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Concept et caractéristiques architecturale de l'outil GeOC

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System-based Options by Context

GeOC

A tool for better investment decisions in agriculture and rural development

Projet financé par la GIZ

"Evaluation de l'impact des options de GDT pour l'atteinte de la Neutralité en matière de Dégradation des Terres"

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

ICARDA

iMMAP

La neutralité en matière de dégradation des terres nécessite des solutions spécifiques au contexte

- La neutralité en matière de dégradation des terres (NDT), définie comme l'utilisation des terres tout en maintenant leur bon état et leur productivité afin de garantir zéro dégragation nette, est cruciale pour l'atteinte des Objectifs de Developpment Durable à l'horizon 2020.

- La grande diversité des contextes dans les régions arides défavorise l'élaboration et l'implémentation de politiques "générales uniformes".

- Pour ce faire, des options de Gestion Durable des Terres (GDT) adaptées à la spécifité des contextes socio-écologiques sont indispensables pour atteindre la NDT à grande échelle là où un impact significatif peut être attendu.

Example 1: Small holder adoption of simple compost technology in Southwestern Burkina Faso

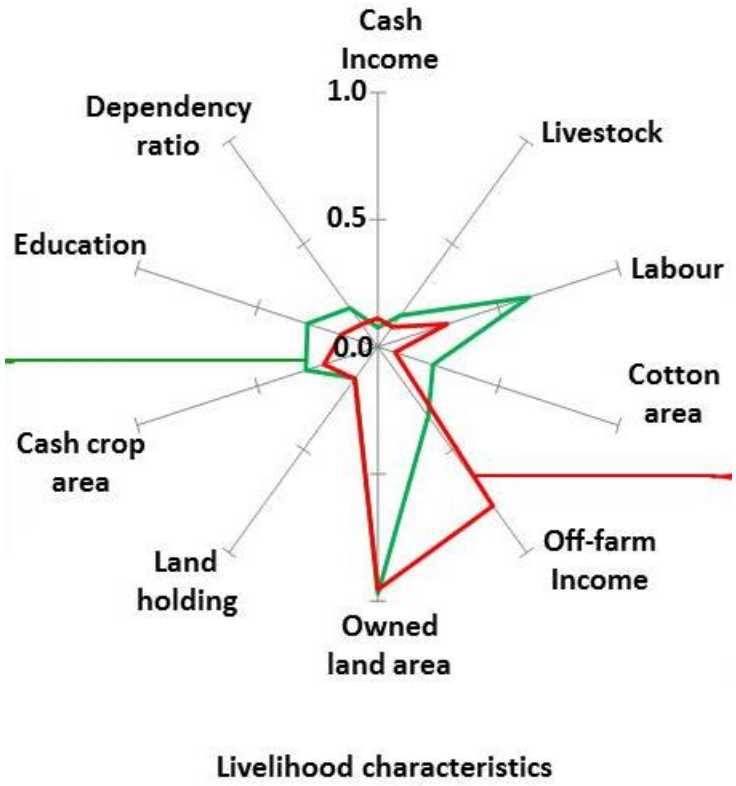
SLM: Composting crop and animal residuals for re-using as fertilizers for crop

- Projects/programs supported farmers build underground residue/garbage container
- Farmers encouraged to collect residues to put on the containers
- After some time, the material will be used as organic fertilizer (can be mixed with mineral fertilizer) for crops

Example 1: Small holder adoption of simple compost technology in Southwestern Burkina Faso

- Two types of household-farm systems (among of some other types):
  - Educated, labor-endowed and farm-based livelihood (the green radar polygon)
  - Less educated, less labor, off-farm based livelihood (the red radar polygon)

- **Can you guess what household-farm type adopt the composting technology better?**

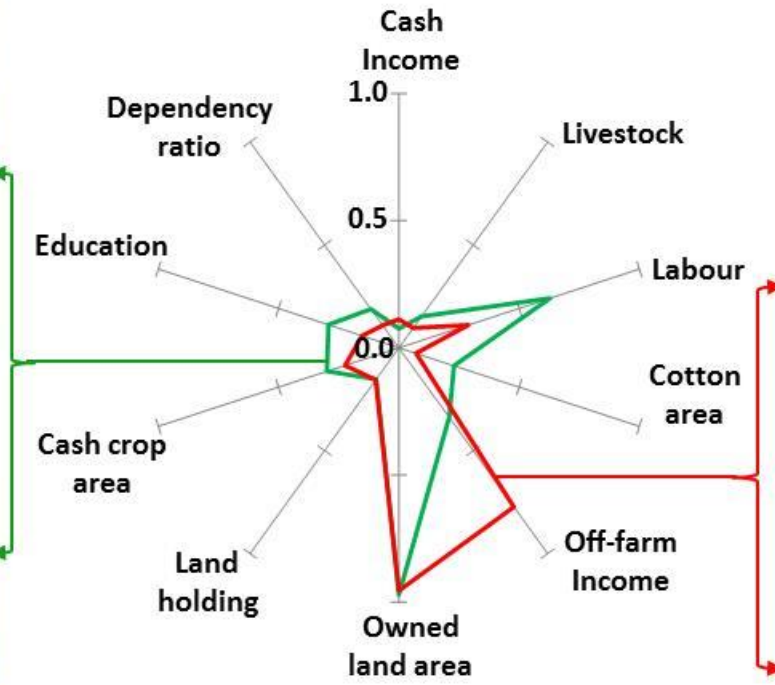


Source: Thiombiano, Le (submitted) Agr. for Sus. Dev.

Example 1

Current:

Nutrient management practices by a farm-based, labour-endowed and educated household



Livelihood characteristics

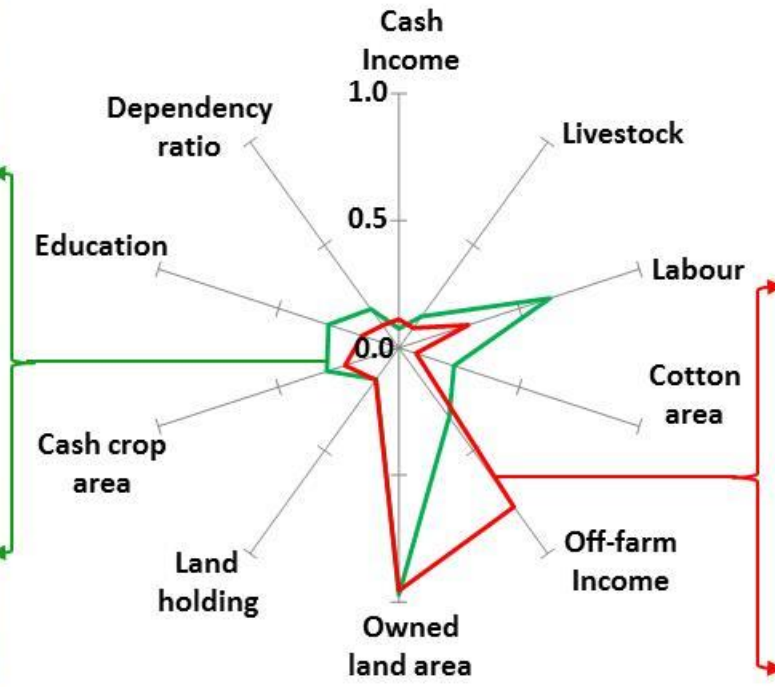
Nutrient management practices by an off-farm oriented household

Source: Thiombiano, Le (submitted) Agr. for Sus. Dev.

Example 1

Will the red household farm type adopt composting tech. as the green one if they are trained/educated and supported by some means for transporting/carrying residues?

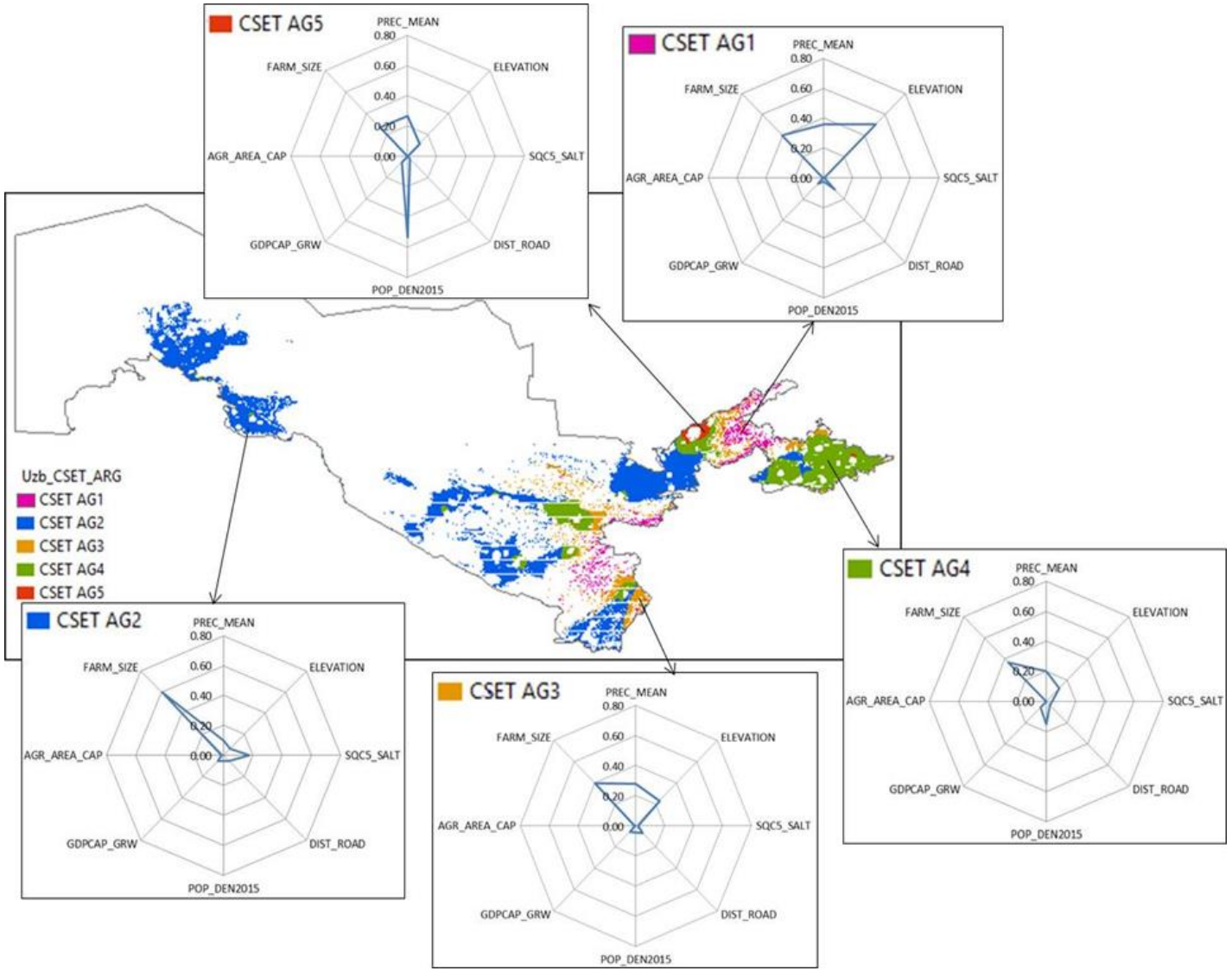
Nutrient management practices by a farm-based, labour-endowed and educated household



Livelihood characteristics

Nutrient management practices by an off-farm oriented household

Example 2: Different functional social-ecological context in Uzbekistan's agricultural land



In separate study, land degradation indicators in these types (measured independently from data used for deriving these context types) are significantly different among these context types

Source: Le, Akramkhanov et al. (in preparation).

Interdependencies among Context - Option – Performance/Outcome

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Context (C)

- Market demand and supply (input and output prices)
- Population pressure
- Land tenure
- Technology availability and access
- Physical and institutional access
- Education
- Economic status
- Socio-political network
- Etc.

x **Options** =

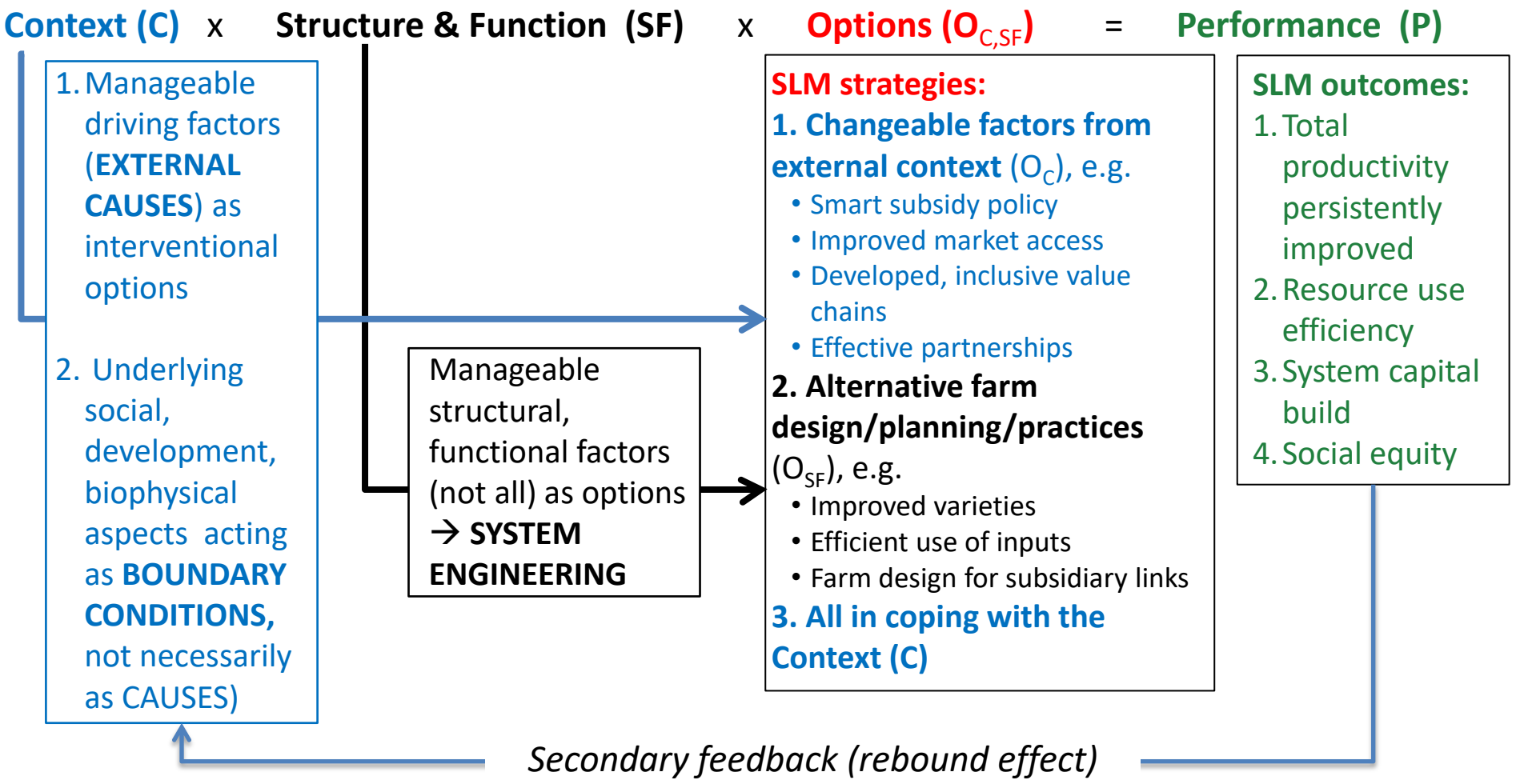
- Soil/water conservation practices
- Smart subsidy policy/mechanism (e.g. payment for ecosystem services)
- Improved market access
- Effective partnerships
- Improved varieties
- Efficient use of inputs
- Farm or landscape planning for promoting subsidiary links, multi-functions

Performance (P)

SLM outcomes:

1. Total productivity persistently improved
2. Resource use efficiency
3. System capitals (natural resources, knowledge base, skills) built
4. Social equity

A system view on interdependencies among Context – System itself - Option – Performance/Outcome



GeOC: un nouvel outil SIG en ligne pour l'activation des options de GDT spécifiques aux contextes

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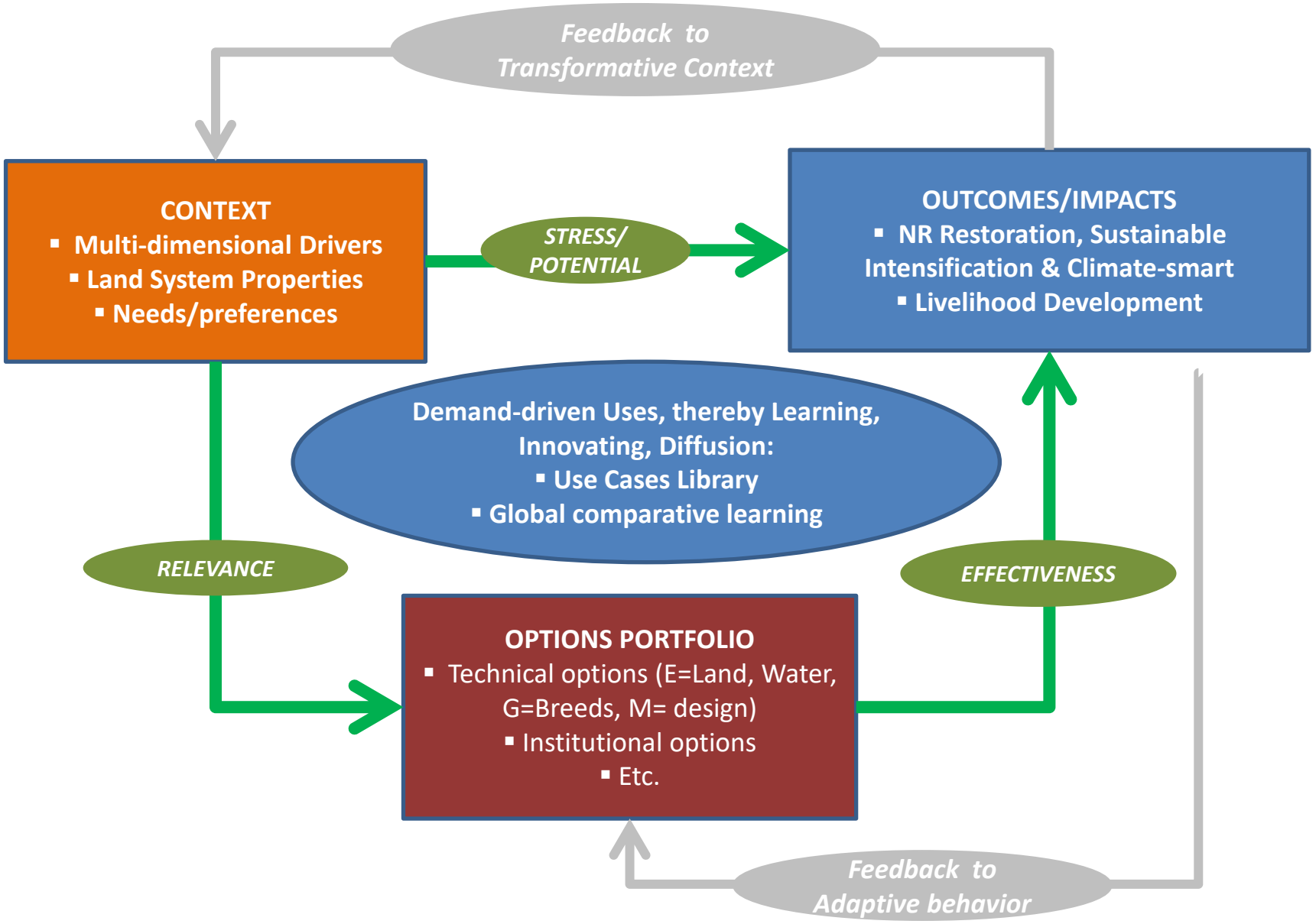
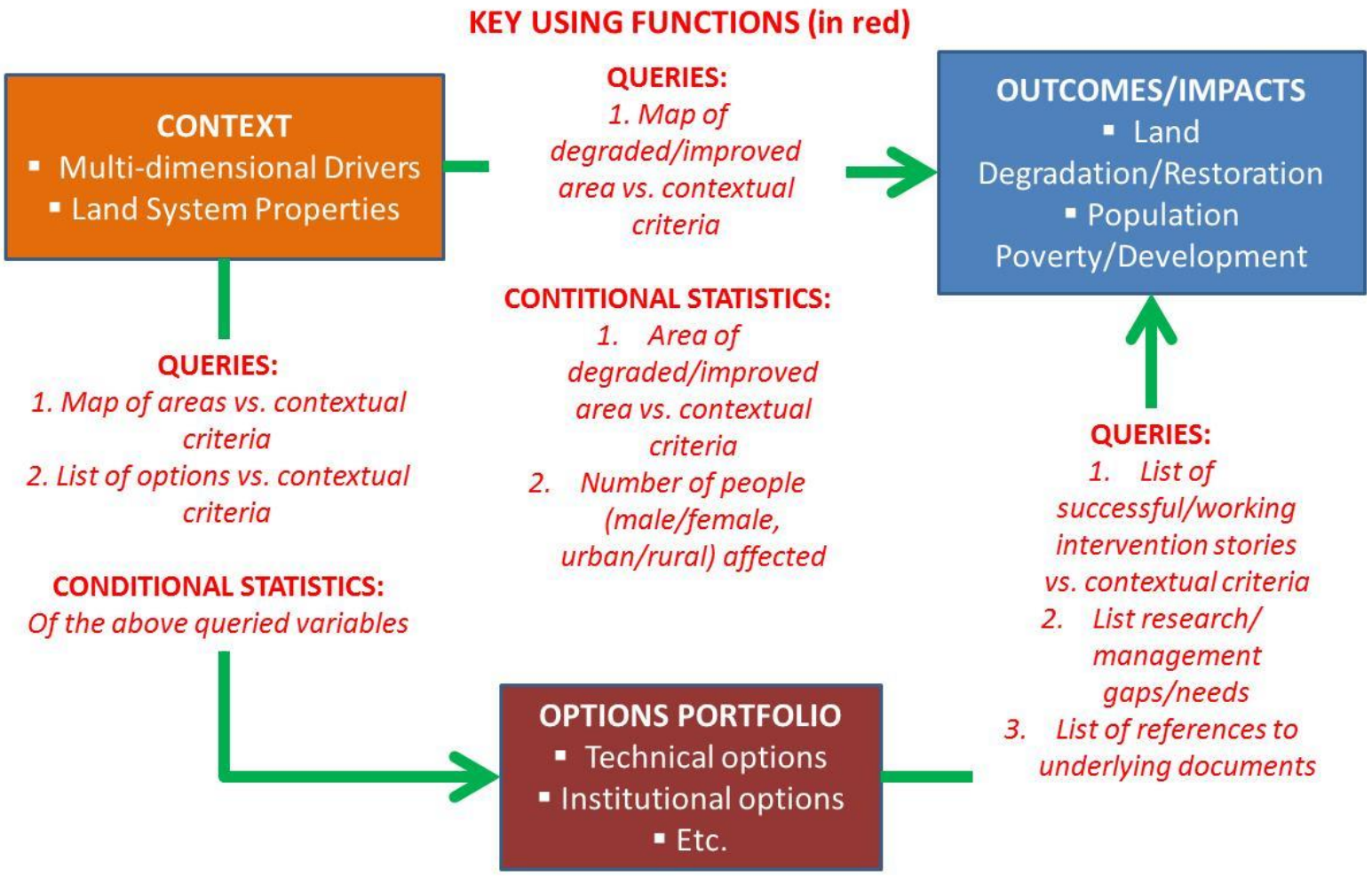
- Le "Geo-informatique Globale des Options par Contexte" (GeOC, acronyme en Anglais) est un nouvel outil SIG en ligne permettant aux utilisateurs de définir, contrôler, évaluer et co-générer des connaissances et l'apprentissage sur les options pertinentes de GDT adaptées aux contextes socio-écologique global, régional et national.
- L'outil GeOC vise à soutenir l'implémentation des practices de GDT par les communautés locales et internationales en leur fournissant des informations contextuelles spécifiques indispensables aux choix d'investissement pour un développement agricole et rural.
- Cet outil est développé pour mettre à disposition des utilisateurs fonciers, des programmes et projets de développement, et des décideurs politiques, des choix plausibles, robustes et extrapolables en matière de choix et d'utilisation des stratégies de GDT.
- Le GeOC est une plateforme libre permettant d'adapter les projets de différentes disciplines en des actions intégrées/holistiques et convergentes en vue de promouvoir la GDT à grande échelle.

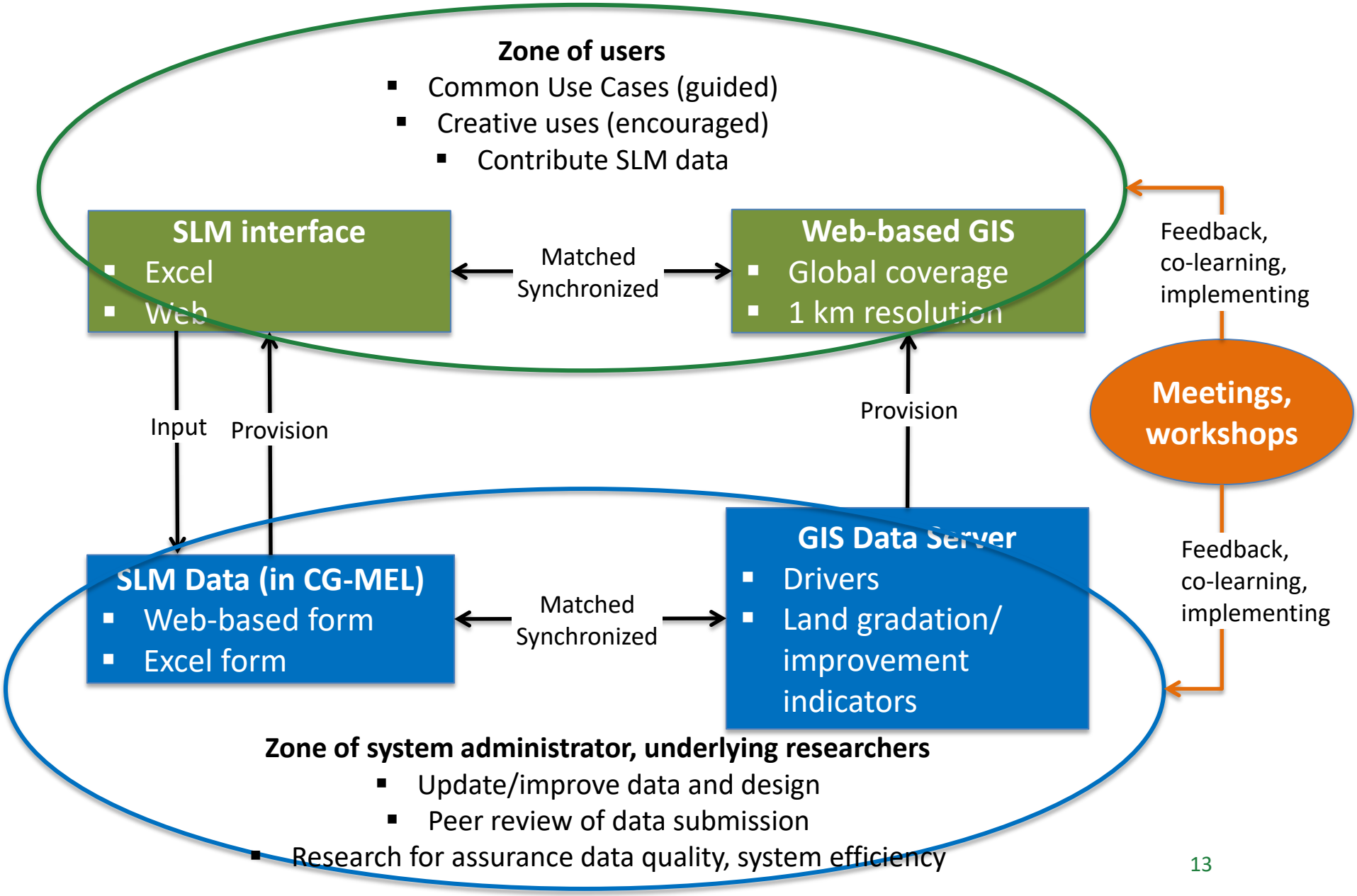
GeOC: Data domains and relationships (overview)



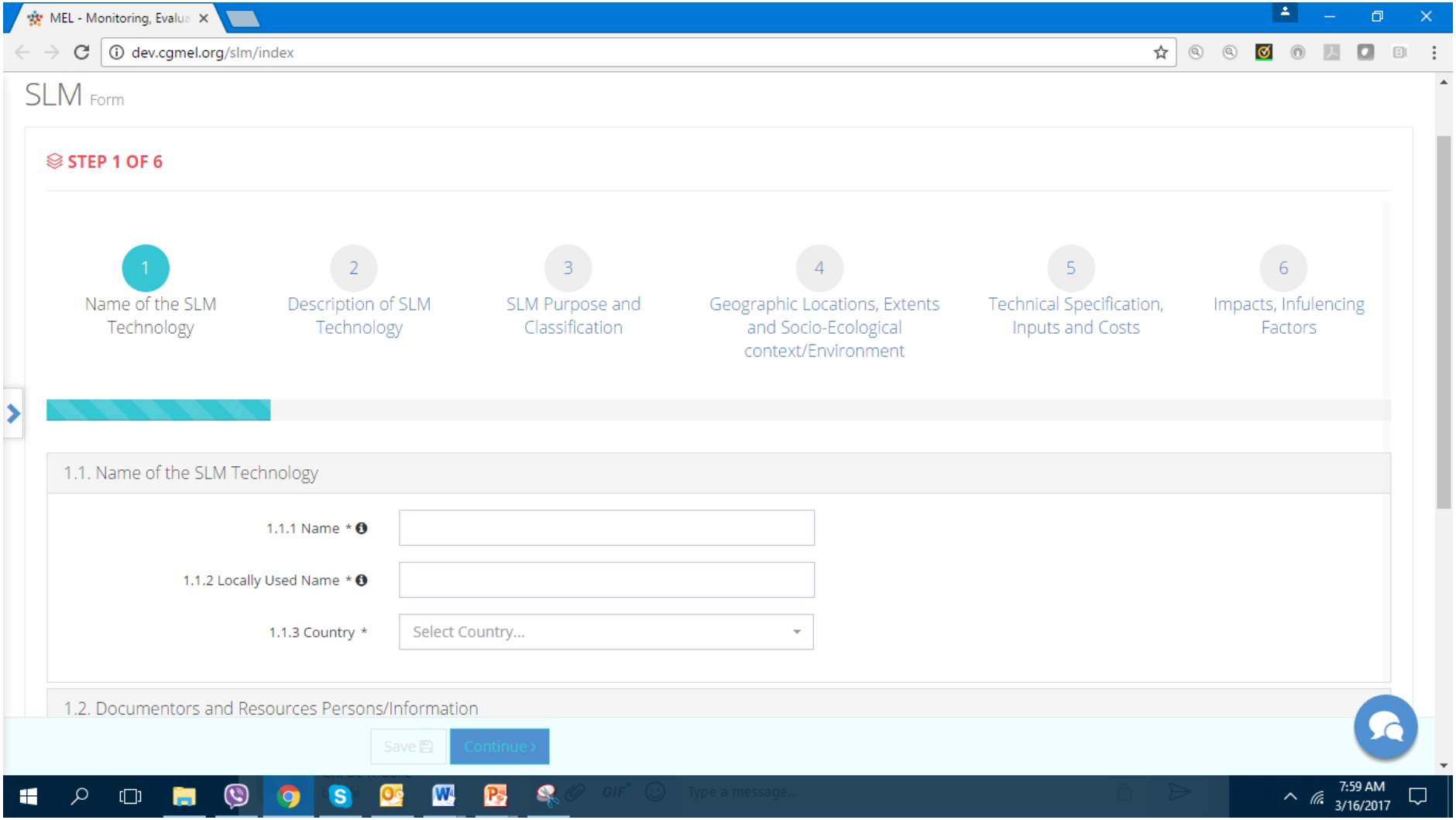
GeOC tool: Key functions (overview)



GeOC tool: Components



SLM Excel form



SLM web form

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Template for Standardized Description of Sustainable Land Management (SLM) Technologies with a Focus on Field-Landscape Level

Created by Quang Bao Le, Program Management Unit (PMU), CGIAR Research Program on Dryland System; Claudio Zucca, ICARDA

Note: This CRP-DS template of SLM technology description is partly adapted from those of WOCAT, however with major modifications and additions. Though CRP-DS is still development this template until August 2016, it can be used for catalouging SLM technologies considered by current CRP-DS projects.

Field of information

PART 1: GENERAL INFORMATION

1.1. Name of the SLM Technology

1.2 Locally

1.2 Documentors and Resouces Persons/Information

Main Documentor

Name (first name +

2.3.1 Illustrative ph

Caption of pho

2.3.2 Illustrative ph

Caption of photo 2

Insert a photo

An overall view of an area arranged in Jessour in

3.1 Purposes of the SLM Technology (max. 3 most important purposes):

3.1.1 The 1st most important purpose: Reduce land degradation (soil, water, vegetation) — Select from the provided li

If the mainpurose was selected as "Other ...", please spec — Max 70 letters including s

3.1.2 The 2nd most important purp — Select from the provided li

If the mainpurose was selected as "Other ...", please spec — Max 70 letters including s

3.1.3 The 3rd most important purp — Select from the provided li

If the mainpurose was selected as "Other ...", please specify: — Max 70 letters including s

- Reduce land degradation (soil, water, vegetation)
- Restore/rehabilitate land degradation (soil, water, vegetation)
- Conserve ecosystem
- Protect a watershed/ downstream areas – in combination with other Techn
- Preserve/ improve biodiversity
- Reduce risk of disasters (e.g. droughts, floods, landslides)
- Adapt to climate change/ extremes and its impacts (e.g. resilience to drougl
- Mitigate climate change and its impacts (e.g. through carbon sequestration

3.2 Type of the SLM Technology (max. 3 most relevant SLM types):

3.2.1 The 1st most relevant SLM type: Water harvesting — Select from the provided li

If the SLM type was selected as "Other ...", please specify: — Max 70 letters including s

3.2.2 The 2nd most relevant SLM type: Irrigation management (incl. water supply, drainage) — Select from the provided li

If the SLM type was selected as "Other ...", please specify: — Max 70 letters including s

3.2.3 The 3nd most relevant SLM type: Minimal soil disturbance — Select from the provided li

If the SLM type was selected as "Other ...", please specify: — Max 70 letters including s

3.2.4 Relevant SLM types (formula is used, please do not delete it): Most relevant type: Water harvesting; Relevant types: Irrigation management (incl. water supply, drainage)/ Minimal soil disturbance — Auto-generated intergal te

3.3 SLM measures comprising the SLM Technology:

3.3.1a Type of Agronomic measures (1st): A1: Vegetation/ soil cover — Select from the provided li

3.3.1b Concrete Agronomic measures (1st): — Examples for typing

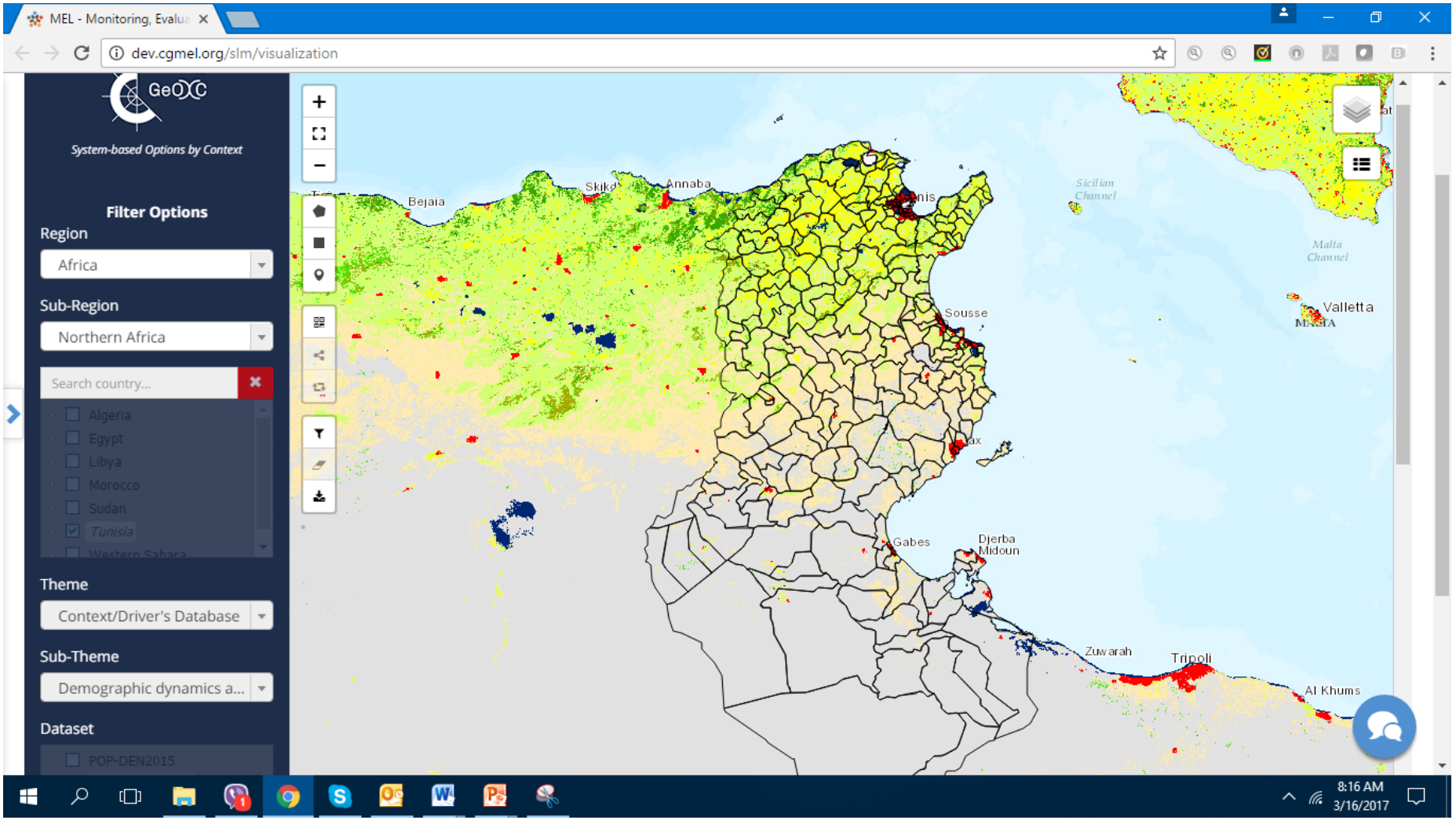
3.3.1c Type of Agronomic measures (2nd): — Select from the provided li

3.3.1d Concrete Agronomic measures (2nd): — Examples for typing

SLM Option-by-Context template | Lists | Sheet1

3.1 Purposes of the SLM Technology (max. 3 most important purposes):

The Web GIS of GeOC tool



Le GeOC offre des fonctionnalités innovantes et faciles d'accès

- Il est basé sur un cadre scientifiquement solide permettant de s'adapter à la grande diversité des contextes.
- Il améliore les liens entre différentes échelles et types de données nécessaires à l'implémentation, évaluation et extrapolation de la GDT.
- Il fournit de multiples points d'entrée pour divers besoins et préférences des utilisateurs
- Il offre des fonctionalités facilement accessibles en différentes langues
- Il offre une interopérabilité multi-système en ligne
- Sa flexibilité favorise l'appropriation et des améliorations continues