

Current Situation and Control of Rocky Desertification in Qian nan Mountainous Area of Guizhou Province

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ABSTRACT

Dushan county, Guizhou province, is located in the southernmost tip of Guizhou province. It belongs to the temperate climate of the subtropical region and is one of the centers of the karst east Asia area. The total area of the county is 242220 hectares, of which 169142 hectares are rocky desertification or endangered desertification state. At present, the problem of rocky desertification has seriously affected the ecological environment of the county, which is one of the important factors that restrict the local social living standard and economic development. Therefore, it is of great significance to promote the social and economic development of the county by investigating and analyzing the spatial differentiation rules, present situation and harm of rocky desertification in Dushan county.

KEYWORDS: rocky desertification; current situation; prevention and control; Dushan county

1. Introduction

Stony desertification is the desertification of stone land and is one of the extreme forms of land degradation. It refers to the natural environment in the tropics, subtropical humid and semi-humid areas where karst is extremely developed. Due to human disturbance, the vegetation is damaged and the soil is seriously eroded. The bedrock is exposed to a large area and the land is degrading. Is the karst area of ecological deterioration of the top shape [1], [2]. Rocky desertification is a desertification ecological phenomenon which is unique to the humid karst area in southwest China and formed on the basis of fragile karst geology [3]. The karst area has a simple structure, fragile structure, lack of water and less soil, poor water retention, leading to frequent disasters such as drought and floods, and the deterioration of the ecological environment, and the weak consciousness of the people's protection, so that the masses of this area cannot get rid of poverty, the economy cannot be effective development.

Karst rocky desertification represents a unique type of desert in the world, that is, wetland rocky desertification. The general trend of rapid expansion of rocky desertification area has not been effectively curbed. Because the mechanism of rocky desertification and karst ecosystem stability mechanism is not clear, while the lack of relatively complete rocky desertification control theory and technology system. The main research contents of rocky desertification process and adaptive ecological restoration in the southwest karst mountain area include: Karst mountain rocky desertification evolution mechanism and driving force research, karst mountain soil erosion process and its hazard research, karst ecosystem degradation process and rocky desertification The study of biogeochemical processes in the process, the comprehensive prevention and control of rocky desertification in karst mountain areas, the adaptive restoration of damaged ecosystems in Karst mountainous areas, the optimization of service functions and the comprehensive regulation of karst ecosystems.

2. A Review of Karst Rocky Desertification

Hou et al. studied on soil anti-erodibility of rocky desertification process in karst ecological control area Journal of Soil and Water Conservation, Soil Science and Technology, the order of corrosion resistance of rocky desertification soil is the original plots, the rocky desertification, the mild rocky desertification, the moderate rocky desertification, and the potential rocky desertification. The soil characteristic indexes selected in the study can be used to characterize the soil erosion resistance in the karst mountain area [4]; QW. Chen 'Study on the temporal and spatial variation law and development trend of rocky desertification in Guizhou karst area' based on the enhanced vegetation index, soil index

and slope information, the ASTER satellite image is used as the data source, and the three-stage rocky desertification in Guizhou province in 2000 and 2005 is extracted by using 3S integrated technology [Figure 5].

The research trend of rocky desertification prevention in karst mountainous area will mainly study the spatial evolution rule and time evolution of rocky desertification in karst mountainous areas, and explore the efficient model of comprehensive management of rocky desertification ecology in karst mountainous area. Desertification comprehensive management of ecological effects evaluation, research karst mountain rocky desertification of water resources development and utilization of several aspects of development. Therefore, the ecological and environmental problems in the rocky desertification area is an urgent and arduous task.

3. Basic profile of Dushan county

3.1. Overview of the natural environment

Climate: Dushan county is located in the south of Guizhou province, the typical karst mountain. There is a subtropical temperate monsoon climate type, four distinct seasons, no cold winter, summer without heat, mild climate, the four seasons such as spring, a pleasant climate, the local average temperature of 17.2 °C, extreme maximum temperature is only 35.5 °C, extreme minimum temperature -4.0 °C, the average annual rainfall of 1346mm, long frost-free period.

Terrain: Dushan county was 'flat quadrilateral' shape is located in Guizhou province, south of Guizhou province. Terrain north high south low, belonging to the plateau terrain, there are rolling hills, mainly mountainous, mountain area is widely distributed.

Geology and geomorphology: Dushan county from the Cenozoic tectonic movement since the impact of complex terrain, regional differences are large, the county from north to south tilt, the soil type is mainly yellow brown soil and yellow soil, soil parent material for the sand shale and limestone, silicate and carbonate rocks are basically distributed in stripes, and the distribution of carbonate rocks is the most extensive. The territory of the county ups and downs, the river is not much, terrain complex and changeable, the average elevation of about one kilometer, karst landforms more clearly to the south, especially in the adjacent town of Ma He Huang Houxiang. Is one of the best preserved karst areas.

Traffic: Dushan county location and convenient transportation, Guizhou province and the southern coastal areas of the closest to the county, is also the southwest into the southwest inland fortress, Dong Sandu Shui autonomous county, southeast and Libo county, south with the Guangxi Zhuang autonomous region Nandan county border, west adjacent Pingtang county, the northern sector Duyun city. 90 km long from north to south, east and west width of 41.5 km, the county a total area of 242220 hectares. Known as 'south gate of Guizhou,' said. In the political, economic, military and other areas have a more important strategic position, under the Qian nan Buyi and Miao Autonomous Prefecture.

3.2. Social and economic profiles

Population: Dushan county jurisdiction over 8 towns, 7 townships, 3 ethnic townships 133 administrative villages 9 neighborhood committees. At the end of 2008, the county's total population of 346800 people, of which 310,357 rural populations, urban population of 36443 people, the population is mainly concentrated in the town and the town of town. There are han, bu yi, shui, miao, yi, hui, dong and other ethnic groups, of which the largest group of children, ethnic minority population 261847 people, accounting for 76% of the total population.

Cultivated land: 15057 hectares of arable land, of which 12518 hectares of paddy fields, 2539 hectares of dry land. Forest area of 52666.9 hectares, grass slope 65333.66 hectares, suitable for forest land 80000.4 hectares.

Waters: the county river belongs to the pearl river basin, respectively, into the Liujiang river water system are Liujiang, dog river and the red river system of cattle, watershed area of 20 square kilometers or river length 10 km above the surface river 24. The river has a total length of 397.6 kilometers and a drainage area of 1744.78 square kilometers. The longest river three bridge river 41900 meters, Jiangzhai river natural drop 880 meters. Underground river more, has now proven a total of 22. There are 19.581 square kilometers of water, the theoretical water resources reserve of 31867 kilowatts, water quality is conducive to irrigation and aquaculture.

Forest resources: Dushan county has a forest coverage rate of 30.23%, but most of the uneven distribution of forest land, mainly concentrated in most of the northern and northern regions. Such as Wengtai township has a forest coverage of 67.47%, the village of 49.13%, 49.34% of the rabbit town, in the north and central distribution is generally the original forest, thick soil is conducive to tall joe, shrub growth, vegetation many species, the stability of the ecological system structure. The county coniferous forest occupies forest land area of 79.8%. , but the southwestern karst area has a very low coverage rate of forest land, such as 4.25% in Kerry township, 9.27% in Ma Tau township, 8.07% in Yaoba township, 7.91% in Huanghou township, only a small number of forests, most of which there are very few slopes, very thin and species of a single vegetation cover, mostly barren hills, steep slopes, thin soil, soil structure is poor, very

few vegetation on the hillside is only the aircraft sowing and some artificial afforestation, mostly pine single, too slow growth, weak resistance to pests and diseases, the ecosystem structure is unstable.

Mineral resources: Dushan county, the main mineral deposits are antimony, iron, coal, mercury, aluminum, zinc, barite, limestone and marble, including antimony reserves up to only half of the antimony ore reserves of metal 13.5 million tons, antimony grade is generally about 20%, up to 50% or more, ranking first in the province, the country's third. Iron ore with hematite and limonite, hematite reserves of 45 million tons, more than 100 million tons of limonite; mercury of the metal reserves of 3.67 million tons, is a medium-sized deposits, lead-zinc mine, magnesium, coal, etc. also have a certain reserve, with mining value. Limestone distribution is very wide; the southern township can be seen everywhere. The limestone calcium carbonate content in the Mawei area is as high as 96.77-99.90%, which is the ideal resource for the production of lime and cement. The reserves of limestone in Yujiawan are only 35.43 million tons, and calcite and marble are already available. Industry has experienced from the infinite, from less to the development process, industrial enterprises involved in electricity, smelting, mining, metal machinery, chemical building materials, printing, textile, bamboo and food and other industries. Dushan hydrochloric acid vegetable production of hydrochloric acid dishes, with sweet and sour crisp unique flavor, the products are exported to Hong Kong and Macao and Southeast Asia. Guizhou Dongfeng Enterprise Group Co., Ltd. production of refined antimony, Guizhou Dushan Dongfeng Food Industry Co., Ltd. production of fresh concanavalin cans is the main export products. [6]

4. Status and impact of rocky desertification in Dushan county

4.1. Status of rocky desertification

Due to the steep slope of Dushan county, the sparse vegetation, coupled with serious rain erosion, resulting in the majority of the county there is a large area of bedrock exposed surface, but also continue to expand to other regions of the larger trend. After investigation, the county a total area of 242,220 hectares, of which non-rocky desertification area of 124488 hectares, accounting for 55.5% of land area; landed rocky desertification of the land area of 69410 hectares, accounting for 30.9% of land area; Land area of 99732 hectares [7], ranking the first in southern Guizhou, accounting for 44.5% of land area. Rocky desertification accounted for 41.17%, second only to Qian nan

49.29% of the county of Changshun county (Note: the data from the Guizhou provincial department of land and resources; Guizhou provincial bureau of geology and mineral resources). And gradually in the southern mountainous vegetation from Dushan county, very few mountainous areas to the central, such as from the town of Ma,

Table 1. Dushan county township rocky desertification area and proportion

Township land	Area (hectare)	Rocky desertification (potential rocky desertification) area (hectare)	Rocky desertification percentage of land area
Chengguan town	24470	15800	0.65
Rabbit town	13000	6120	0.47
Ma Wanzhen	14092	7900	0.56
Base town	17200	7690	0.45
Boss town	27900	14800	0.53
Under the town	13840	7800	0.56
A town	12900	7000	0.54
Mayang town	11000	7910	0.72
Yaoxuo township	15700	10300	0.66
Sheep Fengxiang	10700	7100	0.66
A Ding township	5581	2530	0.45
Weng Tai township	4500	1400	0.31
Bazhai township	14500	8650	0.59
Water Rock township	13900	7200	0.52
Fight sheep township	19060	11000	0.58
Yaoba township	9900	6440	0.65
Huang Houxiang	12600	7400	0.59
Dong Lingxiang	14400	8230	0.57

(Note: Table 1 data from the Dushan county land resources bureau)

Huanghou township, Dongling township, Yaohao township, Xia Si township, Jia Li township, Zhuo Yang township, Yao Suo township, the town of the town to the boss town (see Table 1), and continue to spread to the north of the forest coverage the Dushan county, in addition to the phenomenon of significant rocky desertification, there are a large area in the critical state of rocky desertification land and potential rocky desertification land.

4.2. Analysis on the influencing factors of rocky desertification in Dushan county

4.2.1 Natural factors

Bedrock factors: karst mountainous rich carbonate rocks are easy to leaching, soil slow, easy to lose the characteristics of rocky desertification is the material basis for the formation of a strong karstification process is the main reason [8]

Climatic factors: As the county is in the subtropical temperate monsoon climate zone, to the south of several townships karst landscape is particularly significant, with less rivers, high temperatures, abundant rain and concentrated, less vegetation cover, soil parent material structure is unstable, stone desertification formation provides erosion and dissolution conditions.

Topographic factors: As Dushan county is in the plateau terrain area, mainly in the mountains, the mountain area is widely distributed, slope ups and downs, rain erosion ability, the northern terrain than the south high, the difference between the distribution of forest vegetation, the formation and development of another important reason.

The rocky desertification land formed by natural factors accounts for about 20% of the total land area of rocky desertification.

4.2.2 Human factors

Due to human unreasonable social and economic activities caused by the contradictions between man and land, vegetation damage, soil erosion, land production capacity decline or loss, the surface showing similar desert landscape rock gradually evolved evolution process. The main cause of rocky desertification is human activity. As a result of the long-term natural vegetation has been destroyed, a large area of steep land reclamation, resulting in surface exposed, coupled with karst rock mountain soil thin, bedrock exposed shallow, heavy rain erosion, a large number of soil erosion after the rock gradually prominent, showing rocky desertification phenomenon, and with the passage of time, the extent and area of rocky desertification is also deepening and development. The most direct consequence of the development of rocky desertification is the loss of land resources, and because of the lack of vegetation in the rocky desertification area, which cannot sustain water resources, it is often accompanied by severe drinking water and drinking water. Therefore, the rock and soil resources will show rocky desertification.

The human action is the main reason for the formation and development of rocky desertification land. As Dushan county, the majority of rural population, and mostly living in remote mountainous areas, the traffic is relatively backward, the living standard is lagging behind, generations inherited down the idea of backing the mountain only to solve the immediate problem of warm and cultivated in shallow land, all kinds unreasonable land resources development activities frequently, leading to a large area of rock exposed to the surface, the formation of land rocky desertification. Coupled with the mountain people's ideology is poor, the text that this is a natural phenomenon. Mainly reflected in the following aspects:

(1) Excessive firewood mining. Dushan county karst mountainous areas of economic backwardness, the development of unhappy, farmers can use very few types of energy, the people in the life of energy mainly rely on the firewood, especially in those who lack coal, a single type of energy, cutting down trees is the main cause of vegetation damage. According to the survey, in Dushan county, the energy structure of many mountainous areas, life as the main conventional energy is firewood, followed by coal, electricity and natural gas (see Table 2).

Table 2. Dushan county rural 1995 conventional energy utilization

Coal	Mine	Gas	Electricity	Natural gas
74.3%	7.8%	14.2%	3.4%	0.3%

(Note: Table 2 data from Dushan county rural conventional energy construction office)

(2) Unreasonable farming methods. Dushan county, mountain plains in the past, most of the previous agricultural production in the use of traditional slash and burn, steep slope farming, a wide range of thin farming methods. Due to the lack of necessary soil and water conservation measures and scientific farming methods, so abundant and concentrated precipitation makes the soil easily washed rinse, so that the rock exposed to the surface, resulting in land rocking phenomenon. According to the information, Dushan county, the existing cultivated land in more than 15 degrees of sloping land accounts for about 25% of the total cultivated land.

(3) Excessive reclamation. Dushan county, a small amount of land in the township, in order to ensure adequate farmland, to solve the problem of food and clothing, the local people often through deforestation and grassland cultivation to expand the area of cultivated land, planting a variety of crops, increase food production. These new reclamation land, due to the lack of soil and water conservation measures, the soil loss is serious, and finally lead to the

continuous reduction of vegetation or even eventually disappear, the ground of the soil was washed away, the stone was exposed.

(4) Deforestation. Dushan county, the original forest coverage rate of several northern towns in a large number of large-scale deforestation of forest resources, resulting in a significant reduction in forest area. Such as some of the owners of timber theft or forced the local people a large area of deforestation benefit, so that the forest resources have been severely damaged. As the mountain steep slope, water and soil loss of protection, which accelerated the development of rocky desertification trend.

(5) Overgrazing. Dushan county, the region is generally the majority of farmers in the bulk of livestock, especially in the mountains of farmers usually mostly in the mountains stocking, this process not only destroyed the forest grassland vegetation, but also caused the soil vulnerable to erosion. According to experts' projections, a goat in a year can be 10 acres of 3 years to 5 years old mountain planting was eaten.

4.3. Impact of severe rocky desertification in Dushan county

Karst mountain rocky desertification to Dushan county to bring the impact is serious, many aspects of the specific performance in the following areas:

(1) Karst rocky desertification will lead to soil degradation, soil quality decline, so that soil erosion is more serious, arable land area will be reduced. This is reflected in the karst mountainous area of Dushan county. The consequences of which are the rocky desertification of the land, the physical and chemical properties of the soil, the deterioration of the soil and the deterioration of the soil structure, which has led to the intensification of the poverty of the peasants in these areas, which in turn will further promote the occurrence of karst rocky desertification and development of. The following are the same as the '

(2) Karst rocky desertification will lead to the reverse succession of vegetation in karst areas. The tall trees are gradually replaced by typical small shrubs and grasses, which reduce the number of species in various karst ecosystems, the number of sharp decline, the vegetation structure of a single, destruction of species diversity. What is the diversity of biological inheritance, the diversity of species and the diversity of ecosystem structures are gradually disappearing, and the rate of extinction is also accelerating? The following are the same as the '

(3) The karst rocky desertification leads to the increase of the number of bare rock on the surface, the decrease of forest vegetation, which reduces the ability of regulating the surface runoff, the decrease of water conservation capacity, the increase of underground runoff, of the depletion of water resources, so that the occurrence of regional drought and flood disaster and regional microclimatic environment, the probability of greatly increased.

(4) The deterioration of karst rocky desertification caused the water resources in Dushan county to be extremely uneven in spatial distribution. The surface water shortage and the underground runoff water resources were very abundant, and the south of the serious water shortage was in the rainy It is difficult for people in mountainous areas to grow crops on arid lands.

(5) Karst rocky desertification has seriously hampered the social and economic development of mountainous areas in Dushan county, which will lead to the stagnation of the living standards of farmers in mountainous areas. The relationship between people and the natural environment is becoming more and more contradictory. Want to change the living conditions and make the ecological environment by more serious damage, so that the difficulty of governance of rocky desertification increased. The following are the same as the '

(6) Karst rocky desertification will also destroy the ecological landscape of the region, or cause the landscape value of the tourism within the region to reduce or even lose, which would have a certain advantage of the development and utilization of various tourism resources are hampered.

The impact of karst rocky desertification in the county affects and interacts in all aspects, leading to a vicious circle of population, the natural environment, and socio-economic. Therefore, it is necessary to carry out detailed investigation and comprehensive study on the occurrence and development mechanism and mechanism of karst rocky desertification, and to find out the feasible method of controlling and controlling karst rocky desertification.

5. Prevention and control measures of rocky desertification in Dushan county

Karst area rocky desertification phenomenon to the county brought serious harm, we cannot be helpless, need the people of the county unity and cooperation, to prevent further deterioration of rocky desertification. For rocky desertification, mainly to prevent the main, supplemented by governance, prevention and treatment combined, comprehensive treatment, and ultimately to achieve a good effect of rock and desertification control. However, the rocky desertification area wants to achieve good results in the prevention and control, first of all have to understand the

characteristics of this rocky desertification area, geological conditions, bedrock, soil, vegetation, what characteristics, only fully grasp its characteristics able to prescribe the right medicine. For the Dushan mountain rocky desertification characteristics of the mountain is no exception, only a full understanding of the special nature of rocky desertification can be better governance. Dushan mountain rocky desertification is characterized by: the mountain land conditions are very bad, the soil texture and fertility is relatively low, soil fertilizers and water retention capacity is also poor, mountainous soil erosion is more serious, soil stone content, the county's rocky desertification area is mainly in the hotter south, so the temperature is high. This has brought great difficulty in the management of mountainous rocky desertification, and increased the investment of various governance. Therefore, the Dushan county should be combined with the geographical conditions and the degree of rocky desertification according to local conditions to take a variety of different ways to control.

5.1. Control measures for rocky desertification in Dushan county

The measures of rocky desertification control in the mountainous areas of the county are mainly biological measures, engineering measures, management measures, social and economic measures and comprehensive management measures.

Biological measures: refers to the closure of mountain control, closing hillsides, returning farmland to forest and grass, artificial afforestation (joe, shrubs), artificial grass and other biological measures. Must be in accordance with the 'seal the main, sealing and combining', the natural ecology and economic and social benefits of the principle of unity, in accordance with certain standards for afforestation, so that mountain forest vegetation can be a certain recovery.

In the southwest of Dushan county carbonate rock mountain area vigorously advocate closing hillsides to facilitate forest, is strictly forbidden to cut down trees, steep slope digging, to strengthen the management of the mountain vegetation. Has been transformed into rocky desertification areas to grow some drought, easy to survive, the root is more developed, budding ability to update faster, like calcium and the formation of faster plants, the general tree species such as pinus massoniana, cedar, fruit trees can be planted pepper, cork, honeysuckle, rocky, palm, tung oil and lacquer tree; in addition to the economic tree species can be planted pepper, cork, honeysuckle, In addition, you can also plant some bamboo, such as jin zhu, ban zhu, ku zhu, fang zhu, mian zhu, ci zhu and shi xin zhu; such as planting grass can be considered with strong drought resistance, strong coverage, resistance to extensive management and other characteristics of the grass species are clover, leaf millet grass, tall fescue, ryegrass, white clover, fake grass, grass, sea buckthorn, acacia; and in some soil thin soil fertility can be planted with Green fertilizer crops, including: vetch, purple clouds, alfalfa, sweet grass, tamarind, tian qing, amorpha fruticosa, green ping, water peanuts, water hyacinth, water floating lotus and so on.

Engineering measures: finger slope ladder project, small water conservancy projects, water conservation, water conservation, water storage works, soil improvement and other engineering control measures.

In the karst rocky desertification mountainous areas to implement soil and water conservation projects, one of the most important is the implementation of slope change ladder, especially in some steep slopes and built reservoirs, slope change ladder project is particularly important. It can not only effectively prevent soil erosion, to achieve water retention, soil conservation, fertilizer effect, but also to improve the quality of arable land to improve the added value of the land; in the high temperature and serious shortage of rocky desertification area to build some small water conservancy projects, not only can play a role in mitigating the drought, but also to solve water-saving, water and farmers living water and other aspects of the problem; soil improvement project refers to the use of cement slurry, cement mortar, chemical liquid or its mixture Into the ground to reduce the penetration of ground water to increase the intensity of a measure.

Management measures: refers to the stop farming, grazing, logging and other management measures. The land that has been cut or slaughtered should be ordered to stop the cultivation, sparse vegetation on the slopes, forests and other places to prohibit the stocking of livestock, the deforestation of the necessary severely punished, as well as for the place has been cut down for a variety of appropriate species.

In addition to the above measures, there are socio-economic governance measures such as energy engineering, poverty alleviation projects, ecological engineering, comprehensive management and other measures (refer to the combination of more than two measures to jointly control).

In the rocky mountainous areas should be rational use of water resources, the use of bio-engineering measures to build shelterbelt system, adjust the relationship between agriculture, forestry, wood, take comprehensive measures to solve the agricultural and pastoral areas of energy problems, to achieve the purpose of controlling rocky desertification.

5.2. Prevention and control of rocky desertification occurred

Prevention of rocky desertification is mainly directed at those on the verge of rocky desertification or potential rocky desertification of the land. Prevention of rocky desertification refers to the threat of a potential rocky desertification that is controlled in a region before it is to be developed for rocky desertification. The main methods are:

5.2.1 To be well prepared

Conscientiously grasp the 'returning farmland to forests and grasslands, closing hills and trees to greening, food and food relief, individual contract' preparation. But also vigorously carry out a small area as a pilot unit of comprehensive management to basic farmland construction as the basis, do a good job of rational development and utilization of water resources; vigorously develop economic forest and grass, promote the adjustment of agricultural production structure, speed up the pace of returning farmland to forest and grass, restore and build a good ecological environment and other plans.

5.2.2 In the layout of the implementation of zoning strategy.

Most of the mountainous areas in Dushan county are water shortage, frequent drought and serious soil erosion. Therefore, it is necessary to strengthen supervision and management of soil and water conservation in these areas and control man-made soil erosion. At the same time, we should do a good job in rainwater drainage, some soil and water conservation shelter belts, the development of shrubs herbaceous vegetation, beware of rock exposed. In the areas where the problem is particularly serious, the mountains are steep, the rain is more barren land, the population is relatively dense, the steep slope reclamation is very common. In the area where the soil erosion is serious, it is mainly to focus on prevention and protection. It is strictly forbidden to steep land, soil and water conservation supervision and management, combined with the actual situation of the land to do a good job of slope farmland transformation and basic farmland construction; to ban the main governance, to carry out economic forest and forest grass plantation and other methods to prevent rocky desertification occurred.

5.2.3 Strengthen the legal system, strict protection

Rocky desertification control from the source to start, adhere to the main prevention, scientific governance. To strengthen the legal system, increase law enforcement. Expand the forest and grass vegetation, one hand to protect, another hand strict supervision, according to the law to protect the existing forest and grass vegetation, to prevent the emergence of new rocky desertification land.

5.2.4 Strengthen education and improve scientific and cultural quality

The use of scientific education means to actively promote the application of new technologies, new methods and new technology, to carry out multi-level, multi-form of scientific and technological training, publicity rock desertification hazards, the concept of governance measures. Mobilization of grassroots scientific and technological personnel and farmers, so that the broad masses of the basic knowledge and basic skills to control rocky desertification, improve the overall quality of the management, the harm will be reduced to a minimum.

5.2.5 To explore and promote new mechanisms

In the process of rocky desertification control, we must fully mobilize the government departments and the broad masses of people to manage the rocky desertification of creativity, vigorously explore, practice and promote the adaptation of the rocky desertification control effective method is conducive to ecological and environmental protection [9] ; is conducive to the mountain people out of poverty to become rich new mechanism, in the rocky desertification prevention and control construction in the formation of economic, social and environmental benefits of unity.

5.2.6 Improve the monitoring system, the implementation of dynamic monitoring

We should strengthen the monitoring system of rocky desertification in Dushan county and implement the system of periodic monitoring, fixed-point monitoring and regular monitoring, not only to grasp the rocky desertification status and dynamic development trend, but also to understand the changes of potential rocky desertification areas. Prevention and control work progress and its effectiveness to make an objective assessment, do a good job in the prevention and control of rocky desertification preparation.

5.2.7 Vigorously promote new energy instead of traditional energy

The promotion of rural biogas digesters is an effective, economical and viable approach. Due to the rapid growth of plants in rural areas, the biogas produced by crop straw, livestock waste and weed fermentation can provide new energy for the rural masses. Biogas can burn and cook, the land reduces the number of farmers to cut firewood and save money. As long as the vegetation is protected, it can reduce soil erosion and prevent the development of rocky desertification.

5.2.8 Increase publicity efforts to enhance the ecological awareness of the people

Vigorously promote the seriousness and harm of ecological deterioration, so that cadres at all levels and the broad masses of farmers in place, establish a strong sense of ecological and sense of urgency, and further enhance the rocky desertification control of the sense of urgency and responsibility, encouragement and mobilization all walks of life and the broad masses of people actively participate in governance work. So that there are images on television, radio in the sound, there are articles on the press, the project area has a monument [10].

5.2.9 Multi-sector linkage

County people's government should be the main functional departments, joint relevant departments, the implementation of unified planning, to be planned, step by step implementation. The specific responsibility of rock and desertification control layers of the implementation of the township. At the same time, the effect of rocky desertification is taken as a part of the performance of the leading cadres.

6. Conclusion

Dushan county mountain rocky desertification is not only a natural factor; the most important thing is the human factor in the leading role. According to the characteristics of climate, topography, geology and vegetation distribution in Dushan county, some specific measures such as biological measures, engineering measures, management measures, socio-economic measures and comprehensive management are put forward according to local conditions. Measures. While at the same time in areas where the rocky desertification is critical and where there is a potential rocky desertification. It is of great significance to solve the problem of rocky desertification by means of prevention, prevention and control, comprehensive management, and (1) to speed up the control of rocky desertification to improve the ecological environment and maintain the stability of the structure and function of the ecosystem. Resources can be a reasonable development and utilization; (2) to speed up the rocky desertification control can establish mountain people's understanding of the status quo of rocky desertification and awareness of prevention and control of rocky desertification control of the sense of urgency and responsibility; (3) to promote more effective governance of rock desertification, and promote the regional social and economic level, the ecological environment of sustainable development.

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