CONTROLLED ADAPTIVE NATURAL RESOURCES MANAGEMENT

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Summary

Increasing world population and depletion of natural resources due to imbalanced development necessitate a new approach to development and the use of natural resources. Adaptive controlled planning, design, and management of these precious resources seems to be a more logical approach towards conservation of resources and

sustainability of development. This new approach requires careful understanding and consideration of all aspects of a proposed site and suggesting that the form of development will be in harmony with existing natural forces acting on the site. This approach takes a long-term view towards development and its impact on life and the environment.

1. Controlled Adaptive Natural Resources Conservation

The industrial revolution in the early nineteenth century spurred enormous growth in the industrial base economy throughout the world. From Europe to Japan the pattern of economic growth has been the same: the exploitation of natural resources to fuel industrial growth. In the twenty-first century, we are beginning to question the wisdom of pursuing this pattern of development. Amidst monumental problems that range from depleting resources to the break-up of families, the current style of development is no longer seen as utopian. Perhaps now, as E.A. Gutkind has suggested, humankind is entering another phase in our relationship with the environment, one of mutual respect, admiration, and partnership.

Natural resources conservation has become a major issue worldwide with governments and nongovernmental organizations (NGOs) alike taking a serious look at it. At stake is the ability of humans and other species to continue their existence on this planet. Even though still emotionally charged and fraught with problems, there seems to be a consensus that this has to be tackled in a comprehensive way and at the global level. While policy makers haggle over equitable and just solutions to the use of natural resources, time is ticking away as we drift towards an irreversible situation.

What is wrong with the way we have developed in the nineteenth and twentieth centuries? There is little doubt that we have come very far in achieving a higher standard of living. Our achievements in the field of sciences and technology have enabled us to step foot on the moon and take a peek at other planets. We have diminished or eradicated most major diseases, such as the plague, malaria, and tuberculosis. The threat of famine may soon be a thing of the past due to efficiency in food production. Nevertheless, two factors indicate that all is not well. One is the incredible rate of population growth. The world population will reach 12 billion by 2050. More people will mean a higher consumption of natural resources, including land and space. Another factor has to do with the way we live. Urban living, which is and will continue to be the preferred human habitat, is very energy inefficient and is not attuned to the requirements of nature. Modern cities and the urban lifestyle consume enormous amount of energy and natural resources. Compounding these two problems is the inefficiency with which natural resources are utilized. Current consumption patterns and the enabling technologies produce so much waste in their production and consumption.

Clearly, we need to adopt a more holistic and sustainable approach in the handling of these precious resources. Land, water, minerals, and other nonrenewable natural resources can no longer be treated as just another commodity to be traded and consumed. The environment is a medium that sustains our lives. We need to look back at the wisdom of the ancients where people and nature had a more equitable and

harmonious relationship. Many native cultures still coexist well with their environment. Despite lacking modern conveniences, these people have survived by adapting themselves to the environment in which they live. Respect for the law and processes is still a part of their lore and culture.

Societies can no longer afford to continue the present relationship based on the dualism of humans and nature that has led people to exploit nature for their own ends. We must seek ways where this relationship is based more on mutual benefits. Even though this new paradigm has not been largely accepted but there have been indications that it is slowly making consistent inroads into the minds of professionals and the common folk. A number of new land development projects, for instance, have begun to look at the impact of such developments on the natural environment. Land development professionals such as landscape architects have begun adopting a less destructive approach to development. Conservationist movements, too, have been getting louder and more insistent.

Land planning communities have adopted a more holistic approach to land planning and management based on Aldo Leopold's land ethic. The profession of landscape architecture, in particular, promotes the planning, design, and management of the land based on a harmonious relationship between development and the natural environment. By developing a more balanced approach, they hope to create a high quality living environment that will be both efficient and sustainable. Other disciplines dealing with land development, such as planning and architecture, are following suit. This new ecological and adaptive approach to development promises a better solution to the problems faced by our environment due to overpopulation, insensitive and unwise development, and the depleting of natural resources.

However, a number of problems need to be addressed if we are to make this controlled adaptive approach function successfully. Firstly, it needs a commitment to work together. Depending on the development, the stakeholders may range from policy makers to the general public. Mature thinking, mutual trust, proper understanding of issues at hand, team spirit, and good leadership are essential to the success of this venture.

Secondly, there is bound to be a higher initial investment. This arises from the need to study thoroughly issues involved in any development. This may require the involvement of a greater number of experts. The process, too, may consume more time before any consensus can be reached. Nevertheless, the greater initial costs, both monetary and in time, spent on such studies will avoid more expensive costs later in damage to the environment.

The lack of vital information has been mentioned in many instances and is another major challenge to comprehensive planning. This is especially relevant in countries with a developing economy. These countries lack the resources to gather or have access to the information. Ironically, these are the countries where major development projects involving natural resources are needed to fuel their still lagging economies. There should be a greater effort by richer economies to help these countries plan the use of their resources wisely by providing support for gathering information.

New technologies that can assist in the adoption of this approach to planning are developing but may not be readily accessible in some sectors. For instance, the use of remote sensing, satellite imagery, and geographic information systems (GIS) are beginning to have impacts on large-scale land planning. These tools, while helpful, are still expensive. Furthermore, some of these new techniques are at the cutting edge of technology and not user-friendly just yet.

Last but not least, shifting a paradigm requires a change of attitudes. Change is a time-bound process that requires commitment. This may present the greatest challenge to controlled adaptive approach to planning, design, and management of natural resources. Perhaps, greater awareness on the real need for this new approach will be a good beginning to promote its adoption.

2. Need for Controlled Adaptive Approach

The current exploitative approach to the development of natural resources has resulted in well-documented environmental degradation. This includes land, water, and air pollution of worrying levels. Illegal disposal of toxic waste can render a productive land barren for generations. Similarly the deliberate release of carbon dioxide (CO_2) and chlorofluorocarbons (CFC) into the atmosphere threatens life through global warming and the worsening ozone hole. Our seas are not free from permanent damage through oil spills and other pollutants. All of these are stresses on our natural environment in addition to the already damaging activities brought about by natural resources extraction and utilization.

In addition to environmental degradation, the exploitative approach to developing natural resources has also created profound social problems. This arises when people are displaced during the development process. The rampant displacement of people, especially natives and the poorer sector of society, has made this sector of the population poorer and more marginalized. Removed from the landscape with which they are familiar, these people face uncertainty. Lacking new skills that enable them to adapt to the new environment, they become social misfits and a burden to society. In the case of indigenous populations, the breaking up of a social structure due to displacement will also result in the loss of native cultures and a net loss to humankind.

The current approach to development also encourages globalization. Globalization in itself is good where a new world community will arise with promises of a more equitable world. However, it does present a threat to cultural diversity. The present paradigm of development, which is a legacy of the industrial revolution, is slowly engulfing other non-industrialized cultures. The promise of a cheap and easy way of developing resources for a high economic achievement is very attractive to the new emerging economies. Many developing countries are submitting to this instant cure-all. The price to pay is the disappearance of their indigenous cultures.

A great energy crisis is threatening the world. The present style of development consumes huge amounts of energy. As population grows, cities mushroom and industries become the stalwarts of progress. Present energy resources will not be able to keep up with the demand. Alternative energy sources such as wind, solar, and

geothermal energy are currently being sought out. However, their efficiency and effectiveness are still in their infancy. Meanwhile, nuclear fuel, which promises to supply the world with infinite energy, seems to be life-threatening in itself. Without proper handling, these are not yet a widely accepted energy alternative.

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Biographical Sketch

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