Study on Benefit Detection of the Grassland Desertification Control Project in Xianghuang Banner, Inner Mongolia Based on "3S" Technology

Qiuju Wang
Chinese Academy of Agricultural Sciences, China

Xinhong Wu
Chinese Academy of Agricultural Sciences, China

Tingting Yang
Chinese Academy of Agricultural Sciences, China

The 21st International Grassland Congress / 8th International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

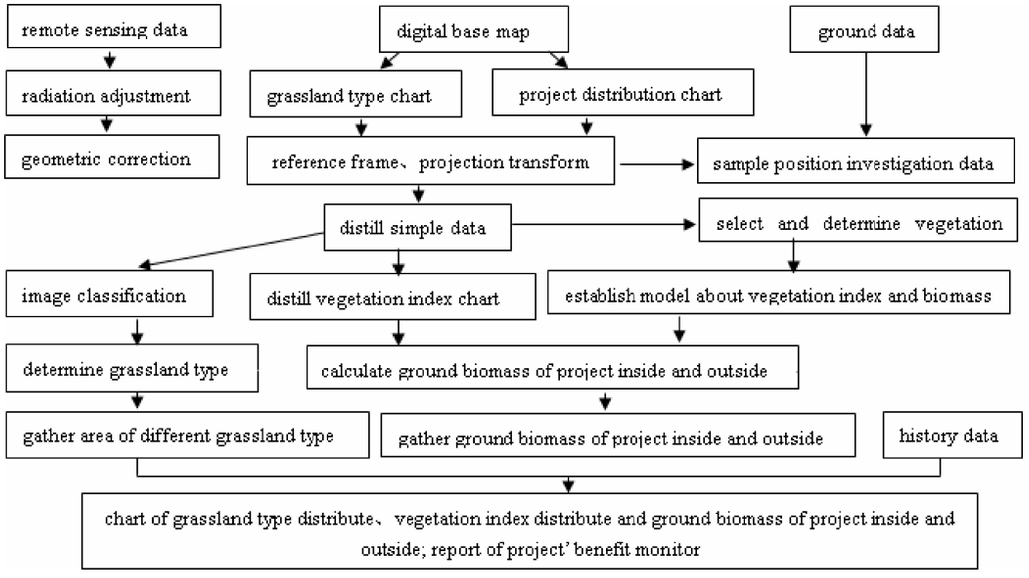
Study on benefit detection of the grassland desertification control project in Xianghuang Banner , Inner Mongolia based on "3S" technology

Wang Qiuju , Wu Xinhong , Yang Tingting
Grassland Research Institute Chinese Academy of Agricultural Sciences ,Hohhot 010010 ,Inner Mongolia Province , China , E-mail :wangqj82@sohu .com

Key words : 3S"technology ,grassland desertification control , remote sensing , detect , benefit

Introduction Desertification is now one of the worlds important environmental and social economy questions , that is threatening humanity's survival and development . Our country , is one of most seriously affected by desertification in the world . In order to effectively reduce grassland desertification , we started a series of grassland desertification control projects . But the project implementation's process is a non-natural process , and we don't know the projects' progress or benefit . Therefore , monitoring the benefit of the Grassland Desertification Control Project is urgent and essential .

Research method and technical route Through ground investigation based on Global Position System technology , we determined vegetation condition data at accurately located points . Using remote sensing , we collected image data about the project area . We analyzed multiple source spatial matching data to get the projects' area , biomass on the ground、vegetal composition、vegetation cover etc , based on GIS technology . Finally , we thoroughly and systematically monitored the grassland desertification control projects benefit . Technical route is as follows in Figure 1 .



Figuer 1 *Flow chart of benefit monitor of project .*

Results Vegetation cover is an important index to reflect health of a grassland ecosystem . Compared with 2003 , the vegetation cover has been improved by 8 .64% in the project area in 2004 .

Vegetal composition is an important component of a grassland ecosystem , and affects ecosystem function . Compared with outside of project , there were fewer *Artemisia frigida willd . . , Ceratoides arborescens (Losinsk .) Tsien et C .G .Ma , Lagochilus Bunge , Potentilla acaulis Linn* . etc . inside of the projects . In general , these plants grow in dry or degenerated habitats . The decrease in density of these species , shows the habitat inside of projects improved .

The above ground biomass is an important factor to appraise productiveness of a grassland . Compared with August , 2003 ,the biomass on the ground increased by 56 .78% in the project area in August 2004 .

Conclusions The projects for controlling grassland desertification have effectively prevented grassland degradation ,protected biodiversity , and promoted the sustainable balanced development of the grassland resource .