

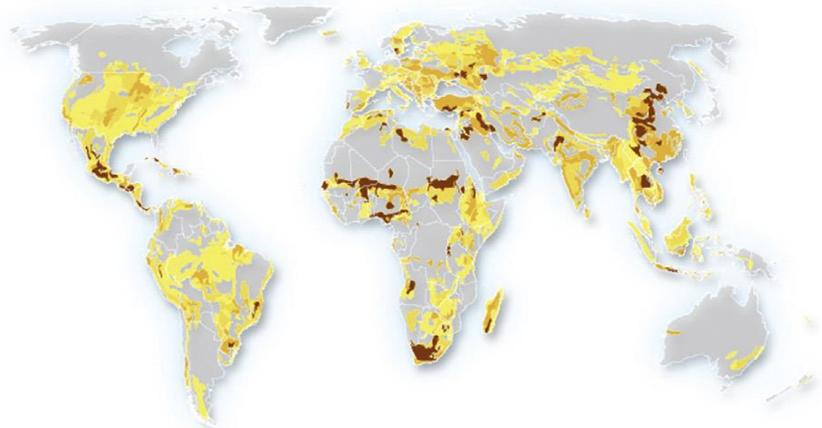
UNDERSTANDING LAND DEGRADATION

Thessaloniki, 28th of April, 2015

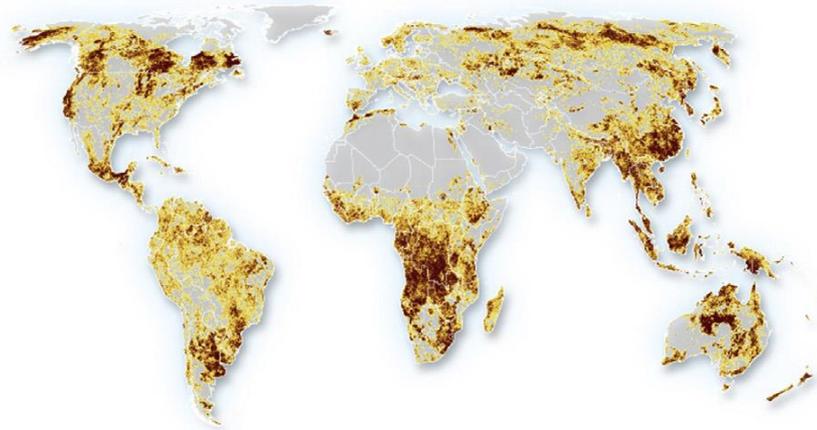
THE PROBLEM

Land degradation is a major issue considering that global demands for food, feed and fuel continue to increase at unprecedented rates, while the agricultural land base needed for production is shrinking in many parts of the world

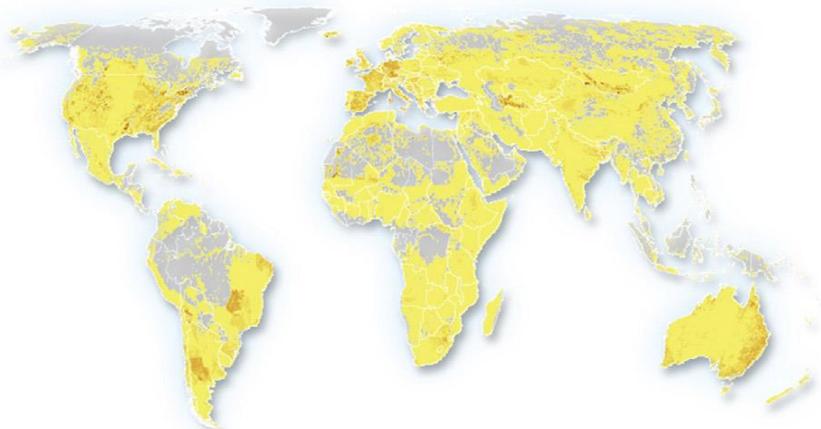
Global estimates of total degraded area vary from less than 1 billion ha to over 6 billion ha, with equally wide disagreement in their spatial distribution



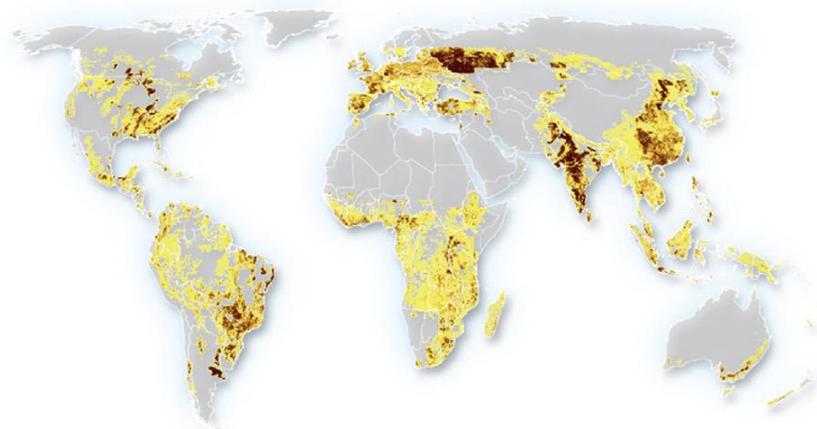
GLASOD (Oldeman, et al. 1990)



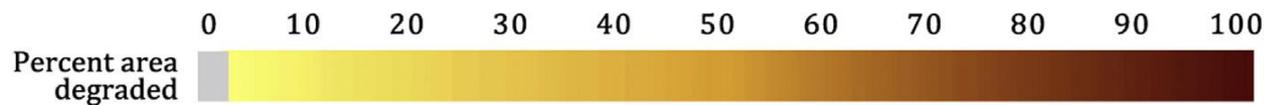
GLADA (Bai, et al. 2008)



Campbell, et al. (2008)



Cai et al. (2011)



Land Degradation

In 2012, ~10 000 publications referred to “land degradation” or “soil degradation”.

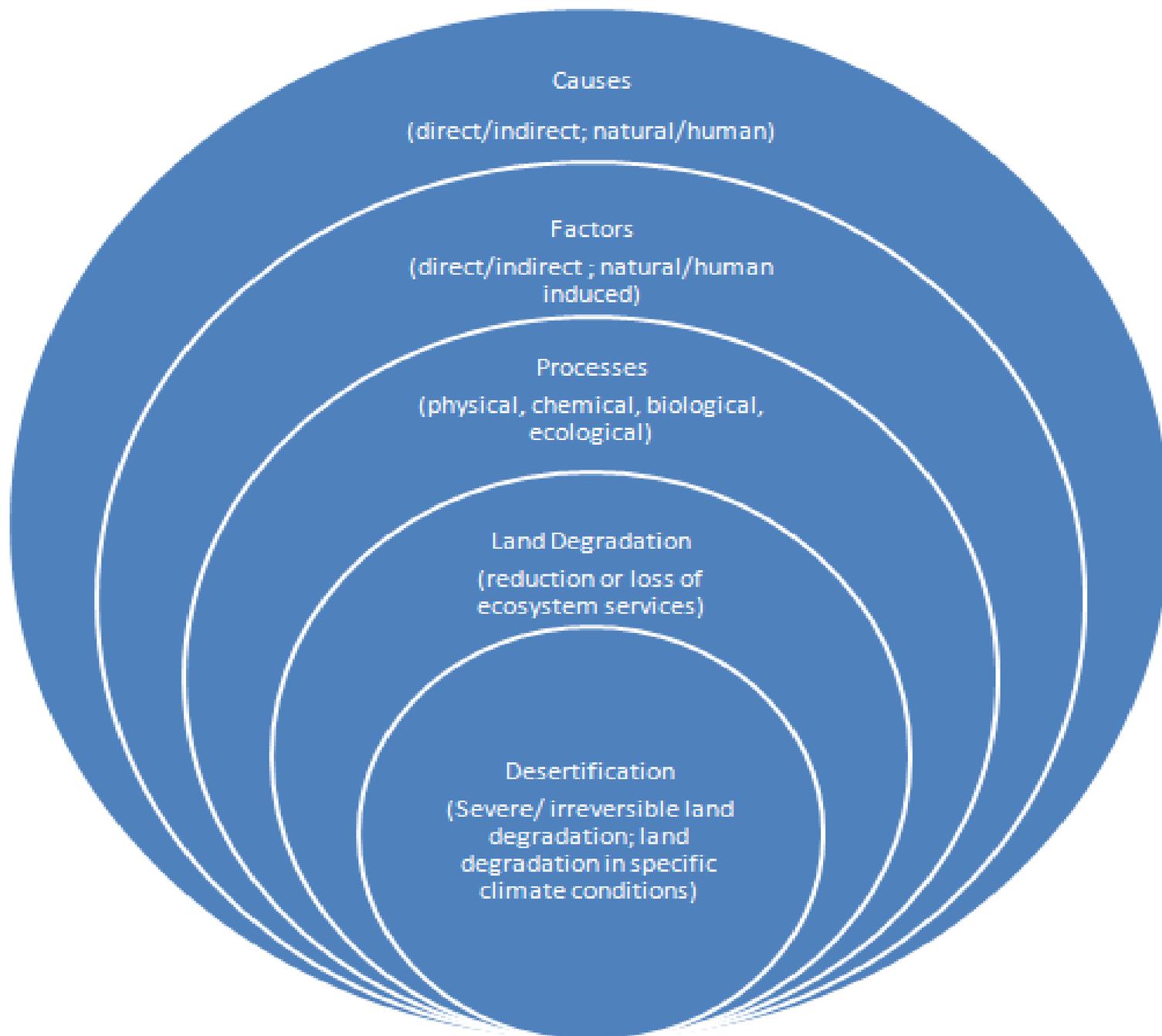
In 2013, Phil Dobie, a senior advisor to ICRAF said, “Getting to a common understanding of what land degradation is, and what the definitions are, is still a huge challenge.”

So far, there is no one agreed-upon definition of land degradation

**DO WE NEED ONE
AGREED DEFINITION OF
LAND DEGRADATION?**

Clarity of assumptions and definitions is important because decisions regarding whether degradation is taking place, or whether a specific area is degraded or not, can have a direct and significant impact on land use, land management decisions and investment flows.

Understand – Define – Algorithm – Resolve



LAND DEGRADATION

2 terms

- land
- degradation

Land: “The terrestrial bio-productive system that comprises soil, vegetation, other biota, and the ecological and hydrological processes that operate within the system” (Article 1 of the UNCCD).

WHAT MEANS “DEGRADATION”?

Degradation - 1530s, from French dégradation (14c., Old French degradacion), from Medieval Latin degradationem (nominative degradatio), noun of action from past participle stem of degradare (see degrade)

degrade - late 14c., from Old French degrader (12c.) "degrade, deprive (of office, rank, etc.)," from des- "down" (see dis-) + Latin gradus "step" (see grade (n.)). Related: Degraded; degrading.

dis- (assimilated as dif- before -f-, to di- before most voiced consonants), word-forming element meaning 1. "lack of, not"; 2. "do the opposite of"; 3. "apart, away", from Old French des- or directly from Latin dis- "apart, in a different direction, between," figuratively "not, un-," also "exceedingly, utterly,"

(<http://www.etymonline.com>)

Land degradation will not mean the loss or decreasing some of its qualities but a land without necessary (requested) qualities or with qualities which are not in concordance with the expectances from this land.

A PROBLEM OF USEFULNESS

DEFINING LAND DEGRADATION

Land degradation is the process leading to a state of land which doesn't meet our expectations, is not useful for us.

Expectations – a problem of subjectivity which extends very much the area of defining land degradation

LAND DEGRADATION

Land degradation is a theme which was debated from ancient times.

Ancient writers were aware about the influence of humans on landscape degradation.

Jeremiah 12:10-11: “Many shepherds will ruin my vineyard and trample down my field; they will turn my pleasant field into a desolate desert. It will be made a wasteland, parched and desolate before me; the whole land will be laid because there is no one who cares”.

Columella, in his great work *De Re Rustica*, emphasizes human’s carelessness on natural factors leading to agricultural degradation.

CURRENT USED DEFINITIONS

The substantial decrease in either or both of an area's biological productivity or usefulness to humans due to humans activities (Johnson & Lewis)

Degradation can be defined as a reduction in productivity of the land or soil due to human activity (Holm, Cridland, & Roderick, 2003; Kniivila, 2004; Oldeman, Hakkeling, & Sombroek, 1990).

The main feature of land degradation – agreed by most of the researchers – diminishing land productivity.

MORE DEFINITIONS

Blaikie and Brookfield (1987) consider that land degradation has validity only in the social context of benefits for humanity which results from ecosystems using by people.

Wasson (1987) defines land degradation as being “a change to land that makes it less useful for human beings”.

Kimpe and Warkentin (1988) consider that “land degradation is a decrease in the optimum functioning of soil in the ecosystems”

BUT ...

- ① **Declining land-productivity \neq Land degradation**
e.g. less intensive agriculture may decrease yields in the short-term, but improve environmental quality in the long-term
- ② **Increasing land-productivity \neq Land improvement**
e.g. intensive agriculture may increase yields in the short-term, but reduce environmental quality in the long-term
- ③ **Land degradation = Declining land-productivity**
degraded land will always perform worse than its unaffected counterpart

DEFINING LAND DEGRADATION IS CHALLENGING

The term degradation is often used as an umbrella term that encompasses a wide variety of land conditions, such as desertification, salinization, erosion, compaction, or encroachment of invasive species.

Some estimates of degradation have focused on the end condition of the land, others consider the ongoing process of degradation itself

A very interesting analysis of what „degradation” means is given in the work „Patterns of Land Degradation in Drylands”.

When we analyse the state of land degradation, we will measure its physical and biological properties and not its inherent or potential utility.

„Degradation” can be „measured” only with respect to a known use (past, present or future).

STUDY – STAKEHOLDERS INVOLVED

KEY TERMS LINKED TO THE CONCEPT OF LAND DEGRADATION:

- productivity/ use;
- Relation to a specific perspective;
- Human perspective;
- Functionality;
- Resilience;
- Ecosystem services;
- change

STUDY – COMMON PEOPLE

WHAT MEANS LAND DEGRADATION?

WHAT DO YOU MEAN BY DEGRADED LANDS?

“Lands degradation represents their destruction in time because of some factors as: pollution, unfavorable meteo conditions, deforestation.

“Land degradation can be defined by their oldness, drought or too much rain which can lead to their abandonment.”

“Land destruction because of human activities or natural factors”

“The effect of some factors action which leads to the destruction of resources potential”

“Lands which can't be used for their purpose.”

“Sterile land which can't be worked”

“Degraded lands are those lands which can't be efficiently used because of diminishing or destruction their natural qualities”

“Lands which can't be capitalized from resources point of view”

VALUE OF LAND

There is an urgent need to create real values for land, for the benefit of its inhabitants and sustainable management practices.

Land can and has been given both monetary and non-monetary values, but until now studies have been relatively sporadic, unrelated, and difficult to compare.

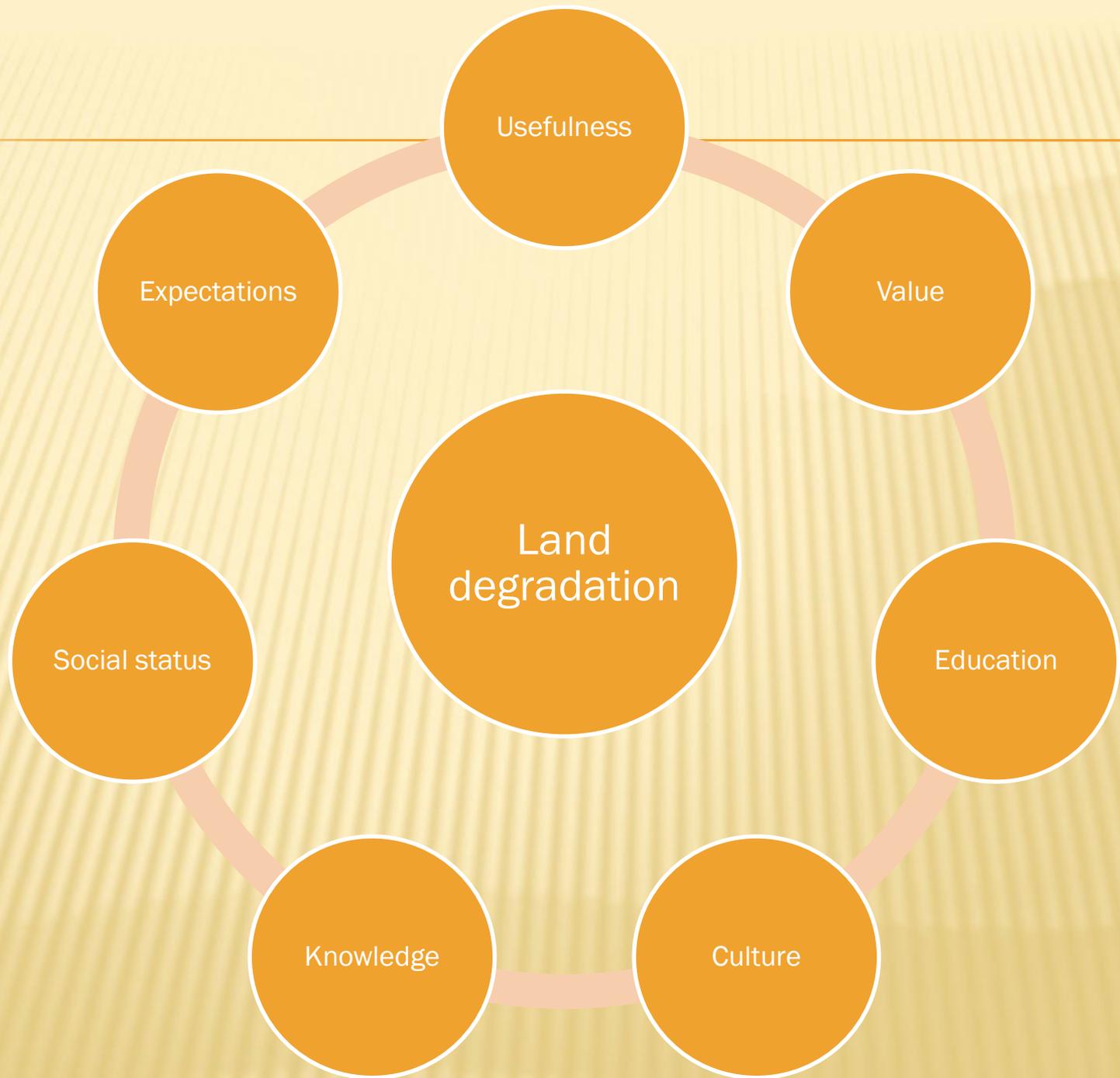
VALUE OF DEGRADATION

Romanian experience:

A degraded land can be very valuable and useful even from ecosystem services point of view is highly degraded.

ecological value – financial value – financial speculation

- lands located near cities
- lands located near highways (future highways)
- lands located near industrial sites/ technological parks
- lands having soils of high quality (agricultural areas)



TIME SCALE PERSPECTIVE

Past Reference Point

- Certainty

Actual Reference Point

- Estimation

Future Reference Point

- Expectation

THINK LOCAL, ACT LOCAL

Land degradation is a local process, exists virtually everywhere to one degree or another, is not limited to any particular political or cultural ideology.

Understanding land degradation is exceedingly complex and multiscaled, complicated by issues of perceptions, available technology, politics, land tenure, differing degrees of social vulnerability, institutional resilience and ecosystem dynamics among others.

Understanding land degradation is an individual, unique, local tailored process.

However, the general effects of land degradation must be widely disseminated as well as the importance of keeping the health of land.

“The land is the only thing in the world worth working for, worth fighting for, worth dying for, because it's the only thing that lasts".....Gerald O'Hara, Gone With The Wind.”

— Margaret Mitchell

On behalf of WG1
THANK YOU.