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The monitoring of ecological effect of implement of sand control project in sand source area round Beijing and Tianjing

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Key word : Rangeland, Desertification, Dynamic monitoring, Remote sensing, sand control project, area around Beijing and Tianjing

Introduction Rangeland desertification is a serious ecological problem in north dry and semi-dry region in China. Since 2000, the sand control project has been carried out in sand source area Beijing and Tianjing. The monitoring result exhibits that the implementation of sand control project has lead to positive effect on rangeland vegetation

Method Dynamic monitoring of rangeland desertification depends on remote sensing technology and field investigation. The vary of vegetation cover and overground biomass inversed NDVI (normal different vegetation index) from MODIS data were used to explain the rangeland quantity change from 2000 to 2006/2007, the comparison of vegetation component get by field investigation between out and inner enclosure to illustrate the rangeland quality change, and sand area in different period obtained by Landsat TM data through supervised classification method to quantify the dynamics of rangeland desertification.

Result From 2000 to 2006/2007, the average vegetation cover in Nemenggu, Hebei and Shanxi provinces increases 6 percentage points, the grass output increases 12.0% averagely (Tab.1), and the serious deserted rangeland at HunShanDaKe sandlot decrease 24.8% averagely (Tab.2). The proportion of eximious timothy at inner enclosure is higher than the out.

Table 1 Change of vegetation cover and grass output from 2000 to 2007.

province	Vegetation cover (%)			Grass output(kg/ha)		
	2000	2007	variation (percentage point)	2000y	2007y	variation (%)
Neimenggu	26.0	32.3	6.3	1021.7	1150.3	12.6
Shanxi	37.7	43.3	5.6	1410.0	1564.7	11.0
Hebei	45.0	51.0	6.0	2121.7	2387.7	12.5

Table 2 Change of serious deserted rangeland from 2000 to 2006/2007.

county	decrease(%)
abaga	18.8
Sunitezu	21.5
xilinhaote	24.2
xianghu	25.3
zhengxiangbai	31.0
zhenglan	27.8
average	24.8

Conclusion Based on the monitoring result by remote sensing and field investigation ways, It is can be concluded that the implementation of sand control project has led to good ecological effectiveness.

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