
POST CORONA PANDEMIC ECOLOGICAL ASPECTS OF SUSTAINABLE DEVELOPMENT

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Abstract:

This paper studied sustainable development aspects by consider problems of inter-generational and intra-generational equity hence current generation use a natural resources by considering the requirement of future generation to avoid long term depletion of resources.

The present concept of GDP based development needed shift to ecological indicators by primarily measure economic, environmental and social aspects of sustainable development post Corona Pandemic must base on Naturalism not only to survive our life but also universe.

Key Words: Agenda 21, Ecological Aspects, Sustained Development, Eco- footprint analysis.

Introduction:

Present 'Development' concept ideological connects 19th century's western industrial society originally rooted in the Baconian philosophy of 17th century, based on technological innovation. First technological transformation found in North America by settlers from industrializing countries of the north-western Europe. Next Spain, Portugal non-industrialized countries colonised South, Central America by converting land use for agriculture, grazing and mining leads these economies of export. In Last pattern industrialism brought slowly to India, Japan, Russia and Eastern Europe by giving concessions to enterprises for promoting transportation systems, exploitation of natural resources, develop energy sources in water, coal, petroleum and factory system urbanization which had transformed natural environment. Such uneven patterns of industrial development by middle of 20th century make large area of earth heavily populated but technically undeveloped. Africa, South America, China, Western Asia, and Oceania not an industrial developed, increase gap in per capita income, standard of living, techno-scientific capability continuously among developed and un-developed nations.

In this context after Second World War the developmental dimensions starts changing slowly, in 1948 the UNESCO, Government of France sponsored IUCN (International Union for Conservation of Nature and Natural Resources). In 1949 United Nations held Scientific Conference on Conservation and Utilization of Resources on ecological development aspects. United Nations conferences on energy emphasis technical and economic aspect held in 1950, 1960. In 1955 International symposium on Man's Role in Changing the Face of the Earth held to focus on anthropological research, to reconcile Man and Nature problems and to develop common philosophy of human development. In September 1968 Biosphere Conference held in Paris to signify perception of development, environment, and public awareness whereas in December 1968 International Conference held on Ecological Aspects of Development stress

developmental goals and responsibility of country on own misguided projects. Thereafter in 1971 International Conferences on Environmental Future first held at Finland then in Iceland.

In June 1972 United Nations Conference at Stockholm held on Human Environment and initiates UNEP (United Nations Environment Programme) for action orientation globally. Immediately in 1974 UNEP/UNCTAD adopted Cocoyoc Declaration in Symposium on Patterns of Resource Use, Environment and Development Strategies on new approach to development, research in alternative consumption patterns, technological life-styles, land-use strategies, institutional frameworks and educational requirements. In 1977 UN sponsored Conference held at Tbilisi, formed International Society for Environmental Education (ISEE). In 1980 IUCN, UNEP developed World Conservation Strategy which described action based programme for political change within people and its Government worldwide. In 1982 United Nations General Assembly adopts Charter for Nature to support ecological sustainable policy.

World Campaign for the Biosphere declared 5 June 1982 as World Environment Day initiated global awareness on threats to biosphere. In June 1984 First General Assembly of the International Society for Environmental Education and twin World Councils for the Biosphere was held in New Delhi & Srinagar, India to supplement inter-governmental and United Nations efforts. In 1987 World Commission on Environment and Development (WCED) published Brundtland Report called Our Common Future that introduced concept of 'Sustainable Development'. In 1989 Daly and Cobb developed The Index of Sustainable Economic Welfare (ISEW) which intends to replace GDP based economy by balancing income distribution, pollution cost and other unsustainable costs.

In 1992 UN Earth Summit held in Rio, Brazil formulated plan Agenda 21 on the sustainable development to executed at local, national, and global level to achieve goals by 2021 in subsequent UN conferences target date extended to 2030 by some modifications with aim to every local government frame its own local Agenda 21. From 2015 Millennium Development Goals also added in updated Agenda 2030.

Literature Review:

George Perkins Marsh (1864) published his book 'Man and Nature; or, Physical Geography as Modified by Human Action' cleared implications of alteration of human environments begun to consider in development planning.

Paterson, Mann (1973) Francis Bacon and Socialized Science highlighted on under-developed 'development' concepts originated in ideology of 19th century Western industrial society it rooted in the Baconian philosophy of the 17th century which forecast improvement of human society through technological innovation. He also underlined uneven pattern of industrial development which makes earth's large area densely populated but undeveloped technically increases gaps in per capita income, living standard, techno-scientific capability among developed and underdeveloped nations.

Fowles, John (1979) explained in Seeing Nature whole about controversy among more and less developed countries on economic development against natural quality. Ecological

sustainable development easily stated but not easily implemented as people see world in parts but not whole. Main cause of development failure lays inadequate concept of 'Development'. It replaced natural environment by artificial system created by human like conversion of forests to urbanised areas.

Ahmad, Yusuf (1981) expressed in Environmental concerns of the least developed countries focusing role of United Nations in developing concept of ecological sustainable development in Human Environment at national and international level and initiatives of UNEP with regional development banks in considering environmental values also talk on NGOs growth in LDCs.

Capra, Carlene (1984) stated in Green Politics about future environment and national and international corrective actions by including ecological sustainability objective in development policy and planning and emphasis on political constituency for policy and persons in government to favour ecological sustainability by expressing ecological-ethical political ideology and action-oriented belief and value in ecol-political movement. Ecological sustainable development requires ecological sustainable behaviour of all people.

Polunin, Nicholas (1984) stated in Geneses and progress of the World Campaign and Council for the Biosphere about the international environmental education programme and initiatives of World Campaign for the Biosphere and World Council for Biosphere to keep environmental issues regularly before scientific and governmental authorities at global level.

Lynton K.C. (1984) described in Political Aspects of Ecologically Sustainable Development that individual self-interest will never save the world to safeguard biosphere requires social commitment values of moral, quasi-religious character on the part of people. Concept of 'limit to growth' needs ecological sustainable economic order recognised globally. Political action on moral belief along scientific information is necessary to safeguard a future.

Wackernagel (1996) explained in Our Ecological Footprint: reducing human impact on the Earth determined the ecological footprint analysis about human impact on the Earth and solutions. Further stated on if everyone enjoy a North American living standard then we requires three earths. He asserted sustainable practice like compensatory land to grow bio-fuel; Cars require 16,000 sq. ft., buses require 3,200 sq. ft. per passenger and bicycles require 1,300 sq. ft. per rider. In Eco-Footprints analysis assess total land area required for given population to live sustainable manner in an area.

Ian Moffatt (2000) stated in Ecological footprints and sustainable development about ecological footprints combined with natural resource accounting to develop internal reliable theory of economic ecological interactions and new measures of sustainable development.

Objectives of the Study:

The present study is undertaken with the following objectives:

- 1) –To understand the evolution of ecological aspects of the sustainable development.
- 2) – To study relational link between anthropological and ecological aspects of development.

Research Methodology:

Present qualitative study based on secondary data sources like online reports, research papers and articles. Critical evaluation, content analysis, rational inductive reasoning methods used as research tools and techniques for subjective interpretation and descriptive conclusion.

Data Analysis:

Link among anthropological & ecological development factors will understand in below data:

Factors/Yr.	1700	1800	1900	1950	2000	2019-20
Population (in millions)	603	989	1,654	2,545	6,145	7,800
Population Density (h/km)	4.5	7.4	12.3	19.0	45.8	60
Land Use (in millions)	963.57	1350.15	2515.56	3853.23	4877.47	4932.62 (Yr. 2016)
Urbanisation (%)	5.10	7.30	16.40	29.61	46.68	56.2
GDP (US \$ in millions)	6,43,323	12,02,361	34,18,754	92,51,063	6,31,00,900	8,72,65,226
CO ² Concentration (in ppm)	277.36	282.8	294.22	312.83	369.55	408.52
Nos. of Natural Disasters	488	1175	1297	1818	1150	403
Pandemics Nos.	32	63	22	16	63	4

Understand links in human factors and ecological aspects, changing periodically in 300 years:

Factors/Periods	1700 – 1800	1800 – 1900	1900 – 1950	1950 – 2000	2000 – 2019-20
Population change (millions)	386	665	891	3600	1655
Change in %	64	67	54	142	27
Density changes	2.9	4.9	6.7	26.8	14.2
Change in %	64	66	54	141	31

Land Use change (millions)	386	1166	1337	1024	56
Change in %	40	86	53	27	1.1
Urbanization change	2.2	9.1	13.21	17.07	9.52
Change in %	43	125	81	58	20
GDP change (millions)	5,59,038	22,16,393	58,32,309	5,38,49,837	2,41,64,326
Change in %	87	184	171	582	38
CO² change (ppm)	5.44	11.42	18.61	56.72	38.97
Change in %	2	4	6	18	10
Disasters change	687	122	521	-668	-747
Change in %	141	10	40	-37	-65
Pandemic Nos. change	31	-41	-6	47	-59
Change in %	97	65	-27	294	-94

Let's discuss and find rational conclusion of above percentage analysis of data of a 300 years.

Discussion:

From 1700 to 1900 population increase steadily due to two industrial revolutions started in this period. From 1900 to 1950 due to two Worlds Wars proportionate percentage increase in population reduce compared to the earlier two centuries. From 1950 to 2000 population increase tremendously by 154% due to the maintenance of peace at world level and economic development within independent countries which earlier colonies of Western European countries in last century. From 2000 to 2020 population increased by 27% due to the effects of population control globally.

Population Density from 1700 to 1900 increases steadily but it reduced from 1900 to 1950 thereafter from 1950 to 2000 increase sharply by 141% and till 2020 it increase by 31% in just 20 years.

Land use pattern from 1700 to 1900 sharply increases by more than double due to the spread of colonisation and each part of the earth is used for various purposes by human beings. From 1900 to 1950 land use come down by 53% thereafter till 2000 it comes down to 27% and by 2020 it comes down by 1.1 %.

The rate of urbanization for initial two centuries i.e. 1700 to 1900 was very high from 43 % to 125% thereafter till 1950 it reaches to 81% then by 2000 it reaches to 58% and by 2020 reaches to 20%.

The rate of increase in GDP for first two centuries i.e. 1700 to 1900 was from 87 % to 184% thereafter by 1950 it reduces to 171% and again increases sharply by highest rate of 582% and till 2020 it increases by 38%.

CO2 emissions rate for the first two centuries i.e. 1700 to 1900 increased by a double from 2% to 4% by 1950 it goes to 6% thereafter it increases sharply by 18% and till 2020 it increases by 10%.

The number of natural disasters from 1700 to 1800 was increased a high rate of 141% then from 1800 to 1900 it was increased by 10% thereafter till 1950 it increases by 40% then till 2000 it reached to -37% and by 2020 it goes down by -65%.

Rate of the total number of pandemics from 1700 to 1800 increased by 97% thereafter from 1800 to 1900 reduced by -65% then by 1950 reached to -27% by the end of 2000 rate sharply increase by 294% and till 2020 its negative growth reached by -94%. We discuss all figures compare with earlier periods as the base for analysis and interpretation of above data.

Conclusion/Suggestion:

From above analysis and discussion we understand the direct relation among factors of economic development & ecological aspects by considering few records of history we now conclude that present GDP based development gives only economic growth to human society but resulted perpetual loss to common resources of all living organisms reflects in the climate change. If we want Sustainable Development Goals to achieve then without considering the ecological aspects it will not be possible. Hence now it's time to shift our focus from greed economy to need ecology at war footing level and save our Economy by saving our Ecology.

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