
Editorial

Strategic Planning for Energy and the Environment: Theories, Practice and the Future

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Abstract

The purpose of this paper is to illustrate the importance of strategic planning in general and its application in energy and the environment in particular. In the contemporary world, planning is so common that we cannot even manage everyday life without plan. Strategic planning is a formalized, structured, planned way to manage planning from formulation to implementation, evaluation, and control. When we talk about energy, we mostly talk about the various forms (physical) of energy such as nuclear, thermal, chemical, electrical, or other forms which create and transform energy. The sources of energy can be solar, wind, water, nuclear, electromagnetism or related to fossil – coal, gas, petroleum etc. The world rarely has sufficient energy therefore, strategic planning for energy is essential to sustain and maintain the energy supply and demand. The environment is our entire surroundings including the land, air, water, or the combination of all biotic and abiotic factors of the planet. We have ample evidence that anthropogenic disturbances have already destroyed the balance of nature, as a result the global climatic pattern is changed, and there has been unprecedented damage to our ecosystem. Such severe impacts

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due to global environmental change mean that it is extremely urgent that we formulate a strategic plan (or plans) to protect the environment. There are as yet no alternatives for Planet Earth, therefore we need planned strategies to minimize the environmental problems. This review outlines why strategic planning is so important for the future of energy and the environment since they go hand in hand.

Keywords: Strategic planning, climate change, energy, environment, development, united nations, environmental problems, epistemology, knowledge gap.

Introduction

The clear pathways of planning and thinking about planning are documented in the writings of Plato (429–347 BC), Aristotle (384–322 BC), Hippodamus of Miletus (498–408 BC) (Mazza 2009). However, modern theories of a specific and driven planning process do not flourish until after 1760 when industrialization has started. By the 19th century as urbanization increases various city beautification movements started including the City Beautiful Reform/Garden Cities (1890–1900s), City Scientism Movement 1933–1945; Radicalism and Activism in planning etc. (El-Kholei 2015). One most used model in planning is the “Comprehensive Rational Model”, which has its origins in enlightenment epistemology as it is centered on decisions and principles that are based on reason, logic and scientific facts with little or no emphasis on values and emotions. However, there are several other approaches in planning processes such as Mixed Scanning; Incrementalism (Non-Planning); Radical/Progressive Planning; The Reflective Practitioner; Normative vs Positive Theories of Planning; Post-Modern Planning etc. The predominance of the Rational planning model with its emphasis towards scientific method and its decision-making process initially hindered strategic planning as it was mainly concerned with economic benefits rather than social or environmental ones.

The strategic planning model, originally developed in the private sector, is among the latest versions of CRM. Bryson and Roering (1987) investigated the use of strategic planning in the public sector. At the community level, we make plans for community development (social, political, economic, cultural, religious etc.) in concrete way with fixed targets to be achieved in a given time. At the national level, the government makes fiscal plans and policies, which can create the social, political, economic, and cultural satisfaction to its

citizens. “Planning can and should be part of the whole way societies manage themselves, allocate resources, check, monitor and assess what is going on and then reconsider their options” (Edwards 2006).

“The goal of planning is to maximize the health, safety, and economic well-being of all people living in our communities. This involves thinking about how we can move around our community, how we can attract and retain thriving businesses, where we want to live, and opportunities for recreation. Planning helps create communities of lasting value” (American Planning Association 2021). <https://www.planning.org/aboutplanning/>

In simple terms planning is the pathway to obtain a desired goal, and strategy is the knowledge about how to implement and follow the pathway. In practical terms the strategy is the understanding about what, why, when, how, where and for whom the planning is happening. So, we can see that Strategy covers the ground from the planning phase through to the implementation phase for any particular program or project.

There is a long and visionary history of planning. The basic message is that society cannot successfully sustain and develop until or unless it follows some sort of planning pathway.

Planning plays an important role in strategy development, including how organizations formulate major problems, set objectives, analyze alternatives, and choose strategies (e.g., Armstrong, 1982; Dutton and Duncan, 1987; Hopkins and Hopkins, 1997; Miller and Cardinal, 1994; Powell, 1992; Shrivastava and Grant, 1985 as in Wolf, and Floyd 2013:2).

“Planning theory and practice has evolved from a concern with “scientific efficiency” in the mid-1800s to a recent emphasis on rationalized decision-making. The period between has seen a continuing shift in focus including the “city beautiful” movement of the late 19th century, the pragmatists/technicians of the 1920s, the national resources concern of the 1930s and 1940s, and the rational planning movement of the past three decades. The rational planning model (RPM) is a 5-step process that involves setting goals, defining alternatives, comparing alternatives, making a choice, and implementing the selected alternative. The RPM has three major problems, however: limited knowledge; the community welfare function; and implementation. Failures because of these problems have led to various attempts to modify the RPM. Although there is no single, best theory of planning, the planning function continues to play an important role and to evolve in response

to continually changing societal needs" (Dzurik, and Feldhaus 1986:37).

Planning is knowledge grounded, and needs step by step procedures to meet goals. "*Planning's harshest critics have defined it as consisting of no more than a fairly rigid, mechanistically applied sequence of prescribed steps often requiring huge amounts of information, power, and authority to complete; and typically divorced from processes, methods, and mechanisms of implementation, such as budgeting*" ((Bryson et.al., 2009:174). However, planning can be simply an acceptable pathway for society, which allows societal members to utilize their own ideas to mark their destiny in a planned way, if there is public participation approach in planning process. Normally, planners try to promote collective interests of the community; consider the external effects of individual and group action; improve the information base for public and private decision-making; and protect the interests of society's most needy members. While preparing plans, planners have to address number of interrelated aspects such as, public-private partnerships, growth control and decline management, historic preservation, adaptive reuse, neighborhood planning, economic development, infrastructures, and environmental management. (El-Kholei 2015). In general, the planning process comprises four steps (Banfield, 1973); analysis of the situation; end reduction and elaboration by defining the goals in a specific/operational term to serve as a criterion of choice; design of the course of actions, where the planner defines the tactics to achieve the desired outcomes by attaining the ends (objectives); comparative evaluation of consequences by identifying the wanted/unwanted consequences (outcomes) (Banfield, 1973 as in El-Kholei 2015:38).

Skilled planners have to work as technical administrators, adjusting, or satisfying the politicians (whether in power or not) and needing to advocate for the interests of the concerned stakeholders. Planners have to maintain a balance between all concerned groups and organizations such as bureaucrats, the private sector, non-profit organizations, and communities. While preparing plan, planners use scientific methods to analyze the current and previous situation and create a viable plan that can be achieved in the given time frame. The Planning process is often grounded with major social, political, and mostly economic theories; however, in terms of its implementation, it has to satisfy the bureaucrats and politicians in power who are responsible to accept and implement the plan. The success of plan depends on political will, therefore, planners also need to know how to convince politicians, so that, the general public can be benefited.

Strategic Planning

Strategic planning is the process which outlines the vision to attain a target, the steps, with alternatives (if one option does not work), that provide the techniques to attain the mission. At the organizational level, strategic planning is the deliberate application of knowledge to develop a plan in a way such that the prescribed method provides the understanding of a particular mission- the path to follow and implement. *“Strategic planning is meant to help public and nonprofit organizations (and communities) create public value through meeting their mandates and fulfilling their missions. In order to do so it must produce fundamental decisions and actions that shape and guide what the organization is, what it does, and why it does it. Producing those decisions requires an interconnected set of activities that organize participation, create ideas for strategic action, build a winning coalition, and implement strategies”*. (Bryson 2004, 27–28 as in Bryson et al. 2009:180). Similarly, Wolf, and Floyd 2013, define strategic planning, *“We define strategic planning as a more or less formalized, periodic process that provides a structured approach to strategy formulation, implementation, and control. The purpose of strategic planning is to influence an organization’s strategic direction for a given period and to coordinate and integrate deliberate as well as emerging strategic decisions. Strategic planning comprises a range of different activities designed to fulfill this purpose (such as strategy reviews, meetings, generation of strategic plans, etc.); the extent to which such activities are governed by explicit rules and procedures, that is, the degree of formalization (Hage and Aiken, 1969), varies both within and between organizations”* (Wolf, and Floyd 2013:5).

The strategic planning process is built upon social, political, and economic theories, it involves topics such as decision systems, governance, contingency planning, behavioral requirements, resources available etc. Strategy is kind of game, which should have multiple routes within a framework to obtain the desired goals (Figure 1 shows an example of simple framework adopted from Wolf, and Floyd 2013, which gives an overview of a strategic planning framework).

Definitions of Strategic Planning

“The framework should be seen not as a research model itself but as a scheme for organizing ideas in a way that helps describe previous and future research. Just below the set of boxes that describe strategic planning practices, practitioners, and praxis, the large box in the middle of the

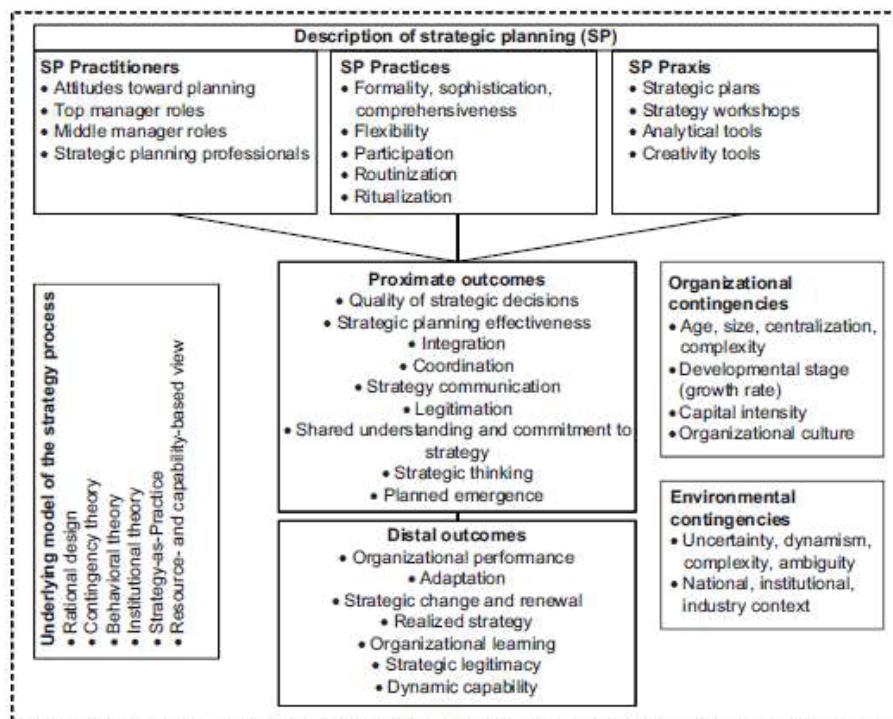


Figure 1 Framework of Strategic planning (adapted from Wolf, and Floyd 2013).

figure represents what can be described as the proximate or intermediate outcomes of strategic planning. This group of constructs is important because it identifies the causal or processual mechanisms that explain how strategic planning influences organizational outcomes. The distal outcomes identified in the figure include organizational performance but also a number of other potential products of strategic planning (Wolf, and Floyd 2013:6–7).

“Practices” ... refer to shared routines of behavior, including traditions, norms, and procedures for thinking, acting, and using “things” ... “praxis” refers to actual activity, what people do in practice. Practitioners are strategy’s actors, the strategists who both perform this activity and carry its practices. (Whittington, 2006: 619, as in Wolf, and Floyd 2013:6).

Strategic management is about “purposes, directions, choices, changes, governance, organizations, and performance of organizations in their industry, market, social, economic, and political contexts” (Pettigrew, Thomas, and Whittington, 2002:3 as in Candy and Gordon 2011:75).

Strategic planning involves analyzing competitive opportunities and threats, as well as the strengths and weaknesses of the organization, and then determining how to position the organization to compete effectively in their environment. Strategic planning has a longtime frame, often three years or more. Strategic planning generally includes the entire organization and includes formulation of objectives. Strategic planning is often based on the organization's mission, which is its fundamental reason for existence. An organization's top management most often conducts strategic planning (UMN 2021).

These (above-mentioned) definitions and statements, clearly indicate that, for the success of any specific plan, project, or program, it is necessary to have a clear vision and mission, a stepwise process, a main pathway including alternatives and choices, an institutional architecture or framework, stakeholder involvement and a clear policy to tackle the different interest groups, and the skill to overcome the bureaucratic hurdles or interests.

Thus, strategic planning for energy can be expanded to include energy coverage (solar, wind, water, nuclear, electromagnetism etc.) and the ways to minimize energy use, particularly fossil fuels. There are still many villages in the world who have not enjoyed the benefit of electricity and there are also many towns where people are using excessive fossil fuel based energy. There is both a need to expand the reach of energy to those who do not have it and also to make those who are over-using fossil fuels aware of this. There is a big need for strategic plans to tackle both conditions.

Similarly, when we talk about strategic planning for the environment, we are seeking to correct the balance between humans and nature. Managing the environment is one of the major challenges of the contemporary world, we need a clear and strong focus on strategic planning to help to minimize the challenges.

Planning for the Energy and the Environment

Theoretically, planning for the energy and the environment is not a new domain. However, practical concern about environmental conservation only formally began when we began to see change in the environment in the form of climate change.

The first assertions that humans are responsible for the Earth came through the book by George Perkins Marsh published in 1864 entitled 'Man and Nature'. In the 1874 revised edition, Marsh changed the title to "The Earth as Modified by Human Action: Man, and Nature" where he stated that

“We are not passive inhabitants of Earth... We give Earth its shape and form. We are responsible for Earth” (Lienhard 1965, as in Bhandari 2020).

This was most likely the first book on ecological problems, which started scientific research on anthropogenic causes for global environmental changes. When humans were recognized as being responsible for these changes, researchers began to think about “how such issues could be solved.” It was also determined environmental problems were not endemic, or a single nation’s problem and different countries began to work together through mutually binding and non-binding treaties of cooperation and collaboration (Weart, 2008, as in Bhandari 2020).

The statement from *Man and Nature* was not seriously considered and the anthropogenic disturbances to nature continued to increase at an accelerating rate. The exploration of the origins of climate change, began its focus in the 1950s. There are a large number of publications highlighting concern about the changing global environment by individual authors, groups of authors or in the name of environmental conservation. The formation of the International Union for Conservation of Nature (IUCN-1948), and the International Council for Science (ICSU-1931) are groups of scientists who extensively contributed to bring climate science to the public’s attention. Fleming (1998) provides a good historical account of climate change in his book “Historical Perspectives on Climate Change.” Similar attempts have been made by the first chair of the Intergovernmental Panel on Climate Change (IPCC) Bert Bolin (2007), who began to write on the climate change issue in the 1960s, with the analysis of carbon dioxide and its impact in the atmosphere. Other such attempts can be found in the work of Mathew Paterson (1996), through his book “Global Warming and Global Politics” and also in Spencer R. Weart’s book on “the Discovery of Global Warming (2008)”. 1972 was a milestone for the institutionalization of climate science through the first World Conference on the Global Environment, which recommended establishing the United National Environment Program (UNEP). With the recommendation of UNEP and World Metrological Organization (WMO), the Intergovernmental Panel on Climate Change (IPCC) was established in 1988. Since then, the IPCC has produced five climate change assessment reports and sixth report is coming during 2021–2022. The role of the IPCC is:

To assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation

and mitigation. Review by experts and governments are an essential part of the IPCC process. The Panel does not conduct new research, monitor climate-related data, or recommend policies. It is open to all member countries of WMO and UNEP” (IPCC 2021).

In addition to the IPCC’s assessments there are hundreds of research papers and books, which illustrate the problems and consequences of global environmental change, mostly due to the increase of global temperature which recommend government policies and plans to minimize or mitigate the impact of climate change (Grove et al. 2002; Kujala et al. 2013). Various tools and mechanisms have been introduced and policies have been formulated from local to international levels. The UN is the key player in formalizing global policy to combat climate change induced challenges through its encouraging and empowering governments to create policy instruments and its provision of implementation plans to its member countries (Bhandari 2012, 2018, 2019).

The major examples of such policies are the bi-national, multinational, and international agreements and binding and unbinding treaties, which have the objective to protect nature and natural resources from the local to the global scale. The Congress of Vienna held from November 1, 1814, through to June 8, 1815, is considered the first internationally binding treaty, and the second regulatory bounded form of an intergovernmental international organization was the League of Nations, which was founded in 1919–1920 as a result of the Treaty of Versailles in an effort to stop future wars (Bhandari 2020). After the foundation of the UN in 1945, the world changed such that, every country could raise their issues at the UN forums. (*The name ‘United Nations,’ coined by United States President Franklin D. Roosevelt, was first used in the ‘Declaration by United Nations’ of 1 January 1942, during the Second World War, when representatives of 26 nations pledged their governments to continue fighting together against the Axis Powers*). The UN has four major purposes: (1) to maintain international peace and security; (2) to develop friendly relations among nations; (3) to cooperate in solving international problems and in promoting respect for human rights; and (4) to be a center for harmonizing the actions of nations. In the contemporary world, the UN is visible in every aspect of social, economic, environmental, and political issue including peacekeeping and international development through its forty plus affiliated organizations (UN, 2010 in Bhandari 2020).

There have been always questions regarding the role of UN because the veto nations (China, France, Russia, the United Kingdom, and the United

States), normally, look after their own interests whether they have negative or positive impacts on non-veto nations interests. However, in terms of planning for a healthy planet, the UN has a clear vision to combat global environmental challenges. *“The major treaty events which boasted the sustainability discourses are Ramsar Convention, Stockholm Declaration of the United Nations Conference on the Human Environment, The Rio Declaration on Environment and Development, Convention on Biological Diversity, Convention on Long-Range Trans-boundary Pollution, Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, Convention on International Trade in Endangered Species (CITES), Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal, Convention Concerning the Protection of the World Cultural & Natural Heritage, United Nations Convention to Combat Desertification, United Nations Convention on Law of the Sea (UNCLOS), United Nations Framework Convention on Climate Change and the Kyoto Protocol on Global Warming and many others). These treaty events captured the notion of international multicultural and socio-economic politics”* (Bhandari 2020).

Among the long list of key initiatives for protection of the global environment, the Swiss government’s action to protect migratory birds of 1872 and the Convention for the Preservation of Animals, Birds and Fish in Africa of 1900, might be the first global initiatives to protect the biodiversity of the planet. In terms of regulatory framework, the UN Conference on the Human Environment held in Stockholm in 1972, paved the new direction of global environmental conservation and planning, which formally establish the UN Environment Program, with the headquarters in Kenya. The publication of the World Conservation Strategy by IUCN in 1980, presented the ‘why’ it is important to conserve nature. Similarly, publication of Our Common Future in 1987 (A report which sets out the fundamental principles of sustainable development), highlighted the current alarming situation and also defined the importance of sustainable development (UNEP 1992; Reinalda 2009; Mitchell 2010).

“The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice. The Goals interconnect and in order to leave no one behind, it is important that we achieve each Goal and target by 2030” (United Nations 2015).

The Montreal Protocol of 1987 bound many countries to cooperate to reduce the greenhouse effects (though a few countries have not signed);

however, in terms of the regulatory framework it has had important role in protecting the environment of the planet (For example it contained results of the research on harmful effects on the ozone layer). In 1988, UNEP and WMO formed the Intergovernmental Panel on Climate Change (IPCC), which has been playing important role particularly in presenting the factual truth of climate change and its impacts. Another milestone initiative was the UN Conference on Environment and Development held in Rio de Janeiro, Brazil 1992, where except hundreds of heads of governments as well as thousands of environmental conservation activists were gathered. The Rio conference adopted Agenda 21 with its detailed list of recommendations, which is considered one of the most important declarations and had the vision of protecting the environment as well as improving social and economic development (*In the Rio Declaration and Agenda 21 Action Plan principles of sustainable development were established and the framework for the future tasks as well*). At the Rio 1992 conference (), the agreement for conservation of biodiversity (Convention of Biodiversity-CBD) was signed on June 5, 1992 and come into force in December 1993. All UN members have signed the multinational treaty except the United States of America. The main goal of CBD is to protect biodiversity, through a fair and equitable share of biore-sources and its objective is to prepare national strategies for conservation, management, and utilization of biodiversity resources. The important aspect of CBD is its focus to help nations to prepare and implement the conservation strategies, on the basis of each nation's current situation.

Another milestone UN initiative was the Paris Conference of 2015, which adopted Paris Climate Change Agreement. The agreement binds all nations to keep global temperature increases to “well below” 2.0C (3.6F) above pre-industrial times and “endeavor to limit” them even more, to 1.5C. If implemented properly, it will certainly help to maintain the planet's health. In addressing the environment, and continued development, the UN proposed the Millennium Development Goals (MDG), with mitigation targets to be met by 2015 (2000–2015 – In 2000, United Nation – declared the millennium development goals. “*The Millennium Declaration identified fundamental values essential to international relations (A/RES/55/2). The Millennium Development Goals set targets for realizing these values around the world by 2015 and served as the focus for UN work throughout the period* (United Nation 2018); however, they were not successful as planned.

The cause of this failure of the MDGs was the lack of institutional arrangements (or local planning) in each specific country. The countries could not make clear plans for reaching the goals and meeting the targets.

They were not able to create strategic plans and had no realistic plans for of action.

Following on from the MDGs, the UN has initiated 17 Sustainable Development Goals (SDGs), with 169 targets.

“The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing – in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests” (United Nations 2015).

These goals and targets are visions and missions for environmental conservation as well as social and economic development. Each country is supposed to include the SDGs in their planning and set targets according to their own geographic, social and economic condition.

In addition to the UN, most of the international organizations (World Bank, IMF, Regional Development Banks, international governmental and international nongovernmental organizations), national government and non-governmental organizations have also prioritized the SDGs as a major step to manage environmental, as well as social and economic development. To achieve the desired goals, it will be necessary to have clear strategic plans for each goal; however, it is still challenging because there is not enough knowledge about proper planning based on reality. Therefore, information and knowledge about strategic planning is in high demand.

Conclusion

In general, civilized human society runs in an organized way, where normal life patterns follow a certain path to sustain and survive. When an individual, group, or society makes a vision, mission, or objective, to accomplish something in a given time frame, then it is necessary to have competent planning at both the strategic as well as the implementation levels. This includes details of method, resources, timeframe, constraints etc. When a planning process includes various ways to reach the desired destination, then, there is the

luxury of time to analyse the problems and consequences. Strategic planning begins with knowing and understanding the current conditions and the likely conditions of the foreseeable future. Principally, it is based on a win-win outcome, because, in strategic thinking, we look for options, choices and alternatives, so, there is less chance of failure. Strategic planning involves analyzing the strengths, weaknesses, competitiveness, alternatives as well as opportunities and threats, so that the prepared plan of action helps to attain the desired goal. The strategic planning process can be based on various theories or principles of social or natural science; however, the goal of the strategy is to attain the set objectives. Without a clear plan, it is almost impossible to attain any objective.

As noted above, there is not any field without problems and in most cases we humans are the responsible party; therefore, it is our responsibility to resolve them. We should do this strategically and in a planned way i.e. acquire baseline information, identify, and set the goals and targets, know and understand the situation and access, analyze, evaluate and formulate the strategic plan to solve the problem in a given timeframe.

The Way Forward

The world has faced various challenges throughout its civilization and the challenges have been resolved or minimized with both planned or unplanned actions. The global environmental challenges are created by us in the name of development particularly through the mechanization and industrialization process. Yes, we obtained the technological advancement, without realizing that we are altering the Earth's ecosystems; however, many scholars were advocating that too much exploitation of nature can harm humans, because humans are also part of the nature. The major cause of the current environmental challenges (raise of the global temperature, climate change, biodiversity loss etc.) is the byproduct of a human desire to win against natural ecosystems. As we are responsible for creating the environmental challenges, it is our responsibility to overcome them. As noted, above, The UN has been playing an important role- by creating the various environment related treaties, agreements, and proposing alternatives action plans "*Ramsar Convention, Stockholm Declaration of the United Nations Conference on the Human Environment, The Rio Declaration on Environment and Development, Convention on Biological Diversity, Convention on Long-Range Trans-boundary Pollution, Paris Agreement*", MDGs, SDGs and targets, and so on. Similarly, the development agencies like the World Bank,

Regional Development Banks, other international governmental (IPCC) and nongovernmental organizations (IUCN, WWF, etc.), academic institutions, individual scholars and governments, NGOs. are also trying to pinpoint the problem and propose solutions. A good example of such efforts are MDGs, and now SDGs and targets, however, so far, there is no evidence which shows that the goals can be obtained.

“I would say SDGs have created a temporary emotion of hope, however, mostly countries of global south may or may not be able to bring desired outcome. The current trend so far in the developed world (G20) shows questionable results. As Bertelsmann Stiftung and Sustainable Development Solutions Network 2018, indicates that the lack of economic resources, appropriate institutional arrangements; suitable monitoring evaluation tools and shortage of appropriate professional manpower are the major challenges toward the achieving SDGs. Bertelsmann Stiftung and Sustainable Development Solutions Network 2018, report summarizes that:

- *Most G20 countries have started SDGs implementation, but important gaps remain.*
- *No country is on track towards achieving all SDGs.*
- *Conflicts are leading to reversals in SDG progress.*
- *Progress towards sustainable consumption and production patterns is too slow.*
- *High-income countries generate negative SDG spillover effects.*
- *Inequalities in economic and social outcomes require better data (Bertelsmann Stiftung and Sustainable Development Solutions Network 2018: IX as in Bhandari 2020).*

“To achieve the SDGs, countries must undertake major transformations of education, health, energy systems, land-use, urban development, and many other dimensions. Each transformation requires long term changes involving large numbers of stakeholders from government, business, and civil society. Since such complex transformations cannot be implemented by markets alone, governments must take the lead in mobilizing stakeholders, planning for the transformations, designing supporting policy processes, and mobilizing the public funding” (Bertelsmann Stiftung and Sustainable Development Solutions Network 2018:1).

To sum up, each SDG needs a global and country specific strategic plan with a clear outline addressing all six questions. The same condition applies for the implementation of the Paris Agreement and all the treaties and agreements we have so far.

In terms of an energy and environment nexus, there is a need for strategic planning in all of the following areas:- management of ecosystems; energy production and distribution; environmental friendly energy systems; low carbon energy production and use; sustainable consumption of energy resources; environmental impacts of energy production; inter-linkages between energy and environmental resources and sustainability; biosphere; biodiversity; bioenergy; biofuels and biomass; climate change; energy conservation; deforestation; ecosystem health; recycling and waste management. There is need for a new epistemology which will teach us to feel the “Bashudhaiva Kutumbakam” – The entire world is our home, and all living beings are our relatives” and Live and let others live – the harmony within, community, nation and global” in strategically planned way.

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