

Rangelands and grasslands monitoring systems



Drylands Monitoring Workshop
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Caterina Batello/ Vivian Onyango/Monica Petri

Rangelands Monitoring –Where are we?

- ❖ Few assessment tools that are long-term and reliable because:
 - ❖ Process is expensive
 - ❖ Time consuming
 - ❖ Difficulty in going back to the same place
- ❖ Some are degrading and some are not
- ❖ Increasing greenness?
- ❖ Knowledge gaps on good land use practices in rangelands
- ❖ More national data sets to clarify the situation and link with GIS and global data



Addressing some of the questions

- ❖ What is the true extent of rangelands and grasslands?
- ❖ To what extent are they degrading?
- ❖ What constitutes degraded rangelands?
- ❖ What measurement units

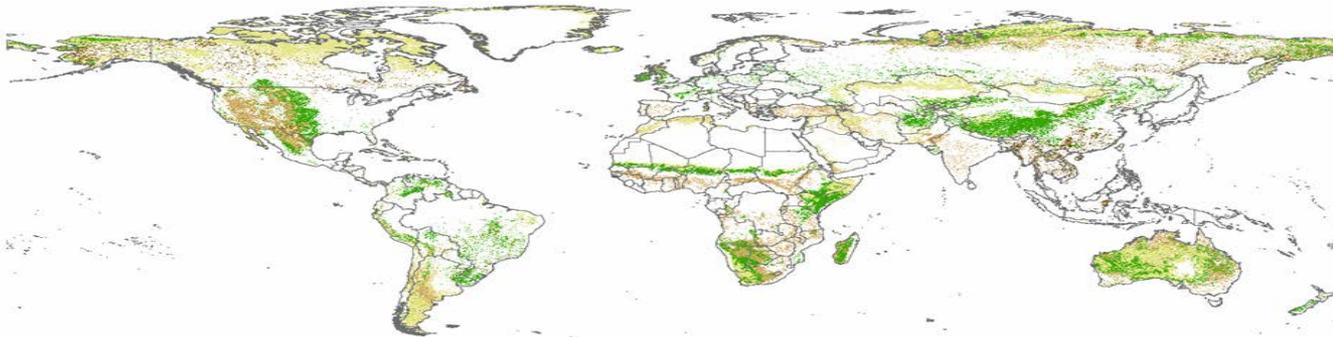


- ❖ Refining classification of rangelands; long process
- ❖ Rangelands have got greener as has got less green
- ❖ Further go into finer details of contributing factors
- ❖ National data sets reveal big differences between remote sensed data and ground truthing

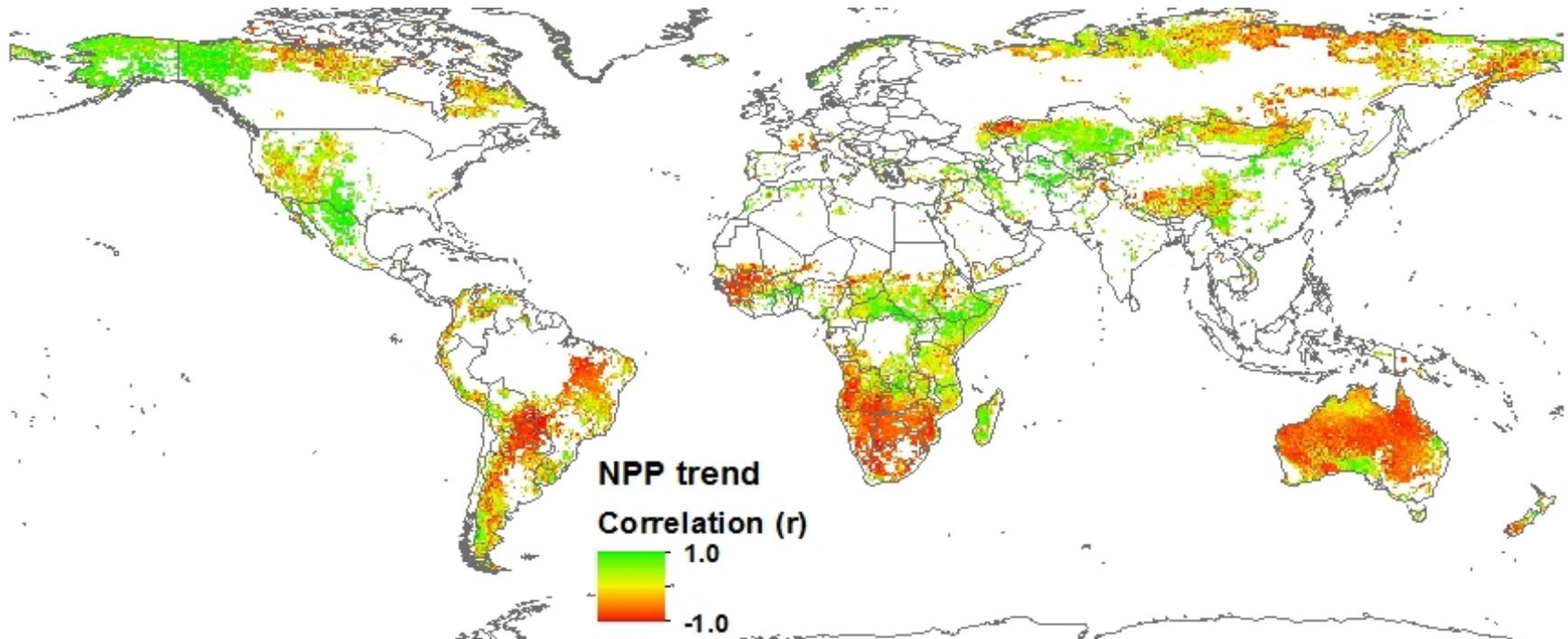


Grasslands

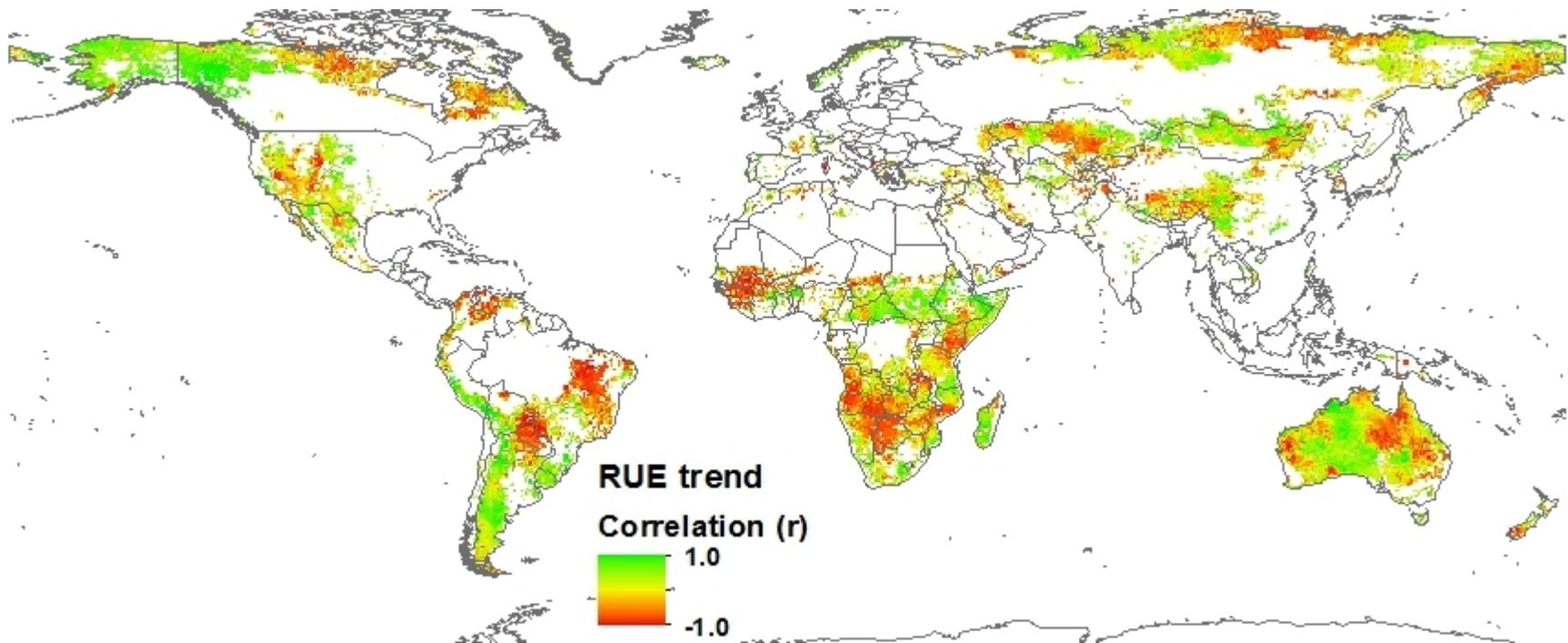
- Grasslands occupy ~30% of the total emerged ice-free world and 70% of the agricultural area.
- Grasslands store up to 8 % of the world's carbon and are an important terrestrial carbon sink - storing 230-260 tonnes C/ha (FAO 2006).



Conditions: Annual net productivity 2000-2004



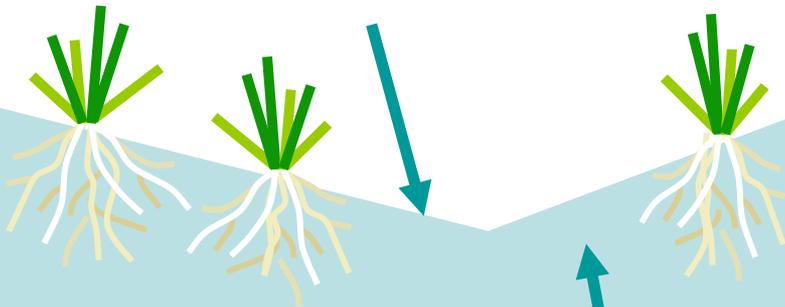
Conditions: Rain Use Efficiency



Non-effective water cycle

50-80% of rainfall is lost through run-off and evaporation.

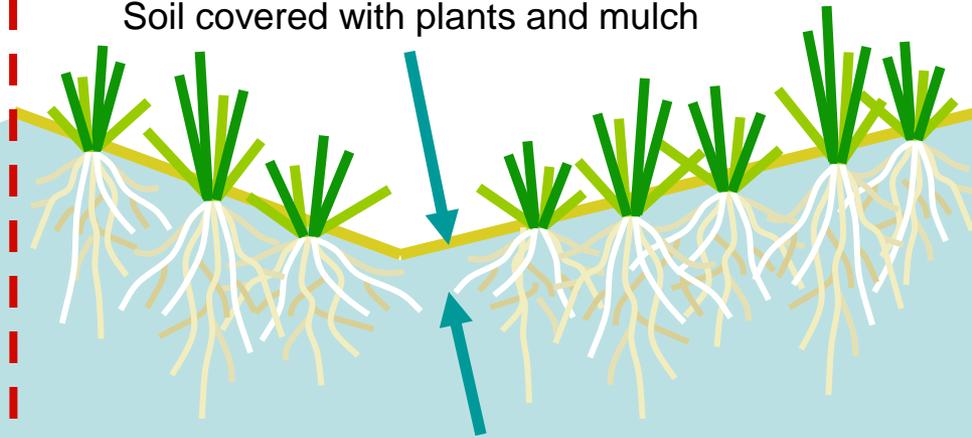
Soil bare between plants



Effective water cycle

1 % increase in SOM
144,000 L H₂O/ha

Soil covered with plants and mulch



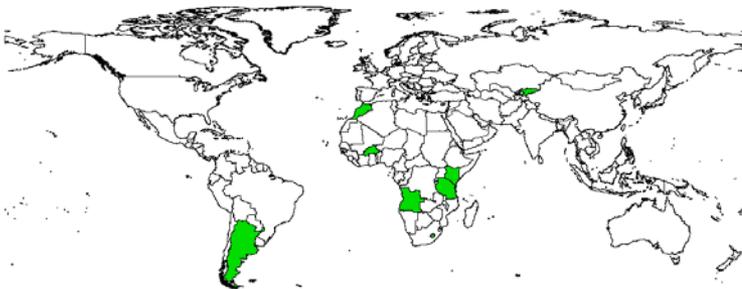
Index by land uses and its potential for carbon sequestration and conservation of biodiversity

	Land use	Index	Index	Total index
		Carbon	Biodiversity	
2	Degraded pasture	0	0	0
3	Native pasture without trees	0,1	0,1	0,2
8	Live fences	0,3	0,3	0,6
11	Fodder bank	0,3	0,5	0,8
14	Native pasture high tree density*	0,5	0,5	1,0
20	Improve pasture high tree density*	0,6	0,7	1,3
23	Young secondary vegetation	0,6	0,8	1,4
24	Riparian forest	0,8	0,7	1,5
27	Secondary forest	0,9	1,0	1,9
28	Primary forest	1,0	1,0	2,0

* > 30 tree ha⁻¹

Entry points-Project

- ❖ A GEF funded project on “Participatory assessment of land degradation and sustainable land management in grassland and pastoral systems.”
- ❖ Aim is to strengthen capacity of local and national stakeholders to assess land degradation and make informed decisions on **multiple benefits of ecosystem services**
- ❖ Have in place an assessment framework for herders building on existing tools and cutting across thematic areas
- ❖ Covers Latin America, Central Asia and Africa



Global project and indicator development



- ❖ Adaptable to governments and smallholders.
- ❖ Performance based
- ❖ Holistic and integrated e.g. with cross-sector linkages
- ❖ Sector specific indicators still relevant in tracking trends
- ❖ Standardized indicators within specific contexts e.g. tenure rights, livelihoods
- ❖ Operate within specified frameworks
- ❖ Impetus for developing/refining indicators
- ❖ Leverage on on-going initiatives

[26/53] Land degradation*Environment*

S4_ENV_06

Have you observed one or several of the following soil degradation processes these last five years?

 Erosion (from wind) Shift of flora (invasive species) Declining yields Erosion (from water) Increased weed competition Grazing area quality degradation Soil salination (preventing crops from growing) Deforestation (reduction in trees and shrubs) Compaction (hard ground) Soil pollution (poisoned soil) Other (specify) 1 Other (specify) 2 No soil degradation observed

Is the land you have access to suitable for your farming activities?

Not at all

A little

Average

A lot

Completely

How much of an impact does land degradation have on your farm system?

Not at all

A little

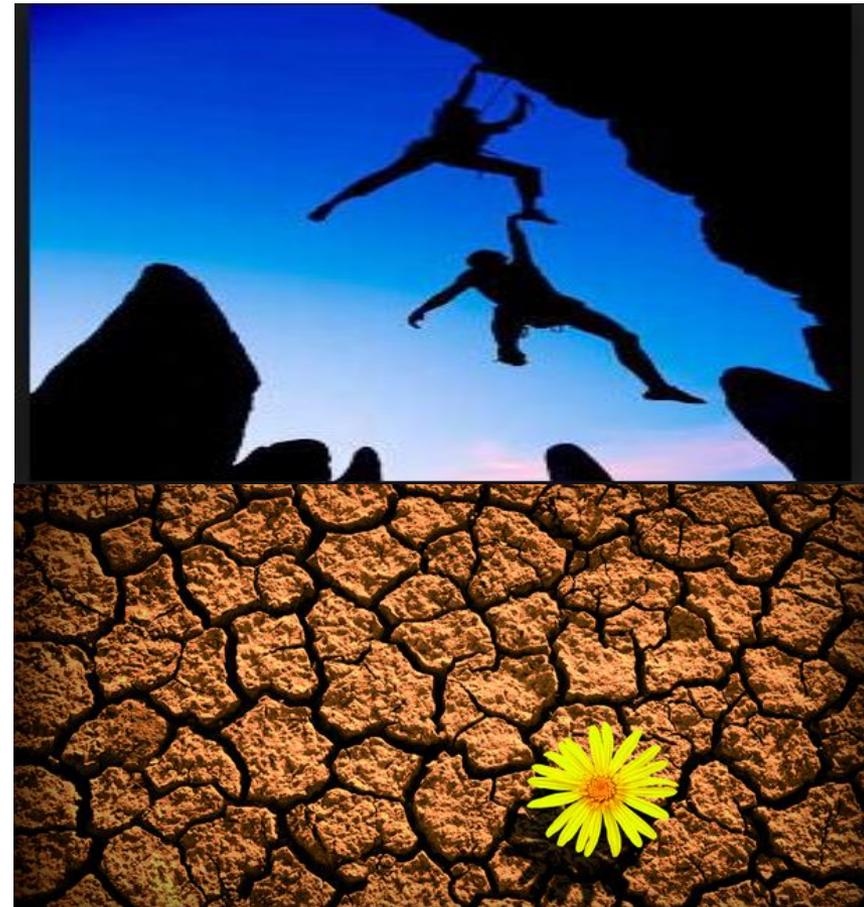
Average

A lot

Very

Interesting assessment frameworks: GEF STAP

- ❖ A conceptual model on indicators to monitor
- ❖ Framework for indicators on agro-ecosystem resilience
- ❖ Integrated approaches; social, ecological, economic on various scales in addressing complex adaptive system.



Interesting assessment frameworks: SDG process

- ❖ Indicators are yet to be discussed at global level, focus is on them
- ❖ Contribute to indicators that capture targets
- ❖ Help develop metrics that are easy for policy makers to understand
- ❖ Using measureable indicators, identify sustainable practices



Human rights and well being	Sustainable livelihoods	Healthy and Sustainable environments
<ul style="list-style-type: none"> • Legal identity • Protect dignity • Cultural heritage • Diversity of rights within the community • Perceptions and awareness • Self-determination • Violation of rights 	<ul style="list-style-type: none"> • Sustainable incomes • Equitable access • Reduced conflicts • Multiple benefit streams 	<ul style="list-style-type: none"> • Sustainable land use • Ecosystem services and benefits • Sustainable production and consumption • Community regulations and protection • Mobility and other traditional systems • Strong local institutions • Harmonization of sectoral laws



Interesting assessment frameworks: UNEP- Integrated measure of monitoring

- ❖ An expert meeting in 2014 on community land and resources indicators
- ❖ To contribute to integrated monitoring frameworks such as UNEP-Live, ILC's land portal and SDGs
- ❖ Focus is on rangelands, forests, wetlands and natural resources therein above and below ground
- ❖ The three overall objectives:
 - ❖ Human rights and well being
 - ❖ Equitable prosperity and sustainable livelihoods
 - ❖ Healthy and sustainably managed environments



Interesting assessment frameworks: UNEP- Integrated measure of monitoring

Category	Proposed indicator	Relevance to SDG Targets	Outstanding issues to resolve
Practices and management	1. Extent to which sustainable practices and management by pastoralists, farmers, fishers, forest dwellers on common lands are protected and enhanced by policies and regulations	1.5 2.4, 6.5 8.2, 8.3, 8.5 9.3 10.7, 11.4 12.2, 13.1 14.7, 14.b Goal 15	
	2. Legal recognition of national and trans-national movement of land users that is critical for sustainable management of common natural resources	10.7 11.a 13.1	Data source : this requires a qualitative assessment of legislation
	3. Consumption of products and services from resilient/viable traditional practices that provide incentives for continuation of sustainable management practices on common lands	2.5, 2.c 4.7 8.4, 8.9 12.8	



Project linkages

Our processes of defining indicators is enriched through our project's link with key partners:

- ❖ *Action Against Desertification*
- ❖ *Mountain Partnership Secretariat*
- ❖ *Pastoralist knowledge Hub*
- ❖ *Voluntary Guidelines on Tenure*
- ❖ *IUCN's field based monitoring approaches to triangulate global data*
- ❖ *UNCCD*
- ❖ *GEF STAP*
- ❖ *On-going IFAD projects*





Lessons learnt

- ❖ Build on existing tools to avoid duplication
- ❖ Establish partnership to reinforce common understanding
- ❖ Enter wider processes
- ❖ Link with on-coming projects
- ❖ Focus our attention on means of implementation and monitoring of indicators
- ❖ Notorious lack of data on rangelands
- ❖ Build evidence for recognition of multiple functions of grasslands including energy, livelihoods and climate change

A preliminary typology of pastoral livelihoods (IFAD)

Typologies of pastoral projects

Activities implemented

Rangeland management

Measures aiming at the creation and management of sustainable grazing systems, the protection and improvement of basic rangeland resources such as soil, water, plants and animal life (e.g. support to the development of pasture monitoring, upgrading technical skills of land management staff, restoration of pasture productivity).

Capacity building for herders

Activities through which the pastoral communities can develop specific skills allowing them to enhance and protect their livelihoods (promotion of community-led planning, strengthening of the institutions for management of natural resources, poverty eradication, pastoral infrastructure management, curriculum development).

Pastoral infrastructure

Construction of facilities aiming to secure water supply and sanitation (watering points, drinking water supplies, access roads, new market places and equipment, communications infrastructure (mobile phone masts, broadband))

Risk management

Design and implementation of measures aimed to identify and monitor potential threats to pastoral livelihoods such as climatic fluctuation, animal diseases, market failures and early warning and rapid response systems.

Animal health

Provide animal disease control in order to avoid the outbreaks of major epizooties in pastoral areas (e.g. vaccination campaigns, provision of basic treatments for animals, strengthening of veterinary services, production and distribution of vaccines)

Social services for herders (i.e. human health and education)

These measures include provision of basic education including mobile and distance learning facilities for primary education, delivery of immunization in remote communities, provision of training for health care assistants.

Commercialization

Initiatives which support the conservation, transformation and marketing of agro pastoral products (milk, dairy products in general)

Microfinance

All the measures taken to facilitate the access of herders to the market of formal financial services.

Support to legal framework/policy dialogue

Measures which promote the equitable and secure access to and by nomadic and transhumant pastoralists.



Thank you!