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What are the solutions for dust and biodiversity from grassland

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- Outline
- 1 Overview
- 2 The results of rangeland degradation on the dust and biodiversity
- 3 Solutions
- 4 Conclusion



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- 1 Overview
- Rangeland degradation is thought to have begun in China by the late-1960s, and since then the area degraded has increased by 15% each decade.
- In the last 10 years the area degraded has risen from 55% to over 90%, 91% in desert steppe.
- The rangeland degradation caused the dust and biodiversity loss.



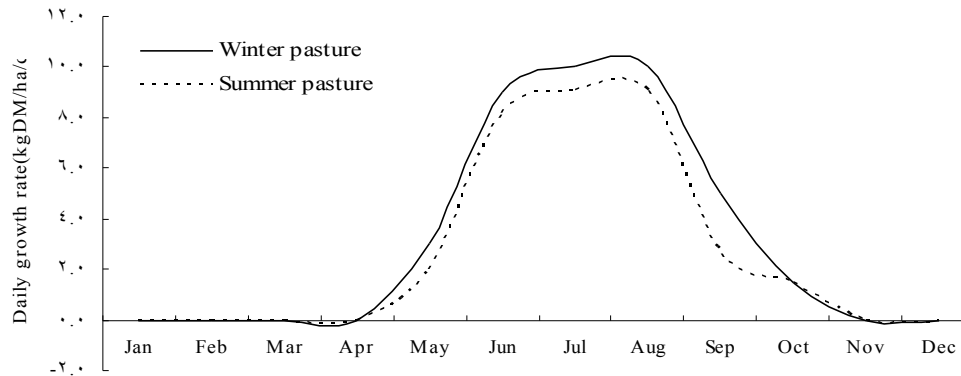
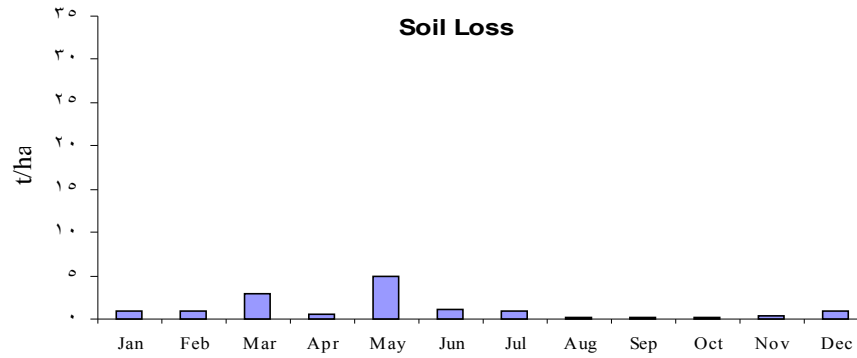
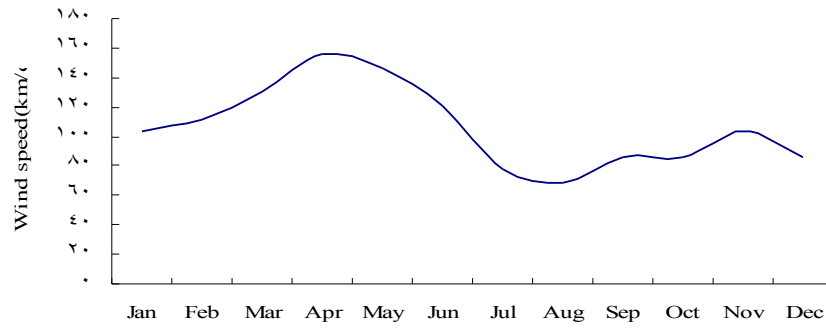
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2 The results of rangeland degradation on the dust and biodiversity

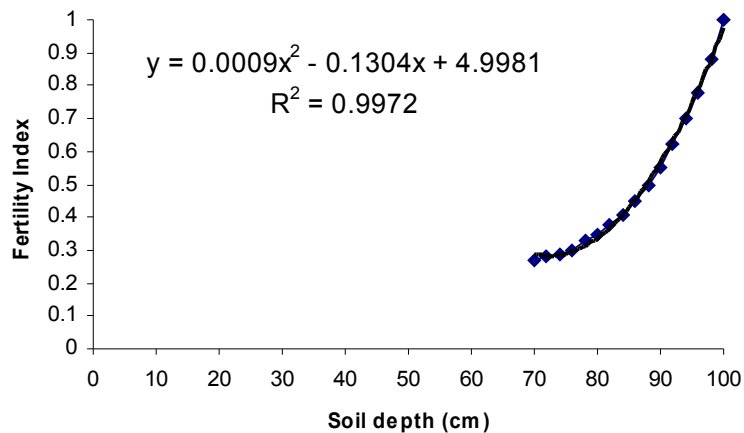
2.1 Dust

Wind erosion hazard, due to the increasing wind speed in spring, in Siziwang is often intensified by the poor vegetation cover combined with characteristic fine unconsolidated surface soil.

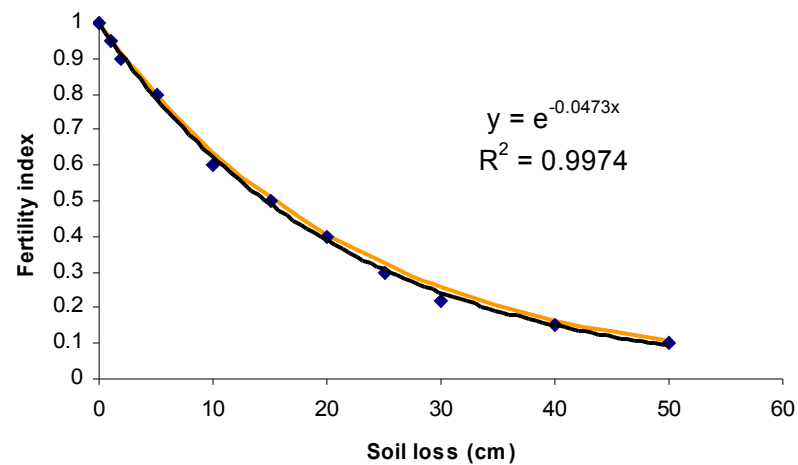


- The wind speed is directly correlated to soil loss. More soil is lost with the increasing wind speed.
- A second peak for soil loss appears in March, which predicts there will be a little or no growth in grassland plant communities in March.

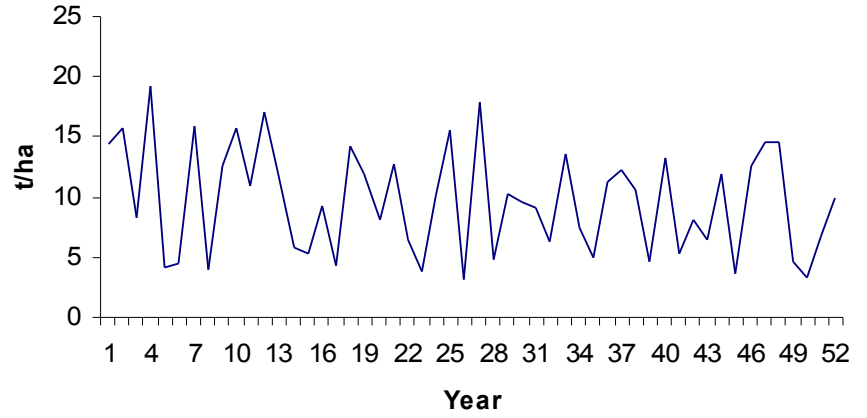
Derivation of Grassland Productivity as a Function of Soil Depth



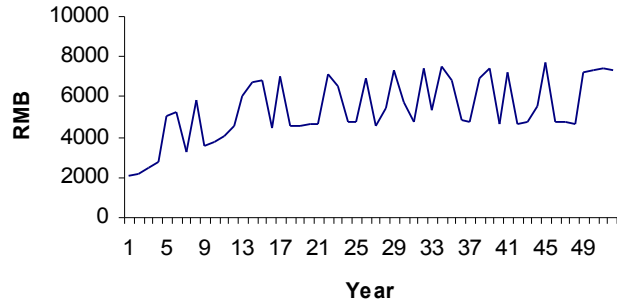
FI as a function of soil lost (cm)



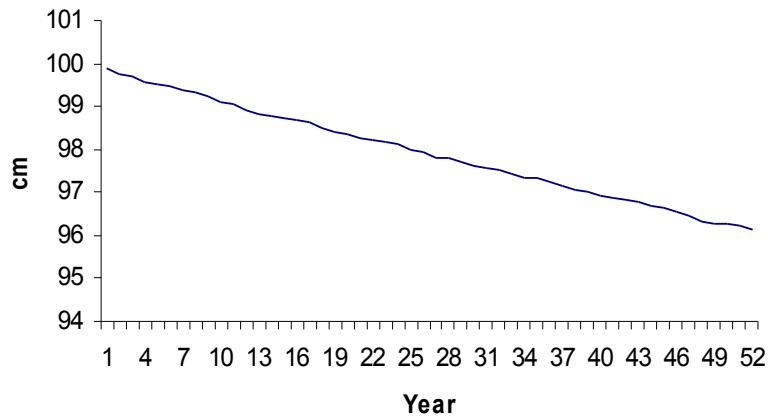
Soil Erosion



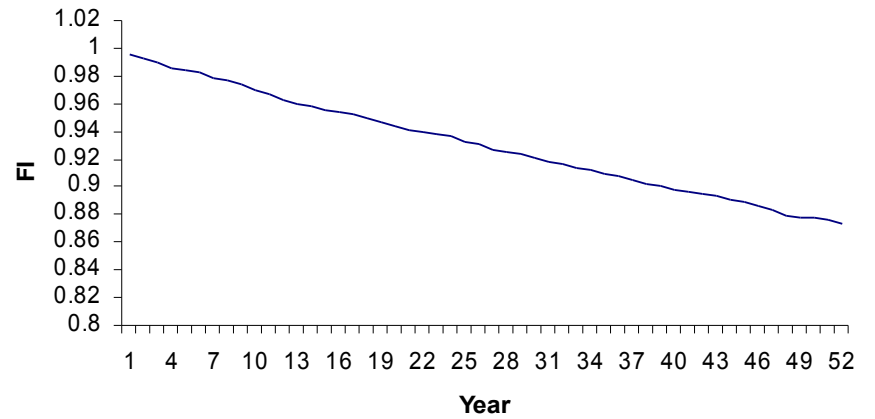
Annual Farm Income

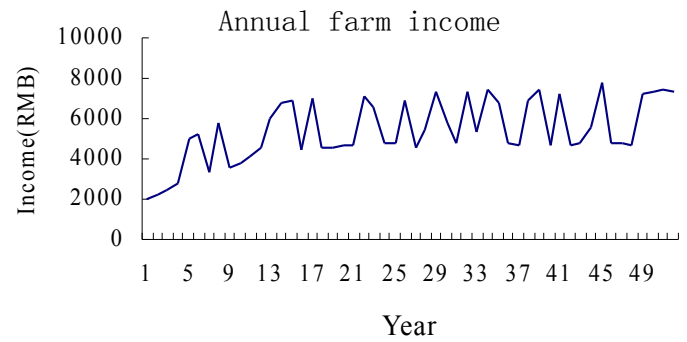
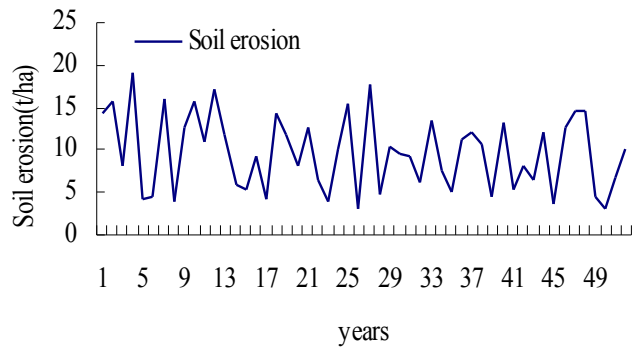
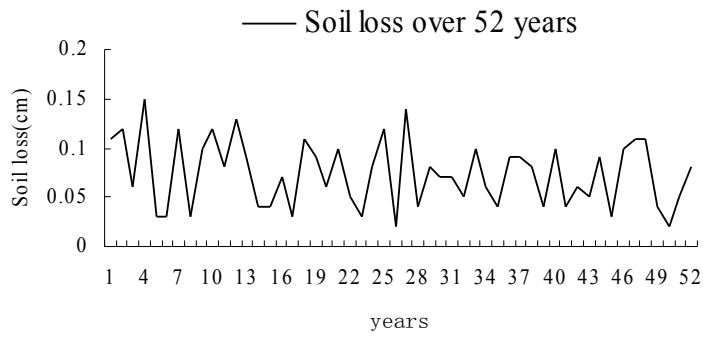


Soil Depth



Fertility Index





- 2.2 Biodiversity

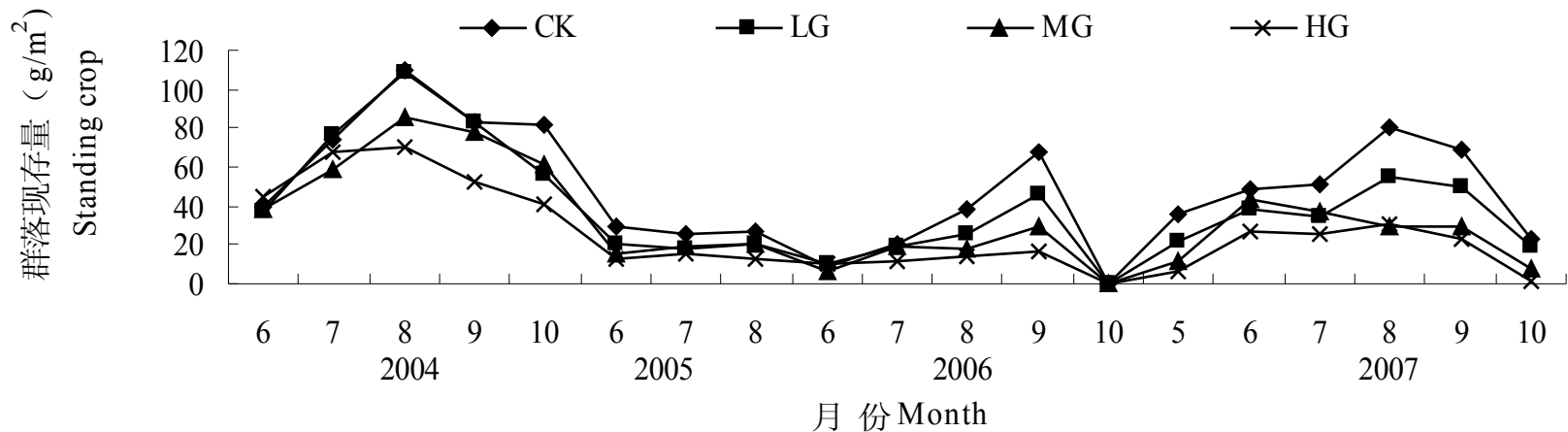
Biodiversity in stocking rate experiment

Treatment	Margalef index of richness	Shannon-Wiener index of biodiversity	Pielou index of evenness
CK	2.9 ^a	2.0 ^a	0.73 ^a
LG	2.6 ^{ab}	1.8 ^b	0.72 ^a
MG	2.5 ^{ab}	1.7 ^b	0.69 ^a
HG	2.5 ^b	1.7 ^b	0.71 ^a



3 Solutions

(1) Reducing stocking rate Standing crop



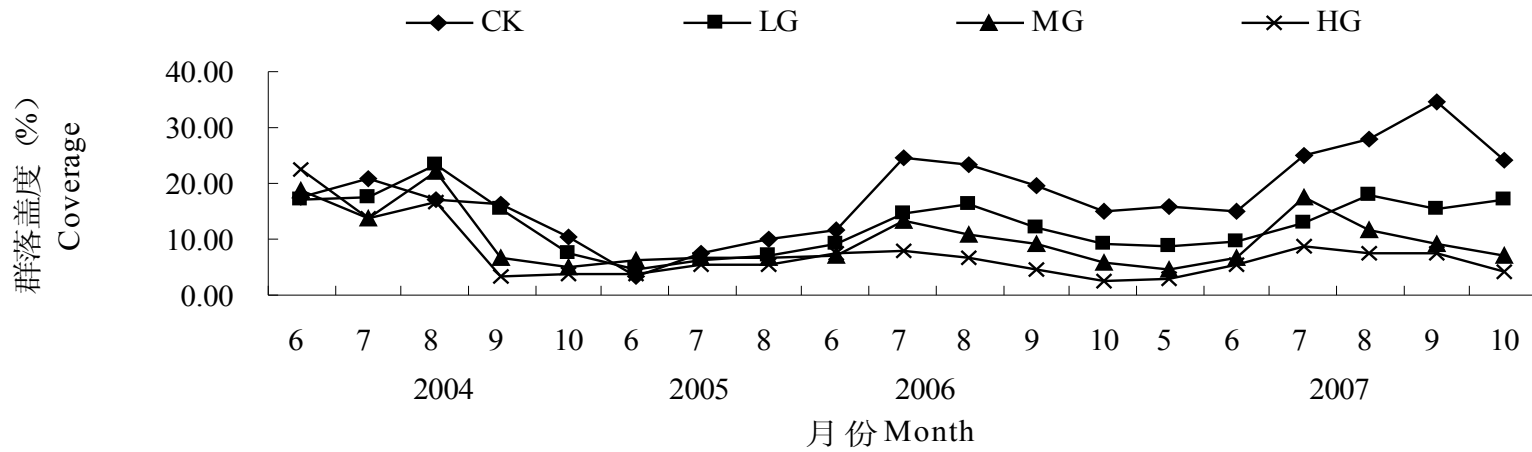


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Coverage

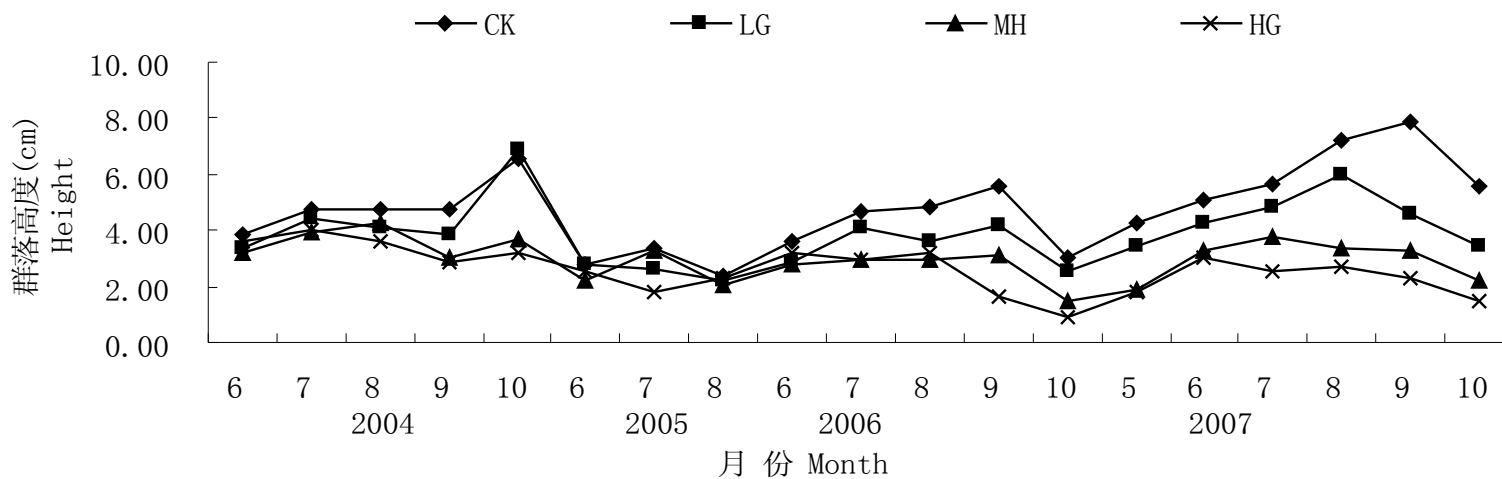




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Height





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(2) Only summer grazing

- Litter to provide the cover for the soil surface and control the soil moisture in the early spring and to improve the water balance



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(3) Improve the forage supply to match the livestock requirement

Provide different feeds according to the livestock production stage: dry, mating, Lactation, lambing



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(4) Marketing improvement

- Higher price for high quality of livestock products;
- Herders Association
- Government assistance
- Enterprise
- Green or organic livestock products



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(5) Training and extension

Useful knowledge for local development

Production and environment

Traditional management change

Bottom-up approach



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4 Conclusion and suggestions

The balance between production and environment

Combination of technology and policy
Marketing development