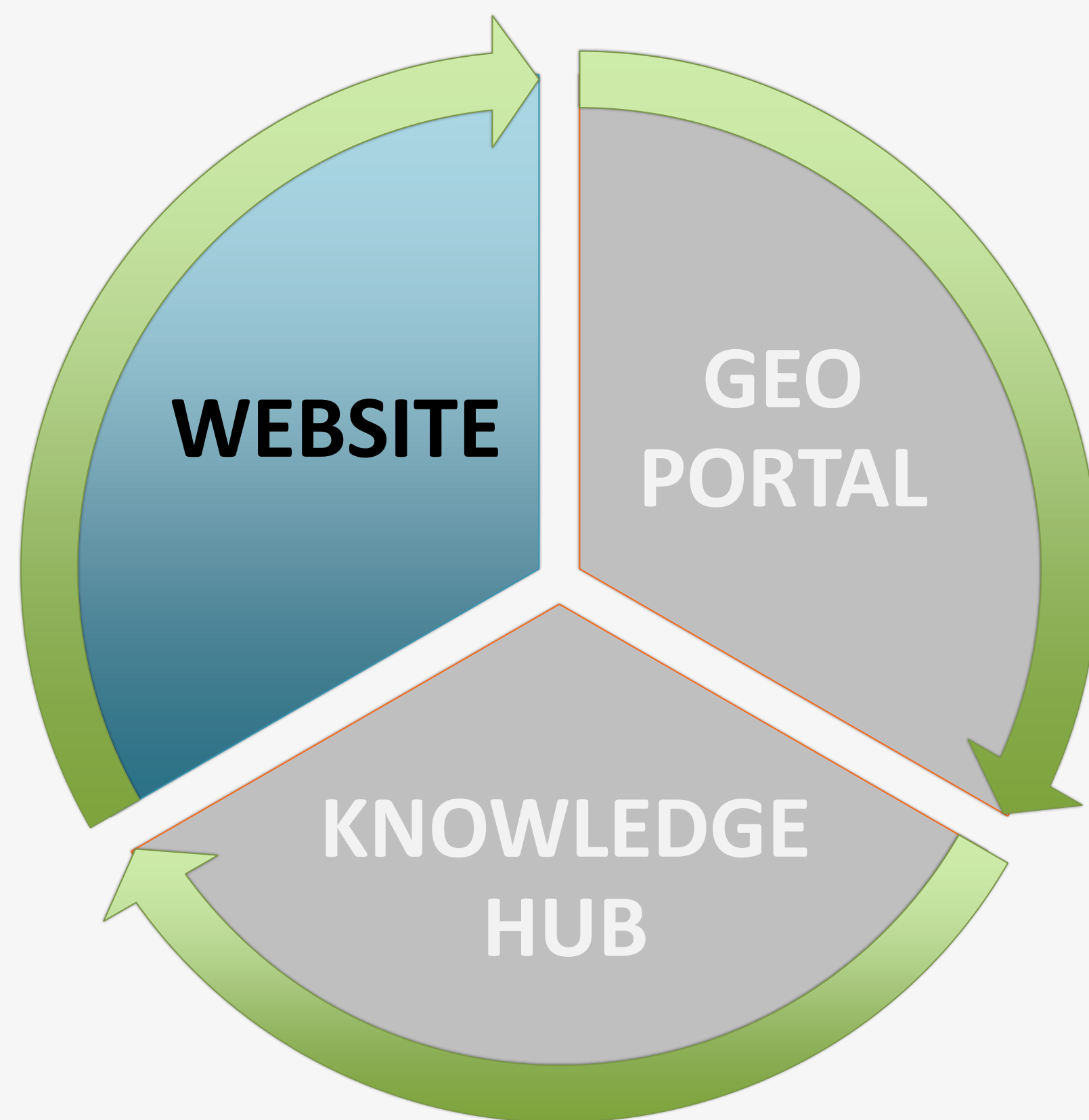
CLIMATE INFORMATION

CENTRAL ASIA

PARTICIPATION PLAN

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logical architecture ... website 1

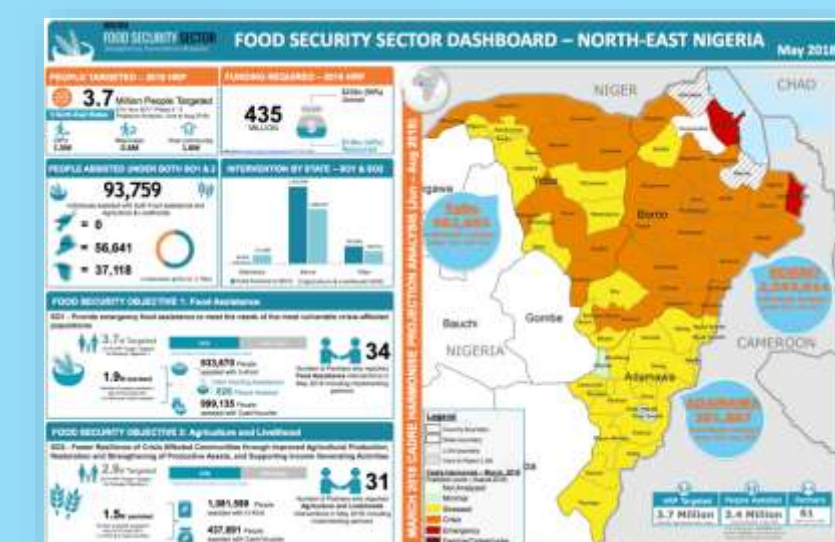


WEBSITE

- is the main entry point of the platform
- set the language (Russian, English)
- lets the user access to all sections
- provides a full text search
- shows news, tweets, updates, ...
- manages user registration, forum
- includes dashboard style information



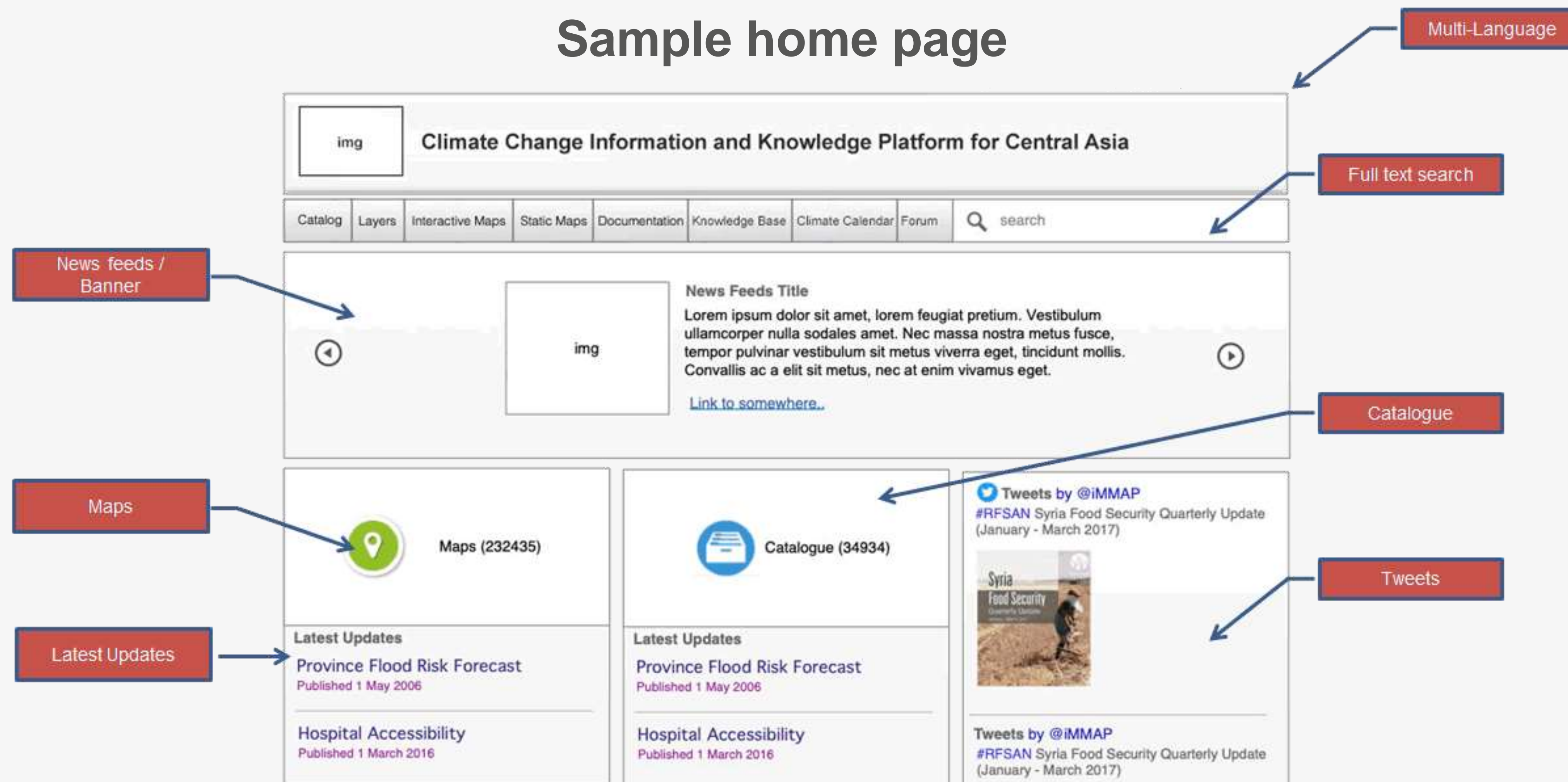
<https://www.icarda.org/>



<https://immap.org/products/>

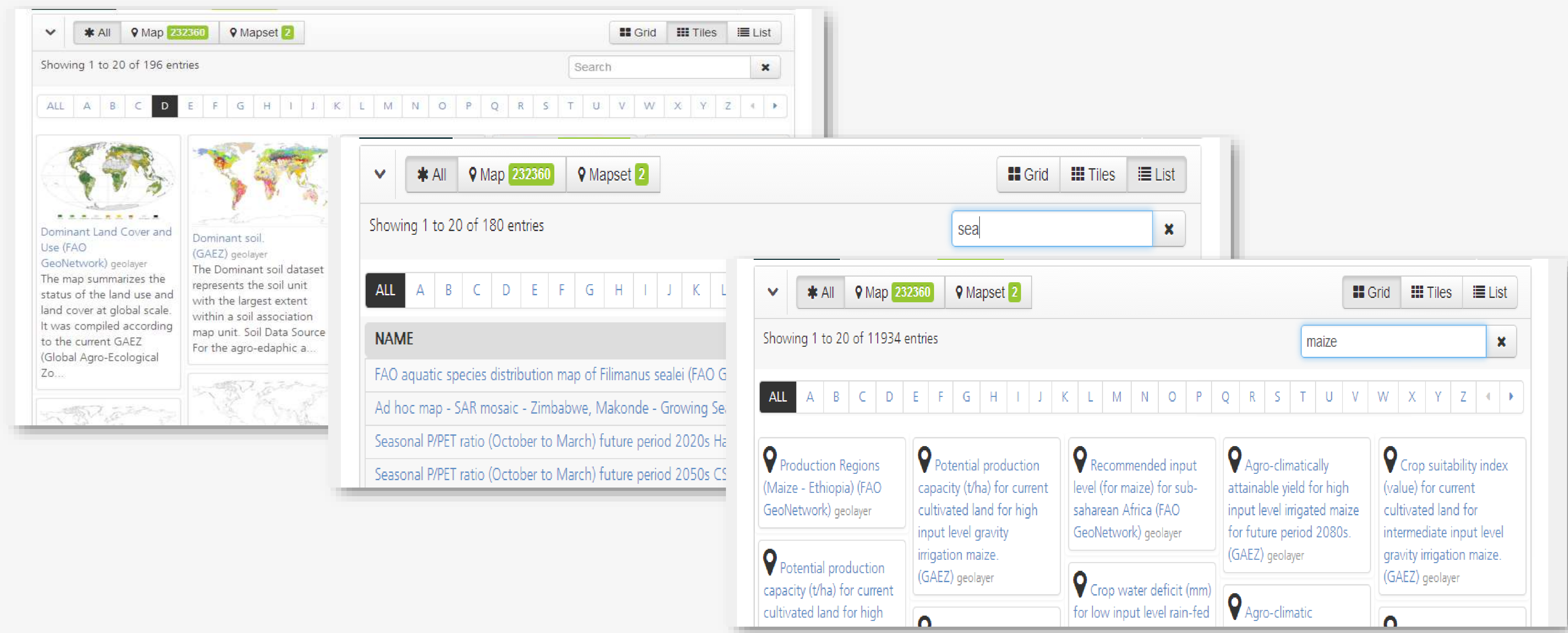
logical architecture ... website ₂

Sample home page



logical architecture ... website ₃

Sample search result with multiple card views



logical architecture ... knowledge ₂

The KNOWLEDGE HUB manages both **static** and **dynamic** knowledge

STATIC KNOWLEDGE

Comprehensive inventory of databases and web resources available for consultation and **tagged by user profiles/use cases**

Series of Publications, Maps, Infographics and Posters **replicated from original sources** (not interoperable) using standardized knowledge software (DSpace-DATAVERSE-FLICK-YOUTUBE, depending on the type of knowledge)

DSpace

Open source web application used to create repositories of scientific publications

<https://duraspace.org/dspace/about/>

DATAVERSE

Open source web application to share, preserve, cite, explore, and analyze research data

<https://dataverse.org/>

FLICKR

To manage and share photos

<https://www.flickr.com/>

YOUTUBE

To manage and share videos

<https://www.youtube.com>

logical architecture ... knowledge ₃

The KNOWLEDGE HUB manages both **static** and **dynamic** knowledge

DYNAMIC KNOWLEDGE

Knowledge repositories **harvested via API** for rapid consultation and **matched with users profiles** base on standardized software (DSpace/DATAVERSE)

Dynamic infographics from knowledge harvested

RSS Feeds and Social Media real-time integration

DSpace

Open source web application
used to create repositories of
scientific publications

<https://duraspace.org/dspace/about/>

DATAVERSE

Open source web application
to share, preserve, cite, explore,
and analyze research data

<https://dataverse.org/>

logical architecture ... knowledge ₄

Dynamic knowledge harvested via API
sample of query and visualization from OKR of the World Bank

1. Visualization of the abstract and of the general information

2. Visualization of metadata
(in this case there is a mix of OKR specific tags and Dublin Core tags (Dublin Core Metadata Initiative DCMI has developed these interoperable online metadata standards: dc...))

3. Specifics to “harvest” the repository
It is a good practice to inform users about harvesting procedures

The screenshot shows the OKR interface for a report titled "Europe and Central Asia Economic Update, Spring 2019 : Financial Inclusion". The page includes the World Bank Group logo, the OKR logo, and the title. Below the title, there are icons for Creative Commons (CC) and Attribution (BY). To the left of the abstract, there is a thumbnail image of the report cover. To the right, there are social media sharing buttons for Twitter, Facebook, and LinkedIn. The abstract text discusses financial services and their role in development. Below the abstract, there are statistics for abstract views (4,258) and file downloads (2,846), each with a small bar chart. At the bottom, there is a download button for the English PDF version, which is 9.383MB and has 1,029 downloads. The citation information and the URI are also provided.

WORLD BANK GROUP

OKR OPEN KNOWLEDGE REPOSITORY

Europe and Central Asia Economic Update, Spring 2019 : Financial Inclusion

CC BY

Financial services can help drive development by facilitating people's investments in their health, education, and businesses, and making it easier for people to manage emergencies. There is great variation in financial inclusion in the Europe and Central Asia region. Some countries have seen significant growth in account ownership, despite starting from a low base. These experiences underline the potential role of digital payments in driving financial inclusion. But nearly 30 percent of unbanked adults report trust in banks as a barrier, which is nearly double the developing country average. And in some countries, gender gaps in account ownership remain significant. Given the heterogeneity of experiences, there are ample opportunities for countries in the region to learn from each other and contribute to the rich research and operational agenda going forward.

Citation
"World Bank. 2019. Europe and Central Asia Economic Update, Spring 2019 : Financial Inclusion. Washington, DC: World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/31501> License: CC BY 3.0 IGO."

URI
<http://hdl.handle.net/10986/31501>

Collection(s)
Europe and Central Asia Economic Update

ABSTRACT VIEWS
4,258

FILE DOWNLOADS
2,846

Download
English PDF
9.383MB, 1,029 downloads

logical architecture ... knowledge ⁵

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  OPEN KNOWLEDGE REPOSITORY	
Europe and Central Asia Economic Update, Spring 2019 : Financial Inclusion Show simple item record	
collection.link.286	https://openknowledge.worldbank.org/handle/10986/22789
collection.name.286	Europe and Central Asia Economic Update
dc.contributor.author	World Bank
dc.date.accessioned	2019-04-03T21:09:51Z
dc.date.available	2019-04-03T21:09:51Z
dc.date.issued	2019-04-05
dc.description.abstract	<p>Financial services can help drive development by facilitating people's investments in their health, education, and businesses, and making it easier for people to manage emergencies. There is great variation in financial inclusion in the Europe and Central Asia region. Some countries have seen significant growth in account ownership, despite starting from a low base. These experiences underline the potential role of digital payments in driving financial inclusion. But nearly 30 percent of unbanked adults report trust in banks as a barrier, which is nearly double the developing country average. And in some countries, gender gaps in account ownership remain significant. Given the heterogeneity of experiences, there are ample opportunities for countries in the region to learn from each other and contribute to the rich research and operational agenda going forward.</p>
dc.identifier.isbn	978-1-4648-1409-9
dc.identifier.uri	http://hdl.handle.net/10986/31501

logical architecture ... knowledge ₆

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It is a good practice to inform users about harvesting procedures



Harvesting the OKR

Structured metadata for OKR content is exposed according to the [OAI-PMH \(Open Archives Initiative Protocol for Metadata Harvesting\)](#) protocol. This enables anyone to import the metadata for the entire OKR, a collection, or for a specific publication.

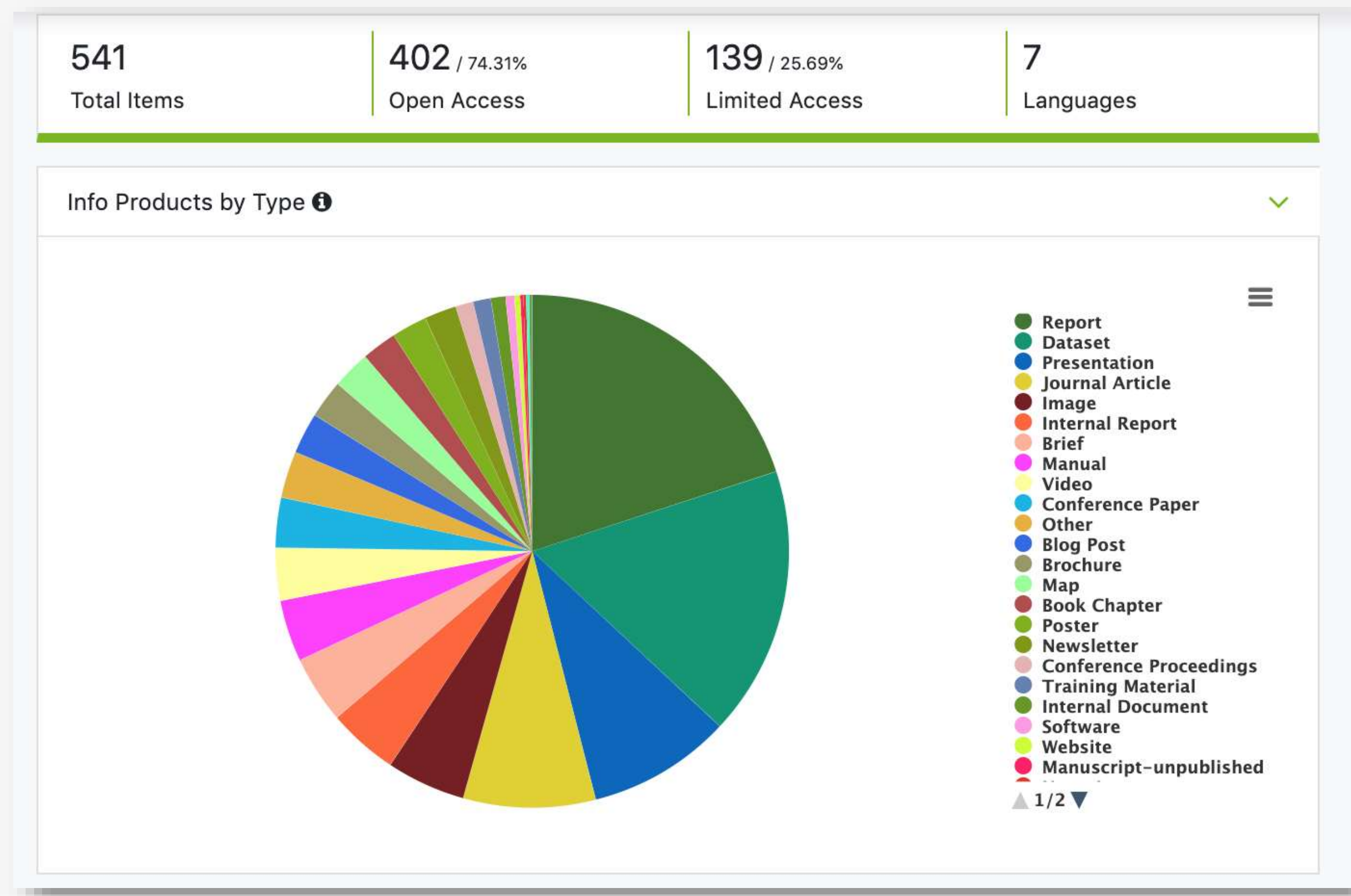
By following the steps below, repositories around the world that comply with OAI-PMH standards can harvest metadata from content in the OKR. Once metadata from the OKR is ingested into other repositories, users of those repositories are able to easily search, discover, and access World Bank publications.

logical architecture ... knowledge 7

Dynamic knowledge harvested via API
sample of query and visualization from AReS of the CGIAR

Useful/nice graphical visualizations

4. **Distribution for type** of the results of a query, and **aggregated statistics**
5. Word cloud based on the results of the query
6. Geographical distribution of the results and histograms



Dynamic knowledge harvested via API
sample of query and visualization from AReS of the CGIAR

Useful/nice graphical visualizations

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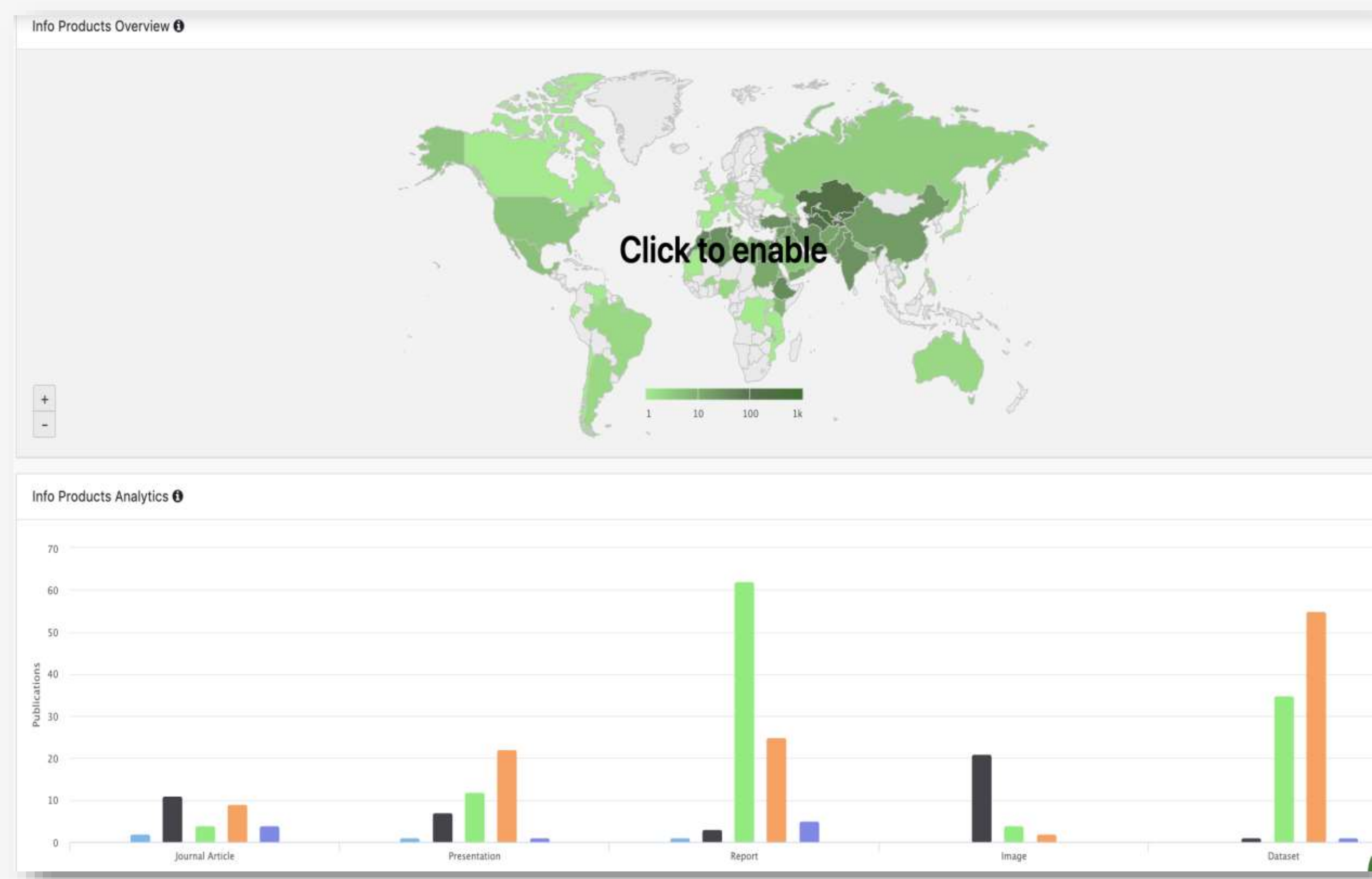


logical architecture ... knowledge ⁹

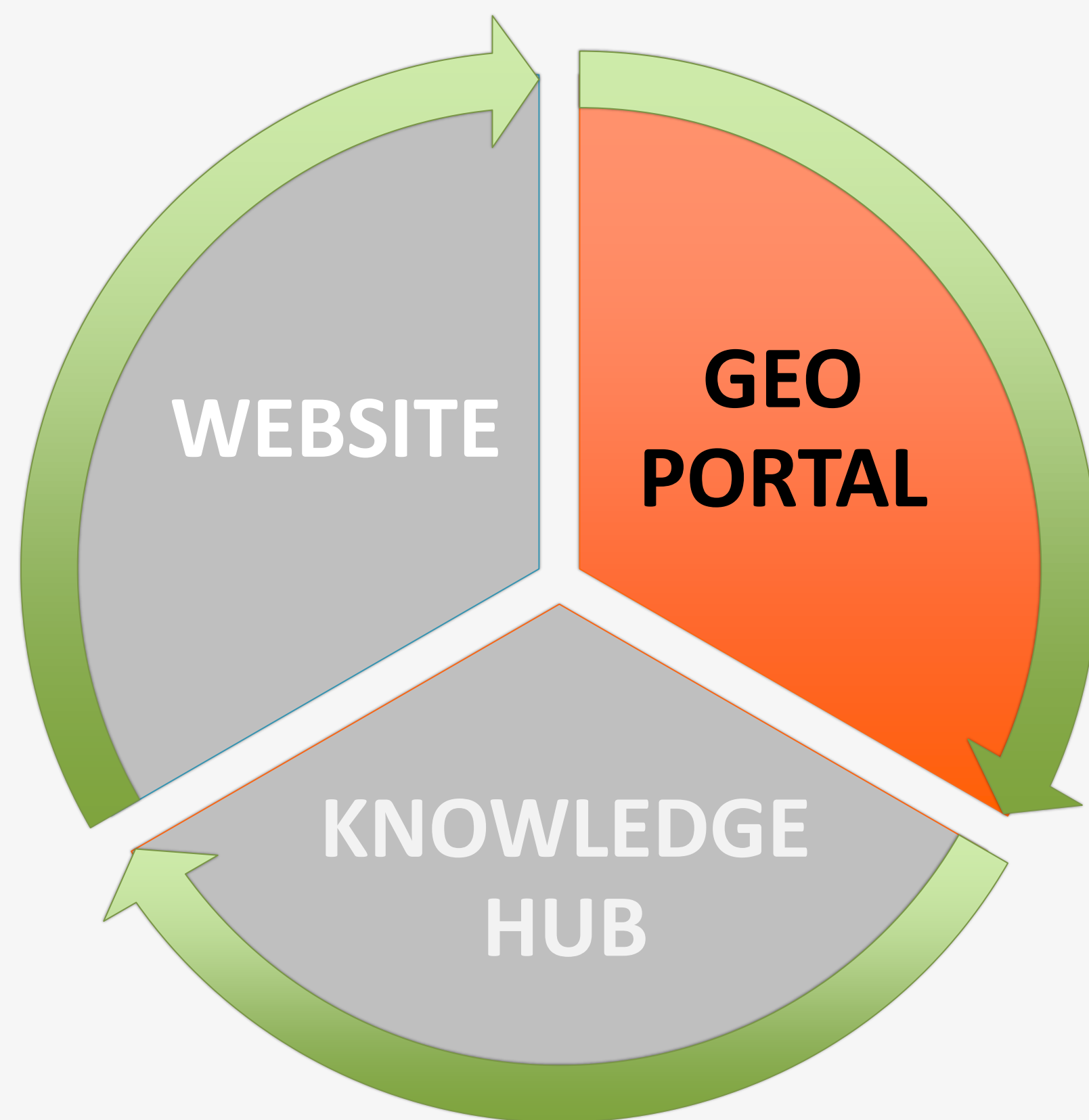
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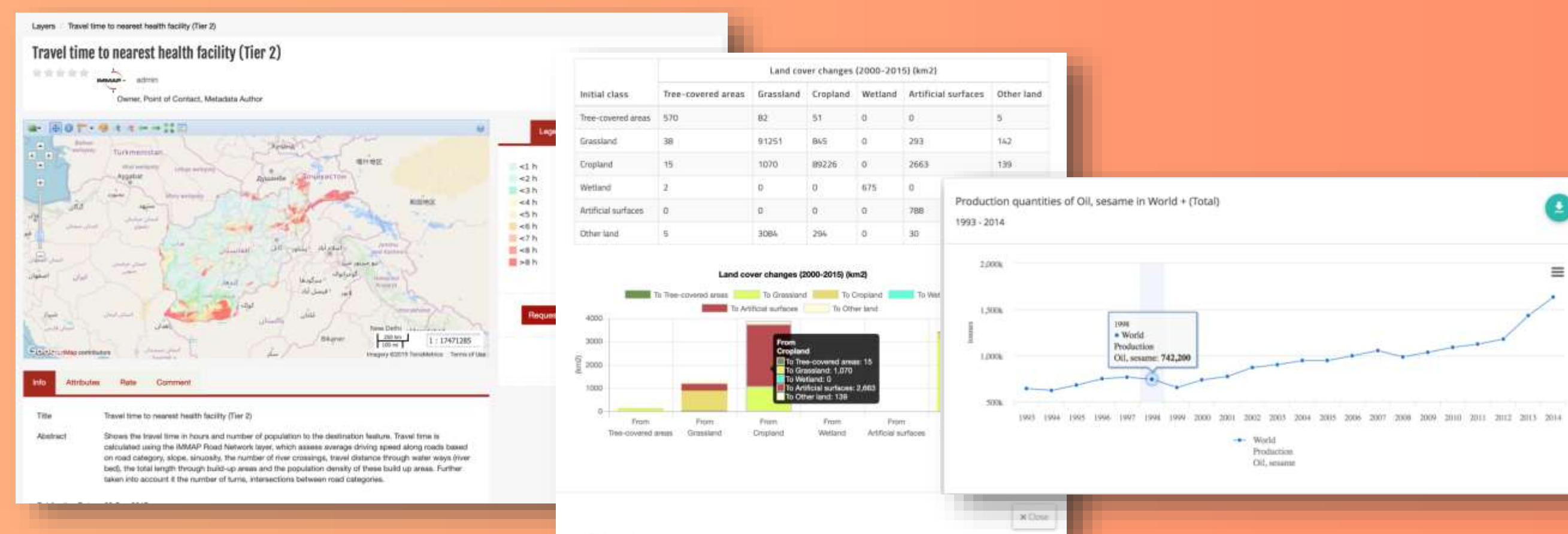


logical architecture ... geo portal ₁



GEO PORTAL

- collects data from external sources
- combines data with local sources
- displays interactive maps
- displays interactive data tables
- allows the access to data (WMS, WFS, API)



logical architecture ... geo portal ₂

The GEO PORTAL manages **static** and **dynamic** data and provide **analysis tools**

As the knowledge base, the GEO PORTAL combines dynamic harvested data with local static data, but **dynamic data are the first priority**.

PostGIS Spatial database is used to store local data

GeoServer is used to publish geographical data using open standards

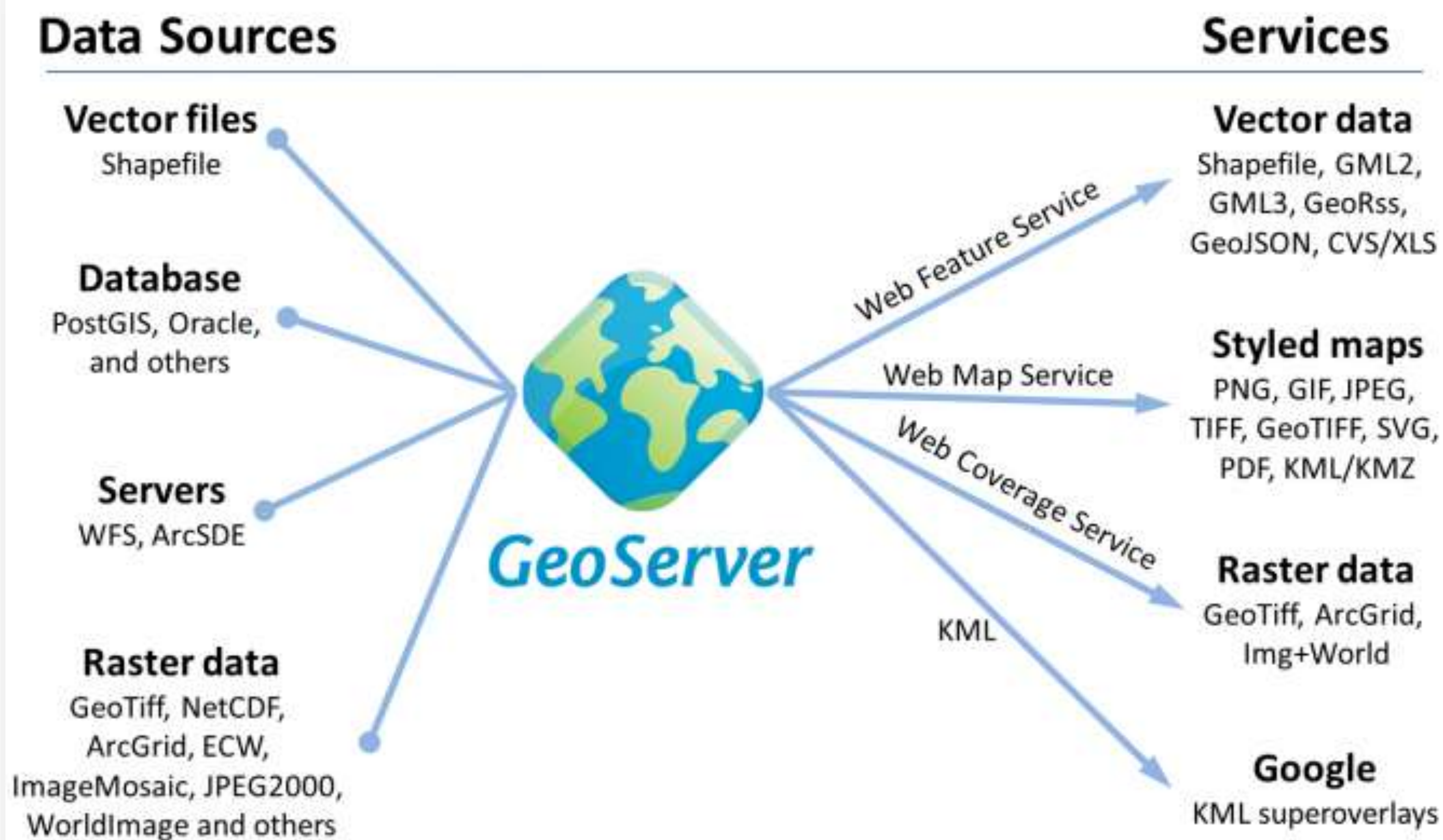
A **content management system** (GeoNode, other) manages the repository and provides the interface to the data.

logical architecture ... geo portal ₃

GeoServer input data

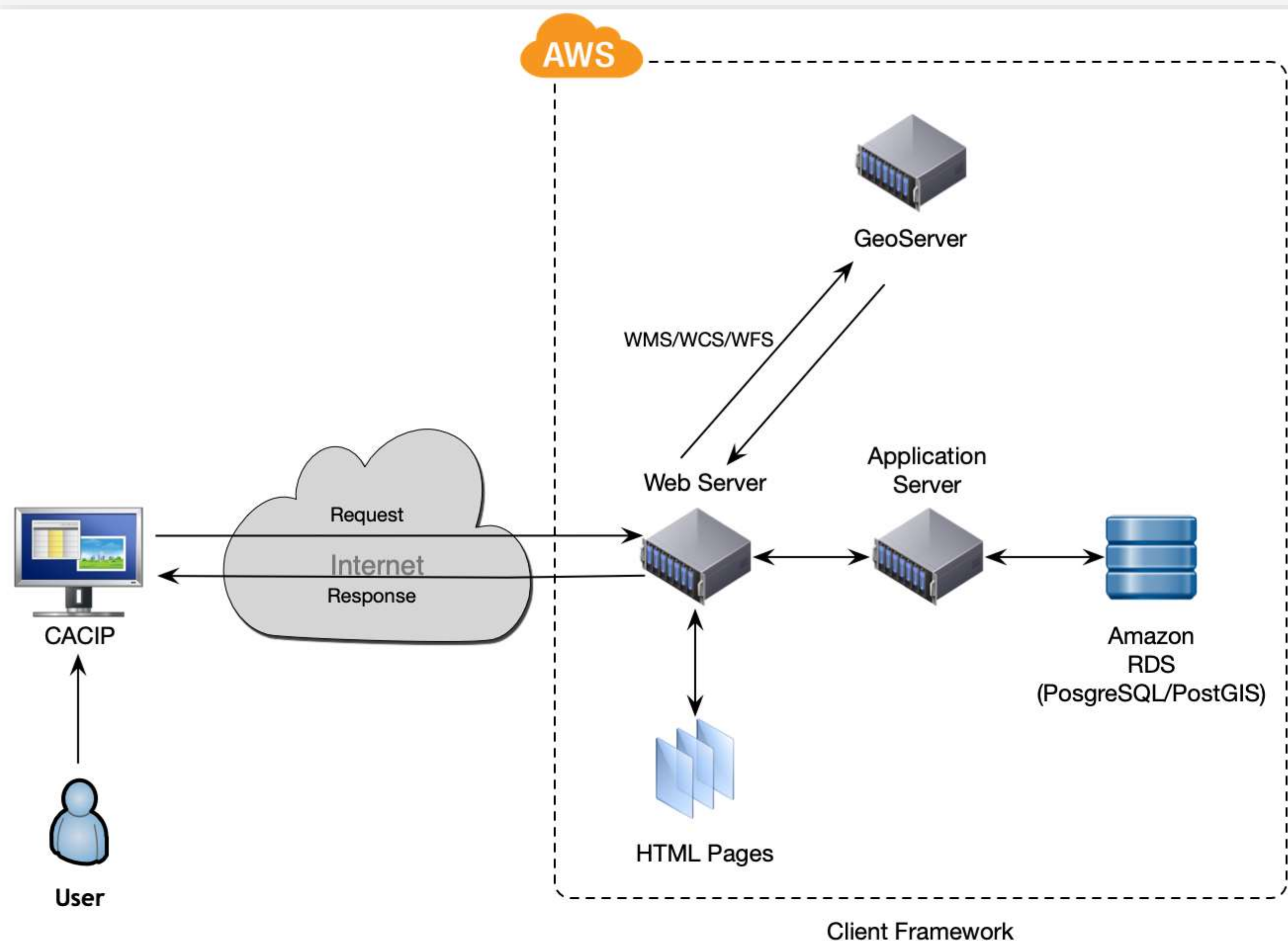
GeoServer is able to access geographical data from different sources (local and remote)

Vector files	shapefile
Database	PostGIS Oracle ...
Servers	WFS ArcSDE
Raster data	GeoTiff ArcGrid ECW JPEG2000 ...



logical architecture ... geo portal ₄

CACIP system architecture



GeoServer is able to publish local and remote data using open international interoperability standards

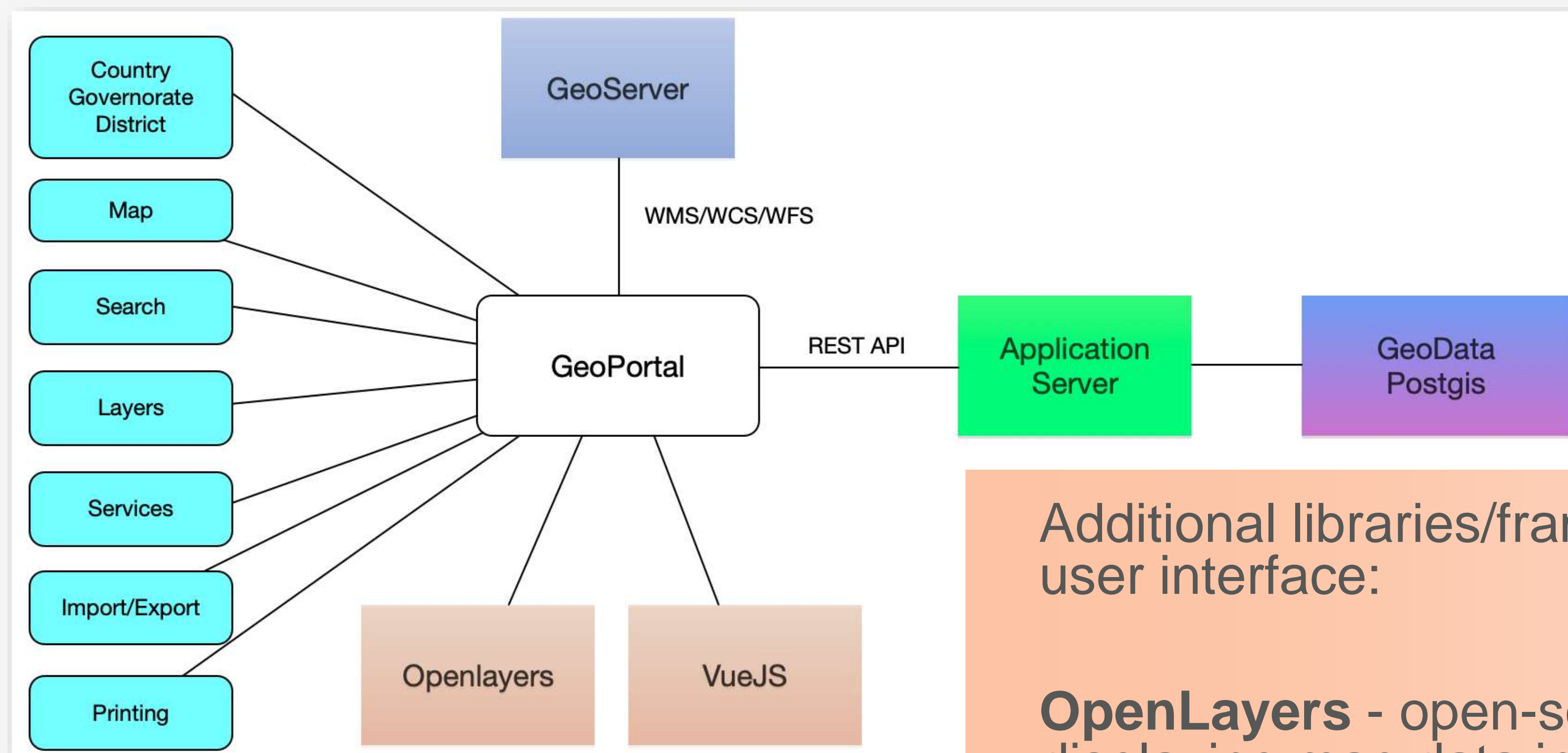
WMS - Web Map Service

WCS - Web Coverage Service

WFS - Web Feature Service

logical architecture ... geo portal ₅

CACIP components architecture



Additional libraries/frameworks are used to build the user interface:

OpenLayers - open-source JavaScript library for displaying map data in web browsers

VueJS - open-source JavaScript framework for building user interfaces and single-page applications

climate information

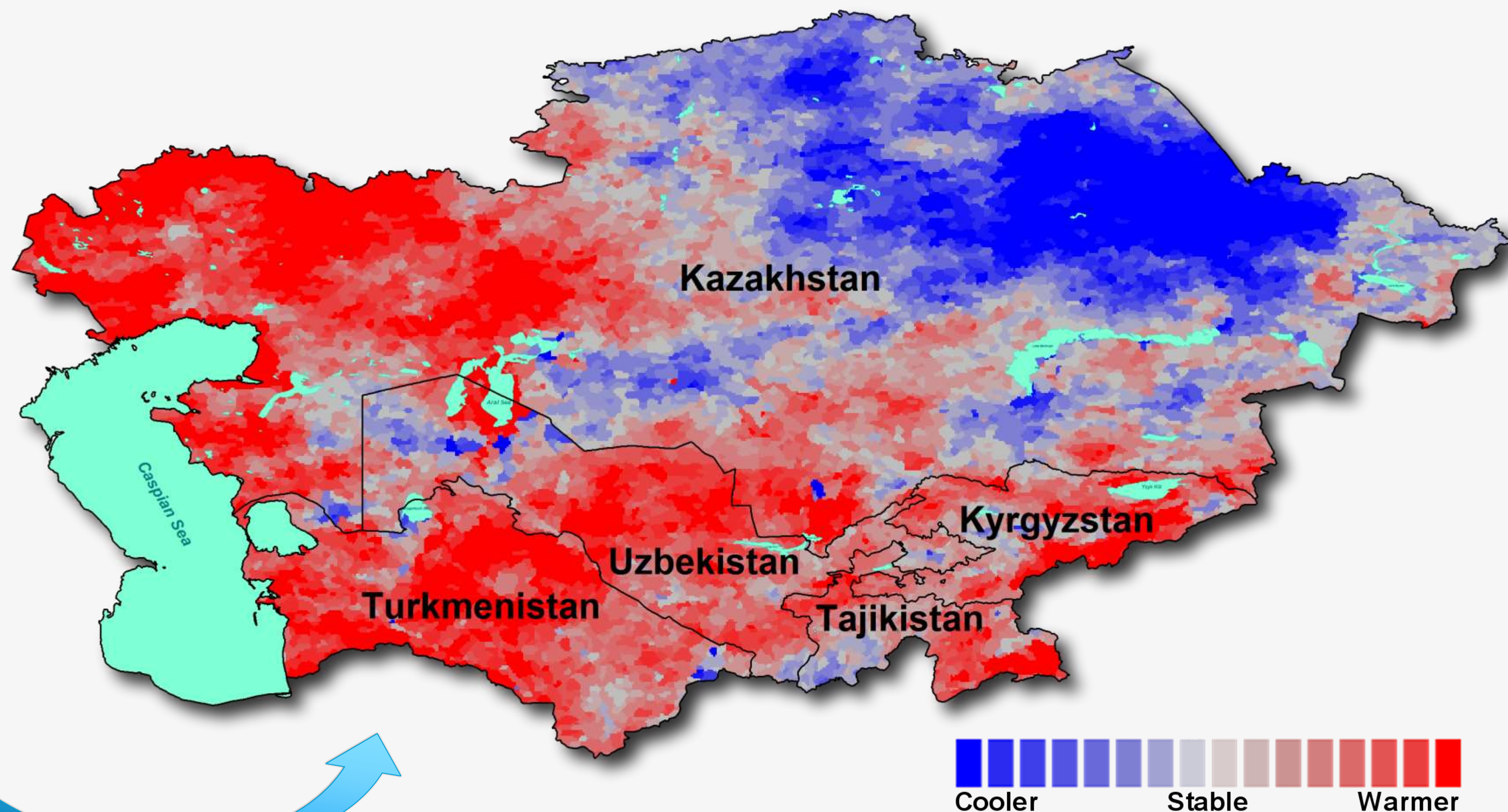
PLATFORM
CLIMATE INFORMATION
CENTRAL ASIA

central asia ...

The contents of the platform focuses on the Central Asia region.

A comprehensive view of the all region facilitates the understanding of climate change phenomena and improves the usefulness of the platform.

On the right the **global trend of surface daily temperature** derived from MODIS data since 2000



Negative/Positive trend of the variation of the land surface temperature in the long term

PLATFORM vs WEBSITE

DESIGN PRINCIPLES

LOGICAL ARCHITECTURE

CLIMATE INFORMATION

CENTRAL ASIA

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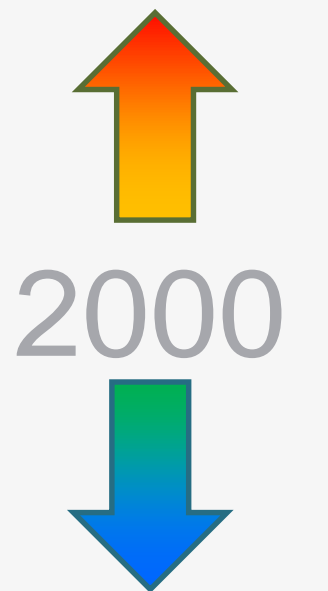
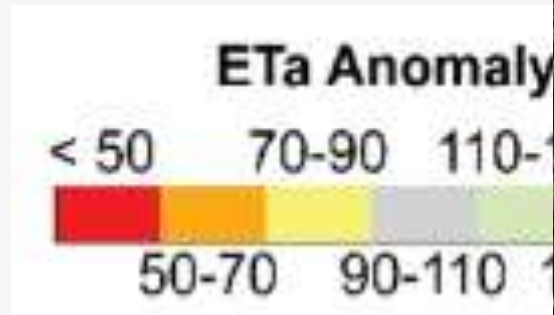
Impact of climate on planetary health

43

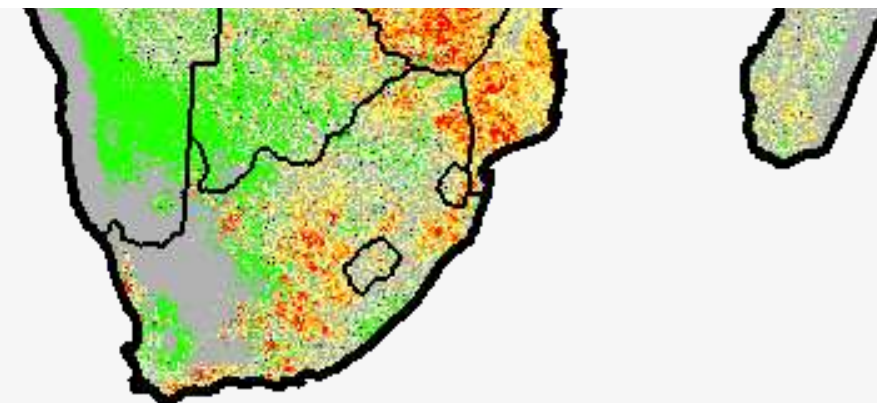
>> land use pattern, water balance and climate



building healthy food systems
and rebuilding living soils

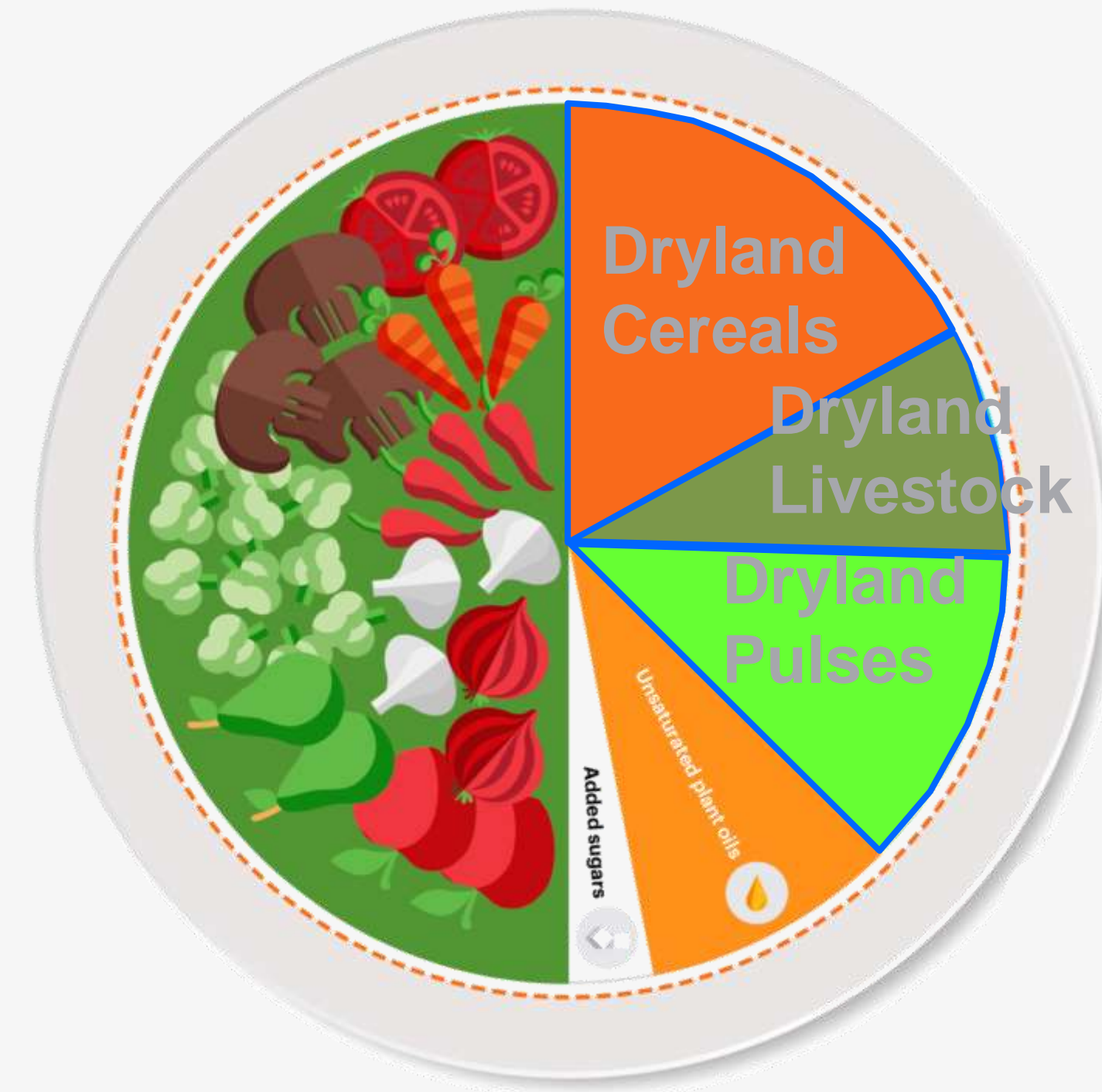
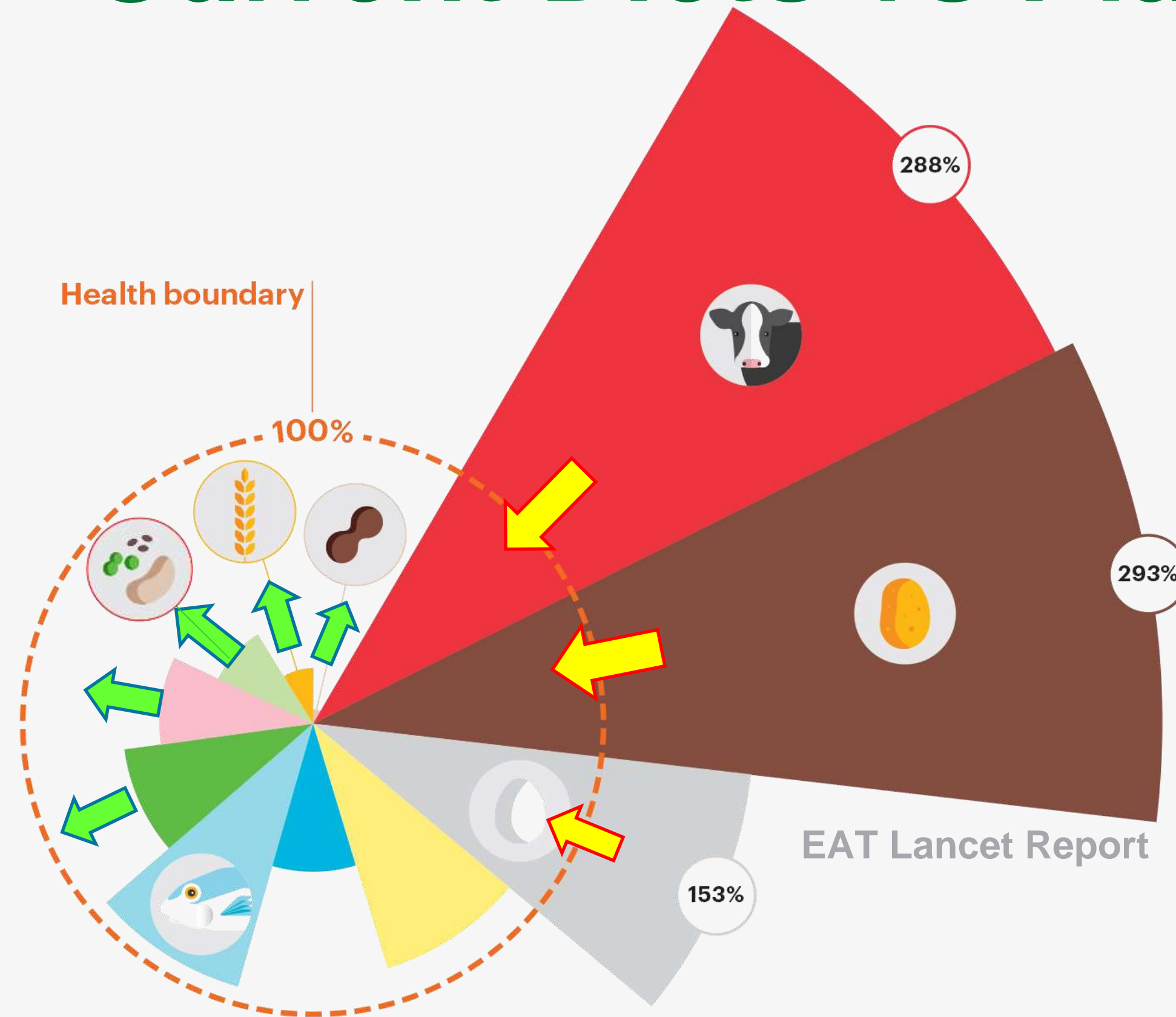


0 800 1,600
ICARDA-GU©2015

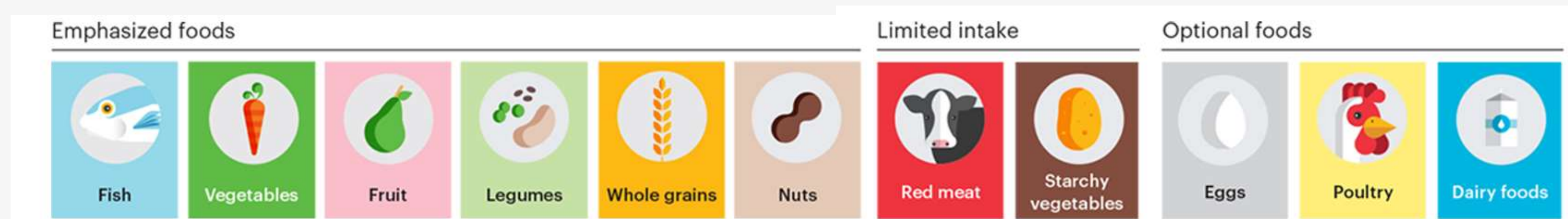


- Climate variability and extreme events
- Dominance of mono-cropping / few commodity focus
- Depleted soil organic carbon

Current Diets vs Planetary Health



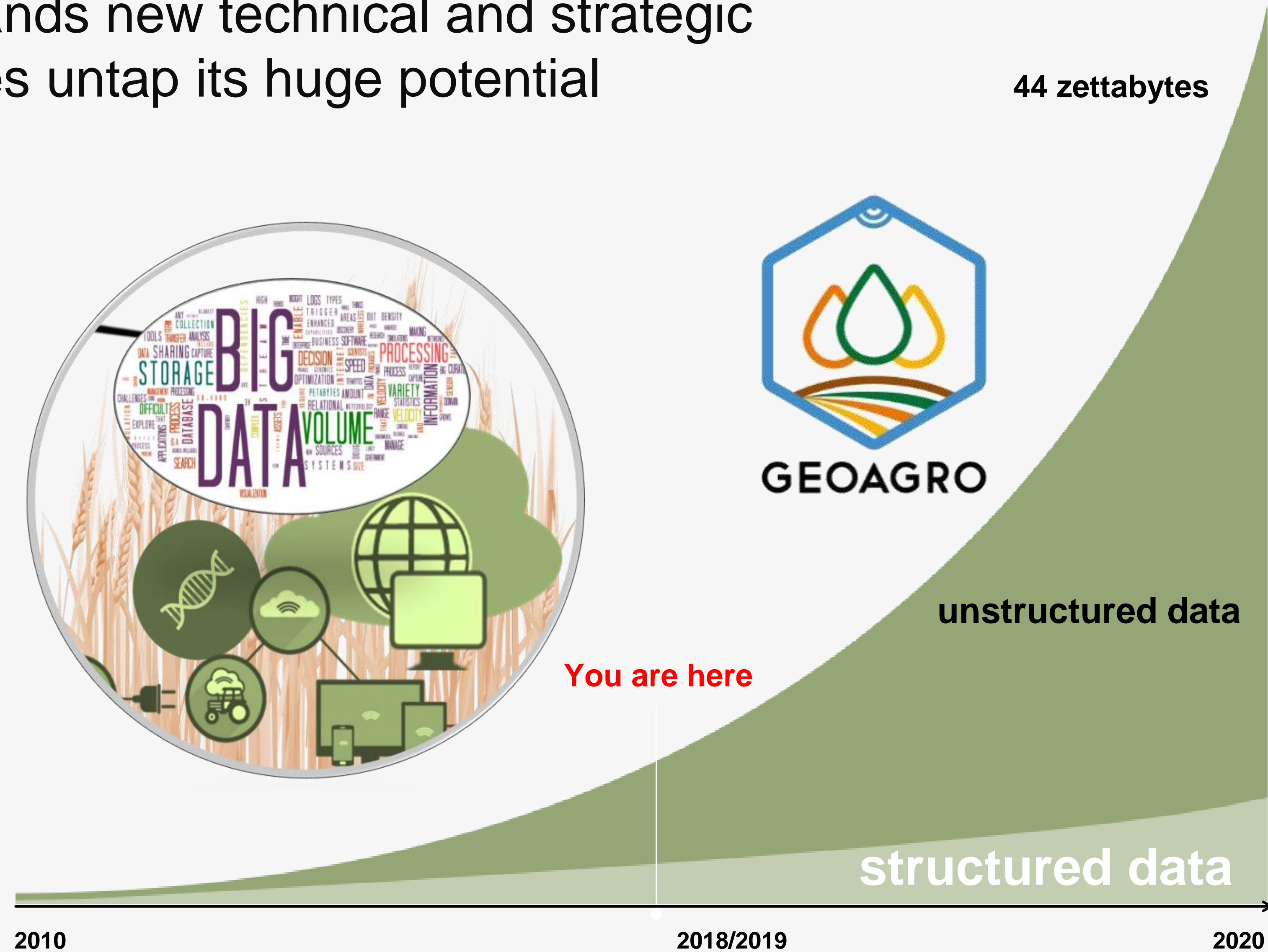
...with diversified cropping systems, conservation, rotation, nutrition focus >> “**more health per acre**”



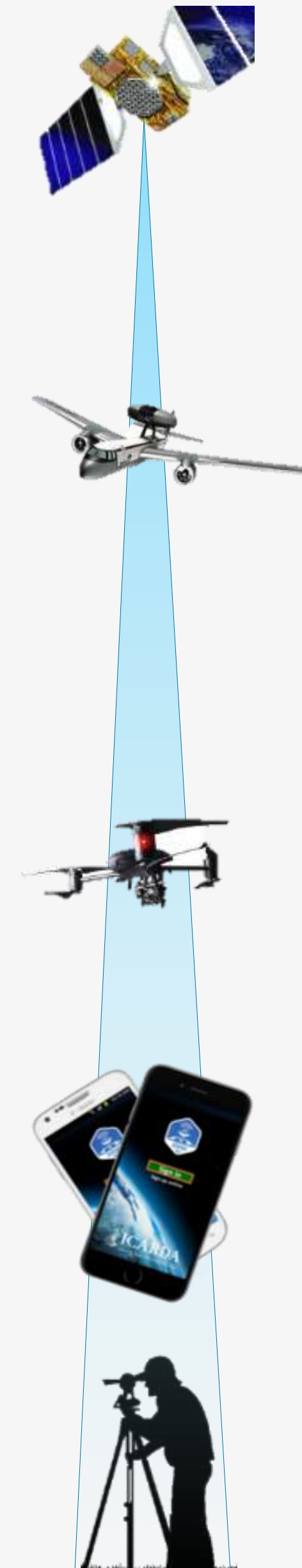
Data growing exponentially

45

>> it demands new technical and strategic approaches untap its huge potential

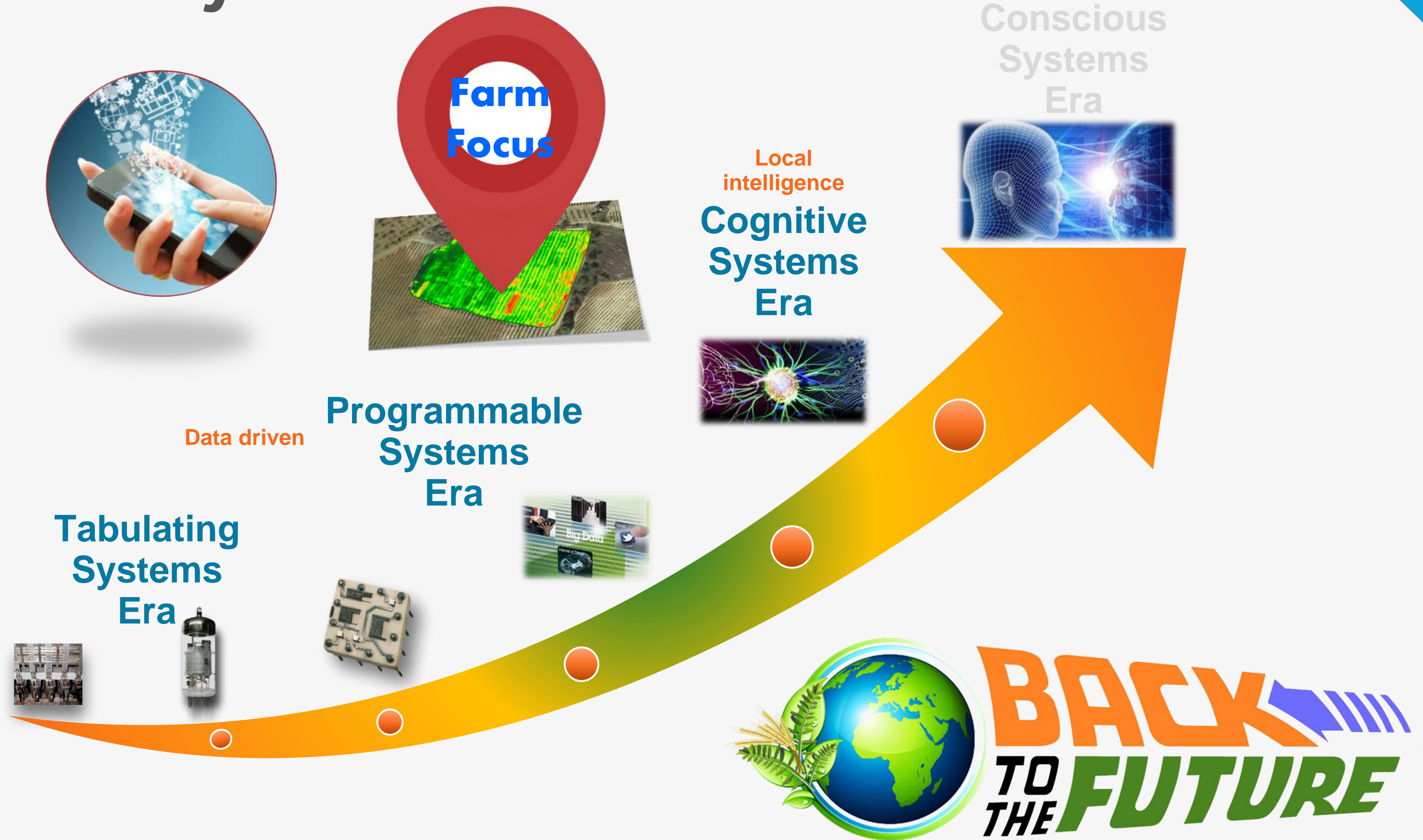


IBM Research



New era of analytics

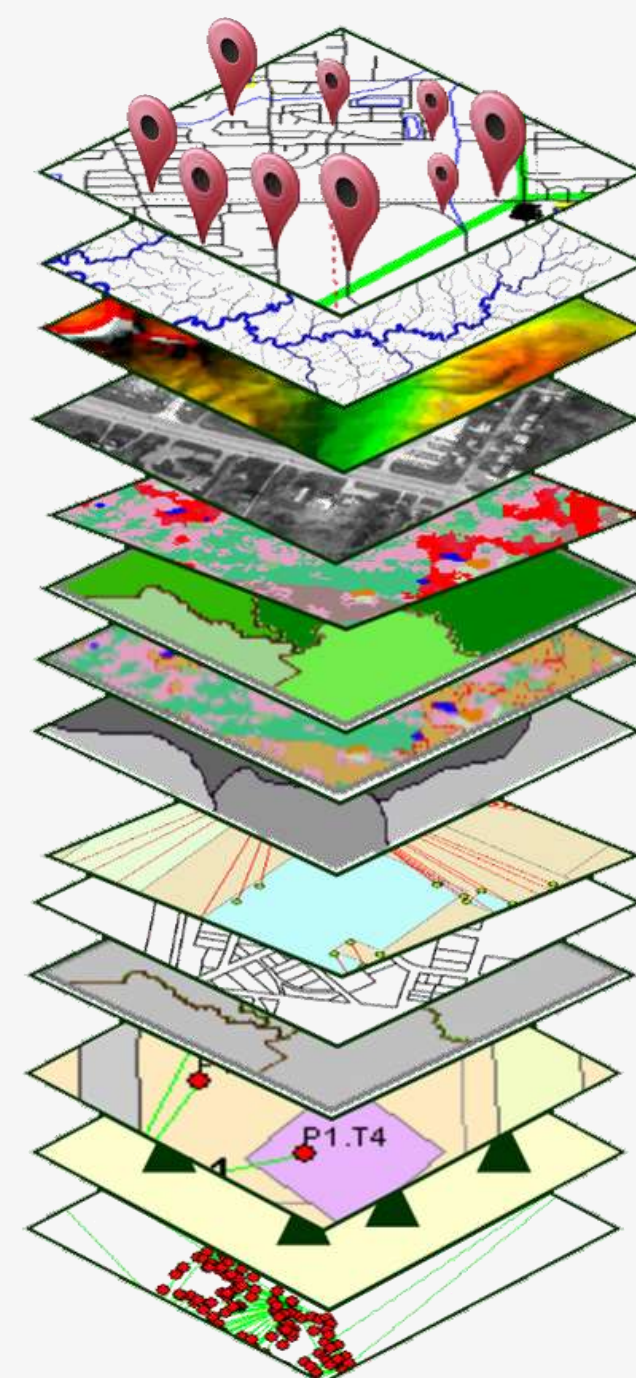
46



Digital (data and knowledge) Augmentation

Geotagging
 Satellite data
 Crop data
 Climate data
 Soil data
 Water data
 Topography
 Demography
 Ecological data
 ...

Data Layers



Computation



Algorithms

Biggest drivers

Applications

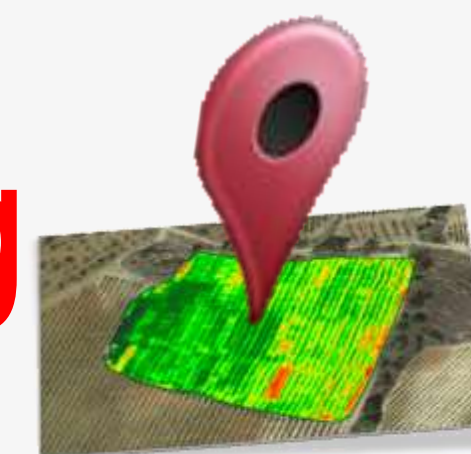


Scalability

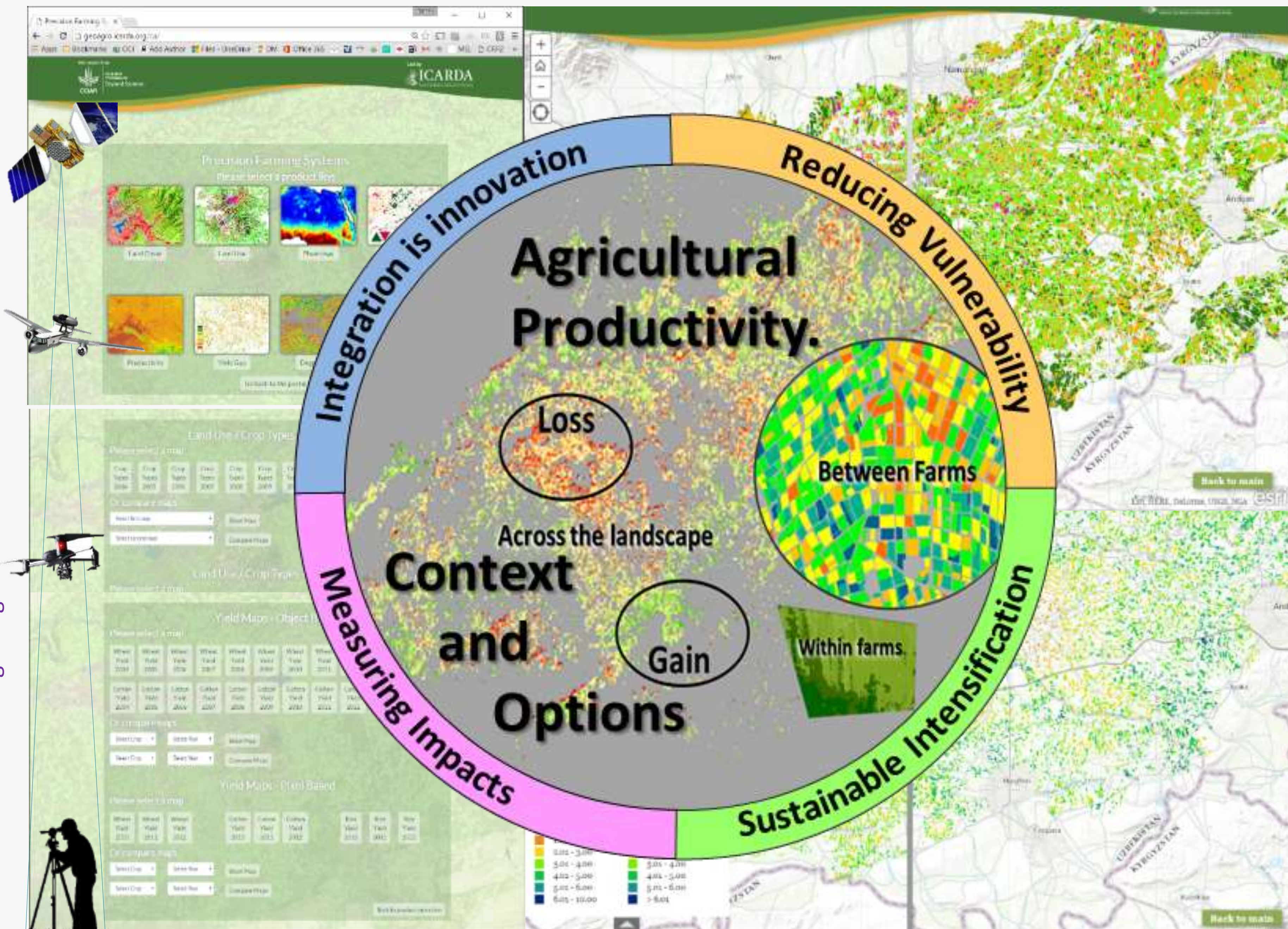
Mapping
 Monitoring
 Targeting
 Estimating
 Forecasting
 Warning
 Lending
 Insurance
 Value chains
 Carbon-Credits



Geo-tagging and Agro-tagging







climate information ... geographical data

(tentative list)

Historical climate variability

- **Temperature**
(<https://modis.gsfc.nasa.gov/data/>)
- **Precipitation**
(<https://pmm.nasa.gov/GPM>)
- **Evapotranspiration**
(<https://modis.gsfc.nasa.gov/data/>)
- **Glaciers**
(<https://nsidc.org/>)
- **NDVI, EVI**
(<https://modis.gsfc.nasa.gov/data/>)
- **Burned areas**
(<https://modis.gsfc.nasa.gov/data/>)
- **Fire**
(<https://earthdata.nasa.gov/earth-observation-data/near-real-time/download-nrt-data/viirs-nrt> , <https://firms.modaps.eosdis.nasa.gov/>)
- **Soil moisture**
(<https://smap.jpl.nasa.gov/>)

Climate characterization

- **Monthly temperature (avg, min, max)>**
(<http://worldclim.org/>)

- **Precipitation**
(<http://worldclim.org/>)
- **Bioclimatic variables**
(<http://worldclim.org/>)

Current data

- **Surface temperature**
(<https://modis.gsfc.nasa.gov/data/>)
- **Precipitation**
(<https://pmm.nasa.gov/GPM>)

Land cover

- **Cover type**
(<https://www.esa-landcover-cci.org/> , <https://modis.gsfc.nasa.gov/data/>)
- **Glaciers/snow cover**
(<https://nsidc.org/>)
- **Cropland**
(<https://modis.gsfc.nasa.gov/data/>)
- **Irrigated areas**
(<http://www.fao.org/land-water/land/land-governance/land-resources-planning-toolbox/category/details/en/c/1029519/>)
- **Tree cover change**
(<http://earthenginepartners.appspot.com/science-2013-global-forest>)

Physical characteristics

- **Soil carbon density**
(<https://www.isric.org/explore/soilgrids>)
- **Global aridity index**
(<https://cg iarcsi.community/2019/01/24/global-aridity-index-and-potential-evapotranspiration-climate-database-v2/>)
- **Potential Evapotranspiration**
(<https://cg iarcsi.community/2019/01/24/global-aridity-index-and-potential-evapotranspiration-climate-database-v2/>)

Other relevant data

- **Agricultural productions**
(<http://www.earthstat.org/>)
- **Spatial production allocation mode 2000, 2005, 2010 (SPAM)**
(<https://cg iarcsi.community/2019/01/04/global-spatially-disaggregated-crop-production-statistics-data-for-2010/>)
- **Land degradation and desertification**
(<http://geoagro.icarda.org/cldd/>)

PLATFORM vs WEBSITE

DESIGN PRINCIPLES

LOGICAL ARCHITECTURE

CLIMATE INFORMATION

CENTRAL ASIA

PARTICIPATION PLAN

SUSTAINABILITY PLAN

central asia

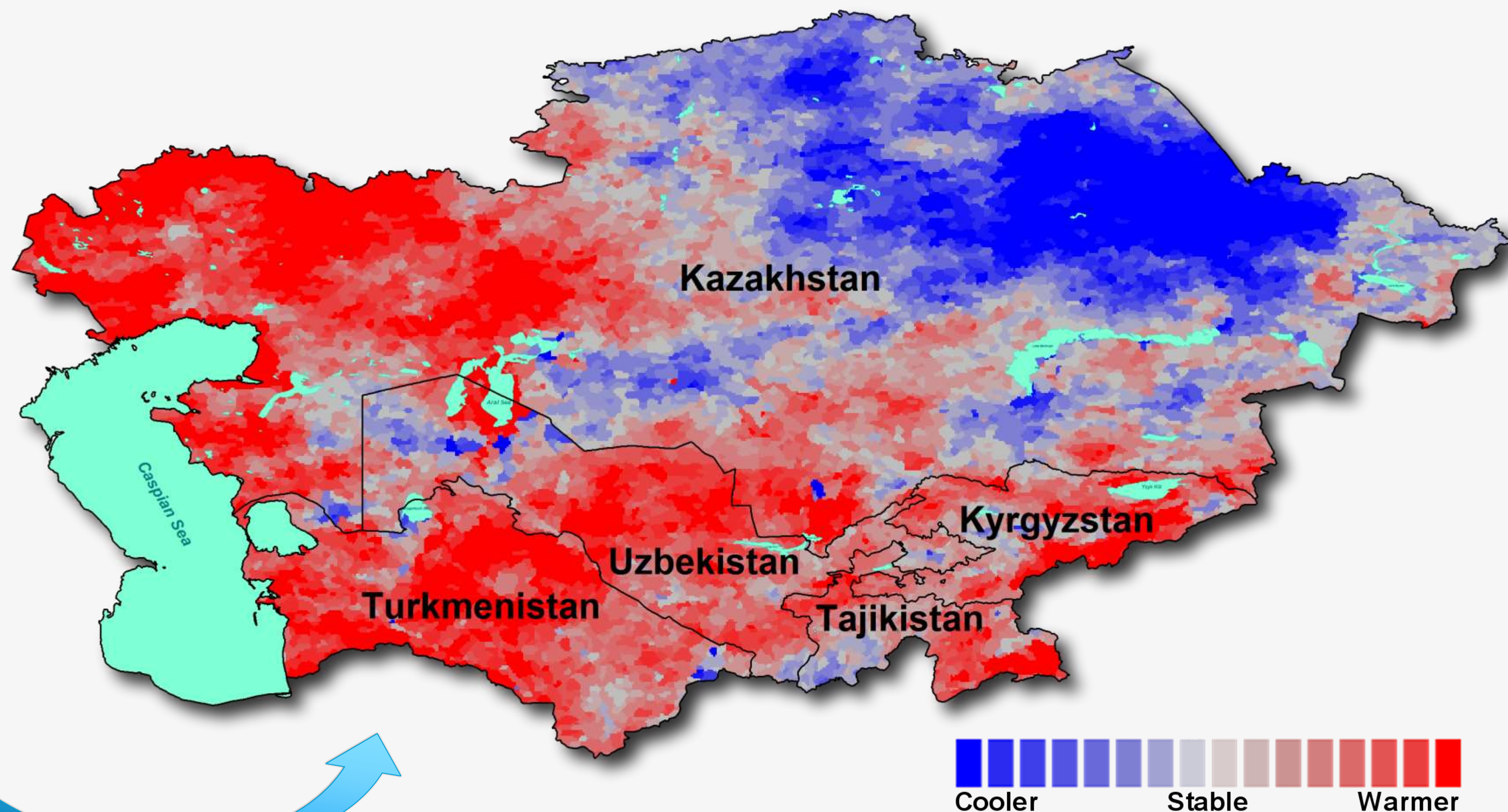
PLATFORM
CLIMATE INFORMATION
CENTRAL ASIA

central asia ...

The contents of the platform focuses on the Central Asia region.

A comprehensive view of the all region facilitates the understanding of climate change phenomena and improves the usefulness of the platform.

On the right the **global trend of surface daily temperature** derived from MODIS data since 2000



Negative/Positive trend of the variation of the land surface temperature in the long term

PLATFORM vs WEBSITE

DESIGN PRINCIPLES

LOGICAL ARCHITECTURE

CLIMATE INFORMATION

CENTRAL ASIA

PARTICIPATION PLAN

SUSTAINABILITY PLAN

participation plan

participation plan

the PARTICIPATION plan of CACIP is based on the following steps:

1. identification of the **stakeholders**
 - on site investigations
 - internet searches
2. identification of **available data**
 - specific one-to-one meetings
 - national consultations
 - analysis of global databases, ...
3. **participatory process**, involvement of stakeholders on the development of the concept
 - brainstorming during official meetings
 - **regional meeting** (end of August)
4. analysis of **feedback** from stakeholders
5. **refinement of the concept** on the basis of stakeholders' suggestions
6. **development of portal**
7. **test, evaluation of the portal** with selected stakeholders before the final release

PLATFORM vs WEBSITE

DESIGN PRINCIPLES

LOGICAL ARCHITECTURE

CLIMATE INFORMATION

CENTRAL ASIA

PARTICIPATION PLAN

SUSTAINABILITY PLAN

sustainability plan

sustainability plan

the SUSTAINABILITY plan of CACIP is based on the following steps:

1. identification of the **regional organization** responsible of the management and maintenance of the platform: directives will be provided by the project team to help the identification of the suitable subject
2. definition of a **management governance**: with the participation of the stakeholders
3. **O&M cost analysis**
4. staff training, about the use and the maintenance of the system
5. formalization of a **management protocol**

PLATFORM vs WEBSITE

DESIGN PRINCIPLES

LOGICAL ARCHITECTURE

CLIMATE INFORMATION

CENTRAL ASIA

PARTICIPATION PLAN

SUSTAINABILITY PLAN

summary

summary of the main concepts



- CACIP is a platform to collect **existing** information
- needs a **community** that keep CACIP alive by **using and updating** the platform
- the **use of existing data is a priority and a requirements** of the project
- the **use of dynamic information** (“harvested” from other sources) **is preferred**
- if somebody is available to share data, in the context of the project, we could collaborate to develop a “custom” integration of this data in the platform

group discussion

discussion objectives ...

Users suggestions are valuable to ensure a close link between needs and implementation. In this project, the participation process is always taken into account.

We ask all participants to share with us their ideas on the following three questions:

1. What **scientific information have to be available** via the CACIP and are useful/necessary in policy making processes at national level and/or in decision making at local level ?
2. What are the **main and more effective formats/channels** to share knowledge (e.g. SMS, smartphone Apps, Telegram, mobile version of websites, direct contacts, ...) ?
3. Should knowledge be **free or paid** ? Do you have **existing examples** ?

Each group should **note the main results** of the discussion and identify a supervisor to **report the results in the plenary restitution**

groups arrangement ...

People should be divided by **focus area**, according with the interests shown in the questionnaire. To facilitate the discussion, we would like to make groups **heterogeneous by profile** (decision makers, researcher, associations, farmers, private companies, etc.)

- focus area 1: **water resources**
- focus area 2: **food and nutritional security**
- focus area 3: **sustainable agroecosystems / mitigation**
- focus area 4: **risk assessment and mapping**
- focus area 5: **land degradation / desertification**
- focus area 6: **reforestation / forest protection**
- focus area 7: **climate changes / long term forecast**
- focus area 8: **socio-economic impact (*)**
- focus area 9: **smartphone services to end users**

(*) it includes migration, health, economic performance, livelihoods, etc.

COFFEE BREAK



plenary discussion

main topics ...

1. What **scientific information have to be available** via the CACIP and are useful/necessary in policy making processes at national level and/or in decision making at local level ?
2. What are the **main and more effective formats/channels** to share knowledge (e.g. SMS, smartphone Apps, Telegram, mobile version of websites, direct contacts, ...) ?
3. Should knowledge be **free or paid** ? Do you have **existing examples** ?
4. ...

action plan

action plan ...

PHASE 1 - END OF AUGUST 2019

	Progress	Completed
Delivery 1.1 – Concept of CACIP		
• consultation of process plan for each country and summary report for each planned event	X	
• compilation of the national stakeholders' profile (organization, capacities, processes and infrastructure)	X	
• definition of the <u>operational framework</u> (cross-border – multi-institution)	X	
• definition of a <u>memorandum of understanding</u> across key stakeholders	X	
Delivery 1.2 – Use-cases and technical infrastructure Identified		
• analysis of the <u>use-cases</u> defined and documented	X	
• compilation of the national and international databases technical report (source of data, quality assessment, reliability, interoperable infrastructure, risk assessment)	X	
Delivery 1.3 – Pilot CACIP developed for consultation		
• definition of the <u>system concept design</u> (draft)	X	
• definition of the backend and interoperability structure for multiple scenarios and documentation	X	
• development of a prototype <u>graphical interface</u>	X	
• development of a pilot demo	X	

action plan ...

PHASE 2 - END OF OCTOBER 2019

Progress

Completed

Delivery 2.1 – Validation process with key stakeholders (feedback)

- technical visits and joint working c/o stakeholders in each country
- definition of the **CACIP system design and architecture documentation** (final)
- collection of the **feedback / recommendations** of key selected stakeholders
- definition of the **sustainability plan** for the CACIP

PHASE 3a - END OF DECEMBER 2019

Progress

Completed

Delivery 3.1a – CACIP development

- CACIP development
- Quality assurance with key partner

PHASE 3b - END OF MARCH 2020

Progress

Completed

Delivery 3.1b – CACIP rolled out

- launch workshop of CACIP
- release of the **CACIP technical documents** (including code)
- release of the **capacity development material** and of the **capacity development plan**
- release of the **hand-over plan**
- finalization of the help-desk support to collect feedback and enhancement

LUNCH TIME



Notes

Uzbekistan, Tashkent: 11 June 2019 – Venue: City Palace hotel <https://citypalace.uz/>

Kazakhstan, Almaty: 14 June 2019 - Venue: Kazzhol Almaty Hotel www.hotelkazzhol.kz

Kyrgyzstan, Bishkek: 11 July 2019 – Venue: Grand Hotel <http://grandhotel.kg/en/>

Tajikistan, Dushanbe: 15 July 2019 - Venue: Rohat Hotel <http://www.rohathotel.tj/kontakty/>

Turkmenistan, Ashgabat: 16 August 2019 – Venue: to be clarified