Between Ecology and Economy
Environmental Governance in India

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1. The Context

With the advent of neo-liberalism, the discourse on governance has taken an interesting turn to further introspection in a changing world. The world, facing opportunities and challenges of liberalisation, urges for good governance which has been defined by the World Bank through the conceptualisation of four key elements: (1) public sector management, (2) accountability, (3) legal framework for development, and (4) information and transparency.[1] All these are assumed as prerequisites for a sound socio-economic development. In a resource oriented, globalised, liberal world, governance is projected as perhaps the most appropriate device to confront and mitigate the challenges of the network society.[2] World Bank has defined good governance in the following manner: "*Good governance is epitomised by predictable, open and enlightened policy making, a bureaucracy imbued with a professional ethos acting in furtherance of the public good, the rule of law, transparent processes and a strong civil society participating in public affairs.*"[3] Governance is also articulated by the United Nations Development Programme (UNDP) in terms of eight major imperatives. They are participation, rule of law, transparency, responsiveness, consensus orientation, equity and inclusiveness, effectiveness and efficiency, and accountability. Participation means informed and organised involvement either direct or through legitimate intermediate institutions or representatives. Rule of law urges for fair legal frameworks that can be enforced impartially with full protection of human rights, particularly those of minorities. The freely and directly available information to those who will be affected by the process of governing and enforcement is the criterion of transparency. By being responsive, governance could gain legitimacy and effectiveness in public domain. Good governance is expected to reach a broad consensus on the issue which is in the best interest of the whole community in spite of existence of different interest groups and voices in society. All the members of a society should feel included in the mainstream and should have opportunity to improve or maintain their well-being. Efficiency addresses the best and sustainable use of natural resources and protection of the environment. And on the whole, accountability is the key factor of good governance.[4]

Good governance is the instrument to attain development in the most democratic way, at least, that is what the present neo-liberal discourse tells us. It is expected to play basically the role of mitigation or facilitation in the process of development. On the other hand, the question of market, both local and global, arises especially in the post 1991 paradigm. Integrating market has evolved as an instrument to attain developmental goals where liberal measures, tariff free

exchanges, and less controls on market have gained prominence. However, certain aspects, identified as the prerequisites of developmental practices, have emerged for which market clearing methods may not be sufficient and some sort of monitoring, control and policy prescription are needed. Improvement or maintaining status of environment and environmental concern is one of those prerequisites of developmental practices. Natural environment may play a role of negative externality[5] in the process of development, precisely, economic development. The negative environmental externality evolves with the divergence between the private benefits and social benefits as well as between private costs and social costs of an economic project or an activity. Generally there are no markets to mediate between these two kinds of agent – the one who affects and the one who is affected. Most often, it is because, markets tend to be difficult and expensive to organise and enforce.[6] This phenomenon has resulted in an inference that it is beyond the efficiency of market clearing model to resolve the environmental questions in an overall paradigm of development. Certainly, the matter of control and protection mechanisms comes in. It is postulated that such control mechanisms need an insight of governance where an authoritative monitoring, practice of law and policy formulation and implementation of those laws and policies through an administrative structure are expected to function. Therefore, the urge to govern environment arises, keeping certain areas of market failure in focus particularly while dealing with natural resources. For environment at least, governance or good governance has emerged as a method to mitigate replacing or complementing the market mechanisms.

On the other hand, United Nations Millennium Development Goals (MDGs) has selected some crucial sectors for which the development initiatives may be consolidated. The initiative is certainly a global one and is based on integrating mandates. Goal - 7 of MDGs has called for an urge to ensure environmental sustainability[7] and advocated for (1) the integration of the principles of sustainable development[8] into country policies and programmes to reverse the loss of environmental resources, and (2) reduction of biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.[9] Consequently, the question of time bound policy making and environmental governance has become important. According to the World Summit on Sustainable Development Plan of Implementation (WSSD), "*good governance, within each country and at the international level, is essential for sustainable development.*"[10]

It is interesting to take note of the fact that environmental concern has taken an entry in both the discourse on governance and development in an interconnecting manner. Good governance and MDGs both incorporate sustainability as a prerequisite. It is evident that the aim of environmental governance is to reach sustainability and development together retaining environment in focus. The aim is two-fold. One is to ensure development in society as an agent of the whole developmental paradigm. That development should be sustainable through effective and efficient utilisation of natural resources for the satisfaction of present generation keeping the need of future generation intact qualitatively and quantitatively. On the other hand, as a part of good governance it is also expected to meet the indicators of success - participation, rule of law, transparency, responsiveness, consensus orientation, equity and inclusiveness, effectiveness and efficiency, and accountability. The task of governance is much more intricate whenever the issue of environment comes in as it involves the managerial assignment to monitor and control the natural resource base to facilitate the economic aspirations of the developmental practice as well as it synthesises the accountability to protect sustainability of nature. In that sense, environmental governance is very much within the interaction line between economy and ecology as a communicator and or manager to both where the interaction-line is not linear either.

Let me introduce ecological components in brief. Ecology certainly plays a problematic role in the developmental paradigm with all its uniqueness. Whatever environs or encompasses especially one's surroundings collectively which affect the life and development of an organism may be termed as environment.[11] Basically it has to take into account an ecosystem, constituting both *biotic* and *abiotic* components, which shows multitude of inter-relations. These inter-relations are very essential for existence and functioning of life-cycles. Every single organism has a non-negligible part to play in the cycle of an ecosystem and human population is consumer acting as a material storage. All the *biotic* components are connected with a non-linear interdependency-web which is a complex process and with the gradual increase of species composition and ecosystem-dynamics it would reach its climax stage of more stability barring severe negative externalities by succession[12]. This complex stage is familiar as biodiversity which is in the focus of several worldwide natural conservation strategies over the past five decades of "environmentalism"[13] with a view to ensure ecological stability and ecological resilience[14]. So, environmental governance is entrusted with the task to maintain biodiversity as well as ecological stability and the only process to ensure it is sustainable development, as believed worldwide. Therefore, from the point of view of environmental governance certain functional technicalities should be incorporated within the tasks of governance which require the efficiency to protect ecosystem function, materials recycling, natural equilibrium and perpetuity of matter and energy to prevent environmental degradation.

A country like India is unique for her practice of environmental governance. Here, the issue is not only the protection of biodiversity and ecological stability but also the protection of the rights to access to natural resources of impoverished society for sustaining livelihood. To them, nature is not only a reserve of resources but a boon of endowment. On the contrary, as a developing country, India is a part of the global band-wagon of neo-liberal paradigm and is also on an economic growth-ladder. Here comes the contested issues; economic growth has certain linkages with sustainability though the linkage may pose some conflicts when the issue of intertemporal allocation of scarce resources[15] within generations comes in. The present article intends to discuss the nature, functioning, changes, successes and challenges of environmental governance in India. In this process, it would explore evolution of the environmental governance in India over decades with the support of constitutional and institutional manoeuvrings. This article intends to reveal the dynamics of and the challenges before the concerned ministry especially in the neo-liberal developmental decades locating the environmental governance in India in the complex interconnection between economy and ecology, which on one hand aims at higher economic growth to achieve developmental goals and on the other hand joins international and domestic mandates on sustainable utilisation of natural resources. There are bio-physical and ecological limits to economic growth in the discourse of ecology but there is no limit to growth in the formulation of developmental model in a developing country like India. So, how to govern this juxtaposition is a question of deeper introspection. Is environmental governance is in dilemma in India? This article intends to answer this research question with an ecological appraisal along with the issues of good governance. More specifically, the appraisal will be two-fold. It will evaluate environmental governance in India from the ecological point of view and also from the perspective of governance.

It is evident that the discourse on environmentalism has incorporated the issue of sustainability in such a manner that both the developmental practice and governmentality take on the subject as an inherent component to deal with. Thus, initially, this article puts forth some

theoretical aspects of sustainability. It is essential to have an exposure to several ecological dimensions of ecology-economy interactions before going into an evaluation of environmental governance in India. The following discourse is going to deal with two prominent issues – economic growth as well as sustainability from economic and from ecological perspective.

Sustainability: A Limit to Economic Growth?

Market traditionally deals with the question of scarcity. The allocation of scarce resources (natural and human) involves broad philosophical issues: questions of values, preferences, efficiency, and equity. Along with these, the notion of sustainability has emerged which problematises the path to achieve an optimal intertemporal allocation of resources.

According to the neo-classical thought, environmental decision making models are assumed to assimilate two principles: the *Axiom of Material Value* and the *Axiom of Abundance*. The *Axiom of Material Value* holds that natural resources have no intrinsic value apart from their economic value in markets. It indicates many essential ecological functions, though critical, may have little value because their use is not allocated through markets. The *Axiom of Abundance* holds that the earth is very large in comparison to the economy and production needs not to be restricted in the long run as the availability of natural capital is unlimited for practical purpose. In general, the neo-classical economics argues that the physical and ecological constraints on economy are inconveniences. Those are impediments to economic growth and a limit to welfare accordingly. But, those can inevitably be overcome by substitution with the discovery of new economic resources or technologies allowing the conversion of non-economic materials to economic goods.[16] This approach adopts the *First Law Principle of Thermodynamics* which argues in favour of constancy of energy and matter base i.e. matter-energy can neither be created nor be destroyed or the total content of matter and energy in a closed system is fixed. The law demonstrates conditions under which prices, indicating the preferences of rational economic agents, accurately reflect resource scarcity, and conditions in which markets efficiently allocate scarcity. That means markets perpetuate themselves by continuous technological improvements. The quality of manmade and natural capital, in terms of how they can substitute each other, depends only on knowledge, manifested as technology. So, the *Axiom of Abundance* changes to *Axiom of technological Abundance:* technologies will always be found enabling substitution between manmade and natural capital. Therefore, the economy can expand without environmental degradation as long as technological discoveries continue.[17]

However, the law fails to describe irreversibility[18]. The economy is an open system which extracts usable energy and matter from the surrounding and returns unusable wastes to it. The boundary of economy is moveable or expanding, whereas, the global environment is a closed system as it receives relatively insignificant volume of matter from the space. Space is again an isolated system. Economy is dependent on global environment mainly for life support, for supplies of raw materials to production units and for dumping wastes. In that sense, the extending economy has a physical boundary to meet which is not expandable further. Also, the economic activity converts low-entropy[19] energy and matter to high-entropy wastes, from which the original low-entropy inputs can't be recovered without conversion of more low-entropy resources to high-entropy wastes. This irreversibility is addressed by the *Second Law Principle of Thermodynamics*. Dismantling natural environment, in many instances, will leave the area with an *abiotic* base entirely different from which existed initially in the natural state. Also, technology can do little to

reproduce the particular geomorphology, biodiversity and ecological succession that were present before disturbances. So, technology is asymmetric. According to the economist Rabindra N. Bhattacharya: "*If the in situ resources of an environment are appreciating in value, relative to goods and services that it might yield if developed then irreversibility will clearly pose a problem.*"[20] He has described the problem in the following manner.[21]

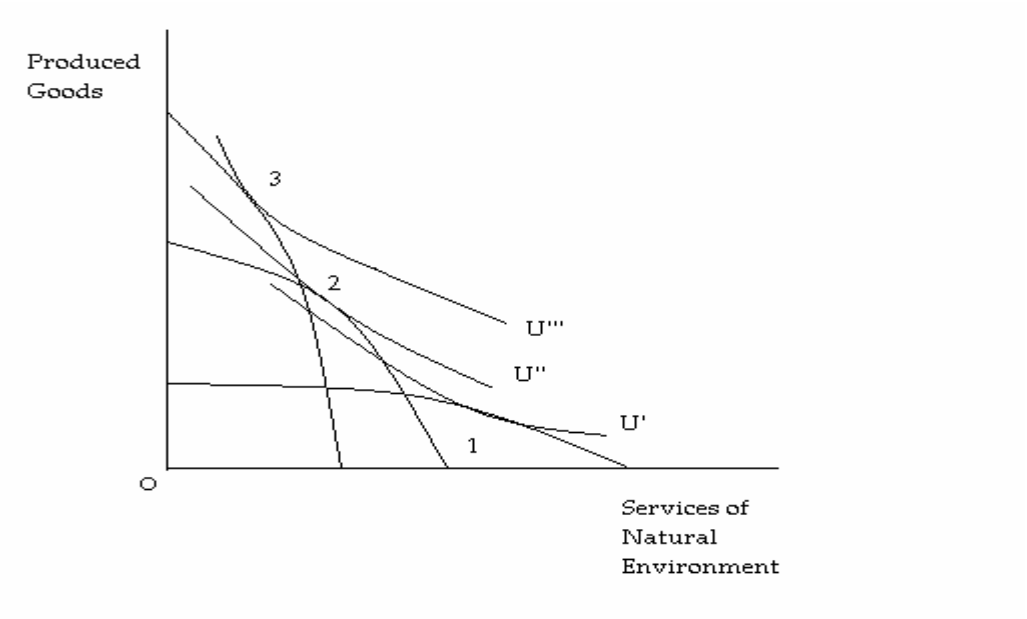

Figure 1: Irreversibility of Environmental Process and the Asymmetry of Technological Change

[Source: Rabindra N. Bhattacharya, 'Economics of Natural Resources' in Rabindra N. Bhattacharya, ed. *Environmental Economics – An Indian Perspective*, (New Delhi: Oxford University Press, 2001), p.: 76.]

In Figure – 1, the shift of the production possibility frontier from (1) to (2) to (3) indicates the absolute reduction of natural amenities whereas the rising magnitude of the interception on the axis of produced goods exhibits the effect of improved technology. A family of social indifference curves is showing the shifts of optimum points to left and upward which indicates the consistent increase in the relative price (value) of natural environmental amenities even with no shift in taste. The slope at the points of tangency represents the negative of the ratio of the price of natural environmental amenities to that of produced goods. These will make future consumption more critical thermodynamically. So, entropy as a physical law imposes absolute constraint on economic growth as far as overall well being is concerned – where "*substitution among individual sources is sometimes possible, it is not always possible and will be less possible as time passes.*"[22] Ultimately issues of biophysical limits emerge in prominence where technological choices fail to offer long term solutions.

However, the economists argue in favour of technological solutions on the ground of substantial progress in science and technology based on research and development (R&D) activities. The optimism iterates that if the costs and benefits of R&D investments are

ascertainable, technology can be conceived as a reproducible item.[23] Capital gives rise to profit and profit is again employed to augment capital base. Similarly, when natural resources are exploited with the help of a technology it gives rise to surplus in the form of rent in a capitalist system which needs to be further mobilised and invested to develop new resource and technology.[24] Seen from that angle, technology is not asymmetric. Also, the constant increase in Gross Domestic Product (GDP) is necessary as well as sufficient condition to develop new resource and technology. According to this school of thought, the environmental quality may suffer from degradation only temporarily in the initial phase of economic growth. Economic growth and environmental cleanliness would move together in the same direction beyond a threshold of development and that is supported by both demand and supply side arguments. Such a pattern can be illustrated by the Environmental Kuznet's Curve in the following figure.

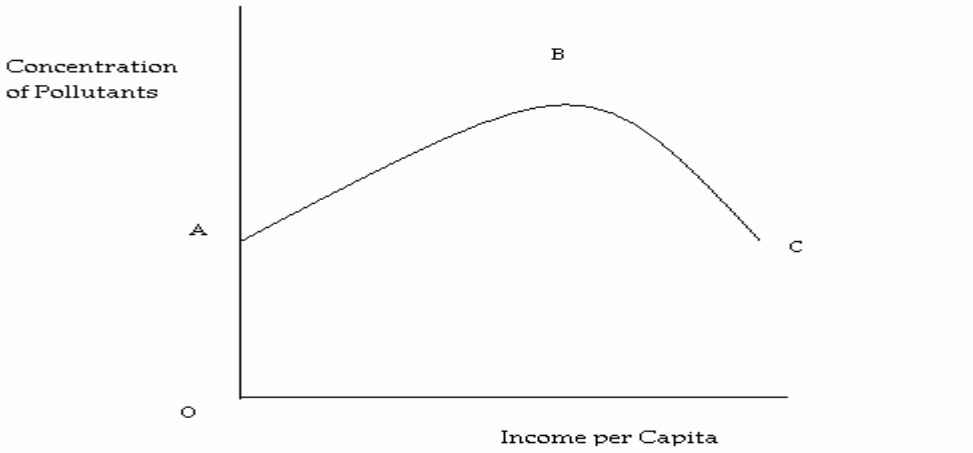

Figure 2: Environmental Kuznet's Curve
[Source: Ramprasad Sengupta, *Ecology and Economics: An Approach to Sustainable Development*, (New Delhi: Oxford University Press, 2001), p.: 228.]

Here environmental quality is considered as a normal good with positive income effect.[25] The substantial growth of secondary sector as part of rising GDP leads to increase in hazardous waste output, biomass depletion, and rise in total direct and indirect intensity of GDP. However, at later stage the share of service sector in GDP would go up as a result of maturity of capitalist development and consequently the pollution intensity of the social aggregate product would decrease due to the nature of demand composition, product preferences and the income-elasticity of demand for environmental services.[26] However, this optimism inevitably faces some fundamental questions. Can preferences of individuals be treated as given? Can social well-being be seen as a result of aggregation of fixed individual preferences? Ramprasad Sengupta has rightly argued that: "*…preferences of people can be manipulated by technological changes, by creating new wants through advertisement in a consumerist culture which can offset part of the benefit of population control …Like technology, the notion of well-being changes over time depending on the realisation of the people regarding the role of various factors including the ecological ones in determining the quality of life.*"[27] On the other hand, capitalist pulse of

economy guides human perception towards short run instead of long run gains and losses. Preferences will be different in short and in long run and preferences will change. Although, the prediction about change in preference path and technological responses cannot be delivered accurately as they are uncertain in nature.

The economy under the neo-liberal framework has to find out a way out by maximising individual welfare and that of society as a whole. Accounting ecological constraints within the economic analysis and policies has been driven by the urge to achieve intertemporal choice of allocation over generations. Here come the issues of sustainability – both in ecological and economic sense which are ultimately issues of limits and conservative investment criteria. Issues of equity and distribution are also issues of limits and they deal with uncertainty[28]. The economics of sustainability deals with the decision making process under extremely uncertain circumstances in spite of careful scrutiny of technological choices because over time it is expected that changes will occur in technology, income and people's preference(s). The problem is not that changes will occur, but that we do not know for sure how and when these changes will occur (i.e., the changes will be, from our viewpoint, random in nature) and we do not know what will be the implications of these changes on future resource availability. Therefore, the protection of ecological stability, inter-generational equity and intertemporal management of natural resources are pre-requisites to deal with uncertainty and irreversibility and to achieve sustainability. The definition of sustainable development establishes that it is equity, not an entirely efficiency issue and also it incorporates an ethical criterion with fairness across generations and fairness within generations. The needs of the present are not to be satisfied at the expense of future needs (well-being). Thus, the trade-off between equity and efficiency needs to be addressed. If equity is an important issue in considering sustainable development, not all efficient points are sustainable.

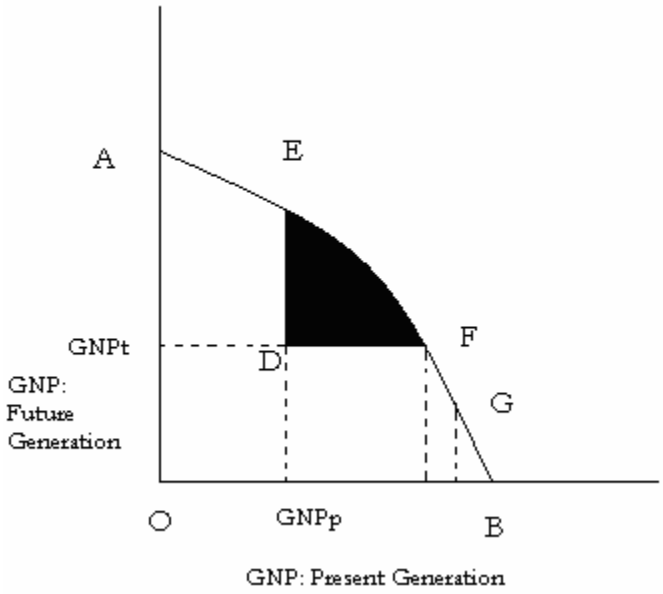

Figure 3: Trade-offs between intergenerational efficiency and equity
[Source: Ahmed Hussen, *Principles of Environmental Economics*, (London: Routledge, 2004), p.: 181.]

Let, the starting point be D. Clearly, this point is inefficient as it is located inside the production possibility frontier AEFGB. A move to point E or F or any point between these two points would lead to a *Pareto optimal outcome.* [29] Such a move would benefit at least one of the generations without affecting the well-being of the other generation. So, efficiency would be achieved along with equity as the range of points from E to F is all on production possibility frontier. The equitable range has been identified with black shade. However, the move to point G would maintain efficiency but would fail to continue equity as the move makes the future generation worse off. So, equity and efficiency may not lie always on similar production choice. Accordingly, economic growth and sustainability may differ at some point as growth is basically efficiency based agenda whereas sustainability inherits equity within its ambit. It is not obvious to continue a 'sustainable growth'.

We are endowed with three different conceptions of sustainability, namely Hartwick-Solow Approach to Sustainability, Ecological Economics Approach to Sustainability and Safe Minimum Standards (SMS) Approach to Sustainability. The Hartwick-Solow Approach to Sustainability focuses on the constancy of real consumption over an indefinite period and thus, it is a consumption oriented approach to sustainability. In order to ensure constancy in the consumption pattern over generations the maintenance of non-declining capital stock is a necessary condition. This capital stock is a conglomeration of natural capital (Kn)[30], human capital (Kh)[31] and man-made capital (Km)[32]. This approach is based on a critical assumption that human capital and natural capital are substitutes. Taken all features together it can be inferred that this approach requires the maintenance of capital stock across generations, however the composition of the capital stock is not considered so important. This can be rigorously defined as:

$$Kn + Kh + Km \geq K^*$$

where K^* = some pre-determined threshold level of total capital composition expressed in monetary terms.

This evokes that an economy, dependent on non-renewable resource as one input to production, could have constant consumption level over time provided that it follows a simple rule: reinvest all rents (the difference between price and marginal cost per unit extracted) from exploiting the resource in man-made capital which results in non-declining consumption over time.[33] But it is important to note that the substitution of one form of capital for another form is possible only to a certain extent. This implies certain minimum quantum of each form of capital is essential for development.[34] That is why this approach is known as the "weak sustainability approach".

This approach has been criticised for same reason for which the neo-classical growth model has also been questioned. This approach assumes that sustainability is defined in terms of maintaining a constant real consumption (of goods and services) over an indefinite period of time while recognising human generated and natural capital are substitutes. This assumed substitutability (characterised by technological advances) is a lively dispute between neo-classical and ecological economists. Either use of technology is asymmetric while dealing with irreversibility and increasing entropy or it fails to rule out uncertainty of economic impact on ecology due to time lag. Ecological economists believe that at the current level and pattern of human economic activity, it is more appropriate to view natural and human capital as

complementary the most. Also, the Solow-Hartwick approach assumes that preferences are exogenously determined and market prices reflect the true social value of resources over time, which imply the existence of a set of competitive markets from now to eternity.[35] Therefore, this approach basically deals with inter-generational efficiency but, not with inter-generational equity. People have positive time preference; i.e., other things remaining equal, people prefer present consumption than the future consumption. So, people would be willing to substitute present consumption for future consumption by discounting the future.[36]

The Ecological Economics Approach to Sustainability starts with a worldview that the natural world is not only finite, but also non-growing and materially closed and human and natural capitals can be complements at best situation. Furthermore, it is postulated that the general capacity of the finite natural world would be strained by the scale of the human economy. So, the approach advocates for stricter sustainability rules in terms of non-declining natural capital. This can be rigorously defined as:

$Kn \geq Kn^*$, where Kn^* = some pre-determined threshold level of natural capital.

This implies that the natural capital stock is to be maintained in its own above some pre-determined threshold level. A consideration of inter-generational equity is the underlying principle for this specific requirement. The non-declining natural capital stock is expected to be consistent not only with economic sustainability but also with the ability of the ecosystem to withstand shocks.[37] That is why this approach is known as the "strong sustainability approach". But, economists argue that this approach is unnecessarily strong. The ultimate objective of the development with inter-generational equity requires that the process of development does not end up with the decline of human well-being index of the society over time.[38] Sustainability has to address also the present societal well-being. Therefore, revising the lacunas of this "strong" approach one has to look for some comprehensive and balanced ways to deal with the issue.

The balance could be brought in through the Safe Minimum Standard (SMS) Approach to Sustainability which starts as a practical guide to natural resource management under the condition of extreme uncertainty. Therefore, it is highly important to pay serious attention to not extending resource exploitation beyond a certain safe minimum standard. Otherwise, the social opportunity cost of reversing direction might become unacceptably large. When viewed from a perspective of long-run resource management, the nature of the substitution possibilities between natural and human capital is uncertain. In this respect, then, "*sustainability warrants maintenance of nondeclining natural capital.*"[39] This can be rigorously defined as:

$Kn \geq Kn^{**}$,
$Kh \geq Kh^{**}$, and
$Km \geq Km^{***}$,

Where Kn^{**} = some minimum level of natural capital;
Kh^{**} = some minimum level of human capital;
Km^{**} = some minimum level of man-made capital;

It seems that the SMS and the ecological approaches are similar to the extent. Both approaches impose limits on the substitution possibilities between natural and human capital facing the threats of irreversibility and uncertainty. However, these two approaches are distinct while providing explanations for limits in factor substitutions. The SMS approach uses irreversibility while the ecological economics approach relies on the physical laws of which irreversibility is a part. The SMS approach first identifies the minimum viable population or minimum habitat size of a population or minimum required stock of some other natural asset. If a proposed development threatens the SMS, then decision-makers are presumed to rule against that proposition, unless the social opportunity costs of such doing is too high.

From the above analysis, what has become increasingly evident is the unsustainability of rapid economic growth, especially if it is based on increasing use of throughput from the natural ecosystem. Economic efficient use of resources is necessarily not similar with sustainable use of resources. Sustainability approach prefers an ethical dimension over an efficiency criterion along with inter-generational equity within its ambit. Also, it is evident from the above analysis that market efficiency cannot resolve the matter due to negative externality, irreversibility and uncertainty of the economic impacts on nature. That's why protection rules become viable and in that sense environmental law, policy making, and governance come under the limelight. These are non-market instruments to deal with the problem. The sustainability rules are thus viable for those non-market instruments because the question of ethics and inter-generational equity are beyond the capability of market clearing systems to resolve. Though, the extremely stringent sustainable rules cannot be chosen due to economic compulsion of the society. However, the safe minimum harvest rate should be determined for both renewable as well as non-renewable natural resources in environmental governance keeping in consideration the phenomena like – irreversibility, uncertainty, and integrity of nature.

The present neo-liberal set up of the globalised world, majorly dependent on market mechanisms for development, however complicates the issue. On one hand, as a part of neo-liberal governance model, it has to cater the developmental targets of the time. On the other hand, it should advocate for limiting economic growth in accordance with the ecological principles to assure sustainable governance of nature. It is interesting to take note of the fact that emergence of discourse on sustainability is very much within the ambit of neo-liberal paradigm, which also advocates for high economic growth, as an essential indicator, to achieve developmental success. This juxtaposition problematises further the issue of environmental governance. The following section will attempt to provide a concise evolution of environmental governance in India. The constitutional and institutional manoeuvrings are enclosed with it to locate the non linear and contested path. This attempt is to understand how much of ecological and how much of economic concern are being associated with that evolution. Theoretical inputs from this section will be helpful to evaluate the evolution of environmental governance in India, the balance between ecological urgency and economic imperatives in functioning of the concerned model of governance as well as its transition, if any, taking the issues of good governance into consideration with a larger ecological and economic reference of a changing world. That will be attempted in an appraisal of environmental governance in India.

2. Evolution of Environmental Governance in India: A Journey through Constitutional and Institutional Manoeuvrings

Constitutional Provisions

The policy paradigm to govern environment might start with the earliest provisions made in Indian Constitution: Articles 47, 48 and 49, which commanded the State to improve the standard of living and public health and to protect historical monuments and structures.[40] To fulfill these constitutional goals, it was necessary to provide a pollution free environment. All of the mentioned articles were included in Part - IV of the Constitution under the *Directive Principles of State Policy*.[41] Article–37 under this section defined the principle. It said: "*The Provisions contained in this Part shall not be enforced by any court, but the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be the duty of the State to apply these principles in making laws.*" Use of the phrases like "*fundamental in the governance*" and "*duty of the State*" seek to raise pressure on Union and State Legislatures to undertake policies in accordance with the provisions made under the *Directive Principles of State Policy*. However, these are not directly enforceable due to the ambiguity embedded within the Directive Principles.[42]

However, the most important breakthrough in this context can be noticed in mid 1970s following several international conferences and resolutions on environmental protection. It would not be irrelevant to quote from the speech of the then Indian Prime Minister, Indira Gandhi, which was delivered in the Parliament in October, 1976: "*So far, the feeling of responsibility towards nature was absent all over the World. It was not absent in our own ancient books; but came about because we adopted the Western viewpoint. Now the time has come to go back to the source of strength of the human race and to try to preserve and revitalise them.*"[43] This growing concern in the Indian Parliament resulted in the 'Constitution (Forty-second Amendment) Act, 1976' which came into force from 3 January 1977. It added: Article 48A**:** "*The State shall endeavour to protect and improve the environment and to safeguard the forest and wild life of the country.*" A new Part - IVA was added introducing *Fundamental Duties* in the Constitution. Article 51A (g**)** of this Part stated: "*It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.*" It was the first time when phrases like "*natural environment*" or "*to protect and improve the environment*" were included in the constitutional draft. Inclusion of these two articles in the *Directive Principles of State Policy* further enhanced the possibility of the emergence of a national policy regarding nature and natural components. Also, it indicated that the Union Legislature was trying to implement two-fold provisions where on one hand, it admitted the liability of the government to protect and improve environmental quality and on the other hand, it cast a duty on the citizens to help in that process boosting the possibility of joint venture. Articles 15(2)(b), Article 21 and Article 24 under Part – III of the Constitution, primarily concentrated on *Fundamental Rights*, provide specific provisions which may be linked with environmental protection. "*Right to protect the environment*" comes under Article 19. In this context the decision taken by the Supreme Court in *Maneka Gandhi vs. Union of India (AIR 1978 SC 597) case*, *Rural Litigation and Entitlement Kendra vs. State of U.P. (AIR 1988 SC 2187)* popularly known as Dehradun Quarrying Case and *M.C. Mehta vs. Union India (AIR 1987 SC*

1086) popularly known as Oleum Gas Leak Case may be mentioned. The '73rd Constitutional Amendment Act, 1992' on revitalisation of Panchayati Raj in Indian political system has added Schedule XI of the Constitution which has assigned eight entries (2, 3, 6, 7, 11, 12, 15 and 29), linked with environmental protection and conservation, like – soil conservation, water management, watershed developments, social and farm forestry, drinking water, fuel and fodder, non-conventional energy sources and maintenance of community assets to the Panchayats. The '74th Amendment Act, 1992' has added entry – 8 to the Schedule XII assigning "*protection of environment and protection of ecological effects*" to urban local (municipal) bodies.

From the point of view of policy making and governance, allocation of legislative authority is very important. Article 246 of Part – XI under Schedule VII of the Constitution provides the distribution of legislative powers between the Centre and the States through three lists of subjects. Some of the subjects of those Lists, having direct or indirect implications on environment are as follows:

LIST- I: UNION LIST[44]

Entry Number	Subjects
6	Atomic energy and mineral resource necessary for its production
14	Entering and agreements with foreign countries and implementing of treaties, agreements and conventions with foreign countries
52	Industries**,** the control of which by the Union is declared by Parliament by law to be expedient in the public interest
53	Regulation and development of oil-fields and mineral oil resources
54	Regulation of mines and mineral development to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest

56	Regulation and development of inter-state rivers and river valleys
57	Fishing and fisheries beyond territorial waters

LIST – II: STATE LIST[45]

Entry Number	Subjects
6	Public health and sanitation, hospitals and dispensaries
14	Agriculture, including agricultural education and research, protection against pests and prevention of plant diseases
15	Preservation, protection and improvement of stock and prevention of animal diseases
17	Water, that is to say, water supplies, irrigation and canals, drainage and embankment, water storage and water power subject to the provisions of Entry 56 of List – I
21	Fisheries

LIST – III: CONCURRENT LIST[46]

Entry Number	Subjects
17	Prevention of cruelty to animals
17A	Forests
17B	Protection of wild animals and

	birds
20	Economic and social planning
20A	Population control and family planning
29	Prevention of the extension from one State to another of infecting or contagious diseases or pests affecting men, animals or plants
36	Factories
37	Boilers
38	Archaeological sites and remains other than those declared by or under law made by Parliament to be of national importance

The residual subjects which are not included in any of the mentioned lists are under the jurisdiction of the Union government according to Article 248. These entries offer a vast spectrum to formulate legislations and policies in the national or state level to increase the quality of environment assisted with some other Articles like 249, 250, 252 and 253 providing special power to the Union government regarding formulation of national policies containing any matter of national interest when required.[47] With these constitutional provisions which are binding forces on citizens, non-citizens as well as the State, it has become viable to go for policy formulation and governance in the matters of environment. The plan documents can serve as first hand appraisal of the evolution of institutional effort to protect and govern environment in India as a conglomeration of legislative laws and institutional manipulations. In this regard, the following sub-section would reveal the institutional environmentalism in India through the five-year plan model.

Institutional Environmentalism

The true environmental concerns were absent in the drafts of the first three Five-Year Plans. It emerged with India's obligation to international efforts to protect environment in early 1970s. The Fourth Five-Year Plan (1969-'74) incorporated *Animal Husbandry*, *Dairying*, *Fishing* and *Forests* all in a single section recognising "*…the inter-dependence of living things and their relationship with land, air and water…*"[48] and admitted the need for development in harmony with environmental issues for the first time. It put stress on linking up rural economy with forests which came to be known as social forestry and introduced a new section, *Conservation of Wild Life* with the National Park Policy. The initiative to protect nature institutionally began through

the establishment of National Committee on Environmental Planning and Coordination (NCEPC) by the Prime Minister Indira Gandhi in 1972. It was set up under Pitambar Pant, member of the Planning Commission, and was entrusted the task to identify environmental effects of activities programmed and to recommend modifications to safeguard the quality of environment. It consisted of mostly experts from various disciplines, related with environment, and was serviced by the Department of Science and Technology. Also the country got two important environmental Acts, first of their kinds, through Union legislations: the 'Wild Life Protection Act, 1972'; and the 'Water (Preservation & Control of Pollution) Act, 1974'. The last one paved the way for the establishment of Central and State Pollution Control Boards (CPCB and SPCBs) to implement the provisions of this Act and of the 'Air (Prevention and Control of Pollution) Act, 1981' and The 'Environment (Protection) Act, 1986'.[49] They were responsible for implementing legislations relating to prevention and control of pollution.

This re-orientation of developmental approach was vehemently lost again in the fifth plan (1974-'79), introduced at a time when the country was reeling under a severe economic crisis. Though, one of the most crucial aspects of institutional environmentalism in India, the Environmental Impact Assessment (EIA) was undertaken in 1977 to ensure environmental compatibility of any economic project. Also the country was offered the 'Environmental Protection after Constitutional (Forty-second Amendment) Act, 1976' and the 'Water (Prevention and Control of Pollution) Amendment Act, 1978'. Though this plan period lacked any kind of environmental commitment in governance as far as the process of planning is concerned, undoubtedly the major contribution of this time is the synthesis of Article 48A and Article 51A (g) in the Constitution**.**

The 'Sixth Five-Year Plan (1980-'85)' devoted one full section to *Ecology and Environment* and classified environmental problems in India into two broad categories:

1. Those arising from conditions of poverty and under-development;
2. Those arising as negative effects of the very process of development;

and recognised, "*… a concern for environment is essentially a desire to see that national development proceeds along rational sustainable lines. Environmental conservation is in fact, the very basis of all development…*"[50] This assertion was a marked turn-over in the history of environmentalism in India and her policy making which looked at environment as a non-excludable and one of the most essential factor of development. The document indicated some of the programmes to be implemented; such as EIA as an integral part of the entire planning process: setting up of Environmental Information System and appropriating programmes for "Public awareness about environmental protection" etc. The government of India appointed a Committee for Recommending Legislative Measures and Administrative Machinery for Environmental Protection under the chairmanship of N.D.Tiwari, the then Deputy Chairperson of the Planning Commission. One of the recommendations of this Committee was the creation of a Department of Environment at the center to provide explicit recognition to the pivotal role that environmental conservation must play for national development. The committee further recommended that this Department should be under the charge of the Prime Minister and "*should primarily play a watchdog role, to study and bring to the attention of the Government and Parliament instances, causes and consequences of environmental degradation in all sectors, and also as a nodal agency for environmental protection and eco-development in a coordinating ro*le."[51] The government accepted these recommendations and the Environment Division was converted into the Department of Environment with effect from November 1, 1980. A National Committee on

Environmental Planning (NCEP) was also set up in April, 1981 as per recommendation of the Tiwari Committee. Its functions included preparation of a state of environment report, arranging conferences on significant environmental issues and establishing a nation-wide environmental information and communication system to propagate awareness through mass media.

Attuned to the rationale of sustainability the approach paper of the seventh plan (1985-'90) envisaged formulation of National Conservation Strategy. The main programmes included development of instrumentation, equipment and institutional facilities for environmental monitoring, pollution control and waste management. It further put stress on Eco-development, Environmental Research Promotion, Environmental Education, Training and Awareness and Coordination and Liaison with State Governments and Union Territories in this respect. For the first time, it put forward its concern on international cooperation for the sake of environment protection incorporating several bilateral and multi-lateral environmental programmes. Ministry for Environment was upgraded to Ministry of Environment and Forests (MoEF) of independent state rank in 1985. Following this initiative, the State governments started to establish their own departments of environment and forests to keep pace with fast increasing policy initiatives. The MoEF, developed as a full-fledged central Ministry, comprised of four divisions:

(a) **Environment:** With the field formation of being the CPCB for exercise of promotional and regulatory functions under the water, air and environment protection Acts.
(b) **Forest and Wildlife:** With field formations in different parts of the country for enforcing the 'Wildlife Protection Act, 1972' and the 'Forest (Conservation) Act, 1980'.
(c) **Ganga Project Directorate:** Administered by a steering committee headed by the Secretary, Environment and Forests. It would supervise the 'National River Action Plan' as and when it was finalised.
(d) **National Afforestation and Eco Development Board:** With six regional centers to provide support for project preparation (like dams) and interaction with the Government of India in May, 1988. They were:
    1. Shilong for the North Eastern Region
    2. Calcutta for the Eastern region
    3. Chandigarh for the North Region
    4. Bangalore for the South Region
    5. Lucknow for the Central Region
    6. Bhopal for the Western region

Other departments/organisations dealing with different aspects of environment are Department of Science and Technology, Department of Agriculture and Cooperation, Department of Biotechnology, Department of Ocean Development, Department of Space and Department of Non-Conventional Energy Sources. Some of the important institutions dealing with environmental management, forestry functions and pollution control functions of MoEF were: Council of Scientific Industrial Research (CSIR), Botanical Survey of India (BSI), Zoological Survey of India (ZSI), Forest Survey of India (FSI), Forest Development Corporations, Indian Council of Forestry research and Education (ICFRE), National River Conservation Directorate, National Land Use and Wastelands Development Council, National Land Use and Conservation Board (NLCB), National Wastelands Development Board (NWDB), Indian Board for Wild Life(IBWL), Wild life Institute of India, Animal Welfare Board of India, Central Zoo Authority, National Eco-Development Board, and Eco-Task Forces of Ex-servicemen.

There was another unique attempt to adopt a coordinated, decentralised approach of environmental conservation involving the cooperation and active participation of every segment of the society and realising the regional diversity of nature and hence the need of different treatments for different problems. Non Governmental Organisations (NGOs), voluntary bodies and the private sector were thus entrusted with an effective role in this effort. During the plan-decades of 1980s India witnessed following important central legislations:

1. The 'Forest (Conservation)Act, 1980'
2. The 'Air (Prevention and Control of Pollution) Act, 1981'
3. The 'Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985'
4. The 'Wild Life Protection Act, 1986'
5. The 'Environment (Protection) Act, 1986'
6. The 'Environment (Protection) Rules, 1986'
7. The 'Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms or Genetically Engineered Organisms or Cells Rules, 1989'

Not only the number of such legislations increased, but also the incorporation of new items, previously left out, under governmental consideration could be noticed. The feature of the central Acts tend to be more comprehensive than before acknowledging the fact that ecology is a complex inter-connected web and not to be dealt with sectoral attitude.

The 'Eighth Five-Year Plan (1992-'97)' urged to monitor the state of environment on a regular basis and to re-generate and restore degraded ecosystems, if possible. India got the 'Public Liability Insurance Act and Rules and Amendment, 1991' and the 'National Environmental Tribunal Act, 1995' in this connection. The question of environmental governance has become more intricate and interesting at the onset of liberal paradigm. The pro-capital, consumption induced market dependency along with the illustrations of special economic zones, free trade areas etc. raised the questions on how the structure of the environmental governance could be manoeuvred in response to this transition. Ninth plan (1997-2002) set out certain strategies:

1. Evolving the rights for common property resources
2. Inter-sectoral coordination and cooperation
3. Participation of people (particularly women) in the management and sharing of usufruct through Joint Forest Management (JFN)
4. Integrated development of villages in and around forests

- besides all other provisions appropriated previously. The country got three new Acts: the 'National Appellate Authority Act, 1997', the 'Municipal Solid Wastes (management & Handling) Rules, 2000' and the 'Ozone Depleting Substances (Regulation & Control) rules, 2000'.

The 'Tenth Five-Year Plan (2002-'07)' iterated, "*Sustainability is not an option but an imperative*" and "*…without sustainability environmental deterioration and economic decline will be feeding on each other leading to poverty, pollution, poor health, political upheaval and unrest*"[52] – thus relating environment with every aspect of life cutting across all sectors of development. The explicit recognition to sustainability issues might indicate that the governance regarding environment has adopted the principle of sustainability and sustainable development in its agenda and would act according to the sustainability doctrine. It admitted India as one of the twelve major biologically diversified countries and set out new initiatives besides the previous:

1. Schemes incorporating clean development mechanism
2. Schemes with international cooperation

India has been offered several Union legislations like: the 'Noise Pollution (Regulation & Control) Amendment Act, 2002', and the 'Biological Diversity Act, 2002'. The country finally got her first ever National Policy draft on environment in 2004 and its implementation in 2006.

Finally, the 'Eleventh Five-Year Plan (2007 – '12)' stated the following in connection with environment and climate change: "*Protection of the environment has to be a central part of any sustainable inclusive growth strategy. This aspect of development is especially important in the Eleventh Plan when consciousness of the dangers of environmental degradation has increased greatly. Population growth, urbanisation, and anthropogenic development employing energy-intensive technologies have resulted in injecting a heavy load of pollutants into the environment. More recently, the issue assumed special importance because of the accumulation of evidence of global warming and the associated climate change that it is likely to bring.*"[53] The plan document made a statement that environmental objectives require actions in several areas cutting across the purview of different ministries. In that sense the role of the Ministry of Environment and Forest (MoEF) is very crucial. "*The Ministry of Environment and Forests (MoEF) has the important role of monitoring the development process and its environmental impact in a perspective of sustainable development and to devise suitable regulatory structures to achieve the desired results. While this role is crucial, environmental objectives can only be achieved if environmental concerns are internalised in policymaking in a large number of sectors. This would require sharing of responsibility at all levels of government and across sectors with respect to monitoring of pollution, enforcement of regulations, and development of programmes for mitigation and abatement. Regulatory enforcement must also be combined with incentives, including market and fiscal mechanisms to encourage both industry and people in their day-to-day working lives to act in a manner responsive to environmental concerns.*"[54]

The following is the structure of the Ministry of Environment and Forests (MoEF) till date. It is still the nodal agency in the administrative structure of the Central government for the planning, promotion, coordination and ensuring the implementation of India's environmental and forestry policies and programmes with the broad objectives:

1. Conservation and survey of flora, fauna, forests and wildlife
2. Prevention and control of pollution
3. Afforestation and regeneration of degraded areas
4. Protection of the environment and
5. Ensuring the welfare of animals

Besides the five regional offices, a new office of Wildlife Crime Control Bureau has been established in New Delhi. MoEF has 76 ENVIS Centres with different subject areas. The CPCB and SPCBs are now designed as ENVIS Centres. Forest Survey of India, Botanical Survey of India, Zoological Survey of India, Indira Gandhi National Forest Academy, Directorate of Forest Education, National Institute of Animal Welfare, National Zoological Park, and National Museum of Natural History are Subordinate Offices under the Ministry. The Ministry has five Autonomous Organisations, four Authorities, three Boards, and one Public Sector Undertaking under its purview. The divisional structure of the Ministry for Environment and Forests is as following:

Divisions

- Administration
- Animal Welfare (AW)
- Budget and Accounts (BA)
- Civil Construction Unit (CCU)
- Clean Technology (CT)
- Conservation & Survey (CS)
- Control of Pollution (CP)
- Environment Education (EE)
- Environmental Impact Assessment (IA)
- Environmental Information (EI)
    - Environmental Information System (ENVIS)
    - ENVIS - A Gateway on Sustainable Development
    - National Natural Resource Management System (NNRMS) Programme
    - Database of Environmental Experts in India:2007
    - NGO Cell (NC)
- Environment Research (RE)
- Externally Aided Projects (EAP)
    - North East Cell (NEC)
- Forest Conservation (FC)
- Forest Policy (FP)
- Forest Protection (FPR)
- Forest Services (FS)
- Hazardous Substances Management (HSM)
- Integrated Finance (IF)
- International Cooperation and Sustainable Development (IC&SD)
    - Climate Change(CC) [Web-site: **8**th Conference of Parties to UNFCCC (COP8)]
        - Clean Development Mechanism(CDM)
- National Afforestation & Eco-Development Board (NAEB)
    - United Nation Convention to Combat Desertification
- National River Conservation Directorate (NRCD)
- Official Language (OL) [Web-site: http://www.rajbhasha.gov.in]
- Montreal Protocol & Ozone Cell (OC)
- Plan Coordination (PC)
- Policy & Law (PL)
- Project Elephant (PE)
- Project Tiger (PT) [Website: http://projecttiger.nic.in/]
- Research & Training (Forestry) (RT)
- Survey & Utilization (SU)
- Trade & Environment (T&E)
- Wildlife (WL)
    - Regional Offices (RO)

Certainly, this reflects the vast spectrum under the environmental governance in India.[55] Perhaps, MoEF consists of most intricate, wide, and comprehensive structure of governance. It has to connect itself with the functions, objectives, and goals of all other Ministries which are crucial for developmental governance. If the task entrusted to the MoEF is looked from a wide angle then it can be stated that basically it has to take into consideration both the ecological and economic concern simultaneously. For the sake of economic aspiration of the country, which was basically underdeveloped before the penetration of global capital into her own economic arrangements, India would prefer to go for growth oriented economic strategy through planning models prevalently up to 1991 for capital accumulation and self-reliance. Also, with the advent of neo-liberal set up she internalises within herself the global integrated economic norms. However, the credibility of the MoEF would lie in how it could response to the developmental fall outs on natural environment, how it could take a balanced path between ecological urgencies and economic imperatives in a development model and how it could come up with the global economic transition.

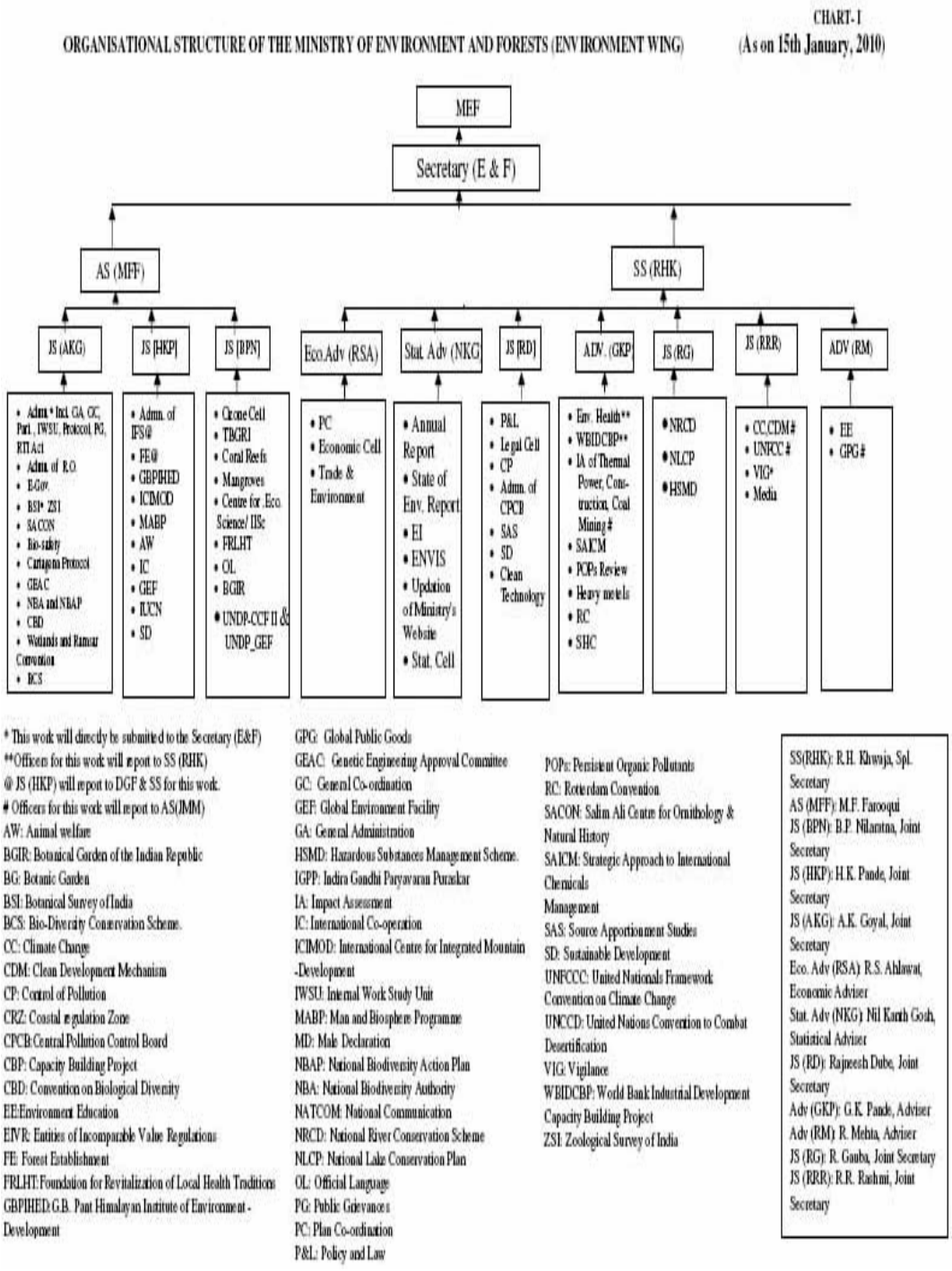

Figure 4: Organisational Structure of the MoEF, India (Environment Wing)
[Source: http://moef.nic.in/modules/about-the-ministry/organisational-structure/chart-1-l1.php,accessed on 12.06.2010]

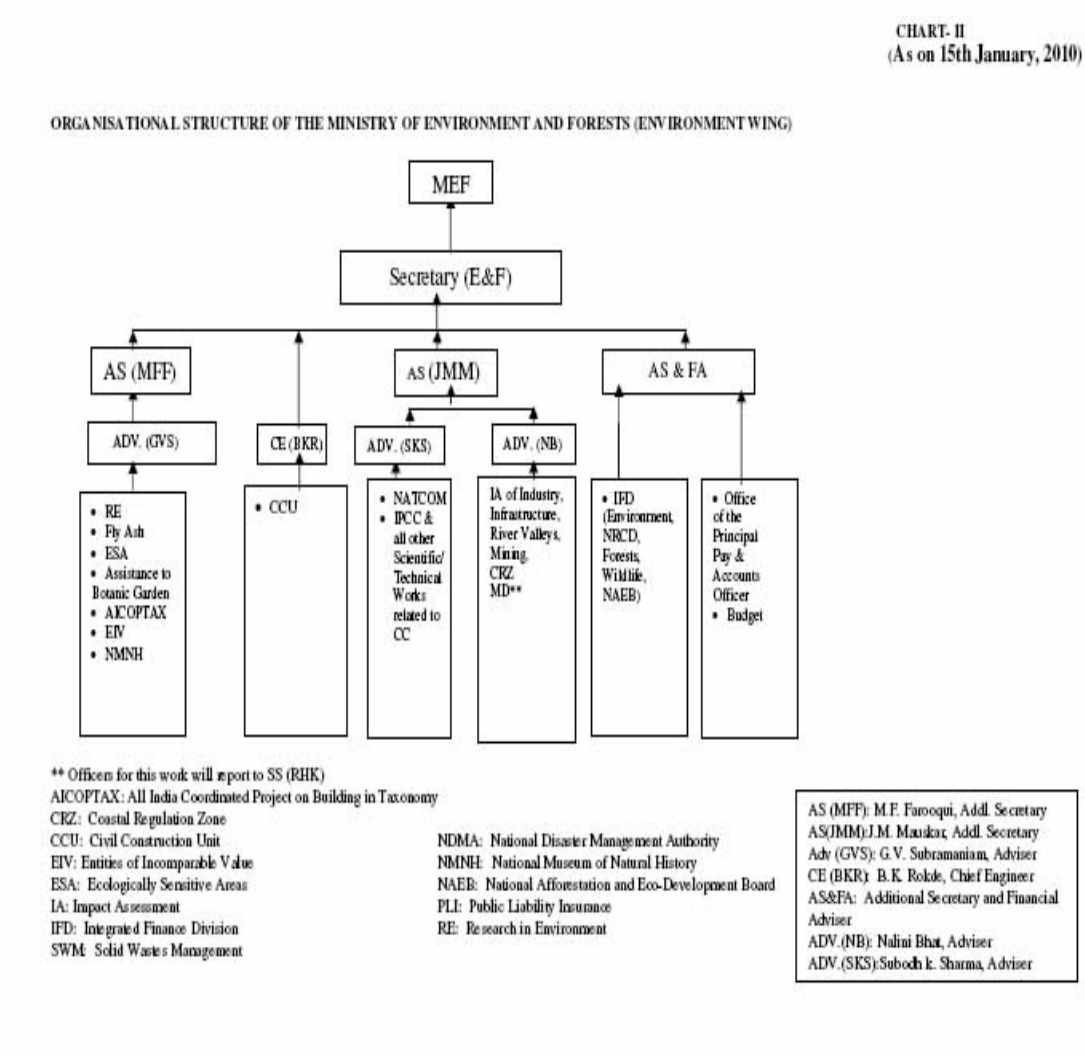

Figure 5: Organisational Structure of the MoEF, India (Environment Wing)
[Source: http://moef.nic.in/modules/about-the-ministry/organisational-structure/chart-2-11.php,accessed on 12.06.2010]

The next section of the present article would concentrate on the appraisal of the evolution and functioning of environmental governance in India in accordance to the ecological inferences, derived from the discussion of the theoretical understanding in the previous section of this article. This would be more or less with a gradual formation of environmental governance in India based on locating the problematics, responding to them institutionally with constitutional back up. A question is certainly important here that how could the issue of environment become such an important issue for governance and where does it locate itself between two more or less opposite trajectories of developmental dimensions – economic growth and ecological sustainability. Which one would be of prevalent influence – 'norm' of economics or 'logic' of ecology? Also the

structure of governance may be critiqued in accordance to the principles of good governance. An appraisal is followed to look for the answers of theses queries.

3. An Appraisal

First Phase: A Hesitant Beginning

India once adopted the Nehru-Mahalanabis Growth Strategy relying on heavy industrial growth as a measure to combat widespread poverty and got coagulated with this principle for the first three decades of Planning to attain "self-reliance". One objective among the principles set out by the Planning Commission was to increase production to the maximum possible extent so as to achieve higher level of national and per capita income.[56] It was then expected that the socio-economic well-being would percolate to the impoverished section of the population through "rapid economic growth". For this rapid growth "efficient" utilisation of natural resources was appreciated. The equity question, if considered, was centred on the intra-generational goal, not inter-generational. Economic infrastructure building natural resources were taken into account as means of reconstruction. For example, the chapter on Forests in Part-III of the 'First Five Year-Plan' document, known as *Programmes of Development* evoked an emerging concern relating loss of some "valuable species" of trees due to the partition of the country and decline of production and import of timber since the end of World War II. The Chapter advised "*…….stepping up supplies of timber by increased use of non-conventional species after proper seasoning and treatment by chemical methods……*"[57] Clause – 10 of this Chapter presented the then consumption figure of forest-timber with are giant share of 27 per cent consumed alone by the government owing to the demand for the production of railway sleepers. Demands were from Defence and other Civil Departments. The Chapter declared, "*… as the availability of steel is far short of total requirements, a policy of conserving steel and replacing it by timber has become imperative and should be adopted.*"[58] With such propositions it can be obviously assumed that Forest Administration and Forest Research and Education were principally meant for the protection of the commercial potential of forest instead of ecological stability. This perception continued over first three Plan periods and during "Plan Holiday"[59]. It might be the cause of not entertaining the potential of the constitutional provisions made under the *Directive Principles of State Policy* towards ecological direction. Even the 'Fourth Five-Year Plan' document, which for the first time incorporated ecological concerns into policy making and governance, clearly put emphasis on economic growth as an answer to widespread poverty with the inherent principle of "growth with justice" and the political slogan of *"garibi hatao"* [remove poverty]. Consequently, the ecological concern was vehemently lost in the time of drafting the 'Fifth Five-Year Plan' when the country was reeling under acute financial crisis. The initial reluctance of the Government to be acquiescent with the international environmental agenda could be located in the following comment of the then Prime Minister Indira Gandhi made in the Stockholm Conference 1972: "*…the environmental problems of developing countries are not side effects of excessive industrialisation but reflect the inadequacy of development. The rich countries may look upon development as the cause of environmental destruction, but to us it is one of the primary of improving the environment for living, or providing food, water, sanitation and shelter, of making the desert green and the mountains habitable.*"[60] It was believed by the policy-makers that there was no trade-off between development and environment. Rather the relationship is

complementary. It was also nearer to neo-classical perception of faster economic growth and full utilisation of resources ignoring the limits by entropy. It was believed that the environmental quality may suffer from degradation only temporarily in the initial phase of growth but beyond a threshold of development economic growth and environmental cleanliness would move together in the same direction as illustrated by the Environmental Kuznet's curve in the previous section.

But India suddenly got stuck in another challenge of governance as she joined the band-wagon of environmentalism as a contracting party of numerous International treaties and agreements on environmental issues. India must have ratified a treaty, that is, by adopting it as national law before it came into force, or by acceding to it after it has come into force. Some of them were:

(1) Convention on International Trade in Endangered Species of Wild Fauna and Flora entered into force on 1 July 1975. India signed on 9 July 1974 and ratified on 20 July 1976.
(2) Convention on Wetlands of International Importance, especially as Waterfowl Habitat, entered into force on 21 December 1975. India acceded on 1 October 1981.
(3) United Nations Convention on the Law of the sea, entered into force on 7 April 1982. India ratified on17 June 1985.
(4) Convention for the Protection of the Ozone Layer, entered into force on 22 September 1988. India ratified on 18 March 1991.
(5) Convention on Biological Diversity, entered into force on 29 December 1993. India signed on 5 June 1992 and ratified on 18 February 1994.

Thus, the emergence of environmental concern in governmental response in India had some interesting linkages. The growth of worldwide environmentalism resulted in a series of international efforts like- 'Club of Rome' initiatives in late 1960s; Founex Conference in Switzerland in June, 1971; United Nation's Conference on the Human Environment in Stockholm in June, 1972; and Geneva Meeting in April, 1974. Gradually, India became part of these global initiatives. The country took part in IUCN General Assembly in the USSR in 1978, World Commission on Environment and Development, 1987, Rio Conference in 1992, Johannesburg Earth Summit 2002 and so on.

The phrase, 'Sustainable Development' had its root in the publication of the Brundtland Commission Report, *Our Common Future*, (in World Commission on Environment and Development, 1987). This report defined sustainable development as "*development which meets the needs of the present without sacrificing the ability of the future to meet its needs.*" In response to it Indian legislations incorporated the concept of sustainability in her Planning model. A handful of central and sectoral Acts have been implemented attuned to this path of development. Also, to cater this new concept of development the requirement of some institutional back up was soon realised. That effort resulted in the structured governmental initiative through the creation of MoEF. Articles 246, 248, 249, 250, 252, and 253 all became extremely helpful to draft several policies, rules and acts. With the provisions made in these articles it has become easier for India to join the global bandwagon of environmentalism.

Obviously, a question could be raised here. How strong was the international influence on Indian governmentality? There were certainly other issues which did enjoy international mandates. However, India did not wish ever to be a part of the bandwagon of those issues. It should be noted that participation in various international ratifications on environmental issues was never mandatory. For instance, the issue of ratification under Kyoto Protocol may be mentioned which has been a much later initiative and it has been introduced when

environmentalism has already loomed large as a global imperative. Enumerating this point let me go back to the theoretical proposition presented earlier in this article along with some empirical findings. It has been stated already that institutional governance regarding environmental issues evolved since late 1970s and in more comprehensive ways since mid 1980s. The later time period certainly had an indication of falling socialism worldwide and gradual inclination towards prevalence of integrating global market. Obviously the demand and supply of raw materials became important, a large portion of which claimed to be natural resources. The *Foreword* and the chapter *Development Perspective* of the 'Fourth Five-Year Plan' reflected some tensions regarding the status of certain crucial natural resources and the emerging demand for resources in the following manner. It iterated: "*We faced a plan gap and a budget gap at a time when the whole world, and India more than other countries, was hard hit by inflation, the continuing rise in the price of petroleum while the price of our raw materials remains static, as well as other political and economic tensions and international confrontations…A developing nation must marshal its scarce resources for a concerted effort to build its capital base in various sectors of the economy to enhance production capabilities and allow larger savings. Increased output and a balanced inter-sectoral allocation of the incremental savings promote further development…The very process of development generates new expectations and makes fresh demands on resources…..Greater emphasis has been laid on the speedy development of indigenous sources of energy and infra-structural sectors of coal, energy, irrigation and transport. High priority has been given to agriculture and rural development and allied agricultural activities like animal husbandry, dairying, fisheries and also the forestry sector, with accent on development and conservation.*"[61]

The Plan document also evoked some uncertainties regarding development. "*Planning for medium and long term has to reckon with certain inherent uncertainties. There are two principal sources of such uncertainty the weather and the international environment. Weather induced fluctuations in agricultural production and hydel generation can throw plan calculations out of gear…With regard to uncertainties in the international economic environment, several alternative scenarios were experimented with, on varying assumptions about the terms of trade mainly to take account of prospective oil price increases. These calculations show that even a small rise in oil prices vis-a-vis what has been assumed in the Plan will significantly reduce the growth of the economy below target levels; it will also adversely effect the level of consumption of the poor people. A rapid increase in the domestic production of oil and alternate energy sources and a reduction in the rate of growth of consumption of petroleum products are essential for safeguarding the integrity of our development plans in the face of these uncertainties.*"[62]

Now, this concern may be related with economist Rabindra N. Bhattacharya's proposition: with the consistent increase in the relative price (value) of natural environmental amenities even with no shift in taste, relative to goods and services that it might yield, irreversibility will clearly pose a problem. The capitalist pulse of economy guides human perception towards short run instead of long run gains and losses. Preferences will be different in short and in long run and preferences will change. Although, the prediction about change in preference path and technological responses cannot be delivered accurately as they are uncertain in nature.

Since the 'Sixth Five Year Plan', the plan documents reiterated that the new developmental paradigm often has produced unintended side effects of efforts to achieve rapid economic growth and development. Distortions may be imposed on national resources from

poorly planned development projects and programmes, as well as from lack of attention to long term concerns by commercial and vested interests. Thus it is clear that a concern for environment is essentially a desire to see that national development proceeds along rational sustainable lines. Environmental conservation is, in fact, the very basis of all development. The urge to achieve intertemporal choice of allocation of resources over generations - sustainability, both in environmental and economic sense, has emerged as the only choice to deal with uncertainty and irreversibility factor. Faster growth with declining natural capital and rising real cost of environmental amenities as well as integration with global market norm are certainly worthy contributions to the governmentality of the country.

On the other hand, the fallouts of "developmental disasters" on the "commons" of the country; and long sustaining environmental movements in several parts of India for rights over natural resources were other influencing factors on the direction of environmental governance. Large dams had to be built to ensure full utilisation of country's hydel energy strength particularly keeping in consideration the declining thermal power base and its appreciating costs. Therefore, Himalayan rugged terrain would have been exploited whatever might be its ecological implications. Forested areas should be managed "properly" to extract economic profit through commercial plantation as well as by promoting tourism. Coastal areas would to be brought under the purview of Ministry of Commerce and Industry and other Ministries to facilitate the establishment of modernised ports and export promoting zones or special economic zones. New kind of hazardous materials are to be exploited to take up challenges like - energy deficiency, chemical revolution, newer demand for information and technology sector, and practice of recycling wastes. Pleateus and hillocks have to be penetrated in search for tones of ores of minerals in order to maintain growing needs of power, physical infrastructure, real estates. However, these have resulted in degradation of core natural areas causing severe damage to the subsistence livelihood of indigenous communities of those areas. Obviously, these have resulted in wider public discontent. The movements like Chipko Movement in Garhwal region, Chilika Movement, Tehri Dam and Narmada Project movements, Cogentrix Controversy, Bhopal Gas Tragedy and long battled aboriginal movements in many parts of India in order to attain their rights over natural tracts perhaps sent the popular pulse of the time to governmental orders. The account of these movements can be cited well in the writings of Ramchandra Guha, Madhav Gadgil, Vandana Shiva and Claude Alveres. These movements often have involved environmentalists, lawyers and other aggrieved parties approaching the Courts for their redemption. While in the developed world, the movements are mainly against pollution and biomass depletion, the domain of developing and underdeveloped world generates the ecological movements centring on the rights of access to natural endowment. Article 19, as described earlier, endorsed the right to protect the environment thus expanding the ambit of environmental governance further. This phenomenon has generated another kind of politics – dragging environment into the overlapping section of economics, ecology, and society. Right based politics on several environmental issues has put forth a substantial volume of populism to the governmentality of the country. MoEF has emerged as a mediator of the tensions and conflicts among economic, ecological, and political aspirations.

The role of Courts in this complex interplay of forces brings out some systematic aspects of environmental politics.[63] Accordingly, institutional efforts incorporated the issues of rights for common property resources, inter-sectoral coordination and cooperation, participation of people (particularly women) in the management and sharing of usufruct through JFN and integrated

development of villages in and around forests in the context of environmental governance. Prior to 1980s, only the aggrieved party could go to the court and seek remedy for its grievance however, any other person who was not personally affected could not do so as a proxy of the victim or the aggrieved party. But, the incorporation of Article 48-A in the *Directive Principles of State Policy* and Article 51-A (g) in the *Fundamental Duties* transformed the perspective creating new horizons of social justice. It was greatly reflected in the cases Municipal Council, *Ratlam vs. Shri Vardhichand and others, (1980) 4 SCC 162*, *Rural Litigation and Entitlement Kendra vs. State of U.P. (1985) 2 SCC 431* and *M.C. Mehta vs. Union of India, (1986) 2 SCC 176* to name a few. Simultaneously, the Supreme Court of India embarked upon a creative activist phase of constitutional interpretation. Against the backdrop of the Bhopal Gas Disaster in 1984 and the Oleum Gas Leak in Delhi in 1985, the Supreme Court suggested that the government should plan a national policy for the location of toxic and hazardous industries and should set up an independent centre with professionally competent and public-spirited experts to provide scientific and technological inputs. Responding to these, the Union Legislation provided the 'Gas Leak Disaster (Processing of Claims) Act, 1985', the 'Environment (Protection) Act, 1986' and the 'Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms or Genetically Engineered Organisms or Cells Rules, 1989'. Since 1985, the most important role has been played by the public interest litigation (PIL) to innovate solutions to environmental matters. The Article 142 of the Constitution offered the Supreme Court a pivotal power to mould its decisions in order to ensure complete justice. As the Supreme Court is the final authority as far as matters of constitutional interpretation are concerned, the same adopted an expanded view of life under Article 21 and enriched it including environmental rights by reading it along Articles 47, 48-A and 51-A (g).

All these substantiate the fact that the authoritative response towards environmental questions in India was not proactive in entirety but reactionary in a large portion. It was because of the fact that the environmental governance in India took the approach of Command and Control (CAC) with a set of laws designed to perform preventive role. The roles of CPCB and SPCBs were proved to be soft reactionary approaches resulting in only into imprisonment for two to seven years with fine for violation of environmental norms.[64] At the best, the Board, if necessary, can also close down certain polluting factories. A study, conducted by the Planning Commission found that the PCBs do not have a complete inventory of polluting and potentially polluting industries. Small industries have been left out of the purview of pollution control for the sake of economic development, though they have the potential to contribute as much as 40 per cent of air and water pollution. Also, the PCBs were accused of poor enforcement, poor monitoring, lack of technical skills, inadequate funding, and political interference. Reviewing ecologically, it can be stated that overall this reactionary CAC approach of environmental governance in India is inadequate in the sense that it doesn't take into account the *Second Law Principle of Thermodynamics* and entropy. Dismantling an undisturbed natural environment, in many instances, may leave the area or region in future with an *abiotic* base entirely different from that which existed initially in the natural state. Therefore the utility of CAC approach to govern environment is certainly questionable. Certain pollutions may be irreversible and mere punishment would fail to prevent harmful alternations in nature. None of the responsibilities of CPCB or SPCBs iterates the urgency to address the uncertainty of the actions of the polluting agents. Also, several central Acts like- the 'Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985'; the 'Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms or

Genetically Engineered Organisms or Cells Rules, 1989' etc. emerged as reactionary control measures after the consequences of the damage felt. The economic imperatives might influence this hesitant state of environmental governance in India to continue. Sustainability issues have been addressed in plan documents several times though governance has failed to take either a dominant ecological stand or an overwhelming economic agenda. What could be the rationale behind this soft-reactionary hesitant approach of the government? India had and has to follow the growth oriented penetrating economic panacea for her substantial impoverished society as well as a response to the global scarcity of resources, their appreciating costs, adverse balance of payments, and increasing global economic integrity. The ecological problem was certainly admitted and along with global mandates on environmentalism India has been adopting a structured form of environmental governance. Despite it, the economic agendas could not be abandoned. It has been mentioned earlier that the substantial growth of secondary sector as part of rising GDP may lead to increase in hazardous waste output, and biomass depletion. However, it is expected that at later stage the share of service sector in GDP would go up as a result of maturity of capitalist development and consequently the pollution intensity of the social aggregate product would decrease due to the nature of demand composition, product preferences and the income-elasticity of demand for environmental service. The governmental response to environmental problems in India may have followed this principle that the fast GDP growth rate would ensure declining environmental problems at later stage of development with the change in consumer tastes, preferences and income-elasticity of demand.

Second Phase: The Spurt in Reforms

The final decade of the twentieth century has seen a growing interest in employing a market-based approach to environmental policy-making and governance. Everything has been going under the purview of market based instruments while the World Bank has been engaging itself to set the parameters of good governance. This is to achieve certain developmental goals of neo-liberal regime. Nature is viewed as the resource base to be exploited efficiently for the sake of development insuring the potential of future use to maintain enhancing consumption practice. Technological superiority has been considered as a treatment to shrinking resource base. The argument in favour of technological solutions based on the ground of substantial progress of science and technology has influenced the possibility frontier to shift to leftward reducing the services from environmental amenities. This already has been explained in *Figure- 1* of this article. Everyone has been trying to climb the ladder of growth which has no end. India is also a member of this urge contesting to reach the double-digit growth figure. The draft five-year plans presented the fact of consistent and rising growth such as: GDP figure rise from 5.8% in the 'Seventh Five-Year Plan (1987 - 1992)' to 6.8 per cent in 'Eighth Five-Year Plan (1992 – 1997)'. During the 'Tenth Five-Year Plan (2002 – 2007)' period the Indian Economy attained an average growth of 7.7 per cent, the highest in any plan period so far. There was acceleration even within the tenth plan period and the average growth rate in the last four years of the plan has been 8.7 per cent, making India one of the fastest growing economies in the world and retained her in the race of reaching double-digit growth figure. However, the question of scarcity of resources urges for governance as well as control and monitoring. Expectedly it should be good.

Incidentally, the environmental governance in India is accused of dilution according to ecological norms when it enters into the market regime. Also, it has invited another criticality

from the point of view of good governance. It has been accused of incorporating de-regulatory policy initiatives in the name of reform measures. The introduction of 'Biodiversity Bill, 2000', the declaration of 'National Environment Policy (NEP), 2006' (the first ever national policy on environment), the 'New Environmental Impact Assessment (EIA) Notification, 2006', and the 'Coastal Management Zone (CMZ) Notification, 2008' all have been severely criticised in ecological parameters.

According to the 'Biodiversity Bill, 2000', the biological diversity and knowledge are brought under the regulation of the proposed National Biodiversity Authority (NBA) whose structure is skewed in favour of strong bureaucratic control undermining two factors - the representation of civil society groups and decentralisation of environmental governance. Panchayats and other local governing bodies are kept as only nodal agencies without recognising their knowledge associated with biological resources. This certainly violates some major principles of good governance such as: participation, rule of law, responsiveness, and inclusiveness.

The NEP 2006 derives its legitimacy from the inclusion of objectives such as sustainable development, intra and inter-generational equity, internalisation of environmental costs into planning process, precautionary principle, fixing strict liability (even if the absence of legislation or standards), and preventive action. All of them are well intentioned. However, NEP seeks no change in the pattern of production and consumption. It makes no effort to control the penetration of the profit maximising private corporate capital into sectors which are ecologically critical and also vulnerable as far as the livelihood security of the "commons" are concerned. It is interesting to note that though it evokes the principle of sustainable development and mentions the unsustainable consumption patterns of the industrialised countries, it fails to deliver any concrete mechanism to attain ecologically sustainable path. No "Safe Minimum Standard" has been set to attain sustainability. Also, the MoEF has been accused of obtaining undemocratic process while drafting the NEP 2006. Civil society groups, NGOs, and other stakeholders have been marginalised in consultation. In July 2005, a few individuals chanced upon a revised copy of the NEP which was marked as "secret" on every page. NGOs once again recorded their consternation with the MoEF in the form of an open letter to the Prime Minister of India urging that the NEP should be widely circulated and discussed using the vast machinery of the SPCBs, the Forest Departments and the State Departments of Environments.[65]

Environmental Impact Assessment (EIA), introduced in 1977, is one of the crucial means of environmental governance. The website of MoEF asserts: "*Environmental Impact Assessment (EIA) is an important management tool for ensuring the optimal use of natural resources for sustainable development. Environmental Management or planning is the study of the unintended consequences of a project. Its purpose is to identify, examine, assess and evaluate the likely and probable impacts of a proposed project on the environment and, thereby, to work out remedial action plans to minimise adverse impact on the environment.*" Critiques of EIA have dealt in detail with the problems of faulty EIA reports, non-functional public hearings, violations of the provisions of EIA Notification, and problems in the content of the EIA Notification itself and its various amendments. The EIA Notification was introduced in 1994 as the only method to assess environmental and social impacts of development projects. However, the New EIA Notification 2006, based on the reform initiative by MoEF, has been alleged that it has diluted the very vision of "impact assessment". Also, the notification was set in an extremely vague as well as undemocratic way. It has been drafted basically as per the principles of the EMCB project of

World Bank and the recommendations of Govindarajan Committee[66]. Consultations on the draft notification were held only with representatives of industry and central government agencies, as per the Ministry's own submission.[67] State governments, panchayats and municipalities, NGOs, trade unions and local community groups were partially or completely kept out of the process. MoEF held meetings with apex industry associations, namely Confederation of Indian Industry (CII), Federation of Indian Chambers of Commerce and Industry (FICCI), Associated Chambers of Commerce and Industry of India (ASHOCHAM), and Confederation of Real Estate Developers' Associations of India (CREDAI). It also mentioned that the comments of the apex industry associations were under review, but failed to even acknowledge the range of comments sent by civil society groups. This inherent bias of the Ministry to negotiate with industry on what an environment regulation should be, was clear from the admittance of the MoEF that it was as per the direction of the office of the Prime Minister. Certain critical modifications made in the new notification were:

- Exemption of Construction projects, power plant projects of less than 500 MW, cement plants of less than 1 MTPA (Million Tonnes Per Annum) capacity, real estate projects affecting less than 20,000 sq. metres from any study of environmental impact and any public consultation
- Extremely short time limits on the assessment process[68]
- No mandatory public hearings if the government feels "conditions are not conducive"
- Extension of the validity of clearances from five to ten years[69]

On the whole, these modifications ensure de-regulation of environmental norms in an unsustainable manner overlooking the threats of irreversibility and uncertainty. The right to attend public hearings or give comments is only for those who have a "plausible stake in the environmental aspects of the project", providing discretion to the government to exclude anyone it deems as not having a "stake."[70] Conflicts and controversies are emerging with projects reportedly being submitted for clearance at the rate of more than 150 per month.

On 19 February 1991, the MoEF issued the Coastal Regulation Zone (CRZ) Notification which sought to regulate human activities in the area of 500 metres from the High Tide Line (HTL) along the entire 6,000 kilometres long coastal stretches of India, in addition, to riverine stretches affected by tidal action. The objective was to protect the coastal areas from degradation due to unplanned development which was beyond the carrying capacity of nature. The notification was issued under the powers given to the central government under the 'Environment Protection Act, 1986'. It classified coastal areas into four zones depending on the intensity of protection and considering the extent of development already taken place. They were:

(i) CRZ I: It comprised of those areas which were most fragile and in need of absolute protection from any form of development: such as mangroves, coral reefs, national parks, marine parks, sanctuaries, spawning grounds of fish and other marine life etc.

(ii) CRZ II: It comprised of areas those had already been developed up to or close to shore line. All cities and other well-populated areas which were substantially built up and had different infrastructural facilities came under this zone. In these areas, development was permitted only on the landward side of existing infrastructure.

(iii) CRZ III: It included the areas which did not fall under either CRZ I or CRZ II. In

this zone, the area up to 200 metres from the HTL was a 'No-development Zone'. Between 200 – 500 metres, a concession was made for the foreign exchange earning potential of the tourism industry, provided it complied with certain conditions.

(iv) CRZ IV: This zone comprised of the coastal stretches of the Andaman and Nicobar Islands, Lakshadweep, and other small islands. These eco-fragile regions had been treated as separate entities and special protection status had been accorded to them.

But, over the years, catering to the productive interests of the industrial, commercial, and other pressure groups and lobbies, the following de-regulatory measures have been taken up.

Date	De-regulations
18.08.94	Reduction of CRZ for rivers, creeks, and backwaters from 100 to 50 metres. Central government may conditionally allow constructions within 200 metres of HTL or even between Low Tide Line (LTL) and HTL in CRZ III.
09.07.97	Transfer of hazardous substances was allowed in the port areas. Storage of petroleum products was allowed in ports in CRZ II and CRZ III.
12.04.01	Some construction activities related to projects of Department of Atomic Energy was allowed in CRZ I. Though, any kind of development was denied in CRZ I initially.
21.05.02	Recruitments of SEZs and IT industries were cleared in CRZ, even in 'No Development Zone'.
24.07.03	Projects of Department of Atomic Energy were permitted in 'No Development Zone' of CRZ III.

In July 2004, the MoEF set up an Expert Committee headed by Professor M.S. Swaminathan to carry out a comprehensive review of the CRZ Notification. Its stated objective was to enable the MoEF with strong scientific principles and to devise regulations that would meet the urgent need for coastal conservation and development / livelihood needs. The 'Swaminathan Committee' submitted its report in February 2005. According to new zonation the CRZ has been modified into CMZ. There are a number of problems with the new CMZ Notification:

 The zonation proposed by the M. S. Swaminathan Committee, particularly CMZ II, is not acceptable, given that it is likely to pave the way for unsustainable developmental activities in large areas of the coastal zone.

 The terminology has been changed from 'regulation' to 'management'. It is only an attempt to prove technological superiority over environment.

 Special Economic Zones (SEZ) have been permitted in the CMZ – II areas opening up the process of commercial exploitation of coasts.

Therefore, through the reform process environmental governance dilutes its principles as far as the governance of the coastal stretches in India is concerned. This natural stretch is substantially fragile in characteristic and among the last tracts consisting ecological diversity.

On the other hand environmental governance in India fails miserably in the performance parameter of 'good governance' as far as the issues of participation, rule of law, transparency, responsiveness, consensus orientation, equity and inclusiveness, effectiveness and efficiency, and

accountability are concerned. Increasing importance of industrial and commercial houses has been felt during the reform phase over aggrieved parties and stakeholders. This dilution not only indicates declining participatory spirit but lack of 'responsiveness', 'consensus orientation' and 'inclusiveness'. According to UNDP norms, responsiveness of governance might be meaningful if there is a serious civil society engagement in public affairs. If we consider the CMZ Notification it can be revealed that MoEF published the Draft CMZ Notification 2008 in the Gazette of India on 01 May 2008 under S.O. No. 1070 (E) and uploaded the draft in its website for public information, inviting objections and suggestions within 60 days from its publication. The question has been rightly asked: "*How can the MoEF expect that tens of millions of coastal people, specially fishers & fishworkers, residing in more than 3, 000 coastal villages situated along some 7, 600 kms. Of coastal stretch of our country, will be able to access the MoEF website or the Gazette of India, where the Draft CMZ Notification has been published in English, read it and submit their comments on the same?*"[71] The appropriation of NEP 2006 and reforms in EIA process after consultation with industrial and commercial lobby, ignoring even the State governments and local governing authorities apart from the aggrieved parties, NGOs, and the stakeholders prove that there is fragmented responsiveness, partitioned consensus, and exclusiveness. Effectiveness of the environmental governance has been suffering from serious lapses as the measures taken fail to produce results that meet the best needs of the society. If the environmental governance in India is efficient, it is certainly not on equitable path. Efficiency and equity are two paradoxical issues as revealed earlier in this article. The present developmental practice will certainly put absolute limit on economic growth in future with irreversible and uncertain fallouts on natural resources. The present capitalist pulse of economy guides human perception towards short run instead of long run gains and losses. But, issue of sustainability locates itself far beyond the self-interest maximisation to societal cooperation with nature. It demands re-examinations of the value systems – to the extent that they affect human preferences. Preferences will be different in short and in long run and preferences will change. Although, the prediction about change in preference path and technological responses cannot be delivered accurately as they are uncertain in nature. "Safe Minimum Standard" has never been ascertained anywhere as the level of "minimum" is steadily declining over the periods according to the parameters of developmental needs. This trend can be substantiated with the de-regulatory measures even in the case of most vulnerable environmental resources.

4. Environmental Governance in India: A Dilemma?

The dilution of environmental governance in India, particularly in the neo-liberal regime, is a continuous process. The gradual withdrawal of Acts and laws and prevalence of bills, notifications, plans and policies reduce the legal enforceability. The governance has been located between the emerging environmental concerns and the powerful economic forces, gradually tilting towards the latter one. The sustainability, the MoEF addresses everywhere, is not ecological but economic. Though, arguments may be raised whether this economic sustainability will be efficient enough to overcome the absolute limits on the very process of development projected by the negative externality of environment and checks by entropy law. Prevalently, developmental process and environmental governance proceeding on this line fail to assure either economic or ecological sustainability. The overall appraisal of the environmental governance in India has revealed some general logical deductions:

(a) A contested path of governance can be located as far as the institutional 'environmentalism' is concerned. The contest can be located between the pure economic aspirations of the society and country as a whole and the unavoidable ecological concern for the very existence of the economy and human society.

(b) The aforesaid contest initiated a hesitant and late beginning of structured environmental governance in mid 1980s and 1990s when on the one hand the global mandates for incorporating environmentalism as an inseparable entity of governance and developmental practice, for the very existence of livelihood were growing and on other hand the new face of governance itself was emerging with the principles of more participation, rule of law, transparency, responsiveness, consensus orientation, equity and inclusiveness, effectiveness and efficiency, and accountability.

(c) The review revealed more or less a diluted journey of environmental governance in India where the urgency for incorporating ecological imperatives into the frame of governance has been felt; however, lack of comprehensive method or strategy has been set to form the governmental procedure. Every plan document since 1980s has iterated the necessity of adapting the path of sustainable development. However, how to achieve the desired trajectory of sustainability and what approach of sustainability is the country going to adopt has never been mentioned in any of those plan documents. The theoretical section of the present article has provided three distinct and established approaches to sustainability, viz., Solow-Hartwick Approach to Sustainability, Ecological Economics Approach to Sustainability and Safe Minimum Standard Approach to Sutainability. Among those the SMS approach has been acclaimed as the preferred and balanced one which is to be promoted. However, that desired "minimum" has never been aimed at in the overall socio-economic planning in India. It has been already mentioned earlier that the criticality of environmental governance has been increased further with the advent of neo-liberal global economic set up riding on market solutions. The theoretical section has analysed how market mechanisms would fail to provide any long-term sustained solution to ecological problems. It fails to provide substantial positive responses to the issues of ecological externality to economy, the absolute limit to economic growth, the asymmetry of technology, ecological uncertainty and irreversibility and thus, unable to achieve sustainable path of development. Only, a logical structure of environmental governance along with comprehensive law and policy paradigm may ensure the desired results. To make this frame of governance more effective, the parametric prescriptions of World Bank and UNDP can be referred not denying the fact that the emergence of that parametric frame is very much within the ambit of neo-liberal logic of mitigating developmental challenges. At this juncture, India is showing a dwindling journey of institutional 'environmentalism' following several dilutions in drafting laws, Acts, and policies especially post 1991 and substantial de-regulations in many environmental initiatives in the name of 'reforms' in favour of neo-liberal economic aspirations. Along with these, the developmental urgency to climb up the ladder of economic growth which has no virtual end only results in the virtual diminishing level of that 'minimum' with the creation of newer demands for the present and future consumption pattern as a consequence of capital accumulation and technological innovations.

So, the dilemma of environmental governance in India could be located. Certainly, the country has incorporated the inherent policy dilemmas of neo-liberal developmental programmes and continues to run on that path.

On the contrary, the environmental governance in a country like India has crossed some incredible performance-milestones in spite of several drawbacks. The divisional structure of the MoEF shows how wide, comprehensive and complicated the structure of governance it has as it stands today. The allocation of legislative authority reveals the challenges of interconnecting task of governance. It gradually reveals how critical the task of governance is, at the receiving end, in lieu of the pressure from several other ministries like – the Ministry of Finance, Ministry of Corporate Affairs, Ministry of Power, Ministry of Commerce, and Ministry of Industry. All of the aforesaid Ministries are on the similar performance scale as far as the issues of good governance are concerned and on the same ladder of growth which has no virtual end. MoEF is basically a project clearing agency for them and for bargaining. The Union Minister of Commerce and Industry, released the *Strategy Paper on the Growth of Engineering Exports* commissioned by Engineering Exports Promotion Council (EEPC) India on 27 April 2010 and set a target of USD 110 billion by 2014 for total engineering exports. He said, "*This, indeed, is a robust target and if engineering is able to maintain its share of nearly 22% in total exports than by 2014, India's total exports should be in the range of USD 500 billion.***"** [72] This will be a substantial increase over the present volume of total exports. The Monthly Economic Report (February 2010) has stated: "*The overall growth of GDP at factor cost at constant 2004-05 prices, as per Advance Estimates released by the CSO was 7.2 per cent in 2009-10 representing an increase from the level of growth of 6.7 percent during 2008-09.*"[73] The Ministry of Power attributed the fact that the capacity addition in the country in the eleventh plan has already exceeded the achievement in tenth plan. Though, the thermal resource base is steadily depleting and there is an increasing potential of the Uranium ore to produce electricity which nevertheless generates toxic wastes.

All these indicate India's strive for high stage economic development based on economic growth and certainly, the difficulties of environmental governance are evident. The country is on a journey to an uncertain destination with shrinking natural shield and deficient developmental perceptions. If ecological balance is disturbed, nothing else in the economy and society will have a chance to go right. However, the dilemma is prevalent within the structure of governance and governmentality. Transition from controlled economy to liberal economy paradigm evoked some irreversible changes in consumer tastes and preferences and ever-rising consumption path, which provoke the governmentality to synthesise a kind of economic urgency and necessity. This urgency is for full utilisation of resources which necessarily includes the natural capital, bypassing how much critical it may be to the ecological functions.

Environmental governance in India has been divulged between these two conflicting aspirations of society. Its evolution, structure, functioning and journey through a contested path have always shown certain dilemmas within governmentality that sometimes has been inclined towards ecological and sometimes to economic imperatives. It has always been searching for a balanced path following several tussles within governmentality. This dilemma is, certainly, not only certified to India alone but also to a global phenomenon as the world is struggling to get out of this and to take an appropriate strategic path where the opportunity cost of entertaining an economic concern may not be much high for the ecological one. Though, for the time being, the environmental governance in India is on a path which may not ensure either ecological or economic sustainability. Also, it has been failing to provide good governance as far as the global

parameters are concerned. Till date, the environmental governance in India is going on to produce certain dilemmas which are able to indicate only a contested and intangible future.

Notes and References

[1] Bidyut Chakrabarty and Mohit Bhattacharya, "Introduction" in Bidyut Chakrabarty and Mohit Bhattacharya, eds. *The Governance Discourse – A Reader*, (New Delhi: Oxford University Press, 2008), p.: 5.
[2] Ibid.
[3] Ibid.
[4] Ibid., pp.: 7-9.
[5] Negative externality arises when costs are borne without benefits being received. It comes into effect when an activity of a production unit causes some unintended harm to other production units and the former one fails to compensate the affected. The natural resources and environmental amenities often develop negative externalities in response to the economic activities.
[6] Katar Singh and Anil Shishodia, *Environmental Economics – Theory and Applications* (New Delhi: Sage Publications, 2007), p.: 70.
[7] Economists' worldview of sustainability put stress on the long term constancy of economic output, income, and consumption whereas the ecologists advocate for long term preservation of the biosphere. Sustainability is a character of a system that will last forever. Sustainability has a socio-economic as well as ecological dimension.
[8] The phrase, "sustainable development" has its root in the publication of the Brundtland Commission Report, *Our Common Future* (in World Commission on Environment and Development, 1987). This report defined sustainable development as "*development which meets the needs of the present without sacrificing the ability of the future to meet its needs*".
[9] *http://en.wikipedia.org/wiki/Millenium_Development_Goals*, accessed on 15.04.2010.
[10] *http://en.wikipedia.org/wiki/Millenium_Development_Goals*, accessed on 15.04.2010.
[11] K. D. Saksena, *Environmental Planning, Policies and Programmes in India* (Delhi: Shipra Publications, 1993), p.: 1.
[12] Ecological succession involves recovery from natural changes in the species composition that occupy a given area over a period of time, as well as from the changes that occur in ecosystem dynamics.
[13] Environmentalism is a broad philosophy and social movement regarding concerns for environmental conservation and improvement of the state of environment. Available at http://en.wikipedia.org/wiki/Environmentalism, accessed on 10.10.2009.
[14] Ecological resilience is the rate at which a disturbed ecosystem returns to its original state.
[15] Intertemporal choice is the study of the relative value people assign to two or more payoffs at different points in time. This relationship is usually simplified to today and some future dates. The concept of intertemporal choice was introduced by John Rae in 1834 in the *Sociological Theory of Capital*. Later, Eugen von Böhm-Bawerk in 1889 and Irving Fisher in 1930 elaborated the model.
[16] George F. McMahon and Janusz R. Mrozek, "Economics, entropy and sustainability", *Hydrological Sciences- Journal,* Vol. 42, No.4, August, 1997, pp.: 501-7.
[17] Ibid.
[18] Beyond a certain threshold, continuous human exploitation of nature or economic growth may cause unmanageable damage to certain vital components of a natural ecosystem. Those damages may be unrecoverable.
[19] Entropy is defined here as the degree to which finite-time processes are irreversible.
[20] Rabindra N. Bhattacharya, 'Economics of Natural Resources' in Rabindra N. Bhattacharya, ed. *Environmental Economics – An Indian Perspective*, (New Delhi: Oxford University Press, 2001), p.: 74.

[21] Ibid., pp.: 74 – 76.
[22] McMahon and Mrozek, op. cit., p.: 504.
[23] Ramprasad Sengupta, *Ecology and Economics: An Approach to Sustainable Development*, (New Delhi: Oxford University Press, 2001), p.: 226.
[24] Ibid.
[25] People demand higher environmental quality as income rises.
[26] Sengupta, op.cit., p.: 228.
[27] Ibid., p.: 229
[28] Our knowledge about environmental assets and their processes is seriously incomplete. So, we are unaware of the effect of several economic activities on natural environmental amenities and the degree of impacts. The impacts may be irreversible.
[29] Given a set of alternative allocations of goods or outcomes for a set of individuals, a change from one allocation to another which makes at least one individual better off without making any other individual worse off is called a "Pareto improvement" or a "Pareto-optimal move". An allocation is defined as "Pareto efficient" or "Pareto optimal" when no further Pareto improvements can be made.
[30] Natural capital comprises of renewable and non-renewable energy and material resources.
[31] Human capital includes labour, skill and knowledge embodied within people.
[32] Man-made capital comprised of the results of past production, as the excess of output over consumption.
[33] Nick Hanley, Jason F. Shogren and Ben White, *Introduction to Environmental Economics*, (New York: Oxford University Press, 2001), p.: 137.
[34] Singh and Shishodia, op. cit., p. 57.
[35] Hussen. op. cit., p. 184.
[36] People will trade or substitute present consumption for future consumption at a future date only at a premium. That means the value of future consumption is less.
[37] Ecological resilience
[38] Sengupta, op. cit., p.: 216.
[39] Hussen, op. cit., p.: 180.
[40] Article 47 provided: *"The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties…" Article 48 provided: "The State shall endeavour to organise agriculture and animal husbandry on modern and scientific lines and shall, in particular, take steps for preservation and improving the breads…"* Article 49 provided: *"It shall be the obligation of the State to protect every monument or place or object of artistic or historic interest, declared by or under law made by parliament to be of National importance, from spoliation, disfigurement, destruction, removal, disposal, or export, as the case may be.*"
[41] The Directive Principles of Indian Constitution laid down the following:
"*The State shall, in particular, direct its policy towards securing …. (a) that citizens, men and women equally, have the right to an adequate means of livelihood; (b) that the ownership and control of the resources of the community are so distributed as best to subserve the common good; (c) that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment.*" This declaration along with the aforesaid Articles enhanced the probability of formulation of policies or legislations on various aspects of man- nature relationship.
[42] An ambiguity was raised when Article - 37 has stated, *"The Provisions contained in this Part shall not be enforced by any court…"*. It indicates that the Court can not compel the State to enact a law or to enforce a particular principle of the State policy or no action can be brought against the State before a Court of law for its failure to implement the Directive Principles.
[43] Lok Sabha Debates, Eighteenth session, Fifth Series, Vol. LXV, No.3, Column 143, 27 October, 1976.
[44] List- I, the 'Union List', contains subjects over which the Union government has exclusive power of legislation.

[45] List- II, the 'State List', contains subjects over which the State governments have exclusive power of legislation

[46] List- III, the 'Concurrent List', contains subjects under the simultaneous jurisdiction of both form of governance though in case of conflict between the Union and State law, the former will prevail. Also, 17A, 17B and 20A were transferred from the 'State List' to the 'Concurrent List' through the Forty-second Amendment Act, 1976.

[47] Article 249 empowers the Union Government to legislate with respect to a matter in the State List in the national interest, if the Council of States (Upper House of the Union Parliament) has declared by resolution supported by not less than two-thirds of the members present and voting that it is necessary or expedient in the national interest that Parliament should legislate on it. Article 250 empowers the Parliament to legislate with respect to any matter in the State List if a proclamation of emergency is in operation. Article 252 provides power to the Parliament to legislate on any matter with respect to which it has no power to make laws for the States except as provided in Articles 249 and 250, if the Legislatures of two or more States pass a resolution to the effect that is desirable for it to do so. Article 253 empowers the Parliament to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or countries or any decision made at any international conference, association or other body.

[48] http://www.planningcommission.nic.in/plans/planrel/fiveyr/welcome.html, accessed on 15.04.2010.

[49] Ulaganathan Sankar, 'Environmental Policy' in Ulaganathan Sankar ed., *Environmental Economics – Readers in Economics,* (New Delhi: Oxford University Press, 2009), p.: 401.

[50] http://www.planningcommission.nic.in/plans/planrel/fiveyr/welcome.html, accessed on 16.04.2010.

[51] http://www.planningcommission.nic.in/plans/planrel/fiveyr/welcome.html, accessed on 16.04.2010.

[52] http://www.planningcommission.nic.in/plans/planrel/fiveyr/10th/volume2/v2_ch9_1.pdf, p. 1055, accessed on 16.04.2010.

[53] http://planningcommission.nic.in/plans/planrel/fiveyr/11th/11_v1/11v1_ch9.pdf, p.: 192, accessed on 23.04.2010.

[54] http://planningcommission.nic.in/plans/planrel/fiveyr/11th/11_v1/11v1_ch9.pdf, p.: 192, accessed on 23.04.2010.

[55] MoEF website: http://moef.nic.in/index.php, accessed on 20.04.2010.

[56] Ruddar Datt and K.P.M. Sundharam, *Indian Economy*, (New Delhi: S. Chand & Company Ltd., 2001), p.: 143.

[57] http://www.planningcommission.nic.in/plans/planrel/fiveyr/welcome.html, accessed on 23.04.2010.

[58] http://www.planningcommission.nic.in/plans/planrel/fiveyr/welcome.html, accessed on 23.04.2010.

[59] Three Annual Plans (1966-'69) were euphemistically described as "Plan Holiday".

[60] Bhattacharya, op. cit. pp.: 100-101.

[61] http://www.planningcommission.nic.in/plans/planrel/fiveyr/welcome.html, accessed on 01.07.2010.

[62] http://www.planningcommission.nic.in/plans/planrel/fiveyr/welcome.html, accessed on 01.07.2010.

[63] Pravin Sheth, *Environmentalism – Politics, Ecology and Development*, (Jaipur and New Delhi: Rawat Publications, 1997), p.: 118.

[64] Bhattacharya, op. cit. pp.: 103-5.

[65] Aarthi Sridhar, 'Environmental Governance Reforms – Rephrasing the Reform Process', (Bangalore: Ashoka Trust for Research in Ecology and the Environment, n.d.), pp.: 6-7.

[66] 'Govindarajan Committee' was set up by the Cabinet Secretariat in September 2001 to recast the government's investment approvals and regulations framework by examining extant procedures for investment approvals and implementation of projects and suggest measures to simplify and expedite the process of both public and private projects. 'Govindarajan Committee' identified certain problems with the environmental regulation framework, which inhibited investment in the country. They are a)Time consuming and require undue effort, b) Entail a cumbersome process, where disproportionate details are

sought with EC applications, delays take place in appraisal meetings, c) Technical issues are reopened at various stages of appraisal, d) EIA studies are of a poor quality leading to suboptimal regulation, e) there are delays by other concerned agencies.

[67] Sridhar, op.cit., pp.: 7-10.

[68] A project application is deemed accepted if government agencies do not respond within the specified time limit.

[69] Sridhar, op. cit., pp.: 8-9.

[70] Sridhar, op. cit., pp.: 9-10.

[71] Pradip Chatterjee and Santanu Chacraverti, *A Critique and Pointers Towards an Alternative Approach*. (Kolkata: Disha, 2008), p.: iv.

[72] Ministry of Commerce website: http://commerce.nic.in, accessed on 25.04.2010.

[73] Ministry of Finance website: http://www.finmin.nic.in/, accessed on 25.04.2010.

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