

## EXECUTIVE SUMMARY

The word *environment* refers to our surroundings where we live. All things, living or non-living, are surrounded by other things, hence each has an environment. For humankind, the environment means, on a broad scale ~ the biosphere, which is that portion of the earth atmosphere system which supports life, and is characterized by its existence. It includes the oceans, the continental landmasses, and the lower atmosphere. The basic structural unit of the biosphere is the ecosystem. Each ecosystem occupies a space in which homogeneous conditions prevail, regardless of scale. Area can be defined in terms of a few hundred square meters or thousands of square kilometers, and depth can vary from a few centimeters (desert soil) or dozens of meters (tropical rain forest) to kilometers (oceans). The components of the environment are linked. No component exists in total isolation, and nothing can be changed without affecting something else. Consequently, the environment cannot be assessed simply by examining its components in isolation; instead, they must be considered as parts of the whole. This concept is crucial in understanding the role which humans play in affecting their environment. People are an integral part of the environment, and are active participants in many ecosystems. Indeed, every aspect of human interaction which may be it social, economic, or physical; can be considered to affect the ecosystems of which we are a part. In other words, we affect the functioning of our environment through our daily actions.

As we change the nature or intensity of our activities, the natural equilibrium of our environment must shift to accommodate these changes. Likewise, as systems change around us, and in response to us, we must accommodate them. Our actions have consequences not only for our immediate environment, but for us as well; anything we do to degrade our environment will generally affect our well-being later on.

Key characteristic of the environment is its compromise between evolution and balance. This dynamic equilibrium is a reflection of the interactions between and within ecosystems. As disturbances arise, a system is thrown off temporarily. It then begins the process of establishing a new balance, which may or may not be the same as before. The amount of time required to re-establish a dynamic equilibrium may range from minutes to tens of thousands of years, depending on the scale of the disruption and the relative fragility of the ecosystem. Road construction and traffic operations, if undertaken without a proper

understanding of the relationships inherent in environmental function, can be accompanied by serious disruptions to the environment, from which it may take a long time to regain equilibrium. In human terms, this may mean that generations must function in a debilitated environment and suffer many possible associated socio-economic hardships and financial losses.

The existing proposed Road development project has some major environmental impacts. Some of the major environmental impacts of the road project include damage to sensitive eco-systems, loss of some productive agricultural lands, accelerated urbanization, and introduction of diseases. Since environmental impacts from road development are quite common, likewise projects usually call for comprehensive environmental assessment studies. As such, substantial time and efforts have been utilized to identify potential impacts and options for minimizing them to consult with various groups who have an interest in the project and to develop and implement mitigation plans. In addition, contract clauses covering work procedures and staff training would need to be prepared by CDA; and work processes in relation to roadside communities, flora, and fauna would need to be given considerable attention.

The consultant thoroughly understands the assessment process and coordinated it with road planners, designers, and contractors of the forthcoming construction activities, allowing sufficient lead time and has simultaneously proposed funds for the necessary additional steps. This is not a new scheme but many such schemes have been previously completed by CDA whose staff are able to recognize potential environmental concerns; they know when to call in specialist experts; know how to specify and manage their work, and understand how to implement mitigation plans and environmental contract clauses.

To meet the demands of the EIA process, usual skills were exercised in the area of consultation with the affected residents, interested members of the public and government departments, and other organizations (known collectively as the stakeholders). While CDA staff are generally quite responsive to the concerns of these stakeholders on engineering issues, the dialogue on environmental matter was expanded by the consultant to include a broader range of topics. The CDA is well equipped to address varying institutional and cultural needs and differences.

When planning and executing EIA for the proposed road, proponent has been made aware through this report that the impacts associated with this new road project are significantly different than those rehabilitated road that were mainly

pertaining to central Islamabad. The key difference is that, for this new project, the focus is on preventing impacts, whereas for the existing or upgraded road projects in Islamabad, the focus had been generally on rehabilitating and mitigating further impacts.

It is pertinent to differentiate here between projects proposed for mainly rural settings versus those planned for primarily urbanized areas. Road developments in these two environments present notably different problems. In the rural setting (as the present case is since the road is expanding into semi rural area), the key impacts usually revolved around removal of some productive agricultural lands and the opening up of previously inaccessible, or marginally accessible, territory into a large scale resource harvesting. Introduction of new sources of noise is an issue in the existing rural settings where ambient noise levels are typically low. Furthermore, because the affected rural life is so closely integrated with the biophysical aspects of the environment, issues such as water quality and biodiversity conservation deserve special consideration.

As the proposed road is opening up into the urban setting, i.e., Islamabad, where population densities are higher and the connection to the biophysical environment is less significant, the dominant impacts are somewhat to do with a minute displacement of people and their homes, general neighborhood disruption, local air-shed contamination, and noise.

Consultation with the communities of both urban and rural locations enabled the consultant to identify potential impacts as well as local sources of information and knowledge; highlighting communities' concerns about the effects of road changes on lifestyles and welfare; and to encourage participation in the development of workable solutions.

The existing proposed road project is the "mixed" rural-urban project, as it does not simply stop in the countryside but traverses and ends in the urban area of Islamabad; hence included in the EIA.

In this report, a full environmental assessment carried out by the firm has been explained (which yields an environmental impact statement or "ES"); and consists of a rigorous study that involves a thorough documentation of existing conditions, an identification of impacts, and a comparative examination of impacts arising from the proposed road project alternatives.

For a new facility (likewise the existing proposed road project) the focus would need to be on the proper technology and siting. The proponent would need to:

- justify the need and the use of a preferred technology;
- describe the actions taking place during each of the main phases of a project (construction, operation, and maintenance) which could lead to environmental damage (elaborated in this report);
- prepare alignment drawings which show the location of the facility relative to the local bio-physical and socio-cultural environmental features;
- identify the potential impacts (as described in this report) of the facility relative to surrounding land use within a 5 km radius/corridor of the facility; and
- formulate a plan to prevent anticipated undesirable impacts from being actualized (as described in the report).

The present EIA undertaken generally has three objectives:

- to present to managers and decision makers a clear assessment of potential impacts which the project may have on overall environmental quality;
- to apply to the project a methodology which assesses and predicts impacts and provides;
  - a) the means for impact prevention and mitigation,
  - b) the enhancement of project benefits, and
  - c) the minimization of long-term impacts;
- to provide a specific forum in which consultation is schematically undertaken in a manner that allows stakeholders to have direct input to the environmental management process.

We understand that this Project-specific EIA is an excellent preventive planning tool, provided that it is implemented early in the project development sequence. It allows the Capital Development Authority Islamabad to familiarize them with the environmental status of the proposed site and anticipate any environmental impacts that may arise from the proposed road project. It highlights likely design problems, thus permitting the Authority to make early changes and avoid costly delays at a later stage; and integrate the project into the existing environment.