



THE VALUE OF ENVIRONMENTAL IMPACT ASSESSMENTS

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Abstract

The environment and the economy are inextricably linked. Today the environmental, economic, and social impacts associated with project and program decisions are at times of such a magnitude and duration that they exceed our ability to understand, let alone mitigate them. Energy production, distribution, pricing, policies, end uses, and externalities demonstrate the need for wise planning and informed decision-making.

International cooperation, based upon mutually shared respect, responsibility, and innovative solutions is an essential component of addressing contemporary issues, impacts, and opportunities. Both Egypt and the United States have laws requiring environmental impact assessments. Just as Egypt can learn from our successes and failures in the environmental impact assessment field over the past 36 years, the United States and other nations can learn as Egypt develops and innovates its own approaches and solutions.

1. INTRODUCTION

"The environmental crisis is an outward manifestation of a crisis of mind and spirit. There could be no greater misconception of its meaning than to believe it to be concerned only with endangered wildlife, human-made ugliness, and pollution. These are part of it, but more importantly, the crisis is concerned with the kind of creatures we are and what we must become in order to survive."<sup>1</sup>

The impacts associated with environmental and economic decisions cross political, social, cultural, resource, and geographic boundaries. For example, our production, distribution, and use of energy directly and indirectly impacts not only our economic and physical environments, but also our social and cultural environments.

<sup>1</sup>Lynton Keith Caldwell, UNEP publication for the United Nations Environmental Earth Rest Day, 1-3 June, 1990.

We live in a world of tradeoffs where, as economists point out, there is no such thing as a free lunch. We can pay now or pay later; but as a people and a species, we will collectively be held accountable for our actions. We will either enjoy or suffer from the consequences of our choices, whether those choices are made actively or passively.

In the United States, our energy-related choices have impacted our cultural, social, psychological, moral, and spiritual qualities, as well as our natural environment. When environmental, social, and cultural impacts are assessed along with our technological, scientific, and engineering choices, we discover some dramatic and surprising consequences. For example, our choices (both conscious and de facto) of the automobile, cheap energy, and consumerism have led to suburbia, television, refrigerators, freezers, and computers. These, in turn, have contributed to social and psychological isolation as people less frequently walk to local markets or meet with friends and family for entertainment. Families are often spread over hundreds or even thousands of miles. Workers may isolate with their computers at work and their televisions, VCRs, stereos, or computers at home. Children may know television personalities and day care workers better than their parents. Drug use and violence increase as people feel less connected and less responsible.

In Egypt, choices regarding energy, transportation, and pricing have resulted in dramatic increases in lung diseases and lead poisoning. This threatens the physical and mental capacity of increasing numbers of Egyptian citizens. Similarly, Egypt's valuable antiquities, which are a global heritage, are deteriorating from pollution. This threatens Egypt's billion dollar tourism industry which is its second largest source of foreign exchange. Another example is Egypt's beautiful Mediterranean and Red Sea coasts, marine resources, and fisheries' industry which are being negatively impacted by environmental contamination.<sup>2</sup>

The environmental, economic, and social impacts resulting from the choices our industrial and technological societies make can overshadow our understanding and our abilities to mitigate them. Today's impacts can be irreversible and irretrievable with consequences of greater severity and duration than in the past. Over the long-term, these projects' costs can exceed their benefits. Yet, for a project or program to truly succeed and improve the quality of life of its citizens, both current and future, it must reconcile and resolve these natural, human, and economic values.

<sup>2</sup>Environmental Action Plan of Egypt, Egyptian Environmental Affairs Agency, 1992, pp 18, 68, 69.

Nowhere are these interrelationships better demonstrated than in the field of energy, and its production, distribution, pricing, end use, and externalities. Often the solutions, which best respect the environment and society at large are also superior from an economic perspective. The most profitable and least costly sources of energy are conservation and demand side management. For example, by changing rate structures to reflect the true costs, resources will be conserved by existing consumers and thereby available to meet future demand. These sources and others such as solar and wind energy and natural gas are less damaging to the environment, allow social choice, financial flexibility, and are sustainable.

## 2. INTERNATIONAL COOPERATION

International cooperation is increasingly essential to understand and assess these environmentally, socially, and economically linked issues. A type of cooperation is needed which is not based upon the double standard of one group of nations telling other countries or regions that they should not follow in their resource intensive footsteps. Rather, a type of cooperation is needed which is based upon mutually shared responsibility, respect, and solutions. A flexible cooperation is required which learns from successes and failures and honors differences as well as similarities.

As we enter the next millennium, we face both a global environment and global economy. For example:

- o By the year 2000, it's estimated the world will have used one-half of all of the oil ever found.
- o Right now there is only one private car per every 1,700 Chinese. If China were to use as much oil per person as Japan now does, it would need an amount of oil (61 million barrels daily) which is nearly equal to current total world production. In addition, China's population is expected to grow from 1.2 billion currently to 1.6 billion in 2030.
- o The number of motor vehicles in the greater Cairo Area has increased 10 percent per year from 1980 to 1990, while electricity consumption grew by almost 9 percent per annum during the same period. Egypt's population is estimated to increase from approximately 58 million currently to 86 million by 2025.
- o During the September 1994 International Conference on Population and Development held in Cairo and attended by 179 nations, the participants agreed to a plan to stabilize world population at 8 to 9 billion by 2050 (compared to 12 billion if population growth continues at its current rate).

Clearly, we must work together to address these future global challenges. If developing nations decide to implement technology in the same way as the U.S., the results will not be sustainable. We must change the patterns, paradigms, and possibilities of our collective lifestyles. Otherwise, we should not be surprised when we end up with predictably negative outcomes.

### 3. INNOVATIVE APPROACHES

Just as the symbol in Chinese for crisis also signifies opportunity, within our global challenges lie our opportunities. As we come to understand our environment cradles our economy and that quality of life is about more than per capita income or gross national product, new doors will open and old obstacles will be overcome.

Like the designs of nature, "the best human designs represent interconnectedness, flexibility and feedback."<sup>3</sup> In the United States, we are beginning to learn that we need to use existing energy more efficiently and increase the development of renewable energy sources. We are realizing the cost of energy and other resource development depends on what costs are counted. Often we have designed our systems and priced our resource use without doing a full accounting of these costs and externalities associated with our choices.

Hindsight, as we know, has 20/20 vision. It has become increasingly clear in the United States that we have created laws, policies, and institutions that prejudice our production and use of energy in ways that run counter to economic and environmental efficiency. We now better understand that our industrial and energy waste represent lost profits and competitive opportunities. In response, we are moving away from regulated monopolies towards managed competition as a way to deliver lower cost energy. We are also trying to integrate externalities into our decisionmaking and financial systems.

Cleaning up contemporary pollutants is so costly and difficult that pollution prevention and sustainable design have become the best pathways for U.S. public and private sectors. "In the past, we've tended to look at symptoms of environmental degradation such as water pollution and hazardous waste sites and think that they are the problem. Now we're beginning to look upstream from the symptoms to the root causes."<sup>4</sup>

<sup>3</sup>Deep Design, by David Wann, p.3.

<sup>4</sup>Deep Design, by David Wann, p.6.

Now major U.S. Corporations, such as the 3M Company and General Motors, are preventing pollution and saving money. They are reducing energy consumption, air and water emissions, resource inputs, and solid and hazardous waste. They are also integrating recycling and reusing more of their final products. Even the White House in Washington, D.C. has installed energy and water efficiency devices throughout.

As we begin to move toward increased efficiency, renewable energy, and pollution prevention, it is apparent the greatest hurdle is not the lack of available technology. Rather, it is taxes, tariffs, policies, financing, institutional entrenchment, and political will which are the greatest barriers. Sustainable development and redevelopment are key to reversing national as well as global pollution problems.

With creative and innovative design, we can have essential human values co-exist: economic, environmental, and social. We can develop and implement solutions which cost less, pollute less, and will succeed for the long term. Nations such as Egypt have the opportunity to set new standards and approaches to energy and industrial development. When emerging nations are not bound by old infrastructures, designs, and policies, they can make fresh choices that will better carry them into the future. If a nation has started down a traditional path, it still has the opportunity to make different, more informed decisions. By avoiding some of the traditionally short sighted choices which have been made by other nations, developing countries can create new alternatives from which we all can learn.

As we search for solutions, we must consider our underlying purpose and need and a wide range of alternatives. The environmental assessment process can help us clarify these considerations. For example, if the goal is to increase the world's food supply, one approach is to clean up and better manage water supplies. Much of the world's food supply is effectively lost through dysentery. World Health Organization statistics show 90,000 annual recorded deaths linked to water-borne diseases and millions more suffer from water-borne diseases. In Egypt, over 2.4 million feddams (6 million acres) of irrigated agricultural land suffer from salinization due to poor water management.<sup>5</sup> We must recognize the interrelated nature of resources and the consequences of our management choices.

<sup>5</sup>Environmental Action Plan of Egypt, 1992, p. 23.

#### 4. THE UNITED STATES NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) AND EGYPT'S UNIFIED LAW FOR THE ENVIRONMENT

Relative to environmental, legal, and regulatory approaches, there are many ways our two nations can share and learn from each other. In 1970, NEPA was signed into U.S. law. In 1994, the

Unified Environmental Law was signed into Egyptian law. Both laws are fundamental laws which require the assessment and consideration of the environment in the decision-making process. They both provide a foundation on which other environmental laws and understandings can be built.

The Council on Environmental Quality (CEQ) regulations, which implemented the specifics of NEPA, followed the passage of NEPA. Subsequently, each federal agency developed their own regulations to implement NEPA as required by the CEQ. NEPA preceded numerous other U.S. environmental laws such as the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act.

NEPA provided the philosophical foundation for subsequent U.S. environmental laws and regulations. With the passage of NEPA, environmental values were required to be considered along with more traditional economic and engineering values for all major federal actions. This was a fundamental change in thinking which is essential if a society is to address and integrate its environmental responsibilities.

The CEQ regulations and NEPA also require the use of a interdisciplinary team which includes environmental, social, economic, and cultural resource specialists. This has helped include other perspectives, values, and information in the decision-making process. It also has changed the values of many federal agencies over time as these new voices have risen through the ranks.

An equally important component of NEPA and the CEQ regulations is that they required public involvement from the earliest point of the process. This includes full public disclosure through the development and distribution of environmental assessment documents, mandated public meetings, and required response to public comments.

NEPA and the CEQ regulations require the lead federal agency or agencies and the project proponent to consider the fundamental underlying purpose and need of a project. The environmental assessment must include a full range of reasonable alternatives (including the "no action alternative") and their associated direct and indirect, long-term and short-term, and on-site and off-site impacts. Potential mitigation measures (including avoidance and minimization) must also be fully considered.

These key components support and reinforce one another. For example, the development of a broad underlying purpose and need permits the consideration of a broad range of creative alternatives. These alternatives, as well as mitigation measures, can be developed by the interdisciplinary team with diverse public input and feedback.

Properly done, this approach leads to better decisions, better projects, advancements in scientific and resource knowledge, cost savings, innovations, and environmental protection. Poorly done, it can lead to unnecessary paperwork justifying decisions already made, unproductive legal delays, additional costs, and frustration.

Article 1 of the Egyptian Unified Law for the Environment requires the use of environmental impact assessments (EIAs) which are defined as, "Studying and analyzing the environmental feasibility of proposed projects, whose construction or activities might affect the safety of the environment, with the aim of protecting the environment."<sup>6</sup> Law Number 4 also created the Environmental Affairs Agency (EAA) as Egypt's key environmental planning, policy, and implementation agency.

Among EAA's responsibilities are several related to environment impact assessments such as:

- The setting of principles and measures for environmental impact assessment of projects as well as environmental pollution standards (Article 5).
- The review and comment (within 60 days) on EIAs prepared by the competent administrative or licensing authority (Articles 19, 20, and 21).
- The review and oversight of environmental impact data submitted by owners of establishments (Article 22).
- The supervision of environmental monitoring networks (Article 24).

There will necessarily be both similarities and differences between Egyptian environmental impact assessment policies and practices and those of the United States. It will be helpful for Egypt to learn from U.S. experience just as the U.S. and other nations should support and learn from Egyptian experience.

<sup>6</sup>Egyptian Unified Law for the Environment (Law Number 1, January 1994), p. 9, Article 1 (36).

## 5. LESSONS LEARNED IN THE UNITED STATES

In the U.S., NEPA and its implementing regulations have resulted in successes and benefits as well as some mistakes and costs. Properly applied, the environmental impact assessment process (which resulted from NEPA) has caused our agencies, planners, and public to more deeply consider:

- The underlying fundamental purpose and need for a project or program.
- A broad range of reasonable alternatives (including the required "no action alternative") and mitigation measures developed with broad public input for a project or program.
- A process and information source which is open to all interested parties and is responsive to public concerns and suggestions.
- Improved environmental and scientific understanding of our resources, their vulnerabilities, and their interconnectedness.
- Better informed decision makers, publics, and decisions which lead to environmental and cost savings.

Our environmental impact assessment process has had its setbacks and limitations which must also be considered. For example, sometimes:

- It has been too costly, benefitting lawyers, scientists, special interests, and bureaucrats more than the environment.
- Public input has been requested only to be later ignored.
- Data has been collected but not used and studies have become an end in themselves.
- It has been too cumbersome and confusing or used to justify decisions already made.
- Measures of success have not been determined and feedback loops have not been established relative to implementation.
- When it has not been well linked with enforcement or follow-up, there have been inconsistencies between what is written and what is actually done.

Yet, for all its flaws, our environmental impact assessment process has been one of our most successful planning and decision-making tools. It has helped to change, clarify, and challenge our relationship with our environment.

## 6. CONCLUSIONS

We have an expression in the United States: "Be careful what you ask for because you just might get it." Perhaps it is time we all ask, what is it we truly want and need in life and why? And if we fulfill our desires, what will it mean for us all?

I believe the environmental impact assessment approach is an important tool which can help us both ask and answer these questions. We can use it to frame our options, consider their implications, and work with and thereby better serve the public. It will be helpful for us all to understand how the environmental impact assessment process is adapted not only in the U.S. and Egypt, but also worldwide.

"The man who sits on the ground meditating on life and its meaning, accepting the kinship of all creatures and acknowledging unity with the universe of things infuses into his being the true essence of civilization."  
[Lakota Chief Luther Standing Bear].

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