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## Rethinking Overgrazing and Strategies for Its Management in Inner Mongolia

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## Rethinking overgrazing and strategies for its management in Inner Mongolia

Dalintai

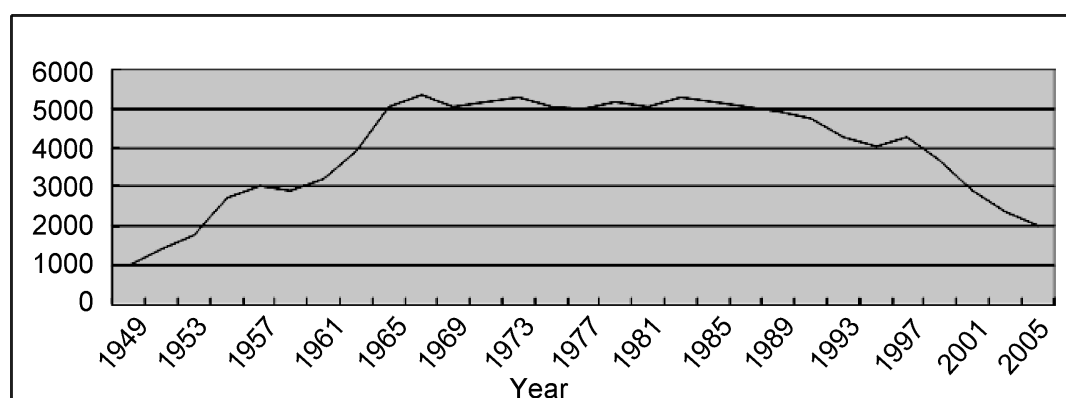
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**Key words :** grassland degradation , overgrazing , animal husbandry , Household Production Responsibility System

**Introduction** During the last fifty years , grassland degradation has become more and more serious . Most methods for restoring degraded grassland are based on the assumption that overgrazing is the main reason for grassland degradation . However , this presumption has not been tested scientifically .

**Materials and methods** Data was obtained from the Animal Husbandry Management Station of Inner Mongolia , Inner Mongolian statistical yearbooks and field work . The technique of energy analysis is used to identify the livestock population sustained by energy derived from outside the pastoral system created by the Household Production Responsibility System ( HPRS) . This includes sources such as anti-disaster bases maintained by both government and herders and also ecological compensation forage transported by government from rural areas .

**Results** Livestock population figures in statistical yearbooks of Inner Mongolia show a continued increase which should lead to overgrazing and grassland degradation . However , as shown in Figure 1 , livestock population depending on natural grassland in Inner Mongolia decreased after 1990 , and do not support this supposition . In fact , statistical data do not only include livestock grazed on natural grassland , but also livestock that rely on energy inputs from outside of pastoral system . Moreover , this has been increasing rapidly under the HPRS for three reasons . (1) Herders have to buy forage from outside , such as in rural areas , to maintain their herds during natural disasters as the HPRS prevents them from moving livestock to other places to avoid disasters . (2) In order to prevent serious livestock loss from natural disasters , herders and government have invested significant effort to build systems to combat disasters . (3) Natural grassland has continued to decrease and degrade due to reduction in grazing scale (Dalintai et al . , 2005) , repeated trampling by livestock and increase in cultivated grassland . Therefore , the proportion of livestock living on energy from outside the pastoral system has increased sharply under the HPRS . Unfortunately , this cannot be shown through statistical data , and this has led to the false presumption that overgrazing is universal on natural grassland in Inner Mongolia . Measures taken to eliminate overgrazing and restore grassland based on this false assumption are unable to achieve their objectives .



**Figure 1** The change of Livestock population (sheep unit) depending on natural grassland of pastoral area of Inner Mongolia(1949—2005)(unit :10 ,000 sheep Unit) .

**Conclusions** By using energy analysis , it is concluded that most livestock in Inner Mongolia are not sustained by natural grassland ,but by energy derived from outside this system . Therefore , it is unreasonable to identify reasons for natural rangeland degradation as overgrazing by livestock living on outside energy . Change in grassland use and disaster management due to HPRS implementation should be carefully studied to reveal the underpinning reasons for grassland degradation and to identify appropriate countermeasures .

### References

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