



Sustaining Development Initiatives on Climate Resilience

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Panel Discussion

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There are many Climate Resilience initiatives undertaken...

Information

- Monitoring
- Analytics
- DecisionSupport
- Documentation
- •

Institutions

- Staffing
- CapacityBuilding/Training
- Collaboration
- ...

Investments

- New/Rehab
- Hard/Soft
- Green/Grey
- Planning/
 Implementation
 / Operations /
 M&E
- ...

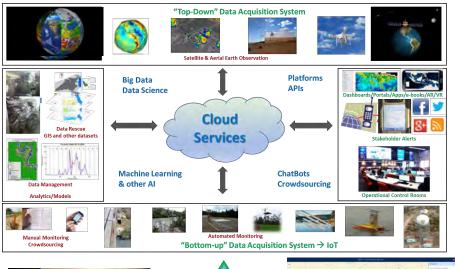
Managing Sustainability Challenges...

Information

A new world of "Disruptive Technology"



"Disrupt" data value chains







"Disrupt" production value chains















"Disrupt" stakeholder value chains

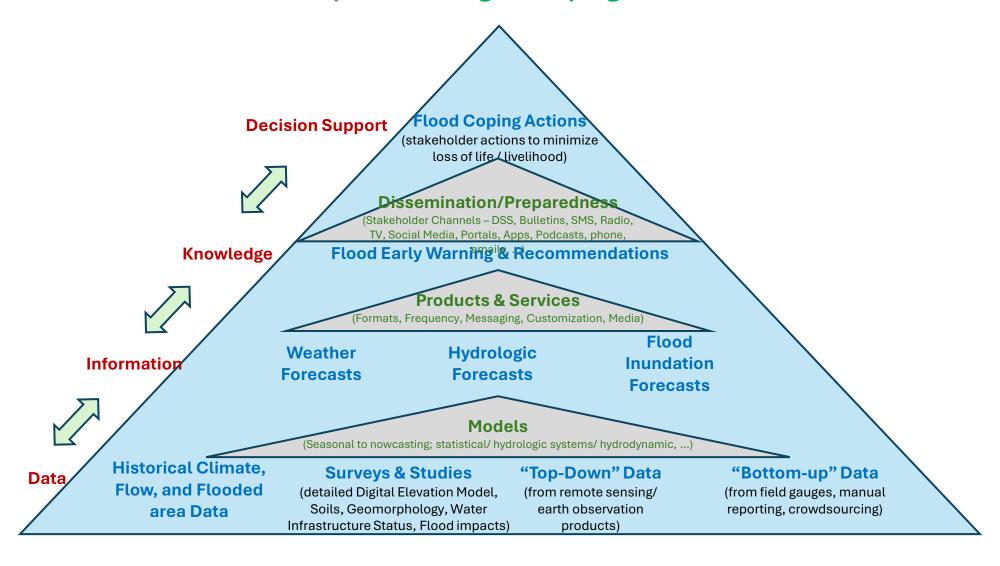


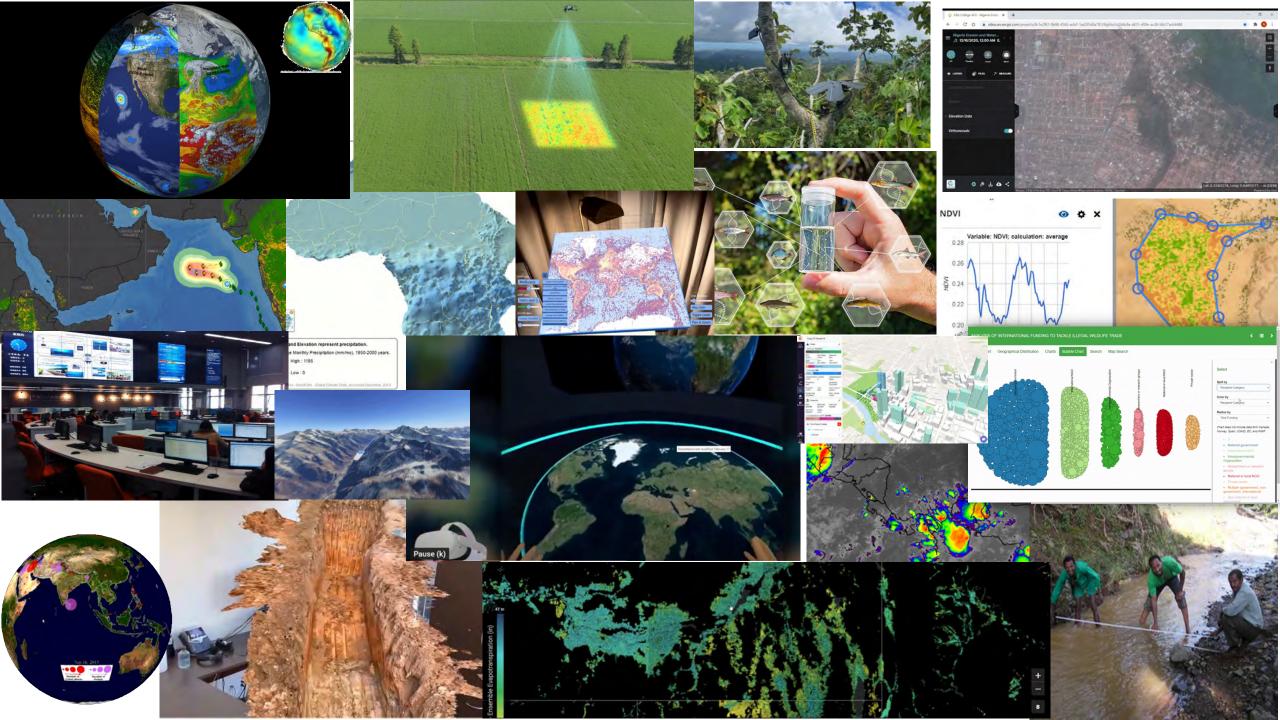




The Data Value Chain

Example: Deciding on Coping with Floods

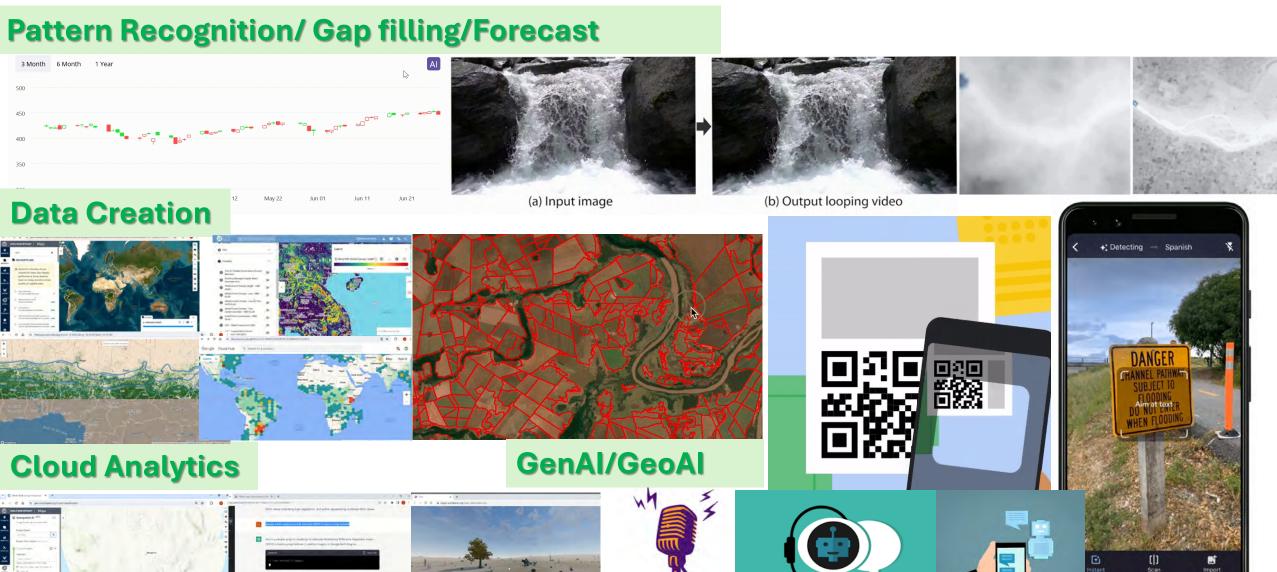






AI AI AI AI ...



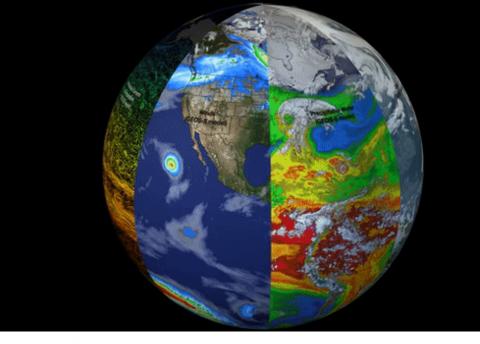


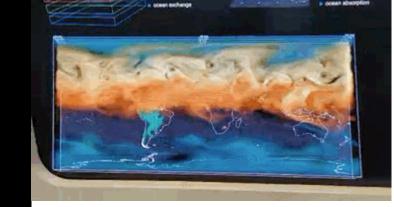
Information

- Open Data; Free/Open Cloud Analytics; AI (Training data);
 ePackaging
- Access of products and services to all relevant stakeholders
- Other Innovations (e.g. financing, institutional, investments, performance-based incentives)
- Not one and done need for continuous innovation



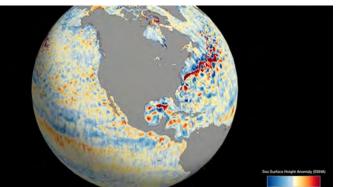








Livable Planet Observatory





Data Sources

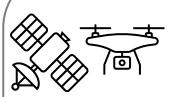
Livable Planet Online Data Repository

Application Services

(from country/regional/global sources)

(geotagged and time-stamped)

(AI-fueled analytics & customized dashboards)



Earth Observation (satellites, aerial surveys, drones)



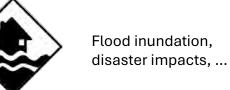
Feedback on quality

Critical data needs

GHG inventory, Improved access to WMO climate data, ...

Water quality, air quality, biodiversity, erosion, sedimentation, ...

Flows, groundwater water levels, soil moisture, water infrastructure...



registries, ...



Data Chatbot

Early Alerts (e.g. for hydrometeorological disasters)



Open Cloud

Services/APIs

Access stats

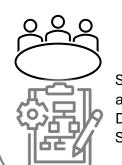
Feedback

Additional needs

Agricultural Advisories even for smallholders (e.g. for farm conditions, crop health, yield forecast, markets, etc.)

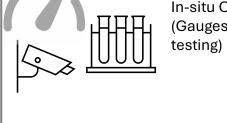


Digital MRV (Measurement, Reporting & Verification) for Carbon sequestration/ecosyste m services

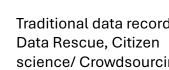


Sector/Spatial Planning and Operational **Decision Support Systems**

Open Science...



In-situ Observations (Gauges/sensors, lab



Traditional data records, science/ Crowdsourcing



Crop yields, crop

Evolving Livable Planet Observatory Resources

World Bank Geospatial Platform:

WORLD BANK

Analyses Types:

(i) Forest Cover Change

Forest Cover Change

he selected region has an area of 5,970,676 km

415,559.14 km² 14,876.73 km²

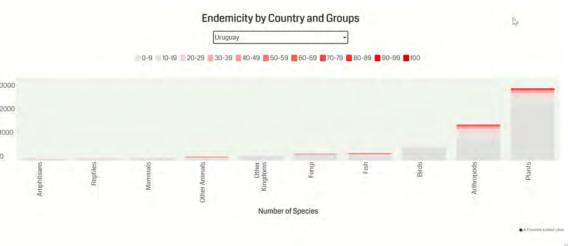
8,831.3 km²

WORLD BANKGROUP IBRD IDA IFC MIGA ICSID

External: https://maps.worldbank.org/

Spatial Agent mobile app (iOS, Android)

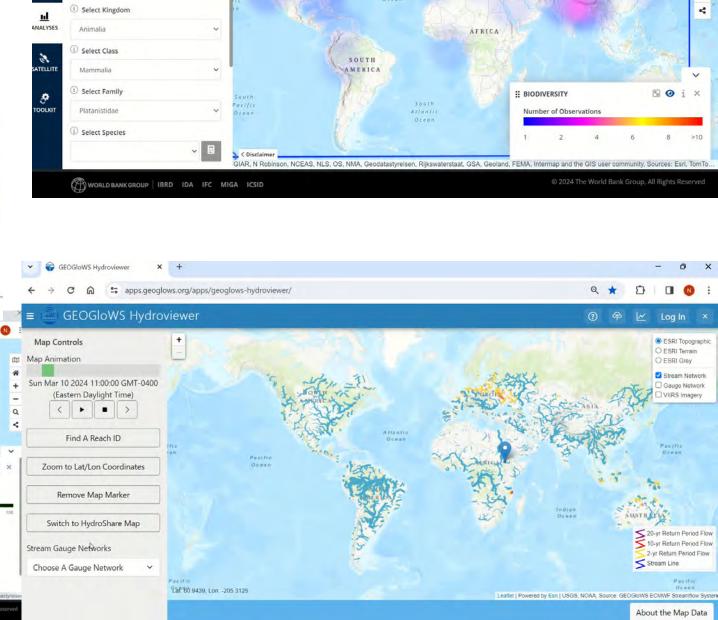
KIDS Catalog: https://spatialagent.org/KIDS/



maps.worldbank.org/analysis?state_ay=basin¶ms1_ay=266&satellite_ay=hansen&variable_ay=lossgain&startdate_ay=2022-05-.... Q 🖻 🕏

~ ANALYSES

FOREST COVER CHANGE (tree



AMERICA

world BANK GROUP Maps

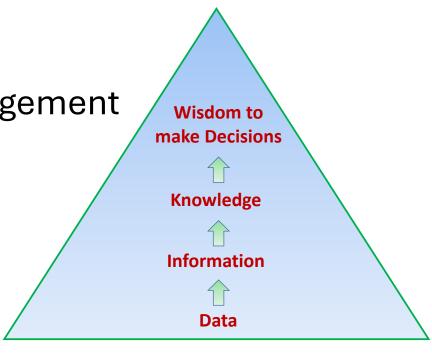
Area of Interest

Your custom shape

Institutions

Institutions

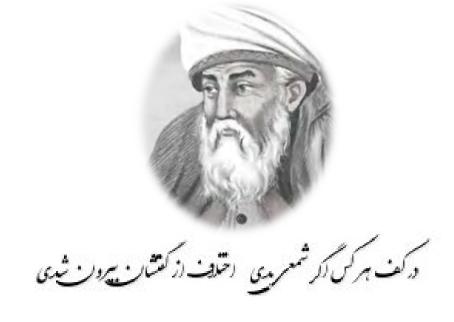
- Meaningful USE stakeholders should miss it when gone!
- Integration into data value chain, business processes
- Adequate \$
- Meaningful stakeholder involvement
- Internships/Visiting Experts/Innovative Engagement
- Partnerships
- Shared Vision Collaboration



Dark

The Elephant in the Room





Each of us touches one place and understands the whole in that way.

•••

If each of us held a candle there, and if we went in together, we could see it.

Multiple sectors, multiple institutions, linked by water and natural resources... A Typical Landscape... Agriculture Ministry/Department/Agency... **Livestock Department** Precipitation **Forest Department Water Resources Agencies Rural Water Supply Department Urban Water Supply Department** Reservoir **Irrigation Department** Watershed Boundary Power Department/Utilities Industry Urban WSS **Industry Department** Rural WSS **Fisheries Department** Rainfed Agr **River Restoration Protected Areas Mgmt.** Recreation **"**人" **Environment Department** Groundwater Inflow ommunity Use **Transport Department** Irrigation **Tourism Department** Return Flow Central, State, district, local govts Infiliation/Recharge **Social Development** Navigation **Surface & Ground water Climate** nds / Environment **Investment Institutions Digital Transformation Basin/Sub-basin Organizations** Groundwater Watershed User Associations/Catchment Committees, WUAs **Transboundary Institutions Labor/Jobs Depts** Farmers, Private Sector, Local Govt., CSOs, Academia, General Public ... **Marine Area Depts** Groundwater Outfl ...Need for spatial and sectoral convergence...

































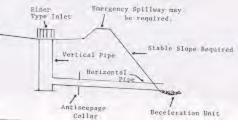




Investments



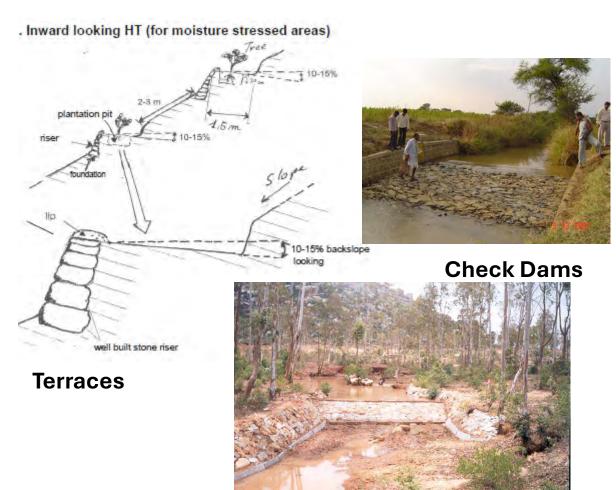




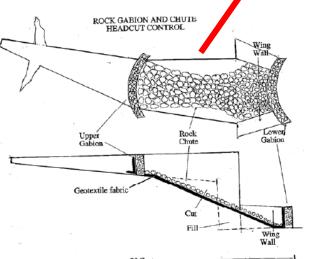
Drop Pipe

On-Farm Systems













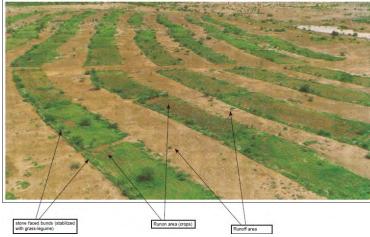
Ultrasonic Algal Control

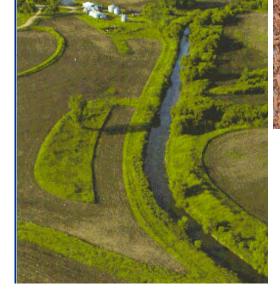


Grassing



Afforestation





Buffer Strips









Agricultural Practices (e.g. **Conservation Agriculture)**



Live Check Dams

Combinations

Green Infrastructure & Climate-Smart Watershed

Investments





Solar-covered Canals

Solar Pumps & Improved Irrigation



Floating Gardens



Improved Agriculture

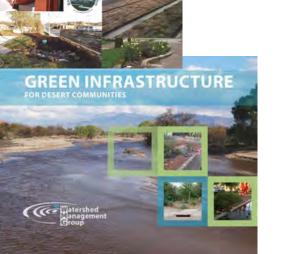






Water from a culvert is channelled into a deep trenches in Megab area, Tigray, Ethiopia. Hand-duq

Source: Mekelle University & MetaMeta https://www.researchgate.net/publication/302590574_Water_harv esting from roads_climate_resilience_in_Tigray_Ethiopia



Investments

- Capacity, coordination for planning, implementation, operation, monitoring, replication/scaling
- Adequate \$ planning, capital, O&M





Overall – the bigger picture...

- Move from retail to wholesale; from closed databases to open data services; free/open cloud analytics & visualization
- Integrated spatial, multi-sectoral, multi-institution perspectives
- Link to and help integrate existing and ongoing initiatives; emerging global good practices
- Long-term institutionalized view not project-by-project
- Meaningful stakeholder participation, Inhouse capacity, Communities of Practice, Partnerships
- Adequate and continuous innovation, services, adaptive management, and financing
- Monitor, Document & Learn! Identify low-hanging fruit...
- Continuously innovate!

