

The Role of Livestock in Sequestering Carbon, Mitigating the Effect of Global Climate Change And Enhancing Rural Livelihoods

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www.holisticmanagement.org

Focus of our work

- To help livestock keepers (commercial, small family-based, pastoral and agro-pastoral)

Enhance decision making about resources

- socially sound
- economically sound
- environmentally sound

Short and long-term

All with a view to improving livelihoods

Cause and Effect

- Long before we discovered petroleum or the science to understand GCC, we had:
 - Lost biodiversity
 - Soil cover loss –(increased erosion)
 - Increased severity and frequency of drought and flood
 - Reduced land productivity
 - Increased inputs (to prop up failing health)
 - Increased pest and disease outbreaks (animal and plant)
 - ...social/political ramifications (conflict, mass migration.. Etc.)

Mostly as a result of human agriculture/land-use

Is climate change a symptom or a cause of these things? They existed before climate change and contributed to carbon build up/legacy load (30%)

Today, they are perhaps two sides of the same coin

Livestock-based livelihoods and land health

- To support livestock-based livelihoods
 - Improve land health
- To increase water quantity and quality
 - Improve land health (soil cover is key)
- To reverse desertification
 - Improve land health (diversity/mass/cover are key)
- To restore soil carbon
 - Improve land health (carbon-cycle has to function through gut of the animals)

Can we improve land health through grazing management?

yes

Improving land health through grazing management

- Requires practices that
 - Enhance species diversity
 - Add/build biomass
 - Allow plants to build root (recovery)
 - Minimize deep soil disturbance (build soil from top down)
 - Conserve soil and water
 - Improve soil structure
 - Strengthen elemental cycling
- (Lal and Savory)



Animal Management is key to reversing desertification and reducing vulnerability to drought

Severe rainfall failure during 2004/5 rains



2004



Good rains 2005/6

2005

Severe rainfall failure during 2006/7 rains



2006



2007

30 years bare & compacted soil.
Permanent drought through good & poor rains.

Beginning 2004, heavy animal impact
Treatments, followed by changed
Grazing management..



Zimbabwe Community grazing



In field to the right,
Livestock used to
prepare soil for annual
crops – no till, no
cutting of trees, no
irrigation, no outside
inputs – only the tool
they already have
(animals).



Estimated 1500 % increase in yields

Holistic planned grazing

- Planning/monitoring Tool used to ensure animal management practices:
 - Improve soil cover
 - Increase water infiltration/retention
 - Improve plant diversity/mass
 - Control time plant is exposed to grazing
 - Increase animal density and trampling
 - Distribute dung and urine
 - Animal maintained grasslands
 - No need to burn
 - Improve livestock quality and productivity



Photo credit: C. Neely

All to enhance human livelihoods.

Australia



NSW 2007

Sonora, Mexico



Property on right is under holistic planned grazing; neighboring property (below) is not. Neither property has any ephemeral or year-round surface water. Photos shot same day



Early Adopters

- Surveys (3rd party) and data gathered from the families:
 - Decreased inputs (fertilizer, herbicides, pesticides, vet costs)
 - Increased income
 - Increased soil cover
 - Increased plant diversity/mass
 - Increased water infiltration/retention
 - Increased wildlife populations
 - Increased stock density and
 - Improved animal productivity



This approach to management also

- Provides a platform to:
 - Bring livestock owners together to define “sustainability” and work toward it
 - Open discussions (build knowledge) about land-health with *management* as the key, not animal numbers
 - Share with communities a way to make sound choices on adaptation techniques (problem solving) that will also build long-term land health/enhanced livelihoods.



Summary

- Key to understand cause vs. effect so that we can know where/when to focus \$, resources (adapt/reverse?)
- Grasslands – if we change livestock management practices - hold significant potential for increased storing of soil carbon and supporting large human populations (win-win)
- How animals are managed is key to addressing root cause of biodiversity loss, and to restoring carbon, adapting to GCC and enhancing livelihoods
- Need to know soil carbon effects of actual changed management (density and plant exposure/recovery) and the net produced by animals in various settings.

With a problem like

**global
warming,**

you need all the

**friends
you can get.**



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We offer consulting, management and training. Whether the need is to restore damaged lands or to optimize the productivity of healthy lands, HMI can help. We're a 501© (3) nonprofit organization, and we exist because people's lives depend on healthy land.

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