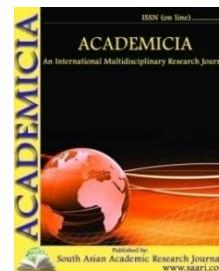




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**ROLE OF INDIAN GOVERNMENT TO PROTECT THE ENVIRONMENT
SUSTAINABILITY - AN OVERVIEW**

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ABSTRACT

Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations. Sustainability is important to making sure that we have and will continue to have, the water, materials, and resources to protect human health and our environment. Our actions impact the environment. Today we realize that each thing we do can help or hurt our planet in many ways. We all need to take ownership of environmental protection. Even though, the rapid growing population and economic development is leading to a number of environmental issues in India because of the uncontrolled growth of urbanization and industrialization, expansion and massive intensification of agriculture, and the destruction of forests. The uprising population and the environmental deterioration face the challenge of sustainable development. Population growth and economic development are contributing too many serious environmental calamities in India. These include heavy pressure on land, land degradation, forests, habitat destruction and loss of biodiversity. Changing consumption pattern has led to rising demand for energy. The final outcomes of this are air pollution, global warming, climate change, water scarcity and water pollution. In the Constitution of India it is clearly stated that it is the duty of the state to 'protect and improve the environment and to safeguard the forests and wildlife of the country'. It imposes a duty on every citizen 'to protect and improve the natural environment including forests, lakes, rivers, and wildlife'. The Environment

Protection Act authorizes the central government to protect and improve environmental quality, control and reduce pollution from all sources, and prohibit or restrict the setting and /or operation of any industrial facility on environmental grounds. In this view, the present paper focuses on the Role of Indian Government to Protect the Environment Sustainability over the period of time.

KEYWORDS: Sustainability, Environmental Protection, Pollution, Environmental laws and Literacy.

INTRODUCTION

Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations. Sustainability is important to making sure that we have and will continue to have, the water, materials, and resources to protect human health and our environment. Our actions impact the environment. Today we realize that each thing we do can help or hurt our planet in many ways. We all need to take ownership of environmental protection.

Sustainable development means attaining a balance between environmental protection and human economic development and between the present and future needs. It means equity in development and sectoral actions across space and time. It requires an integration of economic, social and environmental approaches towards development.

In general, environment refers to the surroundings of an object, or the Natural environment, all living and non-living things that occur naturally on Earth. Environmentalism is a broad philosophy, ideology and social movement regarding concerns for environmental conservation and improvement of the health of the environment, particularly as the measure for this health seeks to incorporate the concerns of non-human elements. Environmentalism advocates the preservation, restoration and/or improvement of the natural environment, and may be referred to as a movement to control pollution

The environmental movement (a term that sometimes includes the conservation and green movements) is a diverse scientific, social, and political movement. In general terms, environmentalists advocate the sustainable management of resources, and the protection (and restoration, when necessary) of the natural environment through changes in public policy and individual behaviour. In its recognition of humanity as a participant in ecosystems, the movement is centred on ecology, health, and human rights. Though the movement is represented by a range of organizations, because of the inclusion of environmentalism in the classroom curriculum, the environmental movement has a younger demographic than is common in other social movements.

Environmentalism as a movement covers broad areas of institutional oppression. Examples of these oppressions are: consumption of ecosystems and natural resources into waste,

dumping waste into disadvantaged communities, air pollution, water pollution, weak infrastructure, exposure of organic life to toxins, mono culture, anti-polythene drive and various other focuses. Because of these divisions, the environmental movement can be categorized into these primary focuses: Environmental Science, Environmental Activism, Environmental Advocacy, and Environmental Justice.

CONCEPT OF SUSTAINABILITY AND ENVIRONMENT PROTECTION

Sustainability is the capacity to endure. For humans, sustainability is the long-term maintenance of well being, which has environmental, economic, and social dimensions, and encompasses the concept of stewardship, the responsible management of resource use. In ecology, sustainability describes how biological systems remain diverse and productive over time, a necessary precondition for human well-being. Long-lived and healthy wetlands and forests are examples of sustainable biological systems.

Environmental protection refers to any activity to maintain or restore the quality of environmental media through preventing the emission of pollutants or reducing the presence of polluting substances in environmental media. It may consist of:

- (a) Changes in characteristics of goods and services,
- (b) Changes in consumption patterns,
- (c) Changes in production techniques,
- (d) Treatment or disposal of residuals in separate environmental protection facilities,
- (e) Recycling, and
- (f) Prevention of degradation of the landscape and ecosystems.

Environmental protection is a practice of protecting the environment, on individual, organizational or governmental level, for the benefit of the natural environment and (or) humans. Due to the pressures of population and our technology the biophysical environment is being degraded, sometimes permanently. This has been recognized and governments began placing restraints on activities that caused environmental degradation. Since the 1960s activism by the environmental movement has created awareness of the various environmental issues. There is not a full agreement on the extent of the environmental impact of human activity and protection measures are occasionally criticized.

INDIAN ENVIRONMENTAL ISSUES

The rapid growing population and economic development is leading to a number of environmental issues in India because of the uncontrolled growth of urbanization and industrialization, expansion and massive intensification of agriculture, and the destruction of forests. Major environmental issues are forest and agricultural degradation of land, resource

depletion (water, mineral, forest, sand, rocks etc.), environmental degradation, public health, loss of biodiversity, loss of resilience in ecosystems, livelihood security for the poor.

It is estimated that the country's population will increase to about 1.26 billion by the year 2016. The projected population indicates that India will be the first most populous country in the world and China will be ranking second in the year 2050. India having 18 per cent of the world's population on 2.4 per cent of world's total area has greatly increased the pressure on its natural resources. Water shortages, soil exhaustion and erosion, deforestation, air and water pollution afflicts many areas.

One of the primary causes of environmental degradation in a country could be attributed to rapid growth of population, which adversely affects the natural resources and environment. The uprising population and the environmental deterioration face the challenge of sustainable development. The existence or the absence of favourable natural resources can facilitate or retard the process of socio-economic development. The three basic demographic factors of births (natality), deaths (mortality), and human migration (migration) and immigration (population moving into a country produces higher population) produce changes in population size, composition, distribution and these changes raise a number of important questions of cause and effect. Population growth and economic development are contributing too many serious environmental calamities in India. These include heavy pressure on land, land degradation, forests, habitat destruction and loss of biodiversity. Changing consumption pattern has led to rising demand for energy. The final outcomes of this are air pollution, global warming, climate change, water scarcity and water pollution.

Environmental issues in India include various natural hazards, particularly cyclones and annual monsoon floods, population growth, increasing individual consumption, industrialization, infrastructural development, poor agricultural practices, and resource misdistribution have led to substantial human transformation of India's natural environment. An estimated 60 per cent of cultivated land suffers from soil erosion, water logging, and salinity. It is also estimated that between 4.7 and 12 billion tons of topsoil are lost annually from soil erosion. From 1947 to 2002, average annual per capita water availability declined by almost 70 per cent to 1,822 cubic meters, and overexploitation of groundwater is problematic in the states of Haryana, Punjab, and Uttar Pradesh. Forest area covers 18.34 per cent of India's geographic area (637000 km²). Nearly half of the country's forest cover is found in the state of Madhya Pradesh (20.7 per cent) and the seven states of the northeast (25.7 per cent); the latter is experiencing net forest loss. Forest cover is declining because of harvesting for fuel wood and the expansion of agricultural land. These trends, combined with increasing industrial and motor vehicle pollution output, have led to atmospheric temperature increases, shifting precipitation patterns, and declining intervals of drought recurrence in many areas.

The Indian Agricultural Research Institute of Parvati has estimated that a 3 °C rise in temperature will result in a 15 to 20 per cent loss in annual wheat yields. These are substantial problems for a nation with such a large population depending on the productivity of primary resources and whose economic growth relies heavily on industrial growth. Civil conflicts involving natural resources—most notably forests and arable land—have occurred in eastern and north-eastern states.

ENVIRONMENTAL POLLUTION IN INDIA

- **WATER POLLUTION** - Out of India's 3,119 towns and cities, just 209 have partial treatment facilities, and only eight have full wastewater treatment facilities (WHO 1992). 114 cities dump untreated sewage and partially cremated bodies directly into the Ganges River. Downstream, the untreated water is used for drinking, bathing, and washing. This situation is typical of many rivers in India as well as other developing countries.

Water resources have not therefore been linked to either domestic or international violent conflict as was previously anticipated by some observers. Possible exceptions include some communal violence related to distribution of water from the Kaveri River and political tensions surrounding actual and potential population displacements by dam projects, particularly on the Narmada River. Punjab is today another hotbed of pollution, for example, Buddha Nullah, a rivulet which runs through Malwa region of Punjab, India, and after passing through highly populated Ludhiana district, before draining into Sutlej River, a tributary of the Indus river, is today an important case point in the recent studies, which suggest this as another Bhopal in making. A joint study by PGIMER and Punjab Pollution Control Board in 2008, revealed that in villages along the Nullah, calcium, magnesium, fluoride, mercury, beta-endosulphan and heptachlor pesticide were more than permissible limit (MPL) in ground and tap waters. Plus the water had high concentration of COD and BOD (chemical and biochemical oxygen demand), ammonia, phosphate, chloride, chromium, arsenic and chlorpyrifos pesticide. The ground water also contains nickel and selenium, while the tap water has high concentration of lead, nickel and cadmium. The Hindon River, which flows through the city of Ghaziabad, highly polluted and groundwater of this city has colored and poisoned by industrial effluents, Hindon Vahini is strongly opposing of water pollution activities.

More than 400 million people live along the Ganges River. An estimated 2,000,000 persons ritually bathe daily in the river, which is considered holy by Hindus. In the Hindu religion it is said to flow from the lotus feet of Vishnu (for Vaisnava devotees) or the hair of Shiva (for Saivites). The spiritual and religious significance could be compared to what the Nile River meant to the ancient Egyptians. While the Ganges may be considered holy, there are some problems associated with the ecology. It is filled with chemical wastes, sewage and even the remains of human and animal corpses which carry major health risks by either direct bathing in the water, or by drinking (the Fecal - oral route). News Week describes Delhi's sacred Yamuna River as "a putrid ribbon of black sludge" where fecal bacteria are 10,000 over safety limits despite a 15-year program to address the problem. Cholera epidemics are not unknown.

- **AIR POLLUTION** - Indian cities are polluted by vehicles and industry emissions. Road dust due to vehicles also contributing up to 33 per cent of air pollution In cities like Bangalore, around 50 per cent of children suffer from asthma. India has emission standard of Bharat Stage IV (Euro IV) for vehicles since 2005.

One of the biggest causes of air pollution in India is from the transport system. Hundreds of millions of old diesel engines are continuously burning away diesel which has anything between 150 to 190 times the amount of sulphur out European diesel has. Of course the biggest

problems are in the big cities where there are huge concentrations of these vehicles. On the positive side, the government appears to have noticed this massive problem and the associated health risks for its people and is slowly but surely taking steps. The first of which was in 2001 when it ruled that its entire public transport system, excluding the trains, be converted from diesel to compressed gas (CPG). Electric rickshaws are being designed and will be subsidised by the government but the supposed ban on the cycle rickshaws in Delhi will require a huge increase on the reliance of other methods of transport, mainly those with engines.

It also appeared that the excessive pollution was having an adverse effect on the Taj Mahal. After a court ruling all transport in the area was shut down shortly followed by the closure of all industrial factories in the area. The air pollution in the big cities is rising to such an extent that it is now 2.3 higher than the amount recommended by World Health Organisation (WHO).

- **NOISE POLLUTION** - The Supreme Court of India gave a significant verdict on noise pollution in 2005. Unnecessary honking of vehicles makes for a high decibel level of noise in cities. The use of loudspeakers for political purposes and by temples and mosques make for noise pollution in residential areas because using more speakers in a program the noise is increase. Recently¹ Government of India has set up norms of permissible noise levels in urban and rural areas. How they will be monitored and implemented is still not sure.
- **LAND POLLUTION** - Land pollution in India is due to pesticides and fertilizers as well as corrosion In March 2009, the issue of Uranium poisoning in Punjab came into light, caused by fly ash ponds of thermal power stations, which reportedly lead to severe birth defects in children in the Faridkot and Bhatinda districts of Punjab.

ENVIRONMENTAL LAWS IN INDIA

In the Constitution of India it is clearly stated that it is the duty of the state to ‘protect and improve the environment and to safeguard the forests and wildlife of the country’. It imposes a duty on every citizen ‘to protect and improve the natural environment including forests, lakes, rivers, and wildlife’. Reference to the environment has also been made in the Directive Principles of State Policy as well as the Fundamental Rights. The Department of Environment was established in India in 1980 to ensure a healthy environment for the country. This later became the Ministry of Environment and Forests in 1985.

The constitutional provisions are backed by a number of laws – acts, rules, and notifications. The EPA (Environment Protection Act), 1986 came into force soon after the Bhopal Gas Tragedy and is considered an umbrella legislation as it fills many gaps in the existing laws. Thereafter a large number of laws came into existence as the problems began arising, for example, Handling and Management of Hazardous Waste Rules in 1989.

A. GENERAL LAW

- 1986 - The Environment (Protection) Act authorizes the central government to protect and improve environmental quality, control and reduce pollution from all sources, and prohibit or restrict the setting and /or operation of any industrial facility on environmental grounds.
- 1986 - The Environment (Protection) Rules lay down procedures for setting standards of emission or discharge of environmental pollutants.
- 1989 - The objective of Hazardous Waste (Management and Handling) Rules is to control the generation, collection, treatment, import, storage, and handling of hazardous waste.
- 1989 - The Manufacture, Storage, and Import of Hazardous Rules define the terms used in this context, and sets up an authority to inspect, once a year, the industrial activity connected with hazardous chemicals and isolated storage facilities.
- 1989 - The Manufacture, Use, Import, Export, and Storage of hazardous Micro-organisms/ Genetically Engineered Organisms or Cells Rules were introduced with a view to protect the environment, nature, and health, in connection with the application of gene technology and microorganisms.
- 1991 - The Public Liability Insurance Act and Rules and Amendment, 1992 was drawn up to provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident while handling any hazardous substance.
- 1995 - The National Environmental Tribunal Act has been created to award compensation for damages to persons, property, and the environment arising from any activity involving hazardous substances.
- 1997 - The National Environment Appellate Authority Act has been created to hear appeals with respect to restrictions of areas in which classes of industries etc. are carried out or prescribed subject to certain safeguards under the EPA.
- 1998 - The Biomedical waste (Management and Handling) Rules is a legal binding on the health care institutions to streamline the process of proper handling of hospital waste such as segregation, disposal, collection, and treatment.
- 1999 - The Environment (Siting for Industrial Projects) Rules, 1999 lay down detailed provisions relating to areas to be avoided for siting of industries, precautionary measures to be taken for site selecting as also the aspects of environmental protection which should have been incorporated during the implementation of the industrial development projects.
- 2000 - The Municipal Solid Wastes (Management and Handling) Rules, 2000 apply to every municipal authority responsible for the collection, segregation, storage, transportation, processing, and disposal of municipal solid wastes.

- 2000 - The Ozone Depleting Substances (Regulation and Control) Rules have been laid down for the regulation of production and consumption of ozone depleting substances.
- 2001 - The Batteries (Management and Handling) Rules, 2001 rules shall apply to every manufacturer, importer, re-conditioner, assembler, dealer, auctioneer, consumer, and bulk consumer involved in the manufacture, processing, sale, purchase, and use of batteries or components so as to regulate and ensure the environmentally safe disposal of used batteries.
- 2002 - The Noise Pollution (Regulation and Control) (Amendment) Rules lay down such terms and conditions as are necessary to reduce noise pollution, permit use of loud speakers or public address systems during night hours (between 10:00 p.m. to 12:00 midnight) on or during any cultural or religious festive occasion
- 2002 - The Biological Diversity Act is an act to provide for the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of the benefits arising out of the use of biological resources and knowledge associated with it

B. FOREST AND WILDLIFE

- 1927 - The Indian Forest Act and Amendment, 1984, is one of the many surviving colonial statutes. It was enacted to 'consolidate the law related to forest, the transit of forest produce, and the duty leviable on timber and other forest produce'.
- 1972 - The Wildlife Protection Act, Rules 1973 and Amendment 1991 provides for the protection of birds and animals and for all matters that are connected to it whether it be their habitat or the waterhole or the forests that sustain them.
- 1980 - The Forest (Conservation) Act and Rules, 1981, provides for the protection of and the conservation of the forests.

C. WATER

- 1882 - The Easement Act allows private rights to use a resource that is, groundwater, by viewing it as an attachment to the land. It also states that all surface water belongs to the state and is a state property.
- 1897 - The Indian Fisheries Act establishes two sets of penal offences whereby the government can sue any person who uses dynamite or other explosive substance in any way (whether coastal or inland) with intent to catch or destroy any fish or poisonous fish in order to kill.
- 1956 - The River Boards Act enables the states to enroll the central government in setting up an Advisory River Board to resolve issues in inter-state cooperation.
- 1970 - The Merchant Shipping Act aims to deal with waste arising from ships along the coastal areas within a specified radius.

- 1974 - The Water (Prevention and Control of Pollution) Act establishes an institutional structure for preventing and abating water pollution. It establishes standards for water quality and effluent. Polluting industries must seek permission to discharge waste into effluent bodies. The CPCB (Central Pollution Control Board) was constituted under this act.
- 1977 - The Water (Prevention and Control of Pollution) Cess Act provides for the levy and collection of cess or fees on water consuming industries and local authorities.
- 1978 - The Water (Prevention and Control of Pollution) Cess Rules contains the standard definitions and indicate the kind of and location of meters that every consumer of water is required to affix.
- 1991 - The Coastal Regulation Zone Notification puts regulations on various activities, including construction, are regulated. It gives some protection to the backwaters and estuaries.

D. AIR

- 1948 – The Factories Act and Amendment in 1987 was the first to express concern for the working environment of the workers. The amendment of 1987 has sharpened its environmental focus and expanded its application to hazardous processes.
- 1981 - The Air (Prevention and Control of Pollution) Act provides for the control and abatement of air pollution. It entrusts the power of enforcing this act to the CPCB .
- 1982 - The Air (Prevention and Control of Pollution) Rules defines the procedures of the meetings of the Boards and the powers entrusted to them.
- 1982 - The Atomic Energy Act deals with the radioactive waste.
- 1987 - The Air (Prevention and Control of Pollution) Amendment Act empowers the central and state pollution control boards to meet with grave emergencies of air pollution.
- 1988 - The Motor Vehicles Act states that all hazardous waste is to be properly packaged, labelled, and transported.

INDIAN ENVIRONMENTAL LITERACY

The Indian Constitution laid down the responsibility of Government to protect and improve the environment and made it a “fundamental duty of every citizen to protect and improve the natural environment including forests, lakes, rivers and wildlife”. On this background Department of Environment was established by the Government of India in 1980 and a Ministry was formed in 1985. The Constitution and the Government's commitment to the environment along with the environmentally sound practices is an important backdrop under which the Environment Education (EE) strategy has been evolved. Comprehensive scheme of 'Environmental Education, Awareness and Training' was launched in 1983-84. The scheme intends to enhance our understanding about the interactions between human beings and

environment. Also, it aims to facilitate the development of skills for environmental protection. The objectives of the schemes are as follow:

- To promote environmental awareness among all sections of the society;
- To spread environment education, especially in the non-formal system among different sections of the society;
- To facilitate development of education/training materials and aids in the formal education sector;
- To promote environment education through existing educational/scientific/research institutions;
- To ensure training and manpower development for environment education, awareness and training;
- To encourage non-governmental organizations, mass media and other concerned organizations for promoting awareness about environmental issues among the people at all levels;
- To use different media including films, audio, visual and print, theatre, drama, advertisements, hoarding, posters, seminars, workshops, competitions, meetings etc. for spreading messages concerning environment and awareness; and
- To mobilize people's participation for preservation and conservation of environment.

NATIONAL ENVIRONMENT AWARENESS CAMPAIGN (NEAC)

The Ministry of Environment and Forests (MoEF), Government of India started The National Environment Awareness Campaign (NEAC) in 1986 with the aim of creating environmental awareness at all levels of society. It is a multi-media campaign which utilises conventional and nonconventional methods of communication for disseminating environmental messages to a wide range of target groups. Under NEAC, the Ministry provides financial assistance to selected nongovernmental organizations, education and training institutes, community organizations, etc., to create massive awareness among citizens of India. Diverse target groups ranging from students/youth/teachers to rural and tribal population, women, professionals and the general public are covered under this campaign. The Campaign programmes are basically composed of a spectrum of short duration programmes. The programme is being implemented through 33 designated Regional Resource Agencies (RRAs) for specific states/regions of the country. During 2009-10 total 11,738 organisations have participated in the campaign across the country.

GLOBAL LEARNING & OBSERVATIONS TO BENEFIT THE ENVIRONMENT (GLOBE)

The GLOBE is an International Science and Education Programme, which emphasizes on hands-on participatory approach. India joined this programme in August, 2000. This programme unites students, teachers and scientists all over the world and targets school children. The

students of GLOBE schools are required to collect data about various basic environmental parameters under the supervision of a GLOBE trained teacher. Through this they learn about scientific protocols and perform environmental learning activities, which have already been introduced as theory in the textbooks. The GLOBE programme not only helps the students to appreciate the contents of the textbooks through better understanding but also assists them in gaining complete knowledge of environment. It facilitates research through a worldwide research team comprising of students, teachers and scientists.

OTHER AWARENESS PROGRAMMES

- India has a vast network of NGO's that are actively participating in the creation of awareness on development and environmental issues. Working on their own and with Governments they are the backbone of the strategy to create greater environmental awareness, especially that leading to environmental action.
- Despite great efforts to spread environmental awareness by the MoEF through several schemes, creation of awareness among large population especially in rural areas is difficult task. "Mass Awareness" through media, particularly the electronic media has therefore been identified as one of the thrust areas. It not only intensifies the efforts already being made in this direction but also launch new initiatives in this direction to encourage individual efforts in producing films/documentaries on environment/wildlife related themes in the country.
- Action Oriented Environmental Education- Environmental education is the process of developing environmentally conscious behaviour of an individual. Education/ literacy alone do not guarantee that the learner will exhibit a specified set of behaviours. Rather, it guarantees only that the learner has the capacity for such behaviours. It involves a limited combination of awareness and action that encourages people to engage in immediate personal action that contributes to environmental improvements such as saving electricity, fuel and water, buying "Green" products, reducing solid waste, etc. Most of these actions are fairly simple and usually require just one step.

CONCLUSION

The Environmental Sustainability Index (ESI) was a composite index published from 1999 to 2005 that tracked 21 elements of environmental sustainability covering natural resource endowments, past and present pollution levels, environmental management efforts, contributions to protection of the global commons, and a society's capacity to improve its environmental performance over time. Sustainability of environmental protection is an important concept of our economy. India, lying within the Indomalaya ecozone, hosts significant biodiversity; it is home to 7.6 per cent of all mammalian, 12.6 per cent of avian, 6.2 per cent of reptilian, and six per cent of flowering plant species. In recent decades, human encroachment has posed a threat to India's wildlife; in response, the system of national parks and protected areas, first established in 1935, was substantially expanded. In 1972, India enacted the Wildlife Protection Act and Project Tiger to safeguard crucial habitat; further federal protections were promulgated in the 1980s. Along with over 500 wildlife sanctuaries, India now hosts 14 biosphere reserves, four of which are part of the World Network of Biosphere Reserves; 25 wetlands are registered under the Ramsar

Convention. A recent trend which is heartening to note is the role of the Indian Judiciary in environmental protection, which has adopted Public Interest Litigation (PIL) for the cause of environmental protection. This has proved an effective tool. Even though, Most of the industries not followed the pollution control procedures. So, the government and related agencies should be given proper guidance to these industries. The industries which are following and implementing the rules and regulations of Pollution Control Board must be honoured and be provided with tax concessions. The government should create awareness and training for recycling and reusing the effluents profitably and environment friendly.

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