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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.



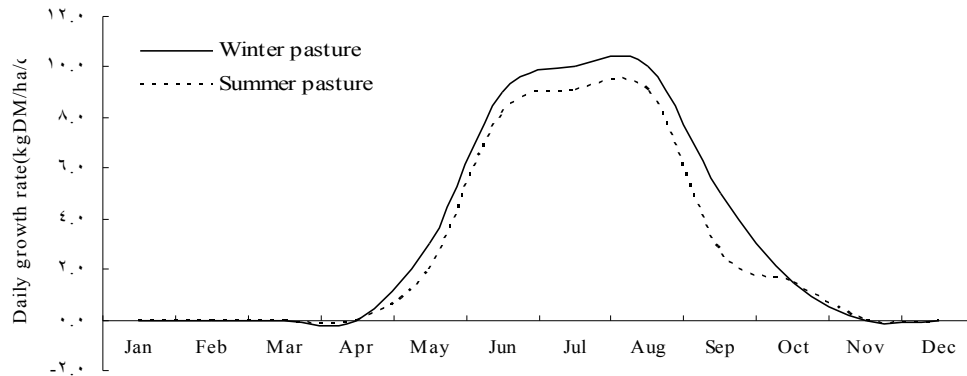
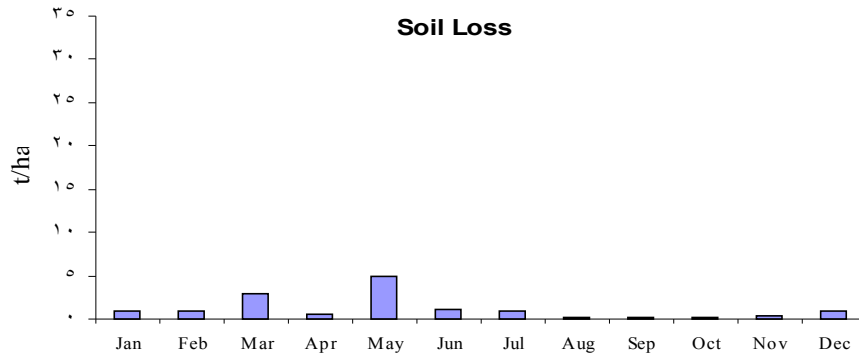
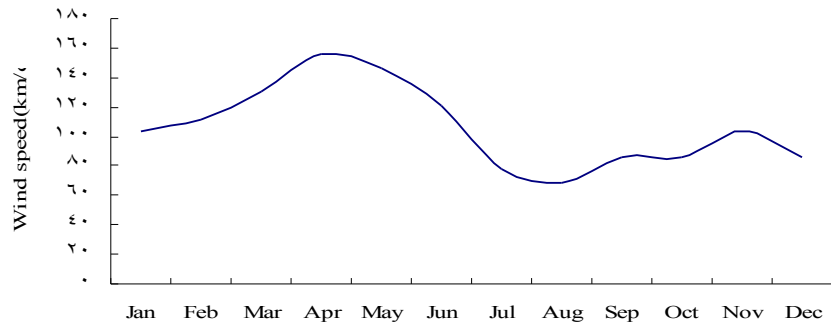
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## 2 The results of rangeland degradation on the dust and biodiversity

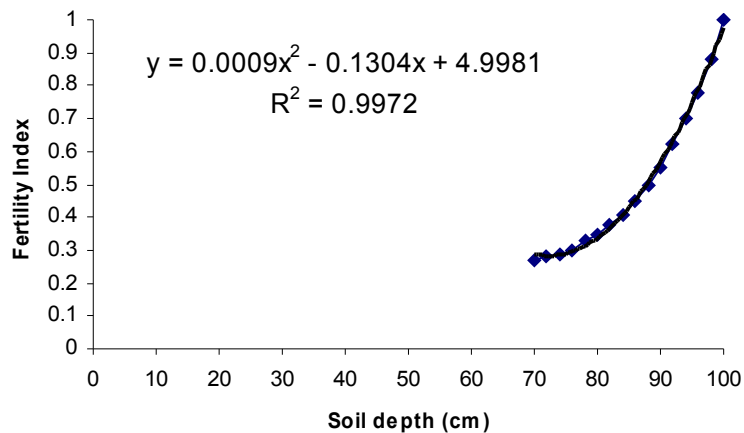
### 2.1 Dust

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.

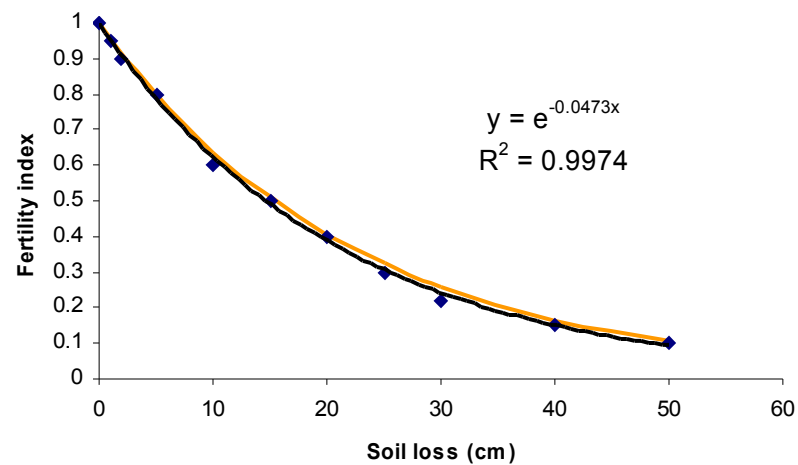


- The wind speed is directly correlated to soil loss. More soil is lost with the increasing wind speed.
- A second peak for soil loss appears in March, which predicts there will be a little or no growth in grassland plant communities in March.

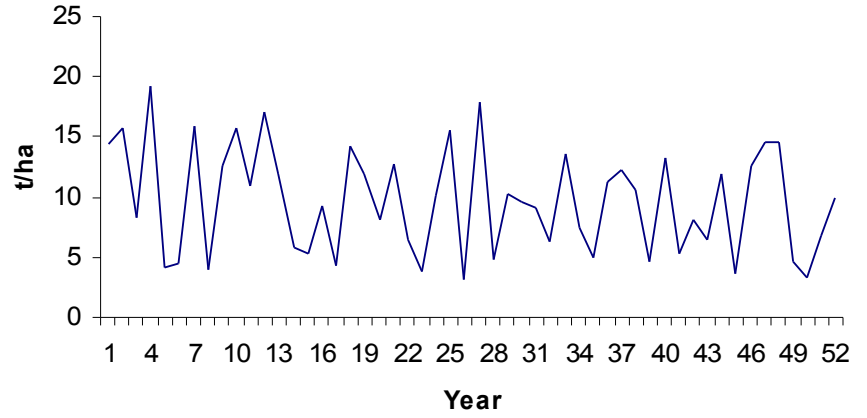
**Derivation of Grassland Productivity as a Function of Soil Depth**



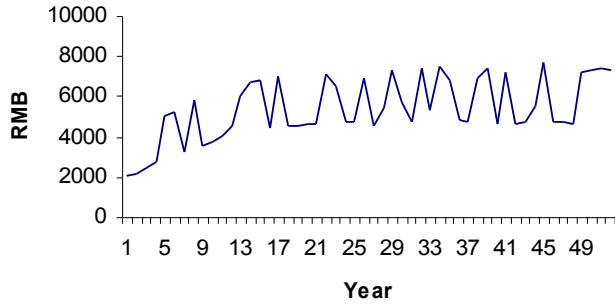
**FI as a function of soil lost (cm)**



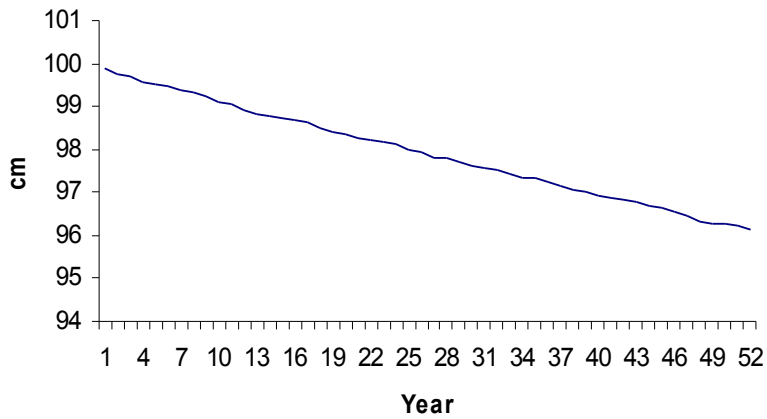
### Soil Erosion



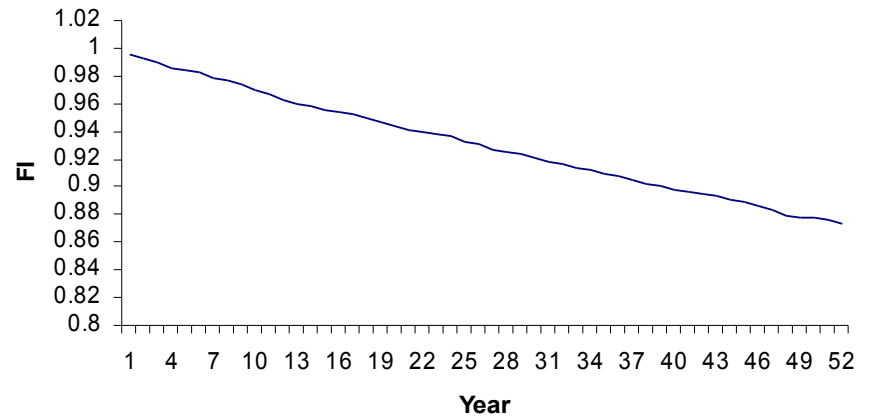
### Annual Farm Income



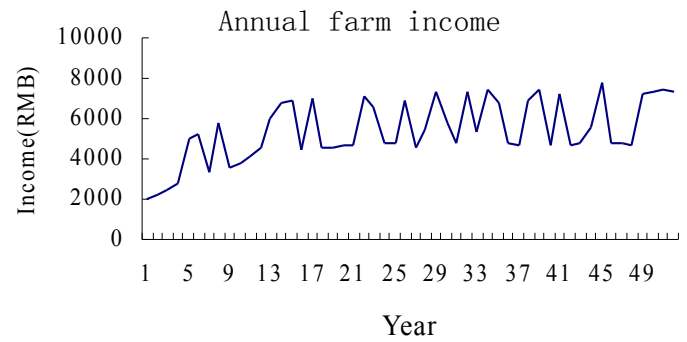
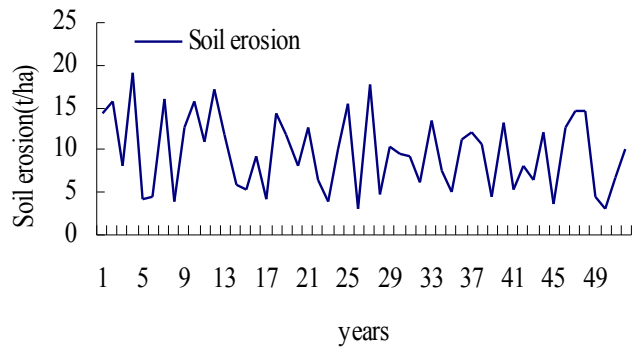
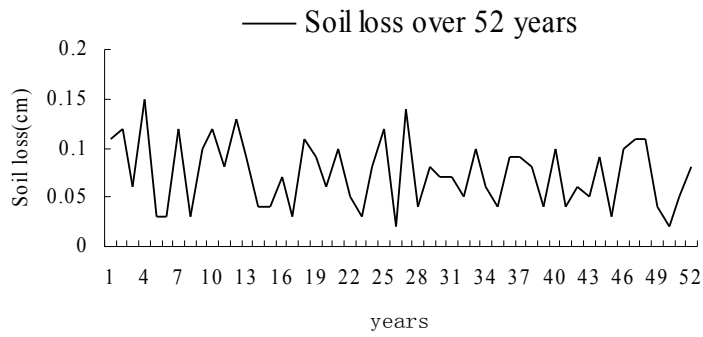
### Soil Depth



### Fertility Index







- 2.2 Biodiversity

### Biodiversity in stocking rate experiment

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

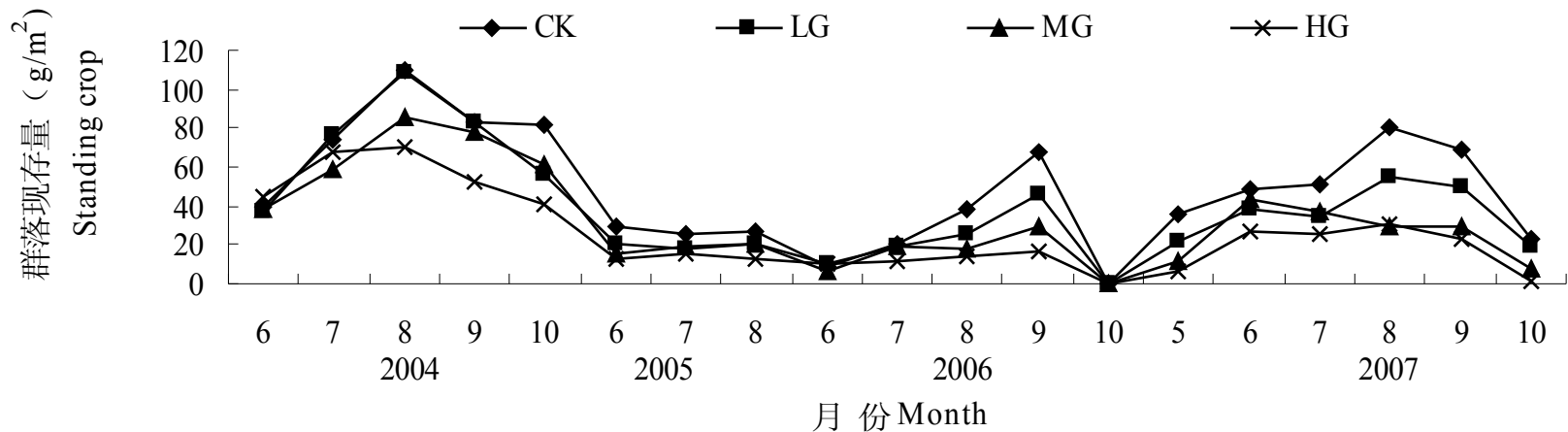
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# 3 Solutions

(1) Reducing stocking rate

Standing crop



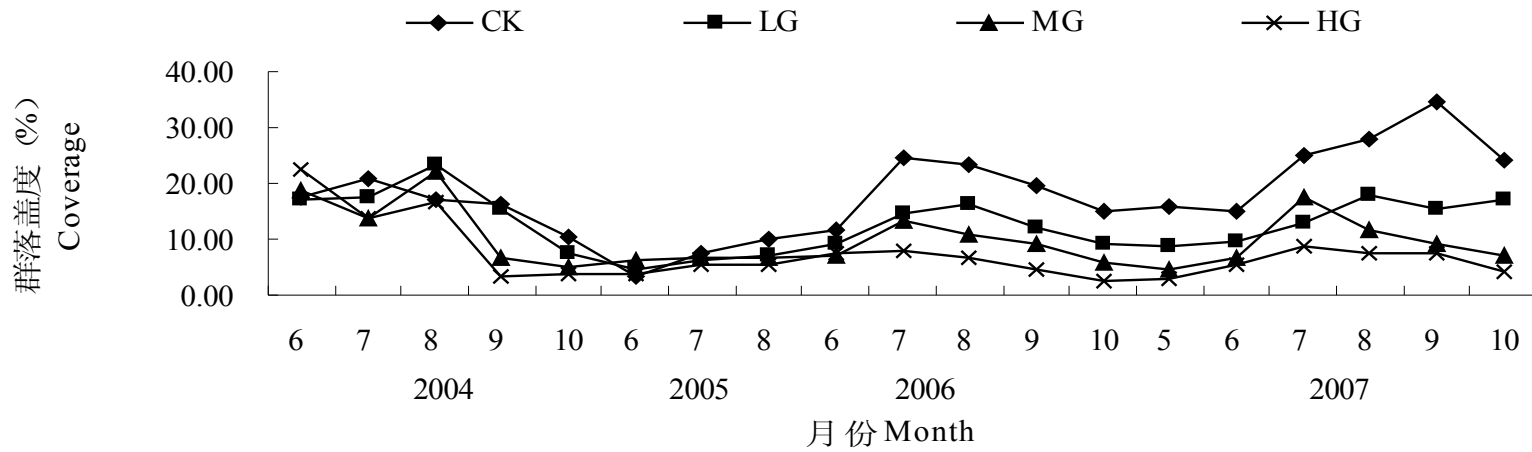


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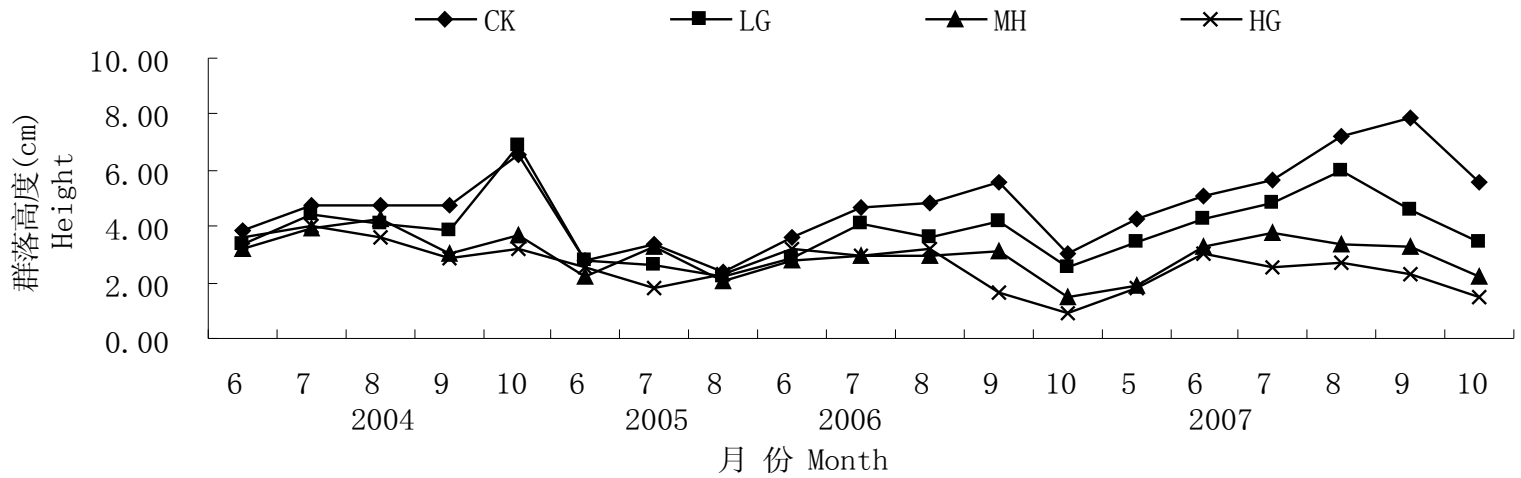


# Coverage





# 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