RESEARCH PROGRAM ON Dryland Systems

CGIAR

Facteurs et indicateurs communs de dégradation/amélioration des terres (domaines de données SIG de l'outil GeOC)

Quang Bao Le

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"

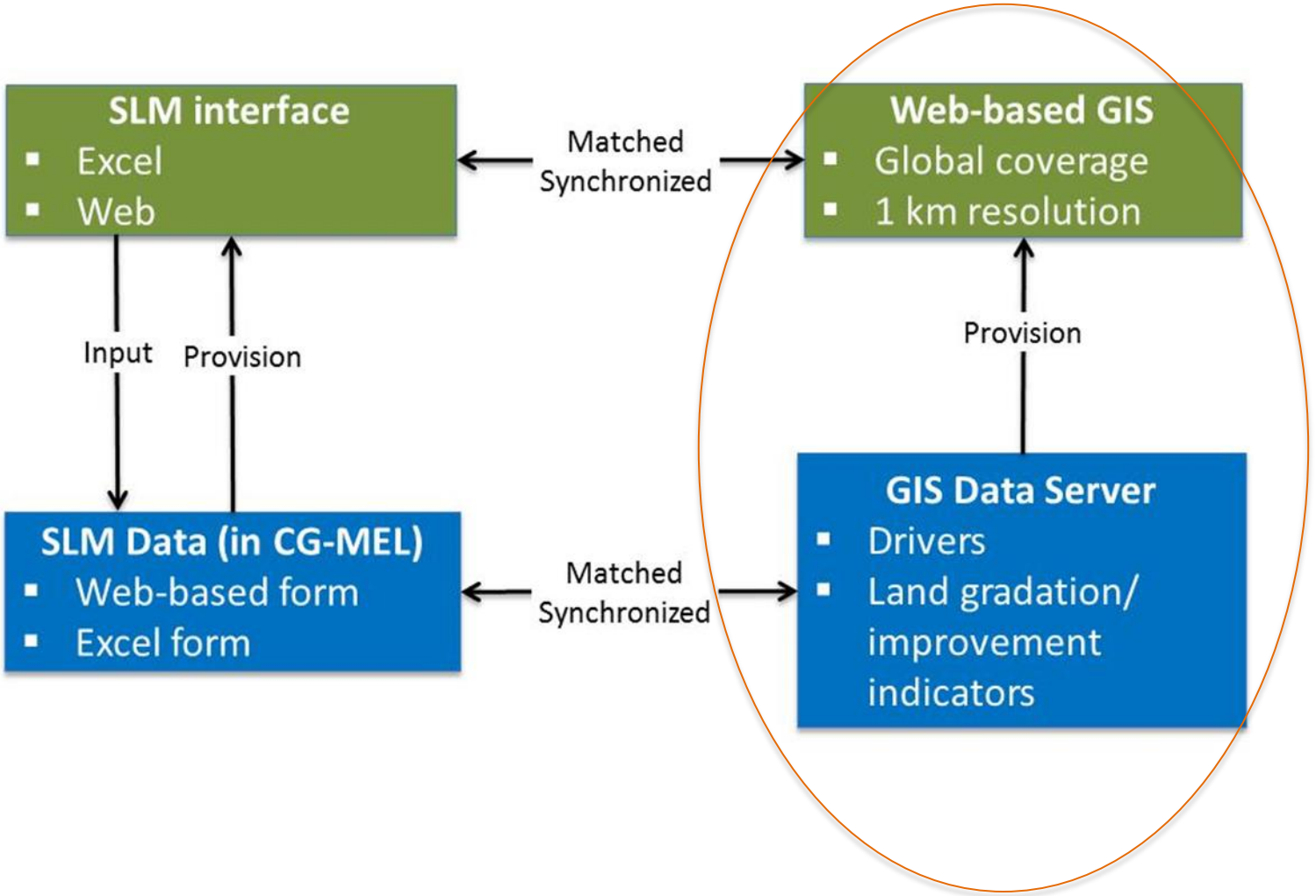
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

ICARDA

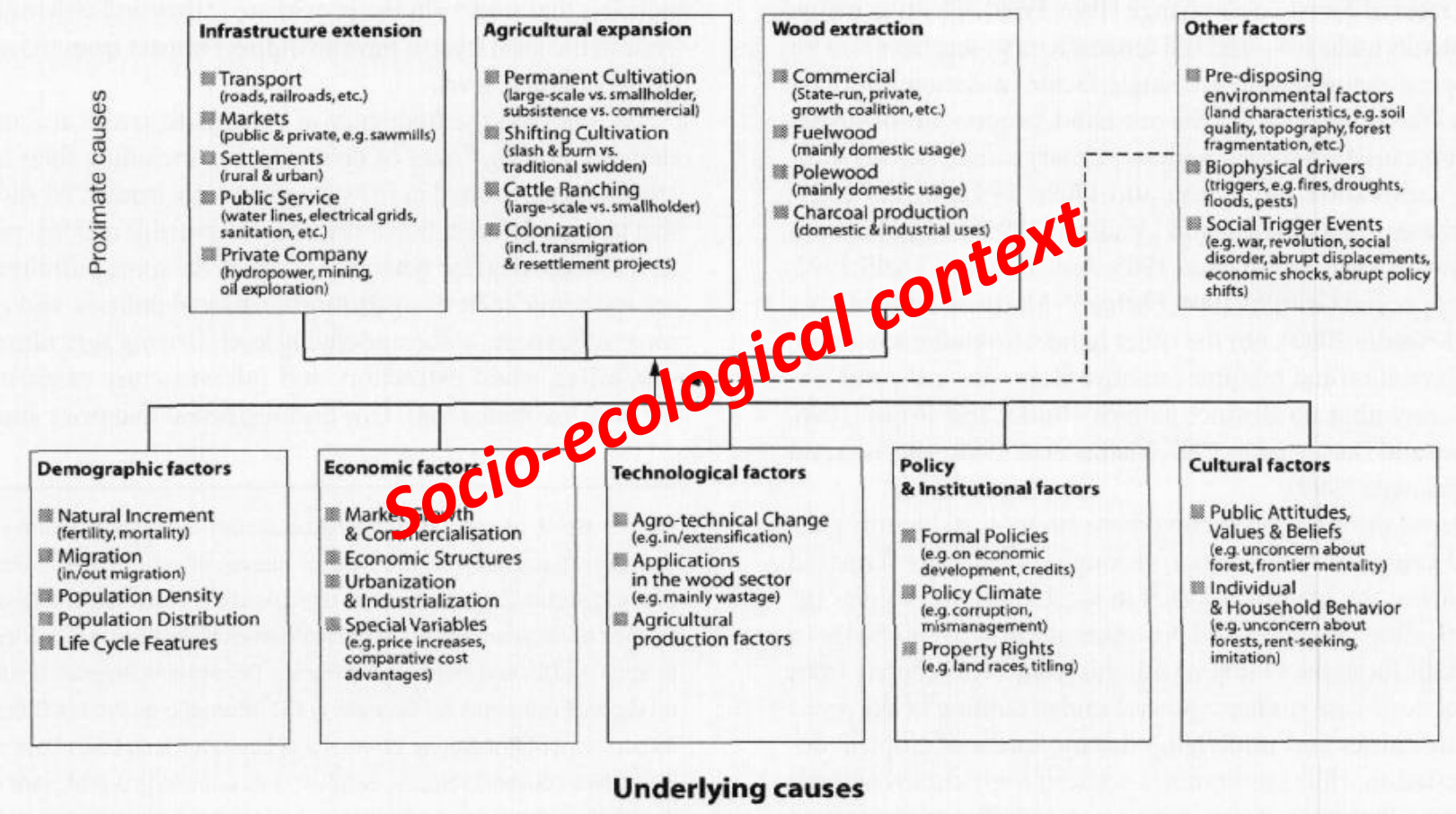
iMMAP

IRESA

Recap the main components of GeOC tool



A common structure of drivers of SLM adoptions, outcomes



The framework of causes/drives of deforestation proposed by Geist & Lambin (2002) has been *analogously/adaptively* used for the case of land degradation, SLM adoptions.

CONTEXT database of the GeOC tool (global)

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Variable	Definition (measuring unit)	Spatial coverage	GIS type, resolution
Biophysical driver			
ARIDITY	Main class of aridity index	Global	Raster, 1-km pixel size
PRECIP-TREND	Long-term trend of annual precipitation (floating trend coefficient)	Global	Raster, 1-km pixel size
WATER- PROXIMITY	Proximity to water body (m)	Global	Raster, 1-km pixel size
BROAD-COVER	Broad class of land cover (several numeric codes)	Global	Raster, 1-km pixel size
ALS	CRP-DS's agricultural livelihood system regimes (1= agro-pastoral, 2= rain-fed, 3= irrigated, 4= mixed)	Global	Raster, 1-km pixel size
TREE-DEN	Tree density (trees/km2)	Global	Raster, 1-km pixel size
SLOPE	Surface slope (degree)	Global	Raster, 1-km pixel size
SOIL-CONSTRAINT	Soil combined quality constraint (1 = no/slight, 2 = moderate, 3 = severe/very severe) based on 8 specific soil constraints [a]	Global	Raster, 1-km pixel size
Physical and institutional accessibility to land resources			
DIST-ROAD	Distance to main road (km)	Global	Raster, 1-km pixel size
DIST-TOWN	Distance to district capital (km)	Global	Raster, 1-km pixel size
PROTECT	IUCN's protected area (ordinary codes of protected areas at different protection level)	Global	Raster, 1-km pixel size
TENURE-SEC	USAID's tenure security level	Global	Raster, 1-km pixel size
Demographic dynamics and pressure			
POP-DENSITY	Average population density (persons/km^2)	Global	Raster, 1-km pixel size
PER-CAP-WATER	ICARDA's green and blue water per person (m3/person)	Global	Raster, 1-km pixel size
URBAN-POP	Urban population / total population (ratio)	Global	Raster, 1-km pixel size
RURAL-POP	Rural population / total population (ratio)	Global	Raster, 1-km pixel size
POPDEN-CHANGE	Change in population density over the period 1990-201x (persons/km^2)	Global	Raster, 1-km pixel size
National economic development			
GDP-CAPITA	Average GDP per capita ($US/person/yr)	Global	Raster, 1-km pixel size
GDP-GROWTH	Mean growth rate of annual GDP during 2000-2015	Global	Raster, 1-km pixel size
POVERTY	Poverty index = proportion of population that is below the poverty line	Global	Raster, 1-km pixel size
FOOD-SECURITY	Food security index	Global	Raster, 1-km pixel size
AGRI-POVERTY	ICARDA's index of agricultural resource poverty	Global	Raster, 1-km pixel size
Socio-ecological contextual similarity			
SES-TYPE	CRP-DS's socio-ecological context type (numeric codes of different contextual types)	Global	Raster, 1-km pixel size

IMPACT/OUTCOME database of the GeOC tool (global)

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Variable	Definition (measuring unit)	Spatial coverage	GIS type, resolution
Productivity and Water Use Efficiency			
NPP-TREND	Significant trend of Net Primary Productivity over 2000-2014 (change in g C/km2/yr; significant positive= improvement, significant negative = degradtion)	Global	Raster, 1-km pixel size
NPP-TREND-REL	Significant trend of Net Primary Productivity over 2000-2014 (change in % of NPP of the baseline year)	Global	Raster, 1-km pixel size
RUE	Rain use efficiency = NPP / annual rainfall (g C/mm rainfall)	Global	Raster, 1-km pixel size
RUE-TREND	Significant trend of rain use efficiency over 2000-2014 (change in RUE index)	Global	Raster, 1-km pixel size
RUE-TREND-REL	Significant trend of rain use efficiency over 2000-2014 (change in % of RUE of the baseline year)	Global	Raster, 1-km pixel size
Pressure on land carrying capacity in term of biomass protential			
HANPP	Human appropriation of NPP = NPP used by human activities x 100 / total NPP (% of total NPP)	Global	Raster, 1-km pixel size
Affected population			
AFFECTED-POP	Approximately population affected by land degradation (affected persons/km^2)	Global	Raster, 1-km pixel size
AFFECTED-WOMEN	Approximately female population benefited by land improvement (affected women/km^2)	Global	Raster, 1-km pixel size
BENEFITED-POP	Approximately population affected by land degradation (benefited persons/km^2)	Global	Raster, 1-km pixel size
BENEFITED-WOMEN	Approximately female population benefited by land improvement (benefited women/km^2)	Global	Raster, 1-km pixel size

Demonstrating CONTEXT and IMPACT data on the ArcGIS deskstop

Demonstrating CONTEXT and IMPACT data on the WebGIS component of GeOC tool