

Endangerment Survey of Construction Activities On Shore Line

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Extended Abstract

In view of the comprehensive governmental policies, on the grounds of exploitation developments from the South Pars Gas Field, on one hand and the impacts of the plan implementation on the environment on the other hand, the performance of impact assessments and consequences arising from regional building operations, taking into consideration the coastal strip is the principle objective of this research. In addition to which, the survey of abiding to environmental criteria, the rendering of modes to decrement and prevent the adverse impacts of activities, the preparation of monitoring environmental programs and establishing compatibility between regional activities and the environment, is another aim of this research.

The distinguished economic region of Pars Energy in southwestern Iran encompasses 10,000 hectares of land, was established in the year 1998. The South Pars Gas Field consists of 6.8 percent of the total global gas reserves and more than 38 percent of the entire gas reserves of the Country. It is one of the largest resources of the Country's energy, located on the common frontier of Iran and Qatar and is accounted for being, one of the major energy resources, of the Country.

The minimum elevation at sea level is zero at the coast and its maximum altitude is approximately 1,400 meters, in the northern heights of the region. The region is situated in the coastal drainage basin and the only regional surface water, is the Gavbandi River. Similarly, the general direction of groundwater flow is towards the sea and its surface level is high. The only active fault present in the region is the Gavbandi Fault, which is situated at a distance of less than 5 kilometers, northeast of the Naieband National Park. In this phase of the research, with the aid of geological maps and types of rocks, in accordance with reference to the Special National Strategy Plan, seismic diagrams and land slides (drifts), in three appropriate zones of durability, semi-suitable and unsuitable have been prepared.

In concern with the ground cover conditions, the regional plants are of the Polygonaceae, Leguminesae and the palmaceae families, including a few classifications of weeds and scrubs, small trees, ornamental and fruit bearing trees. Likewise, in the area of study, the bird community is of an acceptable diversity. The presence of several terrestrial and aquatic habitats has lead to a high diversity of birds in the region in having environmental potentials in the area. In the South Pars region, the Naieband National Marine Park and two creeks which are known as Basatin and Bidkhood are vital environmental banks and suitable locations for spawning and the breeding of aqua life. The proximity with oil and gas installations in the Asalooyeh region can be precarious in two ways. One, in an indirect mode, due to development activities that take place in the area, such as, constructions and littoral structures etc., and in a direct form, due to the perpetual and probable leakage of oil, gas and their derivatives into the regional waters, is possible. According to the census in the year 1996, the township of Kangan had a population of 78,318 persons and with due attention to the economic structure and migration, the area is confronted with a rise in population on the whole.

In order to assess and survey the consequences, arising from the South Pars constructional activities on the coastline, as well as the appraisal of the relative potentials and the vulnerability of the various sections, of the implementation location of the project, from a list to recognize occurrences and the matrix, so as to determine and gain an absolute reliability as to the results, two other methods have been utilized. In this study, with the help of determining the slope, soil conditions (from the viewpoint of depth), bed rock (from the viewpoint of durability), ground cover (from the point of view of density), sensitive ecosystems (creeks, the Naieband Gulf and Naieband National Park) and by taking into consideration the specifications and conditions of the limits, proportionate ecological, industrial and residential model surveys of constructions have been prepared in these three aspects and they have been utilized in zoning.

After executing the zoning, so as to evaluate and specify the amount of damages caused, due to the various activities, the checklist method was resorted to. The utilization of this method took place in the two phases of construction and exploitation, in 6 of the major or principle regional activities such as, the refinery, petrochemicals, airport, port and docks, gas transition line and transportation. In the checklist used with respect to each of the activities, only the negative consequences as to the exploitation impacts of the environmental factors have been distinguished. These consequences, from the point of view of being a collection of impacts, retrievable and likewise, its impacts on the coastline were surveyed and then the results gained were totalized. In continuation, so as to analyze and appraise the regional environmental impacts and consequences and with due attention to the results of the list, (estimations of the initial impacts), for the recognition of the intensity and importance of the impacts, as well as totalizing the quantitative facets of the impacts and a final decision-making, the impacts predicted in the list method, is in the form of a matrix, in two macro and micro proportions, in which they have been categorized and totalized.

With due attention to the results obtained from assessing the capacity, the ecological limits were divided into three zones, the first zone is of 200 hectares, the second zone is of 19,200 hectares and the unsuitable zone, is allocated to 26,300 hectares.

In comparing the ecological capacity role of the area, with the special regional development role, illustrates that, approximately 56 percent of the development is in the semi-suitable zone, and 44 percent of the development shall be conducted in the unsuitable zone. With due attention to the fact that since that the development in the region under study, shall be executed in the unsuitable environmental bed, though, due to the vast importance and aptness of the region, in continuance with more accurate surveys of the limits under study with the aid of other methods in connection with the project implementation was taken into discussion. The results of the checklist show that from between the 6 main activities present in the South Pars Development Plan Region, the refinery and petrochemicals, followed by the gas transfer pipelines, has the highest percentage of adverse impacts on the environment. Similarly, the results of the implementation matrixes of the project in the region do not qualify. Due to the outstanding economic benefits of the South Pars region and the joint participation issue, as well as the exploitation of this resource by the southern neighbors of Iran, a termination of the plan activities is not feasible. Therefore, in the continuation of this research, modes to decrease the impacts and environmental monitoring under influence, with due attention to the regional conditions have been rendered. After surveying the impacts of the mentioned plan, on the various environmental components, as well as with emphasis on pollution and environmental destruction as an adverse impact of the project on the environment, the manner to decrement the negative impacts of the project in the region has been given in brief, as follows:

Means to reduce the adverse impacts of the project on the physical environment:

- Conservation and restoration of the regional lands, reducing the impacts arising from the occurrence of inundation in the region, abiding to the 60 meter perimeter from the coast, for several constructional activities in the area, preparing the required equipments for the collection of coastal sand polluted with oil products, the utilization of suitable chemical compounds for purging oil pollution in the region

Manner to decrease the oil impacts on the biological environment:

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- Utilizing recycled water and surface runoffs, utilizing brackish or fresh water resources, Use of irrigation systems prone to slighter consumption, prevention of industrial development in the direction of the Naieband National Park, prevention of the discharge of untreated urban, industrial and agricultural sewage and wastewaters into the sea, abiding to the standards and controlling the temperature of sewage released into the marine water (sea), controlling the leakage from oil pipes and installations, including the particular oil tankers utilized for the replacement of oil produce

Method to reduce the adverse impacts on the socio-economic and cultural environment:

- Performing population scanning studies, executing special tutorial programs, so as to establish coordination between the indigenous populace, abiding in rendering priority to indigenous individuals, in relative to employing manpower

Modes to decrement the environmental pollution impacts:

- Accurate designing of chimneys utilized for pollutants, utilization of filters to decrease pollution in the flares of industrial chimneys, Siting the approved or correct industrial development, with due attention to the direction of wind in the region, sanitary burial of wastes, controlling the infiltration of pollutants into the surface waters and the utilization of sensing equipment, in regards the leakage of pipes.

The monitoring program taking into consideration the South Pars region comprises of: Survey of the quality of water resources by sampling and testing the specifications under view, topographical and landform monitoring, in order to control and regulate development procedures, measuring and monitoring sound level. Monitoring air pollution, sample taking of aqua life, taking statistical account of the amount and dispersion of terrestrial fauna and aqua life listed in environmental studies, surveying ground cover conditions by reviewing the destruction and transformation of the region having ground cover, particularly the destruction of habitats, Monitoring and control of health and hygiene in the region, including the survey of employment conditions. It is essential, that these specifications be sensed (weighted) during specific intervals of time (more so, monthly and seasonally)

In accordance with the surveys performed, rectification proposals for the decrement of destructive impacts within the entire area of study and the coastal strip have been rendered as hereunder:

Total area of study:

- The conducting of EMS Programs for the distinctive economic energy region of South Pars
- Designing effective management systems for the collection and transfer of waste matter
- Designing a suitable network for the collection of sewage and wastewater and selecting a type of treatment system
- Preparing a data base in a segregated form, in the three terrestrial, aquatic and coastal ecosystems

Coastal Strip:

- The performance of feasibility sensing studies prior to the establishment of the project
- Determining the perimeters of each of the biomes¹ before the implementations of projects, after defining the volume of activities and the type of matter discharged and loaded, with respect to the probable pollution

Key word

Environmental Impact, Persian golf, South Pars, Matrix, Check list, Assaluyeh