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## Indian perspective of sustainable development

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### Abstract

Sustainable development that meets the needs of the present without compromising the ability of future generations to meet their own needs. A development path that is sustainable in a physical sense could theoretically be pursued even in a rigid social and political setting. But physical sustainability cannot be secured unless development policies pay attention to such considerations as changes in access to resources and in the distribution of costs and benefits. Thus the goals of economic and social development must be defined in terms of sustainability in all countries developed or developing, market oriented or centrally planned. Interpretations will vary, but must share certain general features and must flow from a consensus on the basic concept of sustainable development and on a broad strategic frame work for achieving it. India is the seventh largest country in the world and Asia's second largest nation with an area of 3.29 million square kilometers. The country is set apart from the rest of Asia by the Himalayas to the north, and is flanked by the Bay of Bengal to the east, the Arabian Sea to the west, and the Indian Ocean of the South. India is characterized by variable terrain, starting from the Himalayas to flat rolling plains along the Ganges deserts in the West and an unplanned plain (the Deccan plateau) in the country's south. India as numerous perennial and seasonal rivers, a rich variety of soils and a great diversity of natural ecosystems. There are also diverse climate zones varying from tropical monsoon in the south to temperate in the north.

**Keywords:** Sustainable, fresh water, devolution, bio-diversity, governance technology

### 1. Introduction

The essential needs of vast numbers of people in developing countries for food, clothing, shelter, jobs are not being met, and beyond their basic needs these people have legitimate aspirations for an improved quality of life. A world in which poverty and inequity are endemic will always be prone to ecological and other crises. Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for better life. Economic growth and development obviously involve changes in the physical ecosystem. Every ecosystem everywhere cannot be preserved intact. A forest may be depleted in one part of a watershed and extended elsewhere, which is not a bad thing if the exploitation has been planned and the effects on soil erosion rates, water regimes, and genetic losses have been taken into account. Sustainable development is a process to changes in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations. Sustainable development requires that the adverse impact on the quality of air, water and other natural elements are minimized so as to sustain the ecosystem's overall integrity. High levels of productive activity and wide spread poverty can coexist, and can endanger the environment. Hence sustainable development requires that societies meets human needs both increasing productive potential and by ensuring equitable opportunities for all.

### 2. Meaning of sustainable development

Sustainable development is development that meets the needs of the present without compromising the abilities of future generations to meet their own needs". This is a definition offered by the famous World Commission on Environment and Development in its report Our Common Future. Sustainable development has become the new catch phrase. For environmentalists, sustainable development denotes a radical changes from the past. But as a western joke now goes, sustainable development for multinational companies, many of which have also embraced the concept, means simply 'sustained growth" or "sustained profits". A society which learns faster from its mistakes and rectifies its behaviour will invariably be more sustainable than another society which takes a longer time. And a society which fails to incorporate the lessons of its mistakes into its behaviour pattern even after the point of irreversibility has been reached, is obviously a society which is pursuing a totally unsustainable process of development.

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### 3. Minerals and energy resources

India is richly endowed with mineral resources, which include fossile fuels, ferrous and nonferrous ores, and industrial minerals. There are about 20,000 known minerals deposits in the country and as many as 87 minerals (4 fuels, 11 metallic, 50 nonmetallic, 22 minor minerals) are being exploited (TERI, 2001b). The country has abundant reserves of bauxite, coal, dolomite, iron ore, manganese, limestone, magnetite and adequate reserves of chromate, graphite, lignite and rock salt. Beside conventional sources, the country is richly endowed with non-conventional energy resources such as solar, hydro and wind. The country stands out as being the only one in the world with a separate ministry of non-conventional energy sources. India's renewable energy programme is one of the largest and most extensive in the world. Currently, almost 3% of India's installed power capacity comes from non-conventional energy sources.

### 4. Forest and biodiversity

A large variety of forests is found in India ranging from evergreen tropical rain forests in the Andaman and Nicobar Islands, the Western Ghats and the North-Eastern states to dry alpine scrub in the Himalayan region. Between the two extremes the country has semi-evergreen rain forests, deciduous monsoon forests, thorn forests, subtropical pine forests and temperate forests. The forests of India have been divided into 16 major groups comprising 221 types. The forest cover of the country, as per the assessment by Forest Survey of India, is 63.73 million ha constituting 19.39% of the geographic area of the country out of which 37.74 million ha (11.48%) is dense forest (crown density more than 40%), 25.50 million ha (7.76%) open forest (crown density 10%-40%) and 0.49 million ha (0.15%), mangroves (FSI, 2000). Over 45,000 plant species are found in the country. Several thousand of them are unique to the country. Two international biodiversity hotspots have been identified in the Eastern Himalayan region and the Western Ghats.

### 5. Fresh water

India is considered rich in terms of annual rainfall and total water resources available at the national level. The average annual rainfall, equivalent to about 4000 billion cubic metres (BCM), however, is very unevenly distributed both spatially as well as temporally. This causes severe regional and temporal shortages. Utilizable resource availability in the country varies considerably from 18,417 cubic metres in the Brahmaputra valley to as low as 180 cu m in the Sabarmati basin (Chitale, 1992) <sup>[17]</sup>. Precipitation varies from 100 mm a year in western Rajasthan to over 9000 mm a year in the north-eastern state of Meghalaya (Engelmann and Roy, 1993) <sup>[18]</sup>. With 75% of the rain falling in the four monsoon months and the other 1000 BCM spread over the remaining eight month, Indian rivers carry 90% of the water between June and November, making only 10% of the river flow available during the other six months.

### 6. Governance structures

India, at the time of its Independence faced many challenges. The partition of the country produced severe communal stress. There were a large number of small states ruled by dynastic monarchies. Assimilating these into the mainstream of the Indian Union was an uphill task. The country required a strong governance structure to ensure peace and rapid socio-economic development. The

fundamental principles of governance that were enunciated then were democracy, equality and the rule of law. These principles have, over the last fifty years and more, taken deep roots and the country has had an unbroken democratic continuum. The basic democratic character of the Indian state has, since independence, become stronger, wider and deeper. The country has a strong and vibrant legislature with an independent judiciary that have acted as a balance to the executive. The planning process in the country is so structured as to ensure a iterative mechanism of planning based on the interaction between the centre, states and local bodies. At the national level, the Planning Commission draws up Five-Year Plans in consultation with various ministries and state governments, reflecting the nation's priorities. The Five-Year Plans are divided into annual plans, which set the prioritized and short-term developmental goals. The performance of programmes is regularly monitored, by a mid-term review of the Plan. The implementation of developmental programmes in the country is carried out through decentralized and broad-based governance machinery. The country has a fairly uniform pattern of devolution of responsibility between the centre and the states and between the states and the local bodies. There is an active and independent press and since the 90s an equally effective electronic media. A large number of NGOs are active and help to support the formal governance structure, increasingly, information technology is playing an important role in bringing about greater awareness, peoples participation and transparency. These features of the Indian system of governance are elaborated upon in the following sections.

### 7. Legislature and judiciary

The Indian state is characterized by the classical division of powers between the executive, legislature and judiciary. The principles governing this division are laid out in the Constitution. Amendments have been made in the Constitution from time to time to meet the changing needs and to cope with unforeseen situations. The state is federal with 28 states while seven smaller administrative units are directly controlled by the centre (Union Territories). Elections to the legislature, both at the centre and the states, are supervised by an independent Election Commission, whose independence is safeguarded by constitutional provisions. Elections in India are the largest in the world and have been accepted as being fair with provisions for correction in case of any aberrations. The legislatures have the powers to approve/reject/modify all legislation, review financial allocations, expenditure, revenue collection and the overall performance of government. Proceedings of the legislature are open. Important proceedings of the Parliament are also televised live to a national audience. The Judiciary also has a federal character with the Supreme Court at the apex, High Courts in the states and other courts below the high court in the states. The Judiciary is independent and has acted as an effective check on the both the executive and the legislatures. In the recent past the Judiciary has also played a pro-active role in upholding the rights of the citizens particularly through the route of Public Interest Litigation. In the area of environment, in particular, the courts have been active in achieving a greater degree of compliance with the laws and in upholding the right of the citizens to acceptable quality of water and air. The other positive feature of the State is that it has been continuously ruled by elected civilians. The large armed force of the

country has protected the country borders from external aggression and plays an important role in countering terrorism in some of the Border States as also assisting the civilian administration to cope with internal disturbances and natural calamities.

### **8. Devolution to States**

The Constitution lays down the division of powers and responsibilities between the centre and the states. These have provided the basis for an enduring federal structure. Broadly, issues requiring a national perspective like defence, external affairs are with the centre. in the areas of social and economic issues there is shared responsibility. Often the centre takes the initiative on important issues and involves the states in the implementation. Thus the “green revolution” in agriculture was a central initiative implemented by the states. Financial flows to the states are guaranteed by leaving certain taxation powers with the states. This is supplemented by the awards of the Finance Commissions, set up every five years under the Constitution these lay down the principles of revenue sharing of central revenues between the centre and states.

### **9. Devolution to local bodies**

India has had a long history of local self-government, starting well before Independence. After Independence greater use was sought to be made of these bodies in socio-economic development of the country. In 1993 the Constitution was amended to provide constitutional protection to these bodies. This was done in three ways. First there were constitutional safeguards for regular elections and the establishment of State Election Commissions to ensure free and fair elections. Second the powers and functions of these bodies were laid down in the constitution and it was expected that states would follow this national pattern by amending the state legislation where required. Finally there was a provision for State Finance Commissions (on the lines of the National Finance Commission) that would ensure an adequate level of revenue sharing between the state and the local bodies. This move has provided the basis for greater devolution to elected local bodies and thus to the local communities. The amendment was also an important step towards the empowerment of women and increasing their participation in decision-making since it reserved 33% seats in urban municipalities and the panchayati raj institutions for women.

### **10. Education, awareness and the role of media**

The rise in the literacy level along with efforts to mainstream the less privileged in the society have strengthened the decentralized governance system in the country. The media has played an important role in awareness generation. The country has an active press that has guarded its freedom zealously. Given the large diversity of the country, regional papers in the local language far outnumber the national press that is dominated by the English press. Of late there has been a veritable explosion of television channels, once again with a very large number of regional channels in the local languages. The media has played an effective role in upholding the basic rights of the people. It has thus acted as yet another forum where people can seek redress of their grievances, where the other forums are not effective. It is also an instantaneous barometer of public opinion on issues that are contentious. With growing literacy, the effectiveness of this medium in moulding

public opinion has been growing. It has thus proved to be a valuable instrument to strengthen the basic democratic character of the Indian governance structure.

### **11. Transparency and people’s participation**

There has been a growing trend to provide for greater transparency in the functioning of Government. The natural complement of this process has been the parallel trend of allowing people to participate in decision making at all levels. Important issues are debated and discussed before a decision is taken. Consultations are held, both by Government and by Parliament, with important stakeholders. The Five-Year Plans are also finalized only after consulting experts from various fields and disciplines. Similarly, in the case of environmental clearance all major projects have to go through the process of a public hearing. Again in the case of forests a new style of governance has been introduced in the form of Joint Forest Management where both, the government and the local community, participate in managing the forest resources. Use of independent regulatory commissions is yet another administrative innovation to impart greater transparency and people’s participation to the governance structure. The Indian system of governance has thus shown remarkable resilience in adapting to changing situations and learning from the experience of other countries. Throughout this process, the fundamental principles of democracy and openness have not only been retained but also strengthened.

### **12. Information technology and e-governance**

In this process the new opportunities thrown up by information technology have been made full use of. There is now a mass of information available on the Internet on the performance of the government, important new initiatives and plans for the future. The internet is also being used for wider consultations important documents, like the Convergence Bill (which seeks to provide a uniform regulatory structure for the converging telecommunications, entertainment and information technology sectors) are placed on the internet for comments and feedback. The electronic media is also fostering efficient governance through speedier communication, uniform databases that can be used for multiple departments like ration cards, voter identify cards etc. and public services such as tracking the status of rail reservations and passport applications.

### **13. Challenges and administrative reforms**

Governance is an ongoing process that has to continually adapt to new challenges, situations and the opportunities provided by new technologies. The Indian system, rooted as it is in the fundamental principles of democracy, respect for the rights of individual citizens and openness, and has shown ample evidence of its robustness in continuous adaptation to these changes. Administrative reforms have to be seen not as a onetime effort but an ongoing process of change, adaptation and improvement. At every level of governance, both within the various organs of the state and the other agencies like the media, NGOs and local communities, there have been a continuous process of change. This change has led to a progressive improvement in the openness of the system and a greater degree of responsiveness. Given the vast size of the country, the wide differences in traditions and cultures, this is an unmistakable sign of the basic health of the governance structure and its capacity for continuous correction and self-improvement.

#### 14. Social Development

Drinking water and sanitation facilities are basic requirements for healthy living. There has been significant progress in improving these services, but there are marked rural-urban and regional inequalities in the country. Improvement in the health status of the population has been one of the major thrust areas in the social development programmes of the country. Over the years there has been a significant improvement in health standards particularly among the poor. Access to basic health facilities has improved and many dangerous diseases have been eradicated. This has been achieved through technological breakthroughs and improvements in the access to health, family welfare and nutrition services with special focus on the underserved and the under-privileged segments of the population. There has been steep fall in the mortality and in specific disease such as polio, neonatal tetanus and other vaccine-preventable diseases; the incidence of leprosy too, has declined. The disease burden due to communicable, non-communicable disease and nutritional problems, however, continues to be high in the country. As the foregoing section indicates, there has been improvement in the various facets of human development; yet though there is still a long way to go. Levels of achievement are still not adequate. That poverty goes beyond lack of adequate income, and should be viewed more as a state of deprivation spanning the social, economic and political context of the people that prevents their equal participation in the development process, is now well appreciated. Recognizing the need for this holistic view of welfare, the government has recently come out with a well-researched and contextually relevant approach to mapping the state of human development in the country in its many facets through a range of indicators that will be useful in formulating and monitoring public policy. As the Human Development Report brings out, the HDI (human development indicator) for the Country has improved significantly between 1980 and 2001, improving by nearly 26% in the eighties and another 24% in the nineties (Planning Commission, 2002). There has been an improvement both in rural as well as in urban areas. Further, though the rural-urban gap in the level of human development continues to be significant, it has declined during the period. Inequalities across states on the HDI are less than the income inequality as reflected in per capita State Domestic Product. The index of gender inequality measuring the attainments in human development indicators for females as a proportion of that of males has also improved, though marginally, in the 1980s. At the national level, the GEI increased from 62% in the early eighties to 67.6% in the early nineties. This implies that on an average, the attainments of women on human development indicators were only two-thirds of those of men. At the state level, those that have done well in improving female literacy are also the ones that have substantially improved their gender equality. On the whole, gender disparities across the states have declined over the period.

#### 15. Role of Science and Technology

Technology is a fundamental input into sustained growth and welfare. The role of science and technology in decoupling economic growth with environmental degradation has also become important. The promotion of science and technology for the cause of development has

Been one of the guiding principles of planned development in independent India. There has been significant growth in capabilities and achievements in several areas, namely, space sciences, astronomy, meteorology, disaster warning, electronics, defence, nuclear, material and medicine. Industry interface, community involvement and international co-operation in development of science and technology have been strengthened over time. Increasingly the government has sought to support socially oriented S & T interventions for rural areas and weaker section. The role of remote sensing satellite system for natural resource monitoring and management has also gained importance. Since 1990s in particular, sustained efforts have been made for developing newly emerging areas such as information and communication services, biotechnology and new and renewable sources of sources. The government recognizes the enormous potential of information and communication technology as a catalyst towards sustainable development through access to information thus facilitating market access, education, and participative and transparent governance. India enjoys a competitive advantage in software and related services in the form of abundant qualified manpower and expertise state-of-the-art hardware and software platforms. The Department of Information Technology in the Government of India is guided by the vision of making India an IT super power by the year 2008. Independent estimates suggest that by 2008, the IT industry will be the single largest contributor to the GDP of the country and large employment generator. In the area of biotechnology, the government strives for "attaining new heights in biotechnology research, shaping biotechnology into a premier precision tool of the future for creation of wealth and ensuring social justice – especially for the welfare of the poor". Significant advances have already been made in the growth and application of biotechnology in the broad areas of agriculture, health care, animal sciences, environment, and industry. Specifically, several initiatives have been taken to promote transgenic research in plants with emphasis on pest and disease resistance, nutritional quality, molecular biology of human genetic disorders, brain research, plant genome research, development validation and commercialization of diagnostic kits and vaccines for communicable diseases, food biotechnology, biodiversity conservation and bio prospecting, setting up of micro propagation parks and biotechnology based development for weaker sections, rural areas and women. Sustainable energy development is a key element of a sustainable growth outlook. India has made rapid advances in harnessing clean energy and boasts of one of the world's largest renewable energy programmes covering the whole spectrum of renewable energy technologies for a variety of grid and off grid applications. The country has the largest decentralized solar energy programme the second largest biogas and improved cook stoves programme, and the fifth largest wind power programme in the world. A substantial manufacturing base has been created in a variety of new and renewable sources of energy, placing India not only in a position to export technologies but also to offer technical expertise to other countries. Renewable energy technologies are an important means of social development in the country, being an attractive and sometimes only option to provide energy to non-electrified areas that are too remote for grid electrification.



## 16. Environmental sustainability

Environmental sustainability considerations have been an integral part of the Indian culture. The need for conservation and sustainable use of natural resources has been expressed in Indian scriptures more than three thousand years old and is reflected in our constitutional, legislative and policy framework as also international commitments. Apart from concerns about increasing air and water pollution, degradation of land and forests along with loss of biodiversity have also come into focus. Specific measures were initiated way back in 1972 after the Stockholm Declaration. Since then a full-fledged Ministry of Environment and Forests has evolved and an extensive legislative network now exists to address environmental issues. There have also been several policy initiatives to safeguard the environment. Environmental awareness programmes supported by the government and NGOs have also gained momentum in recent times. The country has signed and ratified several international conventions and agreements on the environment and related issues and has been effectively implementing these. The efforts made so far need to be carried forward by strengthening the existing attempts at the domestic level and reinforcing international cooperation in dealing with issues related to social development and the environment.

## 17. Towards Sustainable Development

The governance structure of the country is founded on the principles of democracy, equality and the rule of law. The basic democratic character of the Indian State has, since independence, become stronger, wider and deeper, even as the structure has itself evolved to accommodate new challenges. In order to strengthen the basic character of democracy i.e. the flow of power upward from the people there has been emphasis on strengthening local self-governance in villages and urban areas alike. Education, awareness, a vibrant print and electronic media and the rapid spread of information technology have led to an ever-widening participation of the civil society in the development process of the country. The government has, over the years, developed a number of programmes that aim at eradicating poverty either through directly targeted programmes such as employment generations training and building-up assets of the poor or indirectly through human development with an emphasis on health, education, and minimum needs including protection of human rights and raising the social status of the weak and the poor. The government recognizes the role of economic growth in improving the quality of life of the people. Growth enables expansion of productive employment and provides the necessary financial and technological resources for development programmes. Environmental considerations have been an integral part of the Indian culture and have increasingly integrated in the planning process. This is reflected in our constitutional, legislative and policy framework also international commitments. The government recognizes that these laudable objectives are clouded by concerns. The economy is currently in a decelerating phase, which is compounded by the general slow-down in the world economy. On the social front, too, there remains much to be done. Despite the significant progress in areas eradication, literacy and health standards, there still remains a gulf between the standards prevailing in India and the rest of the world. The Government of India is cognisant of these challenges as the country sets out to

prepare the first development plan of this millennium. While seeking to achieve a high and sustained economic growth, it realizes that economic growth standing on an unsteady social and environmental foundation cannot be sustained. The Tenth Five-Year Plan assigns primacy to enhancement of human well-being which includes not only adequate level of food consumption and other consumer goods but also access to basic social services especially education, health, drinking water and basic sanitation. It also assigns primacy to the expansion of economic and social opportunities for all individuals and groups and wider participation in decision-making. Conservation and management of natural resources is an important focus of the plan.

## 18. Conclusion

Thus the strategy for sustainable development aims to promote harmony among human beings and between humanity and nature. In the specific context of the development and environment crises of the 1980s, which current national and international political and economic institutions have not and perhaps cannot overcome, the pursuit of sustainable development requires: a social system that provides for solutions for the tensions arising from disharmonious development. A political system secures effective citizen participation in decision making. An economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis. A social system that provides for solutions for the tensions arising from disharmonious development. These requirements are more in the nature of goals that should underlie national and international action on development.

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