Statistic Summaries of SLM Options by Context in the WebGIS sub-tool of Geo-informatics Options by Contexts (GeOC)

iMMAP

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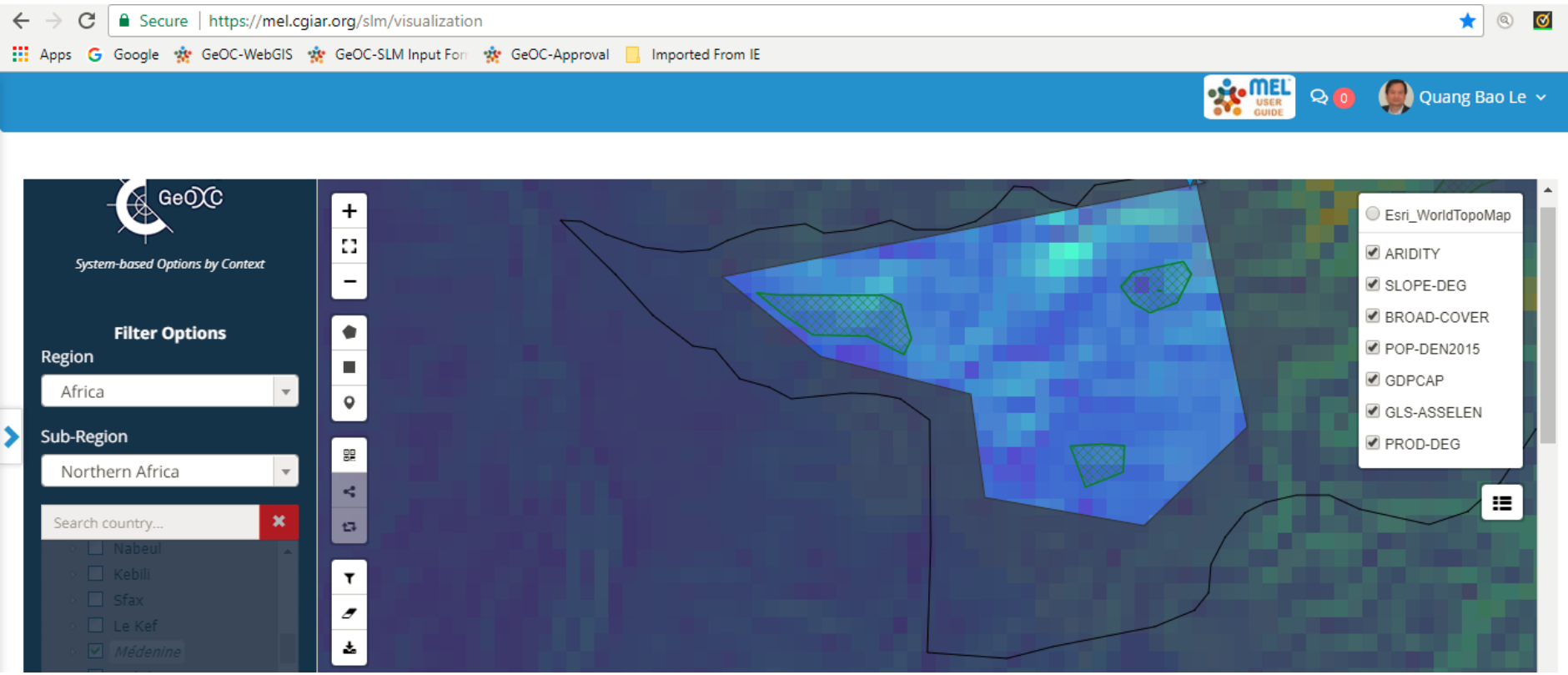
Science for Better Livelihoods in Dry Areas

First, defind areaof interest and contextual criteria

An example of area of interest, cover 4 SLM implementation sites (while blue with polygons in it), with 7 selected contextual factors/variables/layers (while box on the right)



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Descriptive statistics of contextual criteria computed

Then, WebGIS will compute and show descriptive statistics for selected contextual factors

Descriptive statistics of selected continuous/ordinary layers/rasters (within

Layer	Min	Max	Mean	Stdv	Range	Display Unit
ARIDITY	0.1	0.2	0.1	0.0	0.1	Index
SLOPE-DEG	0.0	9.5	1.1	1.1	9.5	Degree
POP-DEN2015	4.4	60.2	40.8	18.4	55.8	Persons/km2
GDPCAP	0.0	567.1	148.0	60.9	567.1	$US/person/yr

Continuous GIS layers/variables:
ARIDITY: an index measure humidity
SLOPE-DEG: Slope of land surface in degree
POP-DEN2015: Population density in 2015
GDPCAP: GDP per capita

Categorical GIS layers/variables:
BROAD-COVER: Broad class of land cover
GLS-ASSELEN: Global land system in according to Asselen et al. (2011)
PROD-DEG: Long-term declining of biomass productivity (Le et al. 2016)

Descriptive statistics of categorical layers/rasters (within the area of interest) (% of total area for each catergory)

Layer	Rainfed crop areas	Mosaic crop-vegetation	Mosaic forest-shrub-grassland	Sparse vegetative areas	Bare soil areas	Artificial areas	Permernant snow/Ice/Domestic water surfaces
BROAD-COVER	0.0%	0.1%	0.1%	7.5%	88.7%	0.9%	2.8%
Layer	**Bare**	**Bare with few livestock**					
GLS-ASSELEN	8.4%	91.6%					
Layer	**Significant long-term NDVI decline (RF- and AF-corrected, LAI > 4 masked)**	**prod_degrad.255**					
PROD-DEG	5.5%	94.5%					

Synthesis tables of SLM's impacts

Notes: i) Impact data from SLM database; ii) short name of SLM hyperlinked to published SLM data form

On-site impacts of the SLM options

Show 10 entries Search:

SLMs in the area of interest	Socio-economic impacts- Production	Socio-economic impacts- Water availability and quality	Socio-economic impacts- Income & costs	Socio-cultural impacts	Ecological impacts- Water cycle/runoff	Ecological impacts- Soil & biodiversity	Ecological impacts- Climate & disaster risk reduction
Cisterns	Slightly positive	Slightly positive	not available	Positive	Slightly positive	Slightly positive	Slightly positive
Plantation for landscape restoration	Slightly positive	not available	not available	Very positive	not available	Positive	Positive
Well in the desert	not available	not available	not available	not available	not available	not available	not available
Well in the desert	Slightly positive	Very positive	not available	Positive	not available	Positive	not available

Showing 1 to 4 of 4 entries Previous 1 Next

Off-site impacts of the SLM options

Show 10 entries Search:

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 infrastructures	Reduced greenhouse gasses emissionsn
Cisterns	Slightly negative	Slightly positive	Slightly positive	not available	not available	not available	not available
Plantation for landscape restoration	not available	not available	not available	not available	not available	not available	not available
Well in the desert	not available	not available	not available	not available	not available	not available	not available
Well in the desert	Very positive	not available	not available	not available	not available	not available	not available

Showing 1 to 4 of 4 entries Previous 1 Next

WebGIS's synthesis table SLMs vs. Land degradation/improvement indicators (programmed, showed in GUI)

- 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							
…							

WebGIS's synthesis table SLMs vs. Cost (establishment, maintennance) (programed and showed in GUI)

- Cost for SLM's establishment and maintenance

Column for SLM names with hyperlink to their metadata

Column for SLM establishment costs

Columns for SLM maintenance costs

SLMs in the area of interest	Establishment cost (in US Dollars)				Maintenance cost (in US Dollars)			
	Labor	Equipment	Materials	Other inputs	Labor	Equipment	Materials	Other inputs
Area enclosure								
Artesian well								
Fixation of sand dunes								
Cisterns								
Desert wells								

WebGIS's synthesis table SLM vs. On-ste impact dimensions (programed showed in GUI)

- 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							

WebGIS's synthesis table SLM vs. On-ste impact dimensions (programed showed in GUI)

- 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
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Fixation of sand dunes							
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