



Updated WebGIS integrated in the Global Geo-informatics Options by Contexts (GeOC) Tool

Final Workshop “Sustainable Land Management to Achieve Land Degradation Neutrality: Options-by-Context Approach and Tools”

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Tunis, Tunisia

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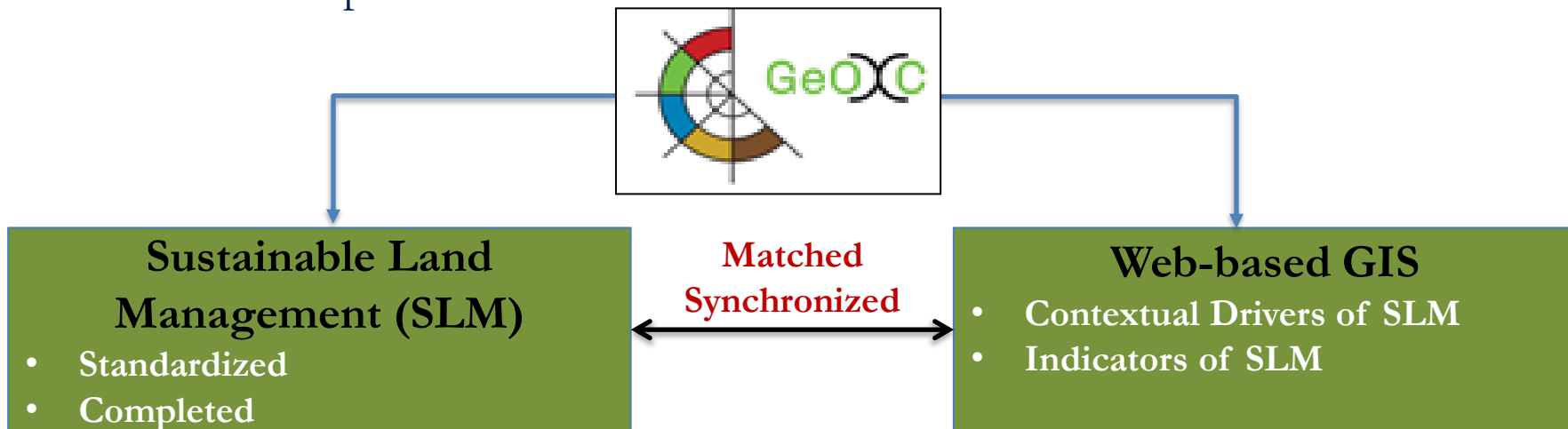
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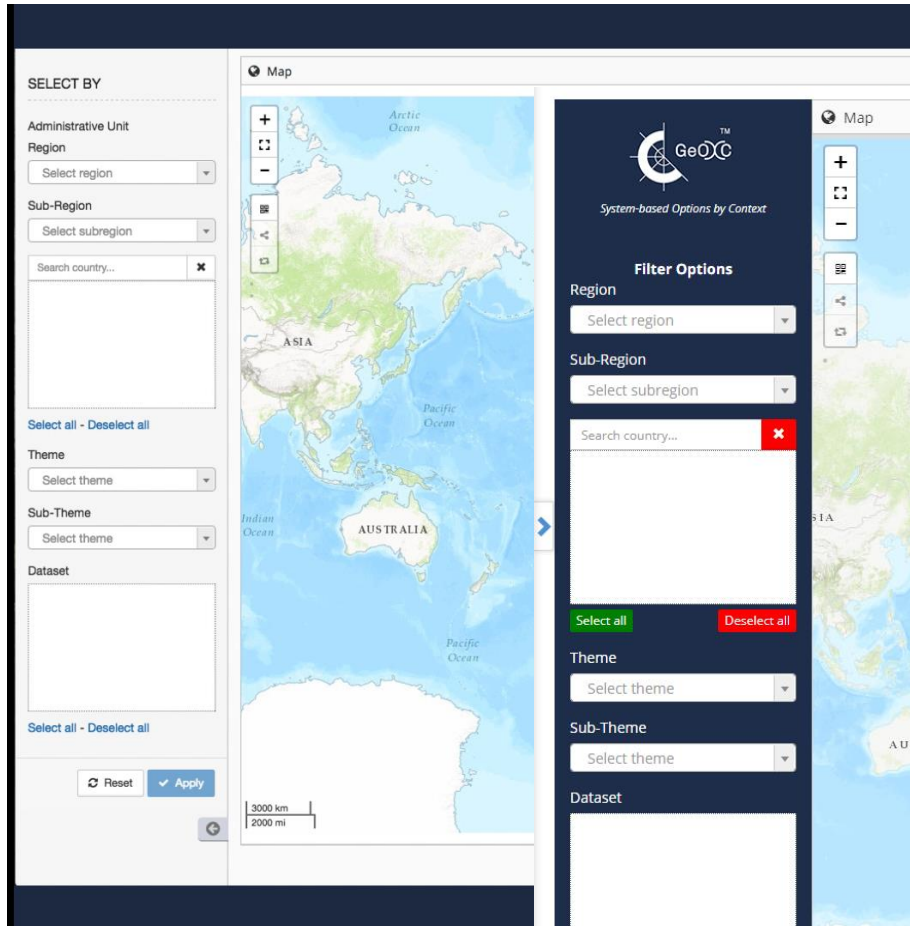
- Global Geo-informatics Option by Context (GeOC) tool, a system-based analysis of options by context for better investment in sustainable agriculture development, has two main components:



- GeOC components are currently under enhancement process in order to provide more robust and stable tool for better contextualised analysis of SLM options
- In this context, the WebGIS component has been enhanced since the first workshop (14-17 March 2017). The major outcomes from these enhancements are the following:

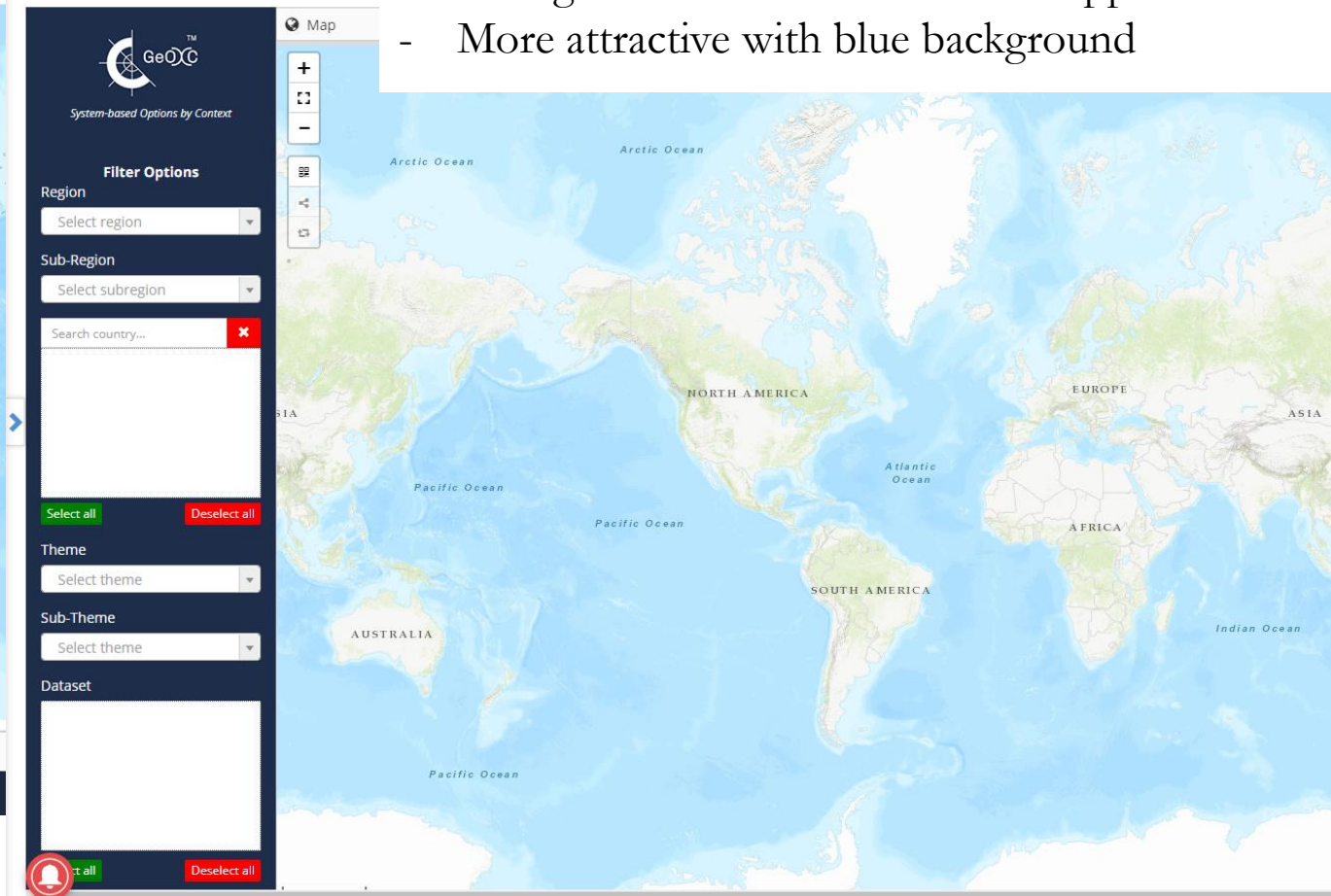
1. Updates in the system appearance

Old interface of GeoC WebGIS

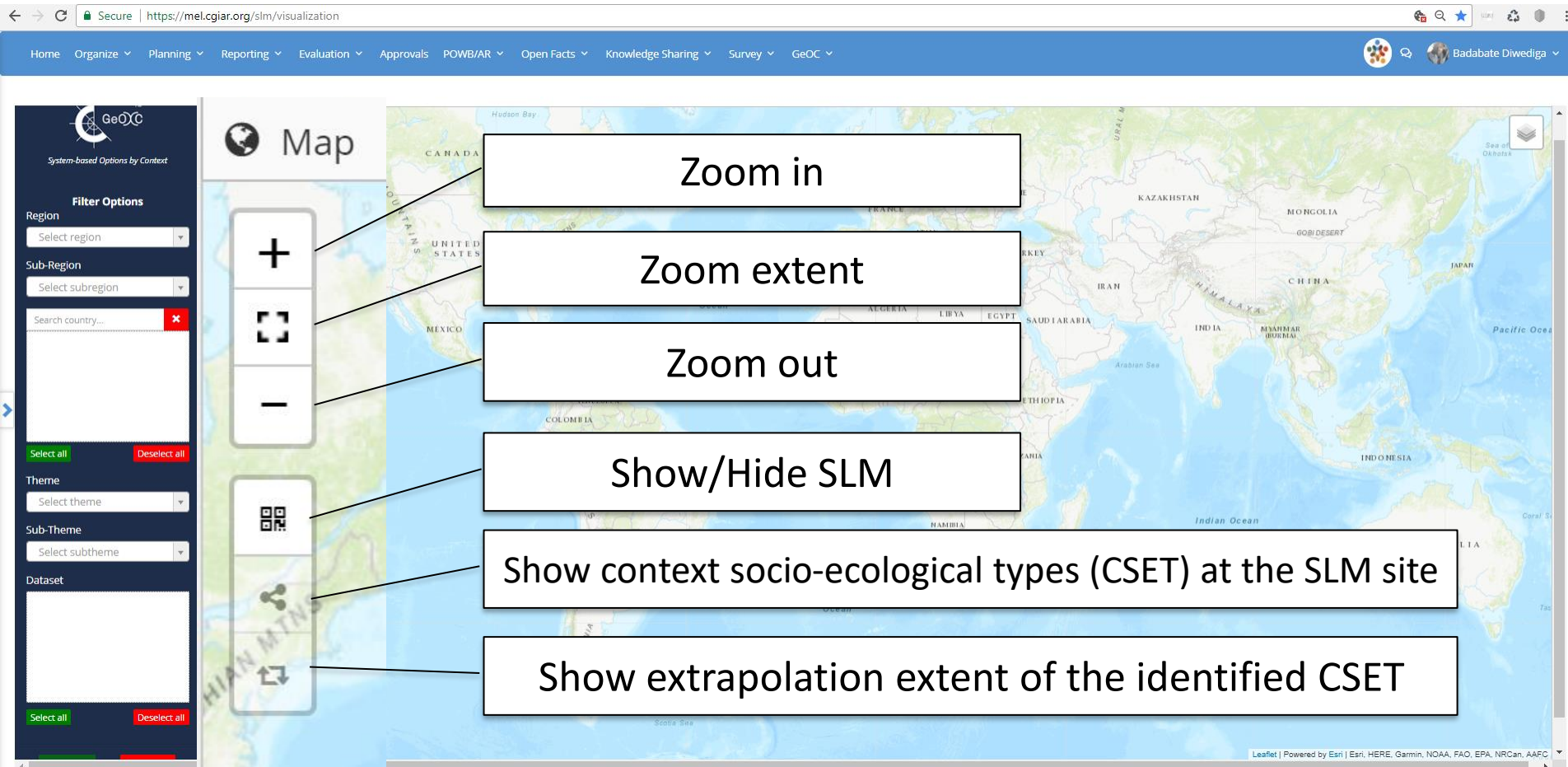


New interface of GeoC WebGIS

- Addition of GeOC logo
- Text and guidance modifications
- Changes in features and function appearance
- More attractive with blue background



2. Map tools and functions



The screenshot shows the GeoOC SLM visualization interface. On the left is a sidebar with filter options for Region, Sub-Region, Theme, Sub-Theme, and Dataset. The main area is a map of the world with a toolbar on the left containing icons for zooming and map controls. Callout boxes point to these icons with the following descriptions:

- Zoom in
- Zoom extent
- Zoom out
- Show/Hide SLM
- Show context socio-ecological types (CSET) at the SLM site
- Show extrapolation extent of the identified CSET



2. Map tools and functions

Browser tabs: Rapid Urban, Developer, Rapid Urban, Comments, Inbox (4) - I, MEL - Monit, MEL - Monit, MEL - Monit, Learning, How to copy, How to copy, WOCAT, WOCAT

URL: <https://mel.cgiar.org/slm/visualization>

Navigation: Home, Organize, Planning, Reporting, Evaluation, Approvals, POWB/AR, Open Facts, Knowledge Sharing, Survey, GeOC

User: Badabate Diwediga

Map Interface:

- Filter Options:** Region (Africa), Sub-Region (Northern Africa), Search country..., Theme (Context/Driver's Database), Sub-Theme (National economic devel...), Dataset (GDP-CAP, GDP-CAP-GRW, AGRI-POVERTY)
- Map Tools:**
 - Draw a polygon
 - Draw a square/rectangle
 - Select a point
 - Show filter
 - Clear layer mask
 - Download raster data
- Map Features:**
 - See Selected raster layers
 - See Legends of selected rasters

Map Title: A tool for better investment decisions in agriculture and rural development

OSD Taskbar: 6:37 AM, 22/10/2017



Region

Sub-region

Country

**Province or
Governorate**

District (if any)



System-based Options by Context

Filter Options

Region

Select region

Africa

Americas

Asia

Europe

Oceania

Select all

Deselect all



System-based Options by Context

Filter Options

Region

Africa

Sub-Region

Select subregion

Eastern Africa

Middle Africa

Northern Africa

Southern Africa

Western Africa

Select all

Deselect all



System-based Options by Context

Filter Options

Region

Africa

Sub-Region

Northern Africa

Search country...

Algeria

Egypt

Libya

Morocco

Sudan

Tunisia

Western Sahara

Select all

Deselect all



System-based Options by Context

Filter Options

Region

Africa

Sub-Region

Northern Africa

Search country...

Tunisia

Ariana

Béja

Ben Arous (Tunis Sud)

Bizerte

Gabès

Gafsa

Select all

Deselect all



System-based Options by Context

Filter Options

Region

Africa

Sub-Region

Northern Africa

Search country...

Tunisia

Ariana

Raoued

Sebkhet Ariana

Sidi Thabet

Soukra

Ariana Médina

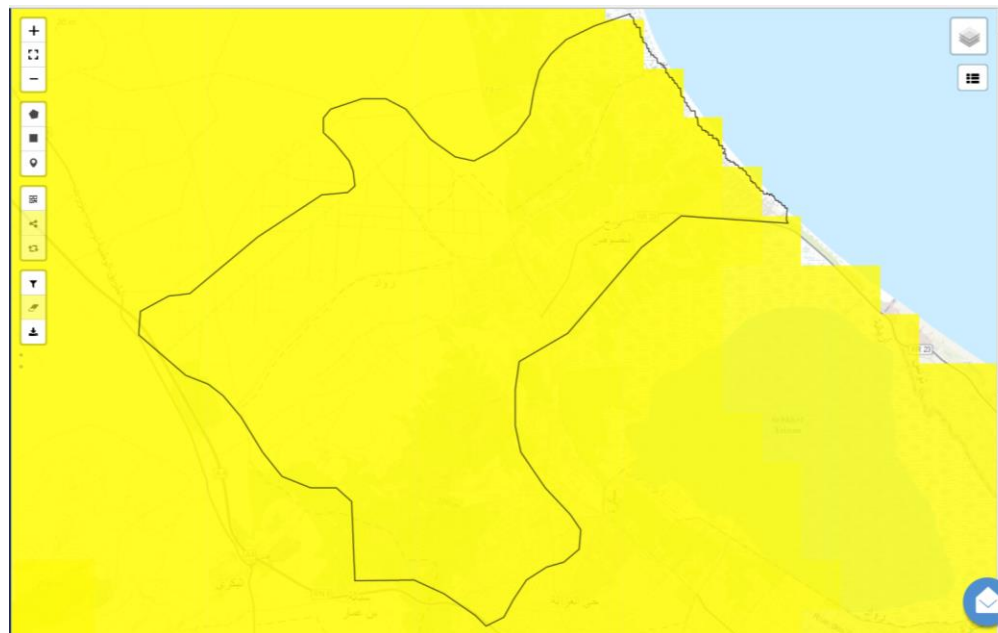
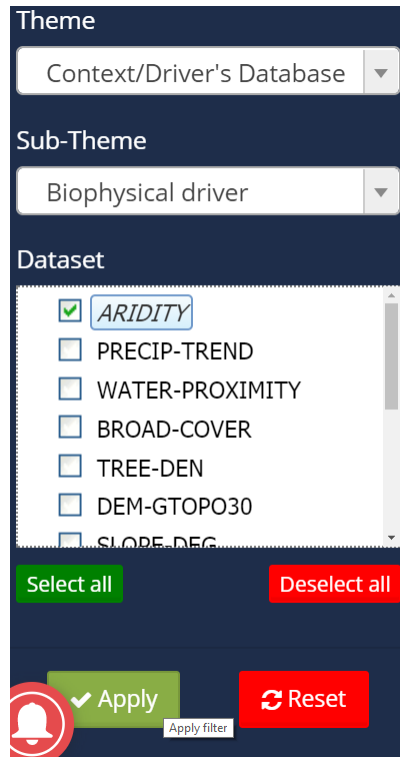
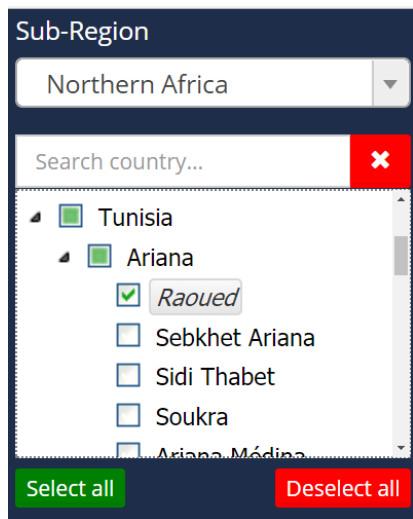
Select all

Deselect all

Step 1: Select area of interest

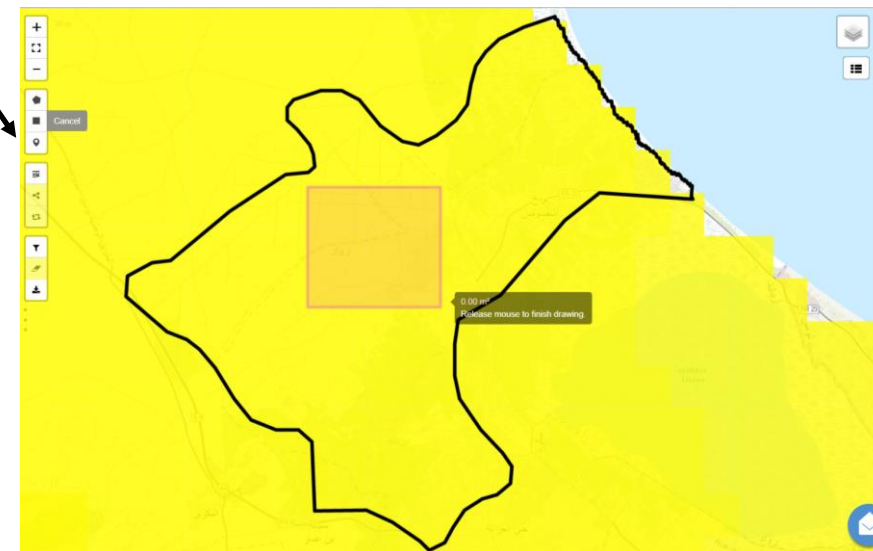
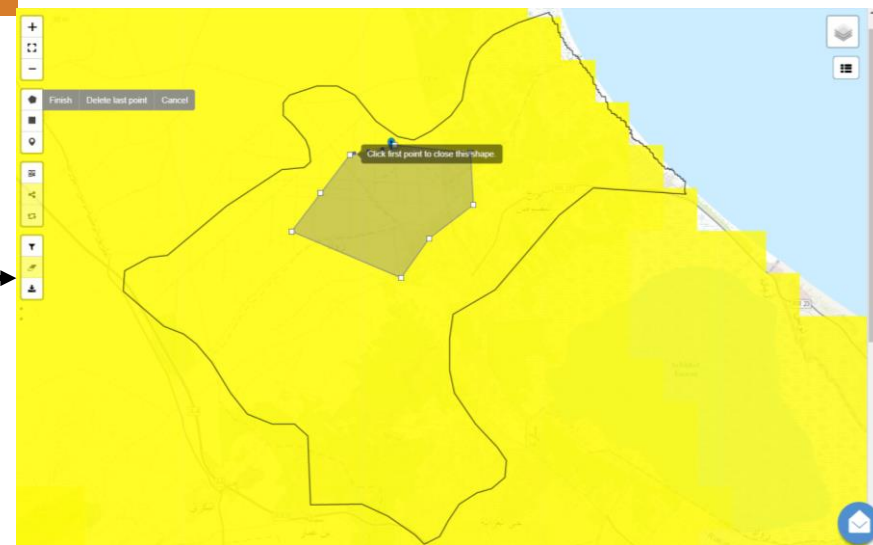
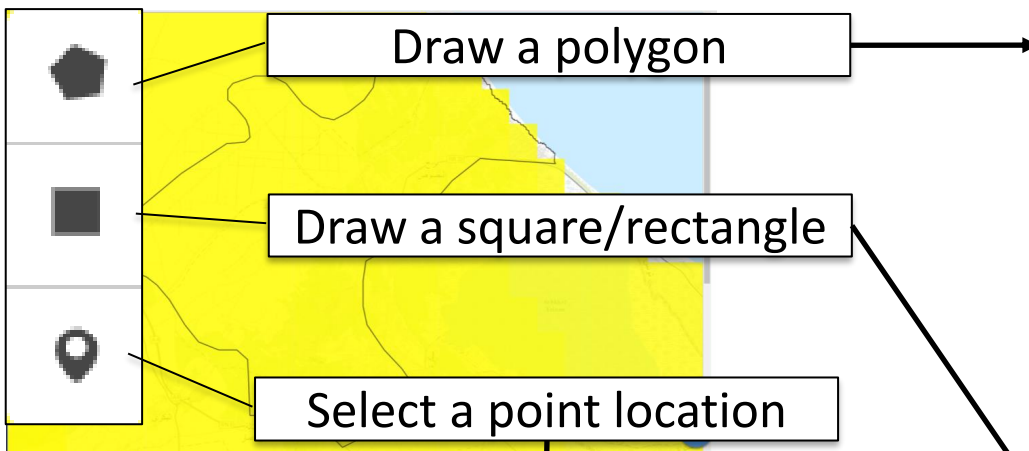
Step 2: Select raster variable of interest

Step 3: Apply filter and zoom in to the area of interest



Step 4: Use the filtering buttons for defining area of interest (see next slide)

Step 4: Use the filtering buttons for defining area of interest



Filtering the variables the main category «Context/Drivers»

Theme

Select theme

Context/Driver's Database

Outcome-Impact Database

Sub-Themes

Sub-Theme

Select subtheme

Biophysical driver

Physical and institutional accessibility to land resources

Demographic dynamics and pressure

Socio-ecological contextual similarity

14

Sub-Theme

Physical and institutional...

Biophysical driver

Physical and institutional accessibility to land resources

Demographic dynamics and pressure

Socio-ecological contextual similarity

04

Sub-Theme

Demographic dynamics ...

Biophysical driver

Physical and institutional accessibility to land resources

Demographic dynamics and pressure

Socio-ecological contextual similarity

03

Sub-Theme

Select subtheme

accessibility to land resources

Demographic dynamics and pressure

Socio-ecological contextual similarity

National economic development

03

Sub-Theme

Select subtheme

accessibility to land resources

Demographic dynamics and pressure

Socio-ecological contextual similarity

National economic development

04

Variables

Sub-Theme

Biophysical driver

Sub-Theme

Biophysical driver

Dataset

SQC1-NUTAVA

SQC2-NUTRCAP

SQC3-ROOTCOD

SQC4-OXYGEN

SQC5-SALT

SQC6-TOXICITY

SQC7-WORKCAP

Select all

Deselect all

Sub-Theme

Physical and institutional...

Dataset

DIST-ROAD

DIST-TOWN

PROTECT-AREA

TENURE-SEC

Select all

Deselect all

Sub-Theme

Demographic dynamics ...

Dataset

POP-DEN2015

POP-DEN-RURAL

POP-CHANGE

Select all

Deselect all

Sub-Theme

Socio-ecological context...

Dataset

CSET-LE

GLS-ASSELEN

LSA-VACLAVIK

Select all

Deselect all

Sub-Theme

National economic devel...

Dataset

GDPCAP

GDPCAP-GRW

AGRI-POVERTY

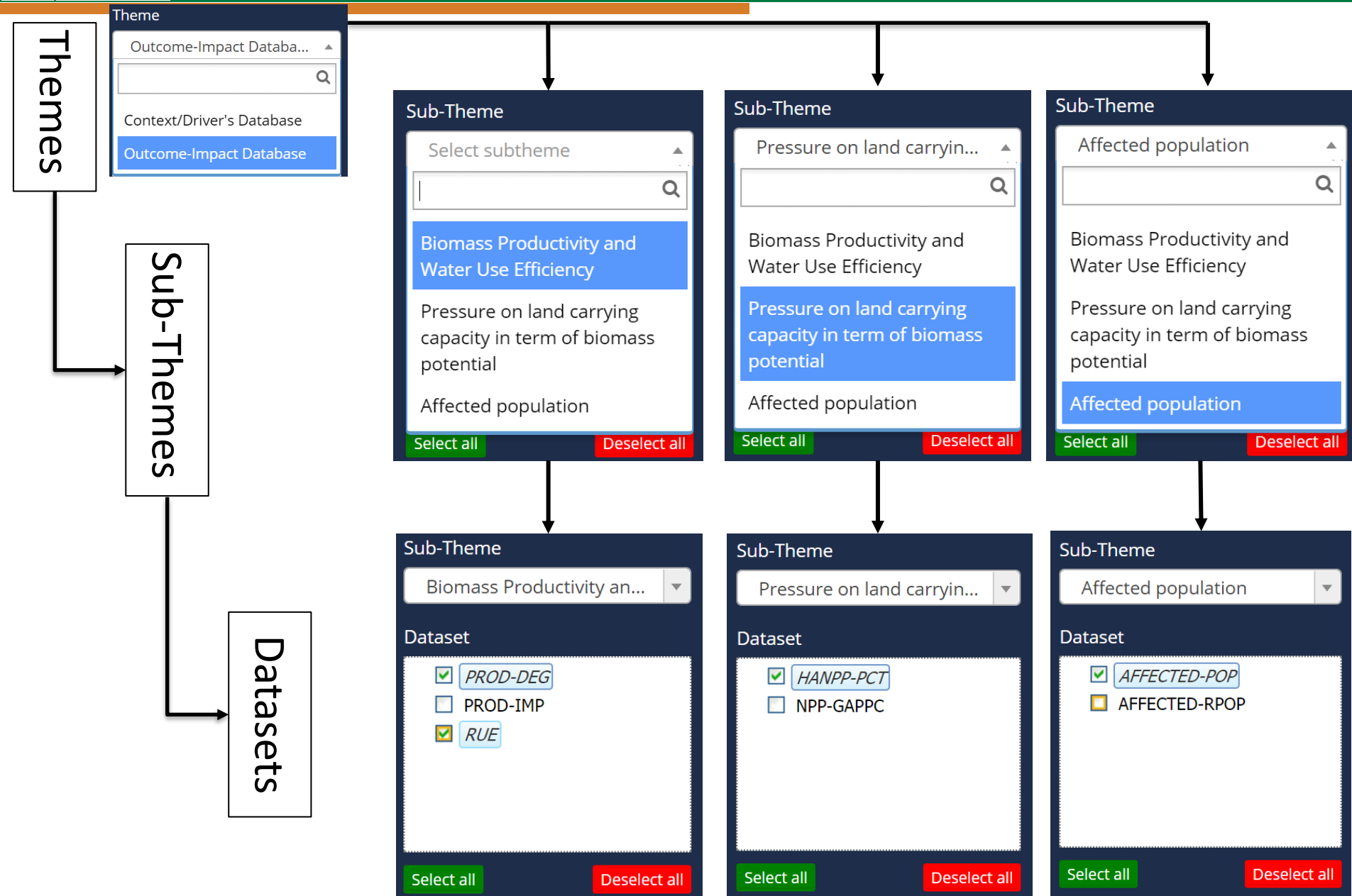
FOOD-SEC

Select all

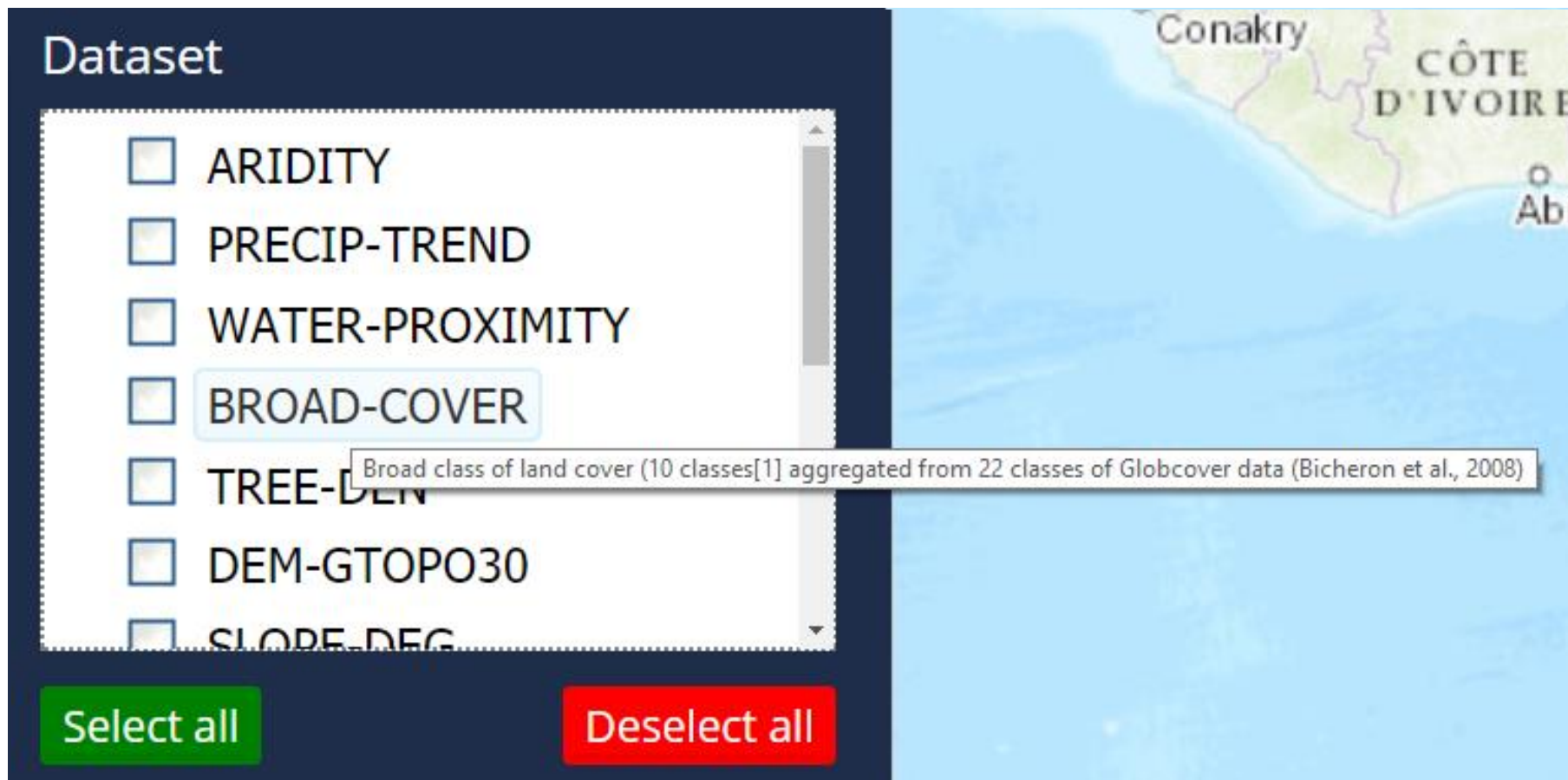
Deselect all



Filtering the variables of the main category « Outcome-Impact »



The short definition of variable in the WebGIS can be viewed by hovering the mouse on the variable name in the dataset list.

A screenshot of a WebGIS interface. On the left, a dark blue panel titled "Dataset" contains a list of variables with checkboxes. The variables are: ARIDITY, PRECIP-TREND, WATER-PROXIMITY, BROAD-COVER (highlighted with a light blue border), TREE-DEN, DEM-GTOPO30, and SLOPE-DEG. Below the list are two buttons: a green "Select all" button and a red "Deselect all" button. On the right, a map of Côte d'Ivoire is shown, with labels for "Conakry" and "Abi". A tooltip box is overlaid on the map, pointing to the "BROAD-COVER" variable, containing the text: "Broad class of land cover (10 classes[1] aggregated from 22 classes of Globcover data (Bicheron et al., 2008)".

Well synchronised and matched
WebGIS from “GeOC visualisation”
and the “SLM web form”

Administrative units
at Region, Sub-
region, Country,
Province & District
levels

WebGIS of GeOC visualisation

WebGIS in SLM web form

System-based Options by Context

Filter Options

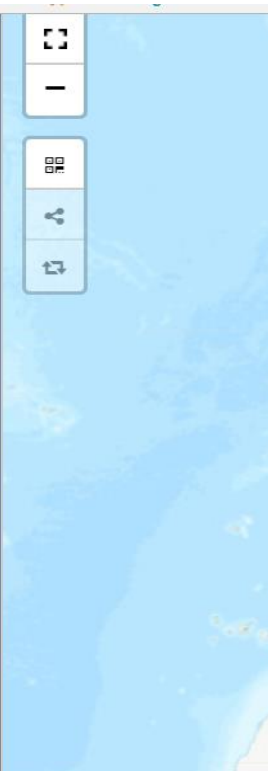
Region
Africa

Sub-Region
Northern Africa

Search country... ✕




- Sidi Bou Zid
- Zaghouan
 - Bir Mchergua
 - Fahs
 - Nadhour
 - Saouaf

Select all Deselect all



Fields with **RED ASTERISK *** are mandatory

4.1 Regions/locations where the SLM technology has been applied

Web GIS  Upload File  URL 

4.1.1 Region * Africa ✕ ▾

4.1.2 Sub-Region * Northern Africa ✕ ▾

4.1.3 Country * WOCAT Tunisia ✕ ▾

4.1.4 Province WOCAT Zaghouan ✕ ▾

4.1.5 District WOCAT Please Select. ▴

4.1.6 Total area where the SLM technology was applied WOCAT

4.1.7 Area / Site ID WOCAT

Bir Mchergua

Fahs

Nadhour

Saouaf

Zaghouan

Zriba

4.2 Socio-ecological context / environment

IS dat

- Proxies of land degradation/improvement in the areas with implemented SLMs

Column for SLM names with hyperlink to their metadata

Columns for indicators of SLM performance in the areas of interest

SLMs in the area of interest	Biomass productivity decline (PROD-DEG)	Biomass productivity improvement (PROD-IMP)	Rain use efficiency (RUE)	Human appropriation of NPP (HANPP-PCT)	Gap between actual and potential NPP	Affected population (AFFECTED-POP)	Affected rural population (AFFECTED-RPOP)
Area enclosure							
Hill lake							
Meskats							
Manual terrace							
...							



Outlook & perspectives: enhancements on the course

- Indicators of On-site impacts of the SLM options

Column for SLM names with hyperlink to their metadata

Indicators of On-site impacts of SLM Options in the areas of interest

	Impact types						
SLMs in the area of interest	Socio-economic (Production)	Socio-economic (Water availability & quality)	Socio-economic (Income & costs)	Socio-cultural	Ecological (Water cycle & runoff)	Ecological (Soil & biodiversity)	Ecological (Climate & disaster risk reduction)
Area enclosure							
Artesian well							
Fixation of sand dunes							
Cisterns							
Desert wells							

- Indicators of Off-site impacts of the SLM options

Column for SLM names with hyperlink to their metadata

Indicators of Off-site impacts of SLM Options in the areas of interest

	Impact types						
SLMs in the area of interest	Water availability, quality and stable stream flow	Reduced downstream flooding	Reduced downstream siltation	Buffering/ filtering capacity (by soil, vegetation, wetlands)	Reduced wind transported sediments	Reduced damages on neighbour field and infrastructure	Reduced greenhouse gasses emissions
Area enclosure							
Artesian well							
Fixation of sand dunes							
Cisterns							
Desert wells							

Global Geo-informatics Options by Contexts



*A tool for better
investment decisions
in agriculture and
rural development*



Thank You!