

Land Management Strategy

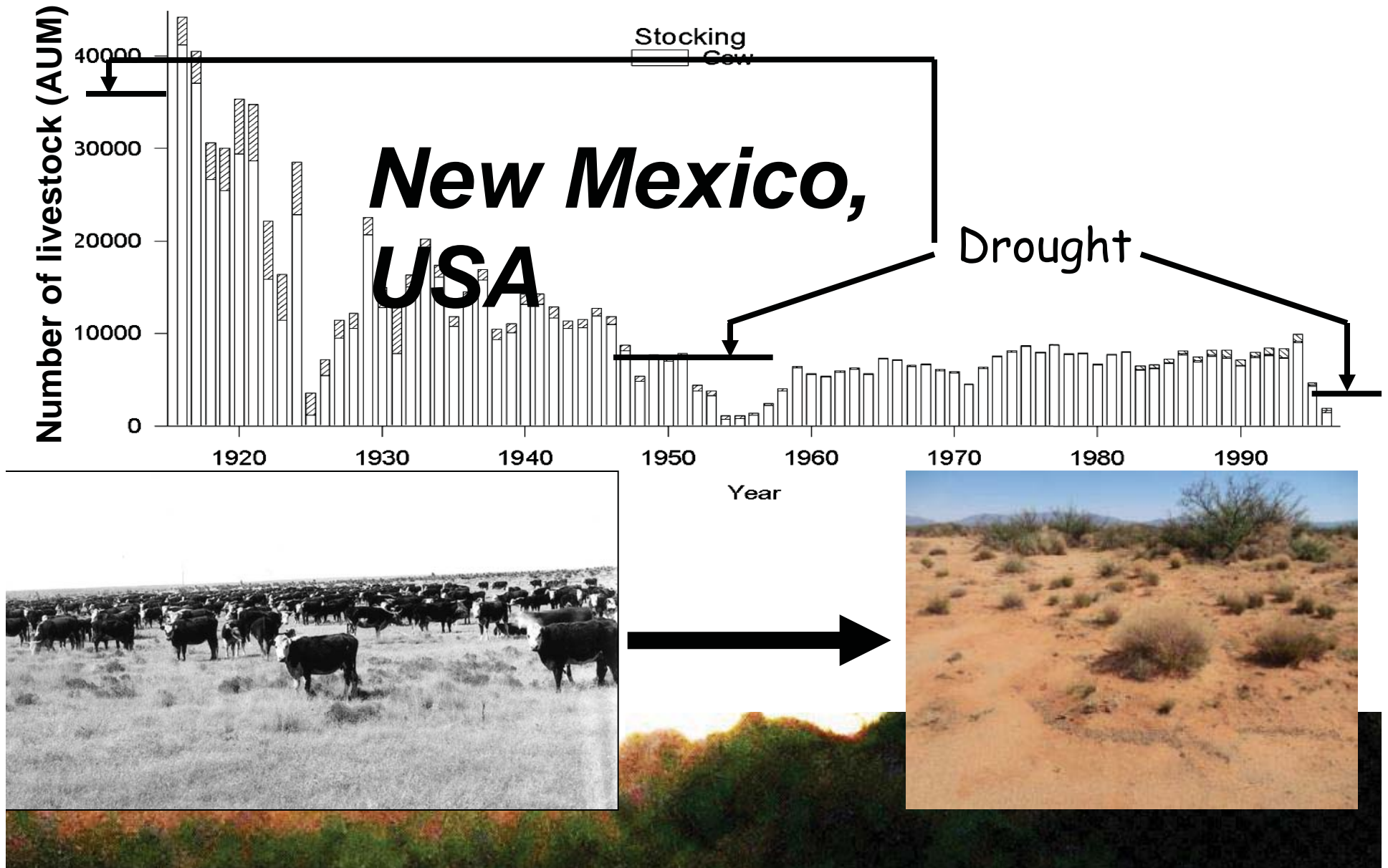
US: 1880's-1930's

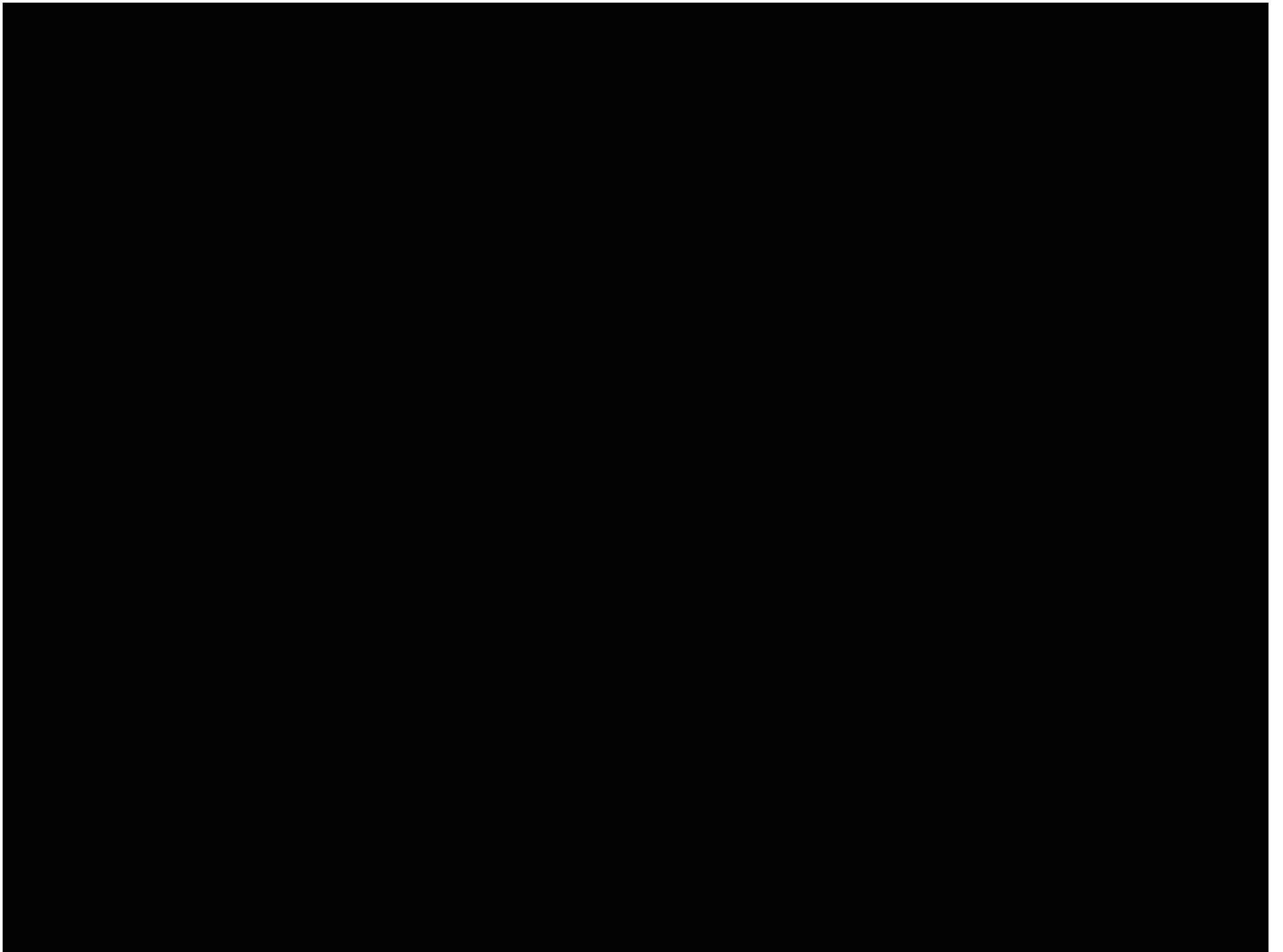
Much of the world: *today*

- **Objectives:** reduce poverty, increase agricultural production, and limit social conflicts
- **Strategy:** cheap (or free) access to grazingland
- **Other factors:**
 - International capital contributes to unsustainable land use intensification (overstocking)
 - Migration
 - Invasive species (mesquite and creosote)

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Same old story... but now we have the knowledge to change the ending, and the means to share that knowledge





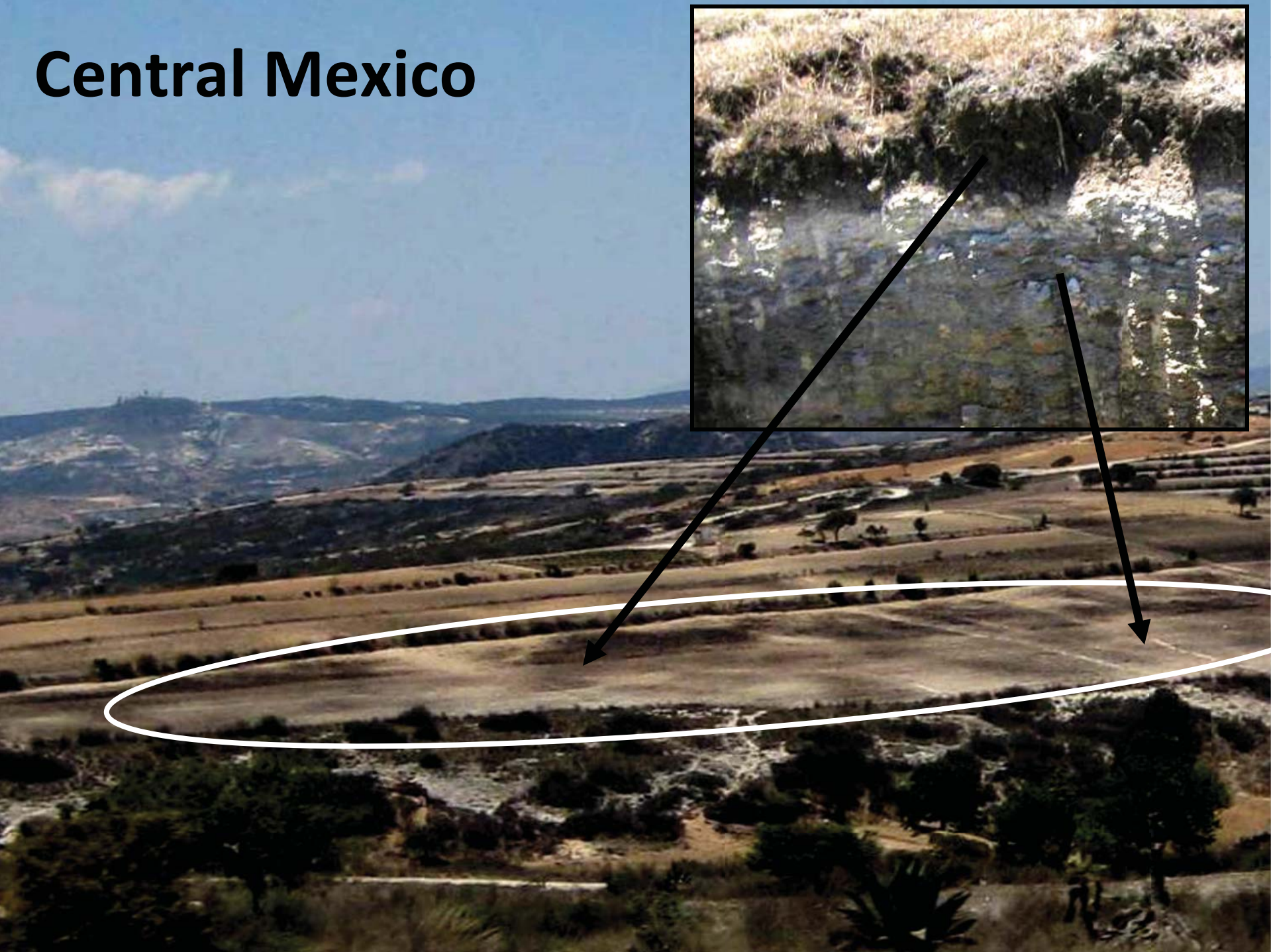
otero Mesa, TX, USA



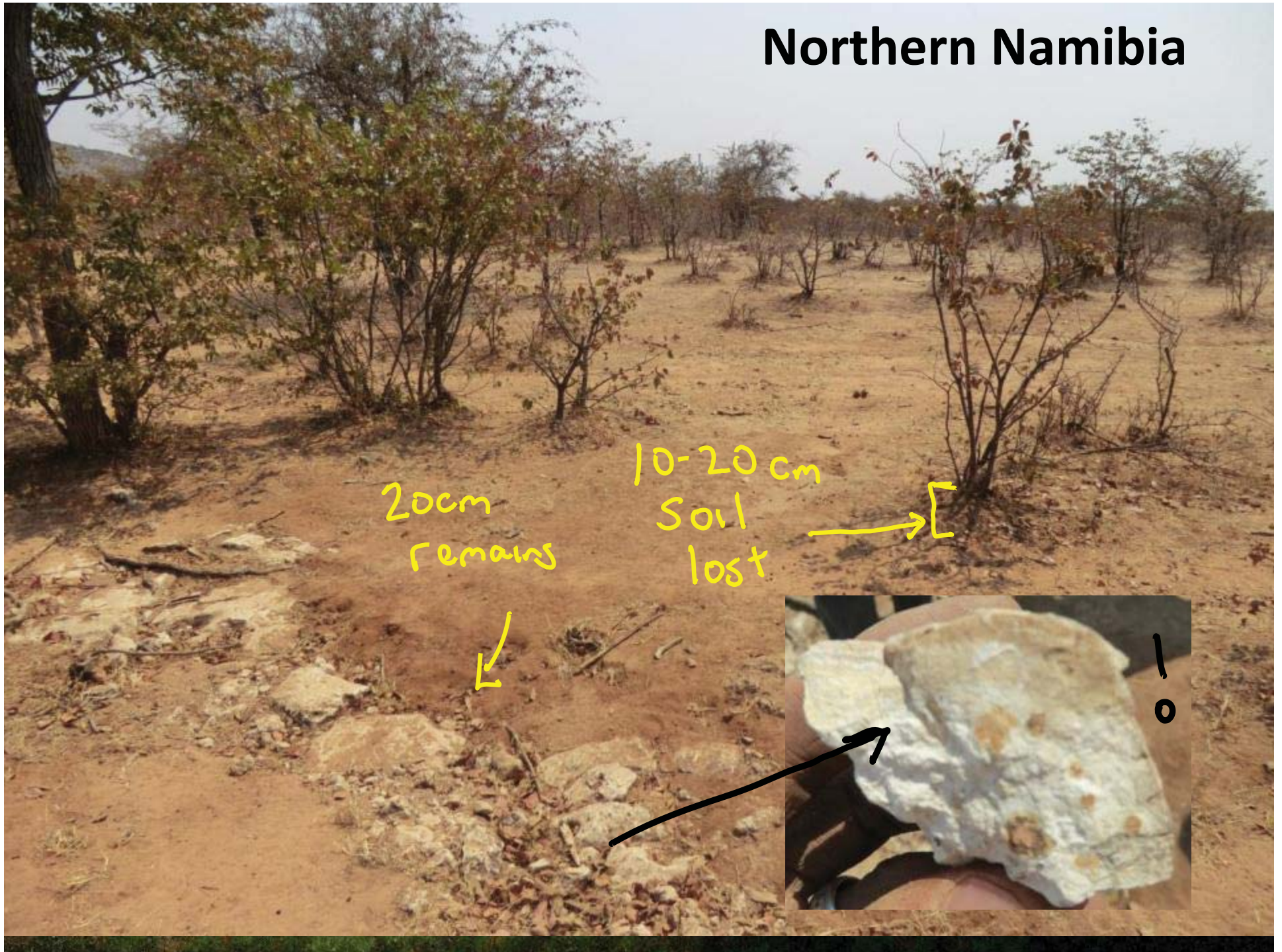
**Exposed petrocalcic horizon: Jornada,
NM, USA**



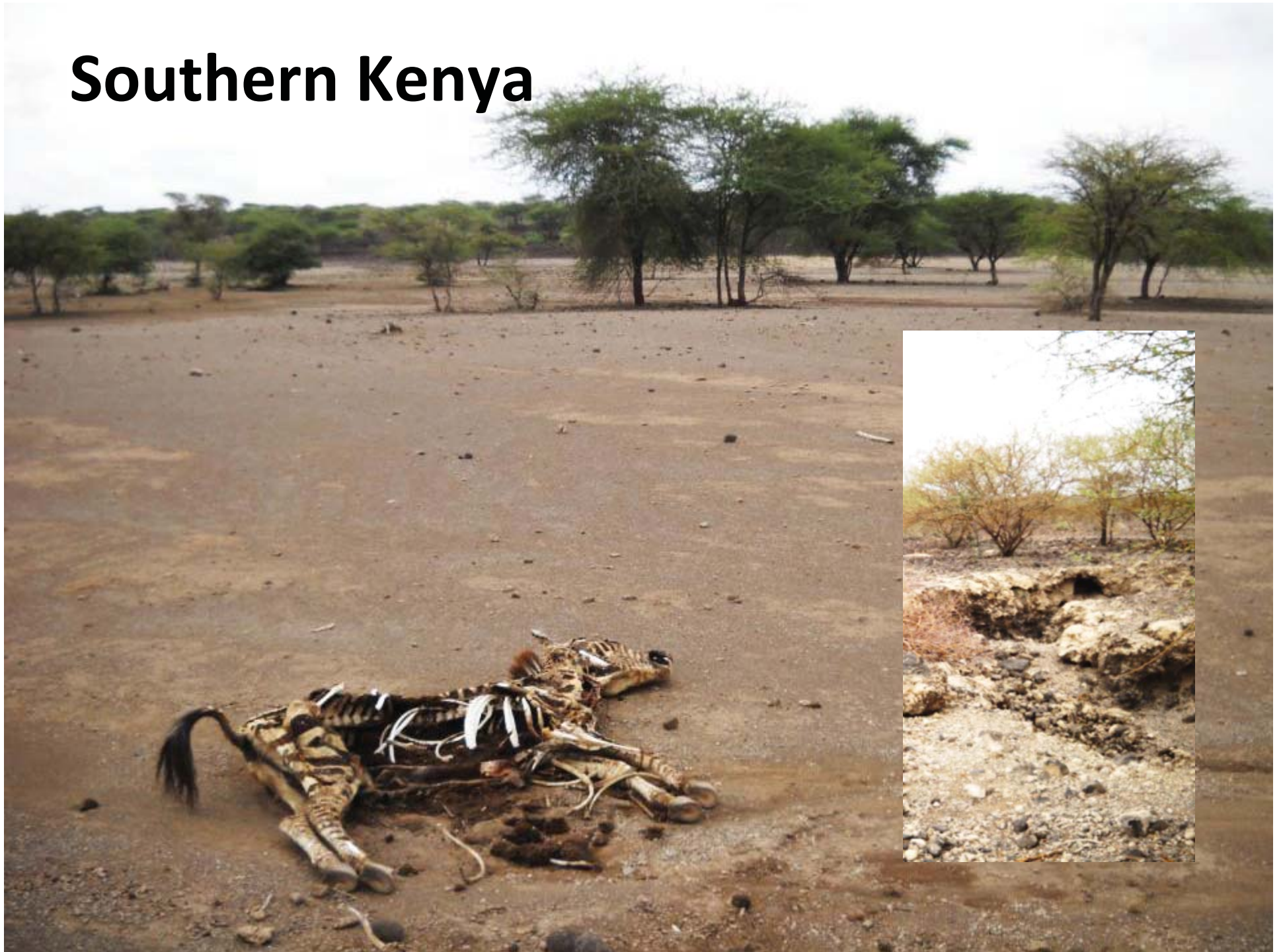
Central Mexico



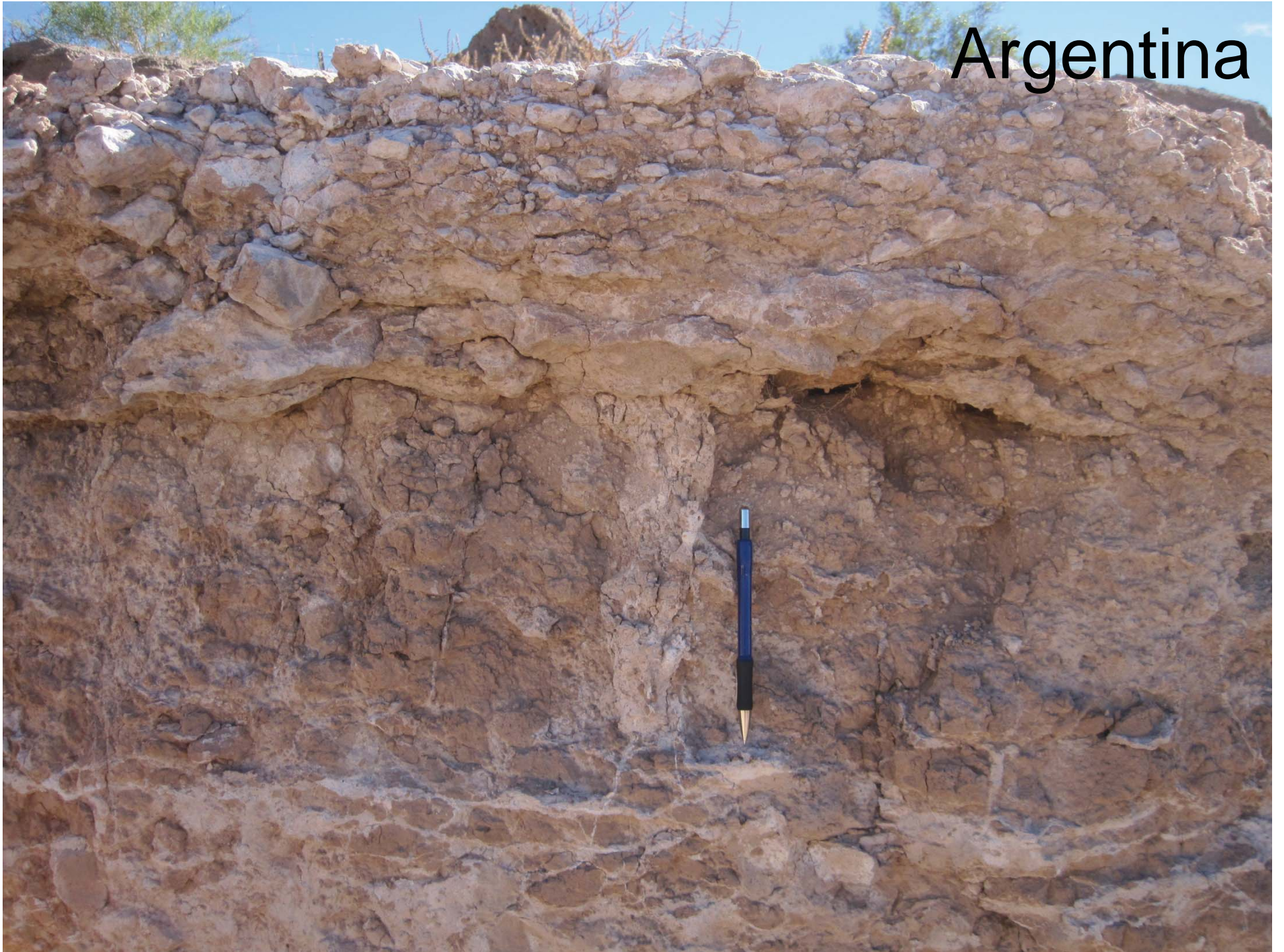
Northern Namibia



Southern Kenya



Argentina



The US can no longer feed the world, but it can reduce social and political conflicts* over land & food by:

- Using our knowledge to help others continue to feed themselves (e.g. USAID “Feed the Future” – USDA is partner)**
- Increasing our knowledge creation through international collaboration**

*Unsustainable land use -> less productive land available → greater competition for productive land → generate or exacerbate conflicts and support for extremists (Kenya, Namibia).

Lack of understanding of productive potential or lack of application of this understanding → unequal distribution of high quality land (Central and parts of South America).

Global strategy for *sustainable, productive* land management:

- Based on an understanding of land potential (e.g. 'ecological sites') to
 - ✓ Minimize degradation risk (esp. thresholds)
 - ✓ Optimize opportunities to promote recovery and increase productivity
- Supported by a global "Land Potential Knowledge System" for integrating and sharing *site- (land potential) & state- (current condition) specific* scientific and local knowledge

Our Tools

- **Research** to continuously *test* and *improve* the strategy
- **Application** at regional to national scales to ***demonstrate*** and ***adapt***
- **Outreach to** and ***collaboration with*** key groups and individuals to support further ***adaptation*** and ***application***
 - Scientific community (workshops, conferences and collaborative writing projects)
 - Educators
 - Development organizations
 - Government agencies



	<u>Research Application Outreach</u>	<u>Funding</u>	<u>Dates/ Current Effort</u>
Argentina	R/A/O	JER/NSF	2010 High
Australia	R	CSIRO/ARC	2007 Low
Canada	O	Canada Gov	2007-09 Low
China	A/O	China Gov (JER?)	2003 Very High
Hungary	R	NSF	1998-2005
Iceland – Land Restoration Training Program	(A)/O	Iceland Gov	2012-? Low-Moderate*
Jordan	O	???	???
Kenya/Ethiopia	(R)/A/O	USAID	2009-? Moderate*
Mexico	(R)/A/O	Mexico Gov JER	1999-? Moderate
Mongolia – Ecological Site development & national monitoring	R/A/O	Switz. Gov US-MCC/NSF	2005-17 Very High
Namibia	R/A/O	US-MCC	2011-17 High
UNCCD	O + Official	JER	2009-? Moderate
UN International Resources Panel	R/O	JER	2011-? Moderate

Examples:

Objectives for Mongolia

- 1. Develop a evidence-based evaluation of rangeland ecosystem conditions, change, and its causes**
- 2. Use evaluations to generate a common understanding of the causes of land degradation to support policy and management solutions**



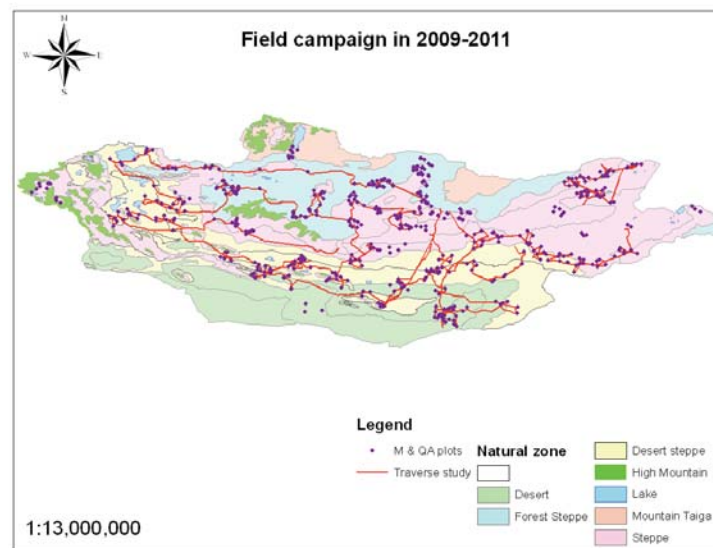
Institutional design:

- 1. MSRM as the coordinating entity**
- 2. Multi-agency agreements on approach**
- 3. National Agency for Meteorology and Environmental Monitoring as implementing agency**



Milestones

1. **Nationally standardized methodologies to measure rangeland vegetation and soil properties (2008)**
2. **Training, design and logistics for national monitoring program (2009)**
3. **National training on methods (320 soums = counties) (2009-)**
4. **Ecological site sampling and development (2009-)**
5. **DIMA database development and training (2010-)**
6. **Ecological site core groups established (2012)**





学术讲座

主讲内容：数据分析与SAS应用
 主讲人：Darren James (统计分析师)
 地点：生态环境学院四楼科技报告厅

时间安排：

日期	时间
3月14日 (星期一)	14:00-16:00
3月15日 (星期二)	14:00-16:00
3月16日 (星期三)	14:00-16:00
3月17日 (星期四)	14:00-16:00
3月18日 (星期五)	14:00-16:00

欢迎广大师生光临！

生态环境学院
2011年3月9日

2011.03.10

Landscape-level model-based restoration projects

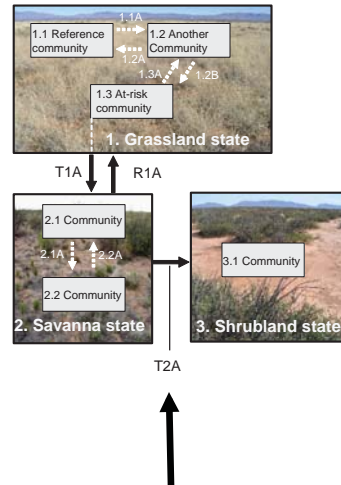


1. Collaboration

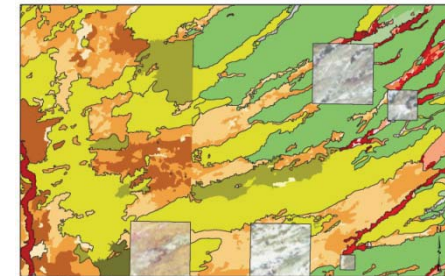
What are the risks and known problems?

Where are they located?

At what scales must solutions be sought?



2. Ecological sites/state-and-transition models, indicators, and management practices

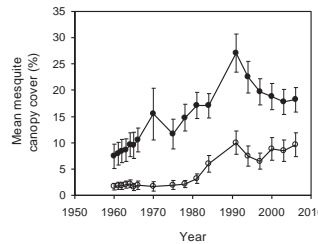


3. Maps of ecological sites and states

4. Apply intervention or do nothing



6. Database results and modify models, collaborative learning



5. Monitoring to test models (did we cross a threshold or restore the desired species?)

Namibia:

R/A: Establishing first replicated on-farm experimental test of Holistic Management on 40 pairs of treatment/control herder groups covering 50-100km² each

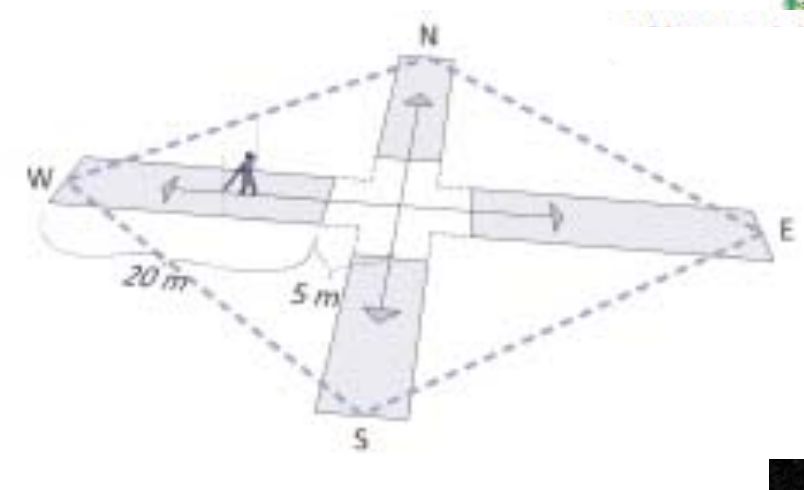
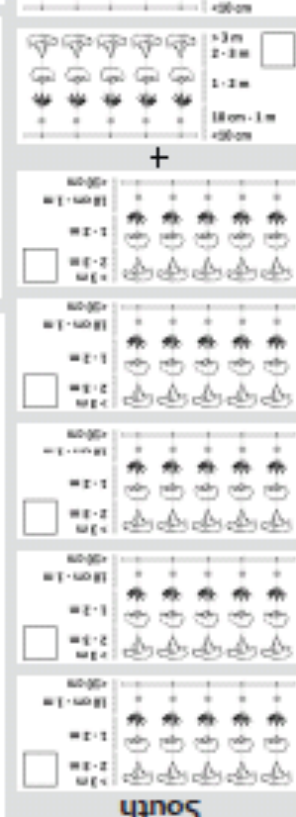
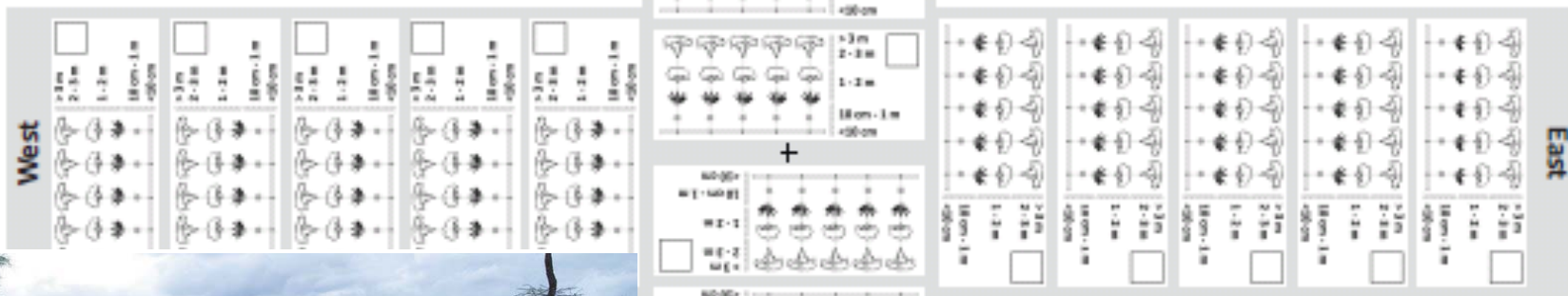
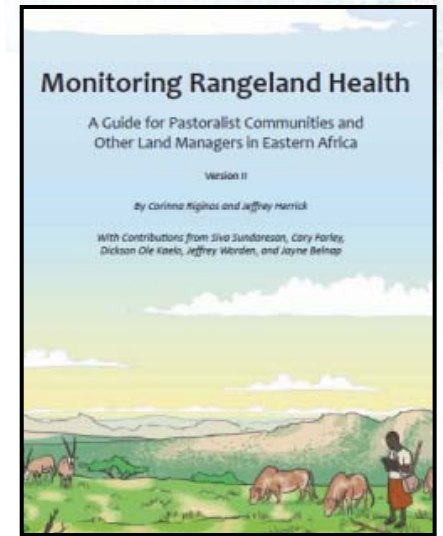
O: Initiated discussion of increasing application of land potential with Ministries of Land and Agriculture




Kenya/Ethiopia:

(R)/A/O: Developed & published simplified protocol for collecting core indicators using 1m stick and 1 sheet of paper or Android App

A/O: Scoping development of regional-global land potential knowledge system for possible AID project.





“Together we can; together we must;
together we will...”

-- Hon. Portia Simpson-Miller, Prime Minister Designate,
Jamaica 1/1/12

“It takes a village”

We are a village, and are a part of the growing global
science and technology village.