THE QUARRY LIFE AWARD

Final Report
"School of Female Leadership of Mangistau"

For Public Awareness Raising Project

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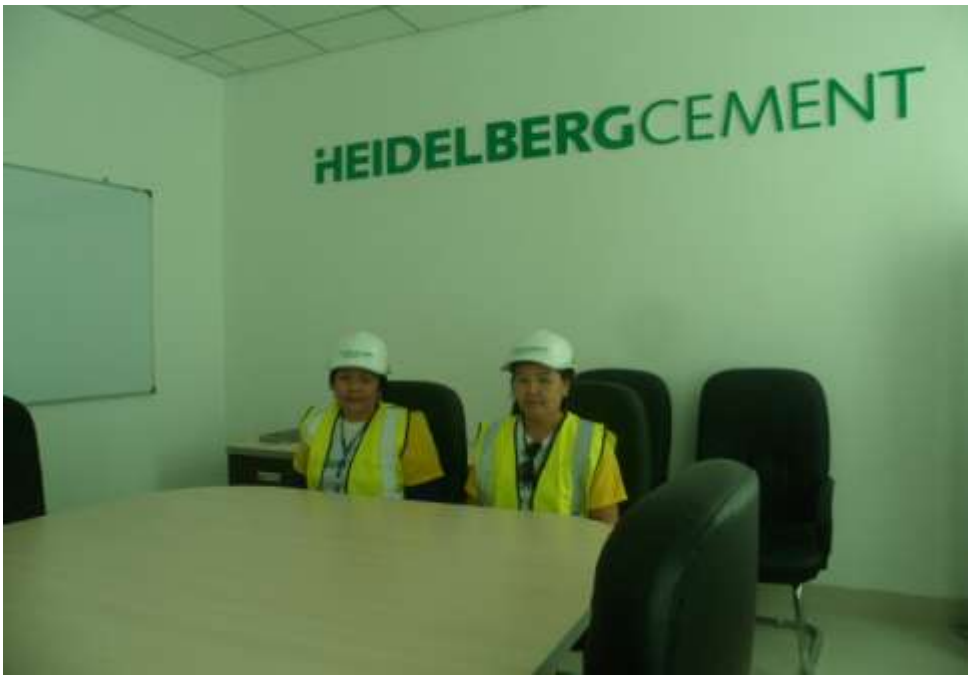


THE QUARRY LIFE AWARD

Contents

THE QUARRY LIFE AWARD

Abstract

Plants are a wealth that can be exhausted, thus, it is vital to protect them purposefully.

Nature is the basis of the human wealth catering for material and spiritual needs. Our primary task is to protect, increase and restore the riches of the nature. Plant resources are dwindling on Earth day by day. Such is also the destiny of the vegetation of Kazakhstan. The main reasons behind it are human activities, fires, changes in nature and pollution.

Human activity is a necessary condition of the existence and prosperity of the society. However, humans in the course of their activity inevitably affect the environment with undesirable consequences, i.e. there are always inevitable conflicts and great number of economic problems in the sphere of interrelation "human-environment".

Yet, as practice shows, emergencies caused by human-made disasters and severe acts of nature pose a threat to the sustainable economic development of any country, its national security and lead to a decline in the life quality of the population through a decline in the quality of their habitat.

Hazards are present in all systems that include energy, chemically or biologically active components and characteristics not conforming to the conditions of human livelihood. With that, one and the same hazard may be realized as an undesirable event due to various reasons and form a variety of environmental problems.

It is noteworthy that the damages from natural and human-made disasters are a problem that has united virtually all nations of the world in the search for its solution. In January 2004 the city of Kobe saw the World Conference on Natural Disaster Reduction that took place under the aegis of the UN in accordance with a decision by its General Assembly. The conference made a number of important decisions including the Hyogo Declaration and Hyogo Framework for Action for 2005-2015 providing for the creation of a disaster resistance potential on the state and community level. Hyogo Declaration confirmed the will of the nations to follow the strategy of decreasing the risks of various activities. The priority directions included the detection, assessment and monitoring of the risk factors of disasters and the improvement of early warning. The effort to diminish the damage from natural and human-made disasters became an element of the national sustainable development strategy of any country.

The analysis of their manifestation allows pointing out that one of the defining factors of the steady tendency of growth in the number and level of natural and human-made disasters existing in the Republic of Kazakhstan is the "human factor" manifested in the aggravation of the discrepancy between the level

of specialist and manager training and the requirements of the modern legal, economic and regulatory framework, the basic principles of republican and regional management in ensuring the safety of the population, the territories and industrial objects from emergencies and disasters.

It follows that the creation of the applied scientific basis of safety ensuring requires the development of a safety ensuring concept, the creation of an information database and the development of hazardous process assessment and management methods.

Introduction

Mangyshlak Peninsula is situated in the east coast of the Caspian Sea and is part of the territory of Kazakhstan (165.1 sq. km). At a first glance Mangyshlak is boundless, desertous space covered mostly with sagebrush. However, this impression is deceptive. The peninsula is unique both in terms of its natural diversity and its beauty.

All these barren lands occupy a fourth of the region's territory, almost four million hectares. The rest of the territory is mostly overgrown with saltwort, sagebrush and tamarisk. It is only for a short time in the spring that the desert is covered with a bright carpet of forbs – ephemerals, mostly bulbous plants. There are massifs of black saxaul. Bushes are characteristic of sands. The flora of mountain Mangyshlak is far richer: there are also plants unique for the desert zone, such as blueberry, briar, blackberry and buckthorn. In the gorges of the Ustyurt Plateau there are also natural woodlands of the desert poplar – the heterophillous Asiatic poplar. The nature of Mangystau is essentially a desert, and there cannot be any forests, fields and rivers. Shell rock and sand rocks provide the basis for everything here. They are everywhere – the legacy of the ancient ocean. Mountains and residual rocks consist of them, houses are built of them. Most of the territory of the region is occupied by the sagebrush and salt desert with spots of scrubs on brown soils: their surface is partially covered with saline fields, takyr-like alkali soils and sands with extremely thin vegetation.

The climate is strongly continental and extremely arid. The average temperature in January is −7 °C and +27 °C in July (the maximum temperature exceeds +40 °C on certain days). The precipitation amounts to some 100—150 mm per year. The climatic conditions of the peninsula are characterized by extremely torrid and very hot summers (40 - 50 C°) and moderately cold winters. There is very little precipitation: some 100 - 120 mm annually. Snow cover is unstable, and it does not snow every winter. Yet strong winds are blowing constantly; dust storms rage frequently. Despite the fact that Mangyshlak is a desert, fresh water

sources exposed as springs are no rarity here. As a rule, oases are formed here, with great trees and forbs. One of such places, Tamshaly, is situated not far from Fort Shevchenko. It is a large canyon where water trickles from a cliff, forming a lake. Trees are growing and frogs are croaking close by – an exceptionally unusual sight for a desert. There is a place not unlike this one in Saur, an abandoned village halfway between the Fort and Aktau; the trees here are even thicker and mightier.

Salt and dust storms are observed frequently in Mangystau region; the presence of salts in the atmosphere air aggravates the ecological situation in the region significantly. Due to this fact, the preservation and replenishment of the forest reserves are important factors not only of the preservation of the region's unique nature, but also of the significant improvement in the area's environmental conditions; planting saxauls will be the most effective step.

Moreover, this species of trees is the most adapted to desert conditions.

Saxaul (Lat. Halóxylon, лат.) is a genus of plants of the Amaranthaceous family. They are scrubs or small trees with a height of 1.5 to 12 m; this plant is a soil former. The saxaul fastens sands with its strong roots and stands in the way of dust storms, protecting fertile lands, rivers and canals from the detrimental invasion of sands, regulates the level of ground waters, hindering the encroachment of saline fields, contributes to the increase in the feeding capacity of the desert pastures, enriches the meager soils with organic matter. The trunk of the saxaul is never straight; the name "*saxaul"* means *splayed out*, *gnarled*. It bends in all directions, twists in unconceivable spirals, spawning unsightly, gnarled branches. The gnarled form of the saxaul is caused by its layered, compressed wood. The saxaul grows rather fast and reaches three meters, almost its normal height, by fifteen years. The appearance of the saxaul is peculiar: the trunk of the tree is gnarled, twisted and stubby; its crown is very loose, affording virtually no shade. Long green twigs, as thin as knitting pins hang down from the branches. They hang in clusters like strands of thick hair.

Objectives

The objective of our project is the propaganda and involvement of the citizens and the public to the preservation and revival of ecological climate at the territory of Mangistau with a lot of wonderful corners of nature, to put forward an initiative for preservation and careful attitude to the mother-nature. Within the project realization the actions, seminars, webinars, trainings for students and pupils and for all concerned citizens of the regions were conducted in order to increase the ecological knowledge of the population, the advertising clips about the recovery of the chalk quarry "South Shetpe" by way of planting the plantlets of saxaul and tamarisk which are more adapted to growing in the area of desert and semi-desert.

THE QUARRY LIFE AWARD

Methods

Ecological camp for students and pupils which will be supported by schools and colleges financed by the company.

- opinions;
- positive example method;
- educative situations method;
- approval method.

Conclusions

Propaganda of careful attitude to the nature among the population.

Within the project realization we visited the plant HEIDELBERGCEMENT in Shetpe. We got familiar with the employees of the plan, technological process of cement production. Safety engineer conducted the safety training for staying at the plant and chalk quarry “South Shetpe”.

Guys were inspired by planting the native shore. They started to learn saxaul planting methods.

Womens of Shetpe village and the public in the person of the local maslikhat T.Abdullayeva support the project "Public Awareness Raising ". They want our project will be realized and students and pupils do not forget about the nature of the native shore, participate in summer camp.

On conducted the lecture on participation in ecological summer camp for the pupils by methods of systematic education technology. Based on this one suggests to the systematic construction of the set of ecological education project, which reflects the interaction of big and complicated ecological, economic and social systems in the processes of ecological safety provision in the Republic of Kazakhstan. The pupils of the school having listened to the lecture attentively got interested in the participation in summer ecological camp as well as in the participation in the action "Plant saxaul!!!"

Our flyers were distributed to the participants of the seminars, lectures, ordinary residents of Shetpe village and Aktau city. Flyers of the project appeal to the participation in the action "Plant saxaul !!!” , which will be conducted since 25th of November till the 10th of December. Pupils, teachers, public figures, deputies of district maslikhat and local residents will take active part in it.

One conducted lectures and seminars for local population as well as pupils pf schools, students and non—governmental organizations of Shetpe and Mangistau region.

THE QUARRY LIFE AWARD

Comments

Saxaul is planted by plantlet in spring and by seeds in autumn. As practice shows plantlets take roots best of all but seeds are cheaper. Saxaul was not chosen by chance, as it absorbs salt well, the plant is easy to keep, it does not require watering and special care. It`s lifetime is about 40 years.

saxaul planting is carried out the following way - there are plantlets in the nursery garden, and they will be planted at the new territory. It`s easy to plant saxaul. All we need is a plantlet and a stick. One makes a pit in depth 20-30 cm in the sand with the stick where plantlet is inserted and the pit is buried.

Natural conditions are complicated but it takes roots. Our trees will provide benefits to people thus efforts were not in vain and our life was not for nothing.

The "CaspiCement" Plant was commissioned in Shetpe village, Mangistau region. The Head of the State Nursultan Nazarbayev gave start to a new object during the conduction of all-national TV- link-up «New industrialiation of Kazakhstan: The results of a half-year period 2014».

The productivity of the"CaspiCement" Plant will make millions of tons of cements of mark 300-800 a year. It was included in the state program of the forced industrial development of Kazakhstan having become an only huge cement plant in the western region.

"Today in Mangistau region a very important enterprise is at the stage of opening. We have been waiting for the commissioning of this plant for a long time as there is economic area near Morport in Aktau city. It requires a large quantity of cement. And now you will not import it from outside, you will be able to provide the region with it and probably you will export it. Congratulations with the commissioning of the enterprise!" –Nursultan Nazarbayev said.

400 new working places were created at the"CaspiCement" Plant, 155 people from Shetpe village were employed.

The program «Affordable housing-2020» is actively realized in the region. New housing will be constructed thus the "CaspiCement" Plant will be strategic for the region. The raw materials from nearby deposits Shetpe-Yuzhnoye and Ausarskoye is used at the plant. High technological production required not just for the region but for other regions of the Western Kazakhstan is supposed at the plant. These products will be exported to the neighbouring regions. The investments made of the order of 200 million Euro.

The representatives of the company «Heidelbergcement», being the investors of the projects mentioned that the cement plant in Shetpe will become one of the first plants in the world that will produce clinker, using dry chalk grinding and will become a new step in the development of cement industry. The place for the plant was not chosen by chance: there is a clay deposit quite neat, as well as chalk mountains – perfect components for qualitative cement.

The cement will be produced by dry method using the advanced, ecologically pure and energy saving technology. The enterprise will be automated fully, a newest equipment is installed there.

Shetpe is the centre of Mangistau region, a large road junction, there is a railway station, bus station, republican road Shetpe-Beineu passes through the village is the only automobile road connecting the region with the rest of the world. Shetpe village is the agricultural region mainly. Majority of cattle-breeding and gardening farms of the region are concentrated right here. There are farmers which are engaged in hothouse plants and melon growing.

Besides the agricultural production the industrial sector is under the development in Shetpe. Five quarries operates here producing crushed rocks. There is also a plant for road and construction materials. The plant launches the so called dry cement production –but it is ecologically safe and energy saving.

Twelve thousand and five hundred people live here. Gas, electric and phones are provided in the village, there is internet connection, heating and portable water.

Conclusion: Perspectives and future realization

Within the project financed by the company «HeidelbergCement» on the topic «Public Awareness Raising » LLP «School of Female Leadership of Mangistau » shall conduct the action "Plant saxaul". The action started from the 25tho of November till the 10th of December, before frosts. People say - leave a tree after you, it is more valuable than other values. Saxaul planting is a very important matter. The tree takes and important place in the life of our region. Saxaul is a wonderful feeding resource for Persian gazelles, giant day jirds and many other animals.

Intensification of natural resources use is connected with the development of the production forces often leads to an abrupt deterioration of natural medium in the region.

The life activity of human community reached today such level of existence when safety provision, self-preservation, survival both separate person and world as a whole become a problem which requires decision.

As a result of quick changes connected with humane civilization the risk of ecological and technological catastrophes, natural disasters and social conflicts is constantly increased.

All that allows to consider the safety as one of the main objectives of public and state activity and as one of the important characteristics defining the all-humane value and significancy of public relationship.

Any country passes three stages of economic development:

- Frontal economy;

- Economic development considering nature protection;
- Development considering ecological restrictions.

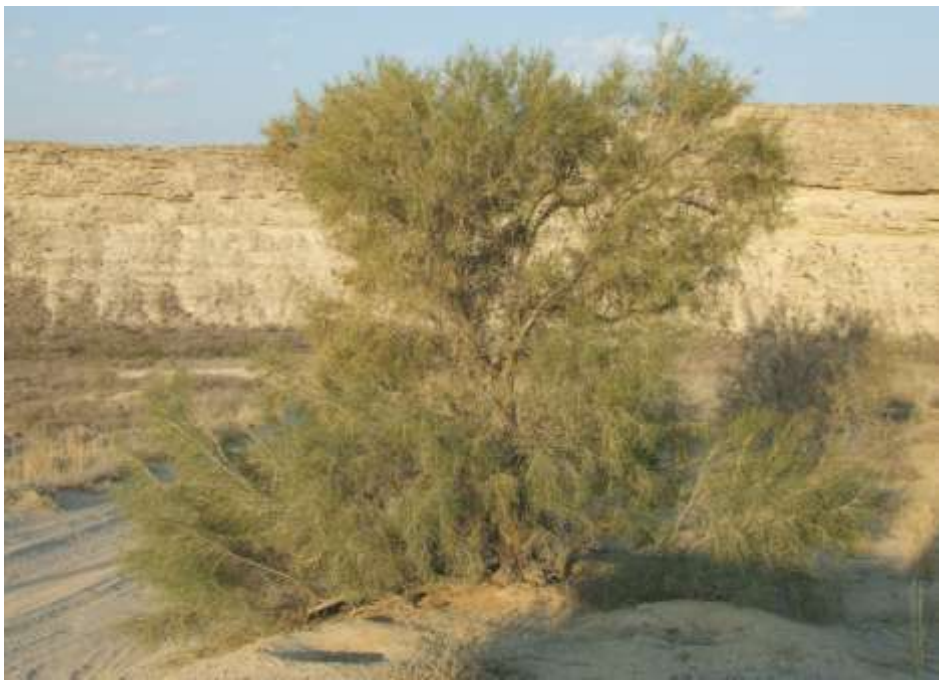
Own principle of nature use corresponds to each stage:

- economic;
- ecological and economic;
- social and ecological.

Today the republic is at the stage of economic development considering the nature protection with ecological and economic principle of nature use.

Thus optimization of nature use and environmental engineering supposes knowledge and monitoring information synthesis on definite direction of the problems under the solution, forecasting evaluation of the natural medium components and analytical processing of all engineering and economic decisions from the position of balance preservation and provision of ecological safety provision of media both human and other biological communities and representatives.

Restoration of biodiversity of chalk quarry "South Shetpe" planting local plants is the priority and defining basis today



White saxaul

Black saxaul