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Effect of Plastic Pollution on Environment and Human Health

Dr. Nilima M. Kankale (Patil)

Assistant Professor, Department of Zoology,

Ghulam Nabi Azad Arts, Commerce & Science College, Barshitakli,

Dist. Akola (M.S.)

drnmpatil74@gmail.com

Introduction:

In present days the plastic are use in number of ways; Carry bags, Bisleri bottles, Milk bags, Plastic tiffin, it is used in daily life, In daily life involves the plastics, in clothing material, bakery product, transport material, telecommunication, footwear and wide range of other products. Plastic born about 70 years ago, at the beginning of this plastic age, it is a survey to study the effect of plastic pollution on total environment and its effect on human health.

***KEY WORDS**: Plastic Pollution, Environment, Human health*

DISCUSSION:

Effect of Plastic Pollution on Land:

In number of ways, the plastic bags are use, but it is a harmful to the soil and Agriculture the polluted soil which leads to a loss of fertile land, decreases its quality to the reduction of availability of food production. The ground or land below our feet, is made of soil, Rocks, minerals and salt, Land support large number of organisms ranging from fungi to earthworms. The effect of plastic on land Pollution can be Catastrophic for the environment, animals and humans, it leads to ground water poisoning, deterioration of Agricultural fields, climate change, health problems and socio-economic impact on humans when polluted soil cannot produce food grain due to degradation of its quality. Furthermore, the ground water and land poisoning have dangerous health impacts on humans.

Effect of Plastic Pollution on Marine Environment:

The number of tourists, daily visitors in the ocean and sea shore, use and throw floating plastic material, the number of problems create, as a small and large invertebrates species in the marine ecosystem including fishes turtles, starfish, octopus, number of snails, sea birds, and aquatic mammals. Attack directly its feeding habit or digestive system, Reproductive output, lacerations, ulcer, and death. (Laist 1997, Derraik 2002, Gregory, 2009). In some experiments, small pieces of plastic ingested by small marine invertebrates including filters feeders, deposit feeders and detritivores (Thompson et al. 2004) while muscles were shown to retain plastic. Some plastic material releases a chemical in the sea water, It is harmful to the wild life and marine environment and disturb the food chain in aquatic animal.

Effect of Plastic Pollution on Human Health:

In daily life, all the peoples are addicted to plastic in our daily life. According to CPCB data the India generates 25,940 tons of plastic waste every day. Plastic it is a combination of various chemicals, some chemicals like BPA (BISPHENOL A) present in plastic may cause cancer in human. In plastic bottles, chemicals are linked to heart diseases and type 2 diabetes. Plastic migrates easily into the human body, breathing, burning plastic material with strong odor. The number of food eating recipes are packed with plastic coating packaging and kitchenware. BPA is metabolized in the liver to form Bisphenol A and it exits in the urine of 95% of candidates. BPA is an endocrine disruptor. The human endocrine system regulates a number of essential body function including metabolism, heart rate, digestion and fertility.

CONCLUSION:

Burning of plastic smell is very horrible, toxic and releases various harmful gases like dioxins, furans, Mercury and polychlorinated biphenyls which are very dangerous to the human health, living organisms and environment. Hence it is most essential to create the awareness of effect of plastic use in public and to restrict the unnecessary use of plastic in our daily life. So we can provide alternative like cloth

bags in our daily use which is the better way and one step ahead for achievement to say **"Be safe to the earth and reduce the use of plastic"**

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Biological Management on Foliar Fungal Diseases of Onion (*Allium Cepa L.*) in Maharashtra (India)

Subhash B. Pawar
Department of Botany,
Sant Ramdas Arts, Commerce and Science College
Ghansawangi , Dist. Jalna (M.S.) - 431209
subhashpawar020@gmail.com

ABSTRACTS

In the present investigation management of the foliar fungal diseases, onions are suffered from many fungal diseases such as white rot southern blight purple blotch and Stemphylium blight are the major foliar fungal diseases. A complete cause the number of onion fields every year. These diseases are management through use of chemicals like fungicides and biological control. In this study symptoms of plants and there control of foliar fungal disease of onion, more cause of foliar fungal disease of onion are purple blotch caused by *Alternaria porri* and Stemphylium blight caused by *Stemphylium vesicarium* of onions. In management of fungal disease by using different plant leaf extracts found to fungi toxic for *Alternaria porri and Stemphylium vesicarium* showed minimum growth in presence of *Azadirechta indica* and *Moringa tingtoria* leaf extract.

Key word: *Biological management foliar fungal onion.*

Introduction:

Onion is one of the most important bulb crops belongs to family Alliaceae and also the importance of cash crop. Onion is characterized by its distinctive flavour and pungency, which is the due to *Allylpropyl-disulphide*, a sulphur containing compound found in the scales of the bulb. The red and yellow colour of outer skin of onion is due to presence of *Anthocyanin* and *Quercetin*. Anti-fungal activities due to present in Phenolic factor (Desh Raj 2018).Major onion producing countries include China, India, Pakistan, USA, Iran, Turkey, Brazil, Russia, Mexico and Spain. India ranks first in area (16.39 m/h) and second in production (26.83 m/t) (NHB 2021).The major onion growing states in India is the Maharashtra, Bihar Orissa, Andhra Pradesh, Karnataka, Rajasthan Tamil Nadu, Haryana, and Madhya Pradesh. Maharashtra is the pioneer state in onion production contributing 25% of country's onion (Gadge and Lawande 2012).In Maharashtra the major onion

producing districts are Pune, Solapur Ahmednagar, Satara, Dhulia, and Nashik. Nashik district contributes 35 to 40 % of the onion production.

Onion bulb contains anti-inflammatory, anticancer anti cancholesterol, Anti inflammatory, anti cholesterol and antioxidant compound quercetin (Augusti, 1996) and antioxidant properties such as quercetin (Slimestad *et.al* 2007). The fungicidal and insecticidal properties of onion are also well identified. (Mishra 2014.) It is used as row the onion also losses due to the causes of same Virus, Mycoplasma, bacterial, Nematode and fungi are cause the major foliar fungal diseases of onions. It more essential to chosen the most important thing is to biological management of foliar fungal diseases of onion by using the various plant leaf extracts.

Materials and methods:

A] Collection of samples:

Infected sample were collected and subsequently the samples were put in the sterilized polythene bags, and brought in to the laboratory for further experiments.

B] Isolation and Identification causal pathogen:

The infected foliar onion sample collected from the different areas like, Jalna, Beed, Aurangabad, Ahmednagar, Nashik, Osmanabad Latur and Pune districts. The samples were cleaned and washed by sterilized water then surface sterilized with 1% $HGCL_2$ solution, and rinsed for several times in sterilized water and dried, the surface sterilized sample were inoculated on to Potato Dextrose Agar (PDA) medium and incubated at 24^0c. After 4-5 days incubation period, the developed fungal colonies were purified by hyphal tip and single spore isolation technique. Identification and the fungal isolation were carried out by using the morphological characteristic of mycelia and spore as described by (Kritzman G.1983).

C] Results and discussion:

Purple blotch caused by *Alternaria porri*

Symptoms: The initial symptoms of purple blotch are small, water-soaked lesions with white centres that appear usually on older leaves. Further, the lesions enlarge 1–2 inches and become purplish with light yellow concentric rings on the margins. As severity, leaves turn yellow brown, lose erectness, and wilt.

Stemphylium leaf blight by *Stemphylium vesicarium*

Symptoms: The first symptoms of the disease appear on the radical leaves at 3-4 leaf stage. This disease is very common on onion leaves and flower stalks. The disease symptoms are developed in the middle of the leaf as small yellow to orange flecks which soon develop into elongated, spindle shaped to ovate elongate spots surrounded by characteristic pinkish margin. The spots progress from the base of the leaves as symptoms develop. Lesion turns light brown to tan and blacken when the conidia develop. The disease appearing on the inflorescence stalk causes severe damage to the seed crop. From the above observation the purple blotch caused by *Alternaria porri,* Stemphylium blight caused by *Stemphylium vesicarium*. Similar study were carried out by Suheri and Price (2000a) and pointed out that, *Stemphylium vesicarium* and *A. porri* are the pathogens most frequently reported on the diseased leaves of *Allium*. These two pathogens can both cause white or purple spots of onion.

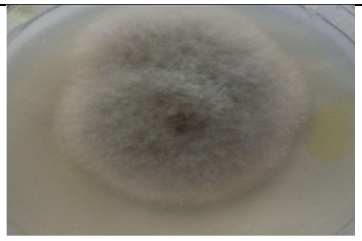
Effects of leaf extract on management of onion fungi:

The eco-friendly management of fungi is concerned *Azadirechta indica* leaf extract was found to be fungitoxic for both the selected fungi. *Alternaria porri* and *Stemphylium vesicarium* showed minimum growth in presence of *Azadirechta indica* and *Moringa tingtoria* leaf extract. Leaf extract of *Moringa tingtoria* was also proved to be fungitoxic for *Alternaria porri,* and *Stemphylium vesicarium compare to the lantana camera plat extract is Alternaria porri* showed the minimum mycelial fungal growth, Annona reticulate also showed the fungi toxic on *Alternaria porri*.

Similarly several workers have tested a large number of plants belonging to angiosperm and gymnosperms for their fungitoxic properties. Mostly the aqueous extract of plants has been used to evaluate their fungi toxic properties (Thapliyal *et al.,* 2000 and Algesaboopathi and Balu, 2002). From these results it can be concluded that, in comparison to synthetic compound, the pesticidal compounds of plant origin are more effective and have little or no side effects on human beings as suggested by Kumar *et al.,* (1995). Similar results were also point out by Singh and Prasada (1993). They found that leaf extract of *Azadirechta indica* and *Ocimum sanctum* inhibited the growth of *Fusarium oxysporum*. Similarly, Manoharachary and Gourinath (1991) found that aqueous leaf

extract of *Eucalyptus lonceolatus* inhibited growth of *Curvularia lunata, Cylindrocarpon lichenicola* and *Fusarium solani*. Nwachukwu and Umechuruba (2001) and Subhash Pawar *et al.,* (2019) reported that the leaf extracts of neem (*Azadirachta indica*) gave significant reduction of mycelial dry weight.

Photo plate shows plant disease, pure culture and Fungal Spore on onion

 Purple blotch	 Pure culture	 *Alternaria porri*
 Stemphylium blight	 Pure culture	 *Stemphylium vesicarium*

2-Photo plates
Shows 10 % leaf extract of different plants mycelial growth on ms media.



Mycelial growths on m s media

Effect of leaf extract (10%) on management of onion fungi
(Fungal mycelial dry weight mg)

Fungi	**Plant names**				
	Azadirechta indica (in mg)	*Calotrapis procera (in mg)*	*Annona reticulate (in mg)*	*Moringa tingtoria(in mg)*	*Lantana camera(in mg)*
Alternaria porri	**0.013**	0.033	0.026	0.023	0.036
Stemphylium vesicarium	**0.015**	0.035	0.029	0.026	0.040

Conclusion:

From the above survey and experimental data indicates that foliar fungal diseases of onion have been studied in present investigation symptomlogy of field diseases like Purple blotch caused by *Alternaria porri,* and Stemphylium blight caused by *Stemphylium vesicarium* on onion were also studied. Significance of the present study is to control the pathogen by using plant leaf extract.

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Biosynthesis of Silver Nanoparticles from Genus *Aspergillus* and Their Characterization

[*1]Dr. Shrikant A. Taur, [*2]Dr. Datta Ghogre, and [*3]Dr. Asmita Daspute

[*1&*2] Department of Botany, MSS,s, Arts, Science and Commerce College Ambad Disrtict Jalna (MS)

[*3]Department of Environmental Science, S.B.E.S. College of Science, Aurangabad (MS)

ABSTRACT:-

In this study, Silver nanoparticles were synthesized extracellularly by *Aspergillus terreus, Aspergillus nidulans Aspergillus flavus Aspergillus oryzae,* and *Aspergillus niger* at room temperature. The AgNPS is quite stable without using any toxic chemicals as capping agents and shows a broad spectrum at 440nm the ability to synthesize the AgNPS as a potential agent using an *Aspergillus terreus, Aspergillus nidulans Aspergillus flavus Aspergillus oryzae,* and *Aspergillus niger* is highly promising for the green-sustainable production of nano-metals, and also enhance its widespread application as an important strategy.

Keywords: Aspergillus, Silver nanoparticles, Characterization Bioassay

Introduction-

Silver has been known for over 2,000 years for there medical properties. Since the nineteenth century, silver-based compounds have been used in many antimicrobial applications Nanoparticles have been known to be used for numerous pharmaceutical, physical, and biological applications. (Prabhu and Poulose 2012).

Nanotechnology is an enormous field that deals with the structure, dimension, and size of particles at >100 nm; and Biotechnology is a wide area that has been involved for decades and whose major application is developing new products using living organisms to find solutions for various problems. Bionanotechnology or Nanobiotechnology is an interdisciplinary research area that is an intersection of both biology and nanotechnology. Green nanotechnology is the effective approach for Silver nanoparticle (AgNP) synthesis from plant extract and microorganisms, though there are various methods including physical, chemical, physicochemical reduction, and electrochemical techniques used for synthesizing AgNP (Verma *et al.,* 2019)

Chemical and physical methods for the synthesis of nanoparticles, the Biological method is effective environment friendly and has several benefits they can be used in the elimination of toxic chemicals and as well as biological reductants, surfactants, or stabilizers. In plant cell extract various chemicals are present they can act as reducing as well as capping agents for silver NPs (Kaler *et al.,*2010).

The present work presents green production of silver nanoparticles by some species belonging to the genus *Aspergillus* due to its prevalence in the natural environment the genus *Aspergillus* is the saprophytic fungi that grow on deteriorated plant parts like root, stem, fruits, leaves, and all part of the plant and also occur in seeds and make abnormal seeds and maximum incidence of genus *Aspergillums* fungi on oil seeds like groundnut, soybean, etc..the genus *Aspergillus* is also seen in soil that's why *Aspergillus* are called as seed-borne fungi, ease of cultivation on laboratory media and economic importance. The aim was also extended to characterize the biosynthesized silver nanoparticles by the most potent producer *Aspergillus terreus, Aspergillus nidulans Aspergillus flavus Aspergillus oryzae,* and *Aspergillus niger.*

Materials and Method

Healthy plants were collected from Aurangabad District and washed with running tap water for 20 min. The root, stem, petiole, and leaf portions were cut into 1-2 cm long pieces. Those were surface-sterilized by dipping in 70 % ethanol for 30 secs, the pieces were again washed several times with sterile distilled water followed by 2% sodium hypochlorite (NaOCl) for 3 min. The pieces were again washed with sterile distilled water. The pieces were placed on Potato Dextrose Agar (PDA) plates. The plates were incubated for 3 days. The visible fungal growth from each piece was then subcultured to a new medium to preserve the strains. Each fungal strain was visibly differentiated from its colony. Ahmed *et al*., (2012)

Characterization and identification of Fungi

The fungi occurring on each of the plates were identified preliminary based on sporulation characteristics like sexual or asexual spores or fruiting structures with the help of a stereoscopic microscope. Detailed examination of fungal characters was done under a compound microscope and their identification was made with the help of manuals and literature, (Elastrution of fungi by D.S Mukadam and Ashok Chavan). The pure culture of these fungi was prepared and maintained on PDA slants.

Nanoparticle production

Production of nanoparticles was studied by growing the fungi on a liquid GN medium. 40 ml of GN medium was poured into 100 ml conical flasks and inoculated separately with 1 ml spore suspension of the fungi which were grown for seven days on PDA slants. Unless otherwise stated, the flasks were incubated for 6 days at 30ºC on a rotary shaker (150 rpm).On the seventh day, the flasks were harvested by filtering the biomass through pre-weight Whatman filter paper No. 1 and these were extensively washed with sterile distilled water to remove any medium component. The fungus biomass is used for the preparation of cell-free extract (Elamawi *et al*., 2018).

Synthesis of Nanoparticles 1 mM of an aqueous solution of Silver nitrate ($AgNo_3$), was used for the synthesis of silver 10 ml of Silver nitrate was mixed with 10 ml of cell-free filtrate of fungi in an Erlenmeyer flask separately. These flasks were incubated at room temperature in dark conditions to minimize the photoactivation of metal ions. Control (without metal ion) was also run along with the experimental flask. (Elamawi *et al*., 2018)

Characterization of Nanoparticles Silver (Ag) nanoparticles are characterized by three analytical techniques as below.

a) Visual Analysis of Nanoparticles- Visual analysis of nanoparticles is the primary confirmation of the presence or absence of nanoparticles. Silver (Ag), nanoparticles show specific color after the exposure of metal ions to the cell-free extract. The dark color indicates that large amounts of nanoparticles while the faint color indicates that fewer amounts of nanoparticles. (Elamawi *et al*., 2018).

b) UV-spectrophotometric Analysis- Spectrophotometer was invented by Arnold O. Beckman (1940) and is one of the most essential instruments which covered both visible and ultraviolet spectrums. A spectrophotometer determines the composition of solution i.e. concentration of certain substances within a solution by measuring how the solution absorbs a particular wavelength of light. UV-Vis spectrophotometers allow the identification, characterization, and analysis of metallic nanoparticles like silver. They can evaluate nanoparticles' dispersion and local structure and are also used to confirm the metallic nature, size, and aggregation level.

Experiment andResults

Isolation of fungi

To study the incidence of soil microflora, 3 media potato dextrose agar (PDA), Rose Bengal agar (RBA), and Glucose nitrate agar (GNA) wear used. A total of 10 colonies were isolated from the soil samples collected from different locations. The *Aspergillus*, *Trichoderma, Penicillium*, and many members of the genus are isolated from the soil.

Two different seeds groundnut and soybean wear screened to study the occurrence of mycoflora like *Aspergillus nigar, A. terreus*, A. *flavus, and A.nidulance* wear these fungi isolated from the Soybean and groundnut.

Naturally, infected plant parts like Stems, leaves, and fruit were collected from different marketplaces and storehouses. Infected plant parts were cut into small pieces wash with distilled water and incubated on PDA media at 30^0C for 7 Days.

A] Production of nanoparticles

All selected *Aspergillus* 5 species are used for the production of silver nanoparticles. GN media is used for the production of biomass of all fungi. They showed distinct mycelium structure Extracellular or intracellular nanoparticle synthesis occurred in fungi with the help of a silver nitrate ($AgNo_3$) reducing agent.

I] Production of Biomass

Selected fungi like *Aspergillus flavus, A.terreus, A.oryzae, A.nidulans, A.nigar* and were incubated separately in 40ml GN media in 100ml flask after 6 days each flask showed the growth of mycelium. All species of *Aspergillus* show smooth and granular growth on the GN medium. *Aspergillus oryzae* showed the largest weight of harvested biomass while *Aspergillus flavus* found the smallest weight.

II) Biosynthesis of silver nanoparticles

Silver nanoparticles were synthesized by harvested biomass of selected fungi. Pre-weight fresh fungal biomass of selected 5fungi was washed with double distilled water to remove any component of media clean biomass of each fungus incubated in five flasks containing 40ml of distilled water. After 3 days the cell-free filtrate was collected with the help of whatsman filter paper no-1. The cells free filtrate of *Aspergillus flavus* showed faint yellow and *A.nigar*, clearly showed light brown color and *A nidulans* shows opec white and *A. prize*, a faint yellow, and *A. terreus,* showed a yellowish color. The color of cell

filtrate changes after the exposure of 20ml of 1mM silver nitrate was colorless. After immersion of 1mM silver nitrate solution into cell filtrate, the color becomes changes from colorless to brown. All selected fungi cell-free filtrate showed different shades of brown color.

Screening of fungi for nanoparticles in GN medium

Sr. No	Name of Fungi	Spore	Color of Mycelium	Culture filtrate (C.F)
1	*Aspergillus flavus*	Citron green	Yellowish	Faint yellow
2	*Aspergillus terreus*	Olive grey	Brownish	Yellow
3	*Aspergillus oryzae*	Greenish blue	Light green	Faint yellow
4	*Aspergillus nidulans*	Lightish brown	Brownish	Opec white
5	*Aspergillus nigar*	Blackish brown	Black	Light brown

B] Characterization of silver nanoparticles

1] Visual Analysis of **Silver nanoparticles ($AgNo_3$)**

20ml cell free extract of selected 5 fungi immersed with 20ml of 1Mm solution of ($AgNo_3$) in separate flask. After immersion color of the cell-free extract becomes changed from pale yellow to a different shade of brown color. *A. terreus*, the color of the cell-free extract was pale yellow after exposure to 1mM $AgNo_3$ color becomes dark brown while *A. nigar* the color of the cell-free extract was light brown after exposure to 1mM $AgNo_3$ color becomes dark brown. While *A. oryze* the color of the cell-free extract was faint yellow after exposure to 1mM $AgNo_3$ color becomes dark brown. While with *A.nidulans*, the color of the cell-free extract was opec white after exposure to 1mM $AgNo_3$ color becomes faint brown. While the color of cell cell-free extract was faint yellow after exposure to 1mM $AgNo_3$ color becomes moderate brown. Photoplate clearly showed that all 5 dominant fungi color becomes changed in a different shade of brown color.

Visual Analysis of Biosynthesized Silver Nanoparticle

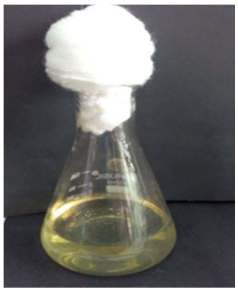
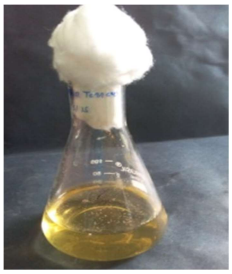
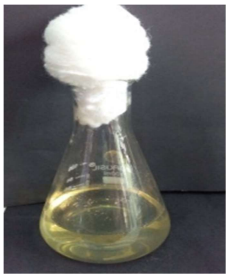
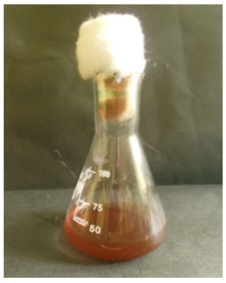
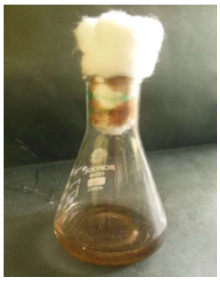
C.F.	C.F. + $AgNO_3$
 *Aspergillus flavus*	 *Aspergillus flavus*
 *Aspergillus terreus*	 *Aspergillus terreus*
 *Aspergillus oryzae*	 *Aspergillus oryzae*
 *Aspergillus nidulans*	 *Aspergillus nidulans*
 *Aspergillus nigar*	 *Aspergillus nigar*

Table No.:- 2 Biosynthesis of silver nanoparticles by visual and photometric method

Sr. No	Name of Fungi	Visual method		Photometric method		Silver nanoparticles
		C.F Color	C.F+ $AgNO_3$	Pick formation	OD	
1	*Aspergillus flavus*	Faint yellow	Moderate brown	450	0.2689	Present
2	*Aspergillus terreus*	yellow	Dark brown	450	0.6114	Present
3	*Aspergillus oryzae*	Faint yellow	Dark brown	450	0.6578	Present
4	*Aspergillus nidulans*	Opec white	Faint brown	440	0.4931	Present
5	*Aspergillus nigar*	Light brown	Dark brown	440	0.4811	Present

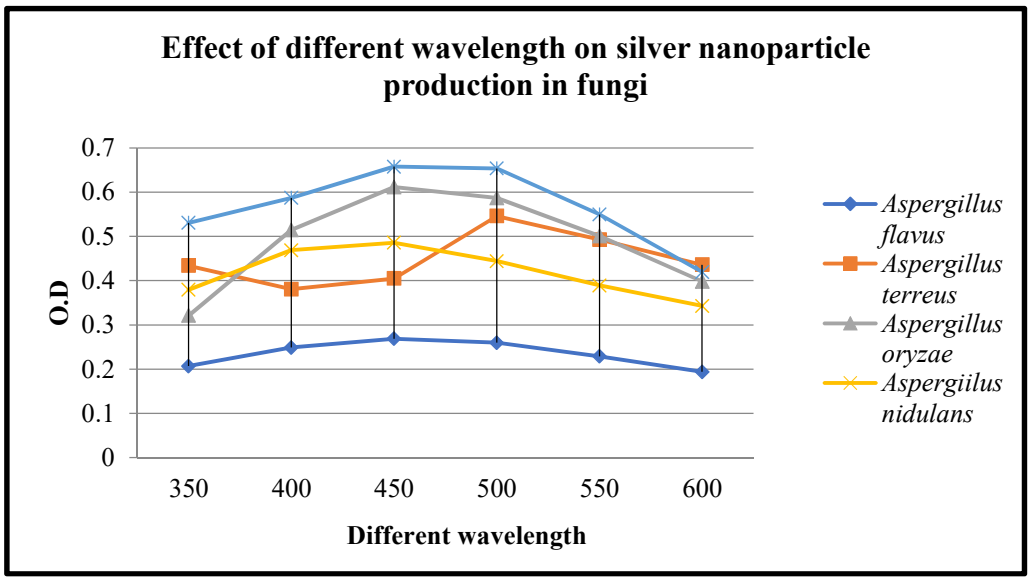
II] UV-spectrophotometric Analysis

UV-spectrophotometric technique was used to determine the concentration of silver nanoparticles within a solution by absorbing the particular wavelength of light gradually increased peak formation in a spectral reading is the indication of presence of nanoparticles in that cell filtrate of fungus. Peak formation was varies in different nanoparticles Absorption spectra of silver is in between 400-500 nm was found.Silver nanoparticles (AgNps) from table showed that all selected 5 dominant fungi absorb the 400-500nm wavelength of light. Cell free extract of fungi.

The data decipited in Table No 3 shows the ultraviolet-visible spectra of the cell filtrate with $AgNO_3$ showed a strong broad peak at 440nm which is surface Plasmon resonance (SPR band). Which indicated that presence AgNPs in *Aspergillus terreus, Aspergillus nidulans, Aspergillus niger,* However *Aspergillus flavus* and *Aspergillus oryzae*. shows a strong broad peak at 450 nm.

Table No.:- 3 Effect of different wavelength on silver nanoparticles production in

Sr. No	Name of Fungi	Different wavelength					
		350	400	450	500	550	600
1	*Aspergillus flavus*	0.2068	0.2488	0.2689	0.2597	0.2288	0.1940
2	*Aspergillus terreus*	0.4336	0.3806	0.4050	0.5460	0.4929	0.4360
3	*Aspergillus oryzae*	0.3208	0.5143	0.6114	0.5870	0.5008	0.3981
4	*Aspergillus nidulans*	0.3794	0.4687	0.4860	0.4443	0.3893	0.3428
5	*Aspergillus niger*	0.5308	0.5871	0.6578	0.6536	0.5496	0.4198



Conclusion

In this study, were synthesized extrcellularly by *Aspergillus terreus, Aspergillus nidulans Aspergillus flavus Aspergillus oryzae* and *Aspergillus niger* at room temperature the AgNPS quite stable without using any toxic chemicals as capping agent and shows broad spectrum at 440nm the ability to synthesize the AgNPS as potential agent using a *Aspergillus terreus, Aspergillus nidulans Aspergillus flavus Aspergillus oryzae* and *Aspergillus niger* is highly promising for the green sustainable production of nano-metals, and also enhance its widespread application as an important strategy.

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In vitro Management of Selected Plant Pathogenic Fungi *Alternaria solani* by Different Weed Plant Extract

Dr Shaikh Faruk Karim

Department of Botany,
MSS's Arts, Science and Commerce College,
Ambad Dist. Jalna, (MS), India – 431204
Affialated to Dr. Babasaheb Ambedkar Marathwada University,
Chh. Sambaji Nagar (Auranagabad).

Abstract

In vitro antifungal activities of weed plant on mycelial growth of *Alternaria solani* . The Antifungal activity of plant extract was determined by food poisoning technique (kumar and tyagi 2013). The weed plant extracts *Datura metel* (17 mm), *Parthenium hysterophorus* (21 mm), *Tridax procumbens* (22 mm) inhibited mycelial growth of *Alternaria solani*, Whereas, *Achyranthes aspera* (27 mm) *Salix* sp., (30 mm), *Physalis minima* (48 mm), *Chenopodium album* (51 mm), and *Lantana camara* (58 mm) respectively. The weed extract also reduced mycelium growth of *Alternaria solani*.. Present findings also supported by (Shivastava and Singh 2011). Reported that bio fungicides are easily bio degradable, selective and locally produced, especially for the farmers who cannot afford expensive synthetics fungicides. By using weed plant species as raw materials for plant derived fungicides, can manage the disease, and at the same time might create economic uses for these unwanted species.

Keyword:- *In vitro, plant extracts, mycelium growth, Alternaria solani and vegetable crop etc.*

Introduction

Chemical compounds are used in a variety of sectors like food, forestry, agriculture and aquaculture. Pesticides show their toxicity into the living systems. The World Health Organization (WHO) categorizes them based on their detrimental effects, emphasizing the relevance of public health. The usage can be minimized to a least level by using them sparingly with a complete grasp of their categorization, which is beneficial to both human health and the environment. In this review, we have discussed pesticides with respect to

their global scenarios, such as worldwide distribution and environmental impacts. Major literature focused on potential uses of pesticides, classification according to their properties and toxicity and their adverse effect on natural system (soil and aquatic), water, plants (growth, metabolism, genotypic and phenotypic changes and impact on plants defense system), human health (genetic alteration, cancer, allergies, and asthma), and preserve food products. We have also described eco-friendly management strategies for pesticides as a green solution, including bacterial degradation, myco-remediation, phytoremediation, and microalgae-based bioremediation. The microbes, using catabolic enzymes for degradation of pesticides and clean-up from the environment. This review shows the importance of finding potent microbes, novel genes, and biotechnological applications for pesticide waste management to create a sustainable environment. So, present studies focused on the ecofriendly sources use for the management of fungi causing diseases in crops. Before verify natural sources use in vitro condition to management of selected pathogen control.

In vitro biological management of selected pathogenic soil born fungi causing seedling diseases of vegetable crop *Alternaria solani, Fusarium oxysporum* by used different weeds of plants selected weed plants are i.e. *physalis minima, salix* sp, *Melilotus* sp., *Solanum nigrum, Lantana camara, Datura metel, Convolvulus arvensis, Achyranthes aspera, Parthenium hysterophorus, Cyanodon dactylon, Tridax procumbens*, *Cannabis sativa, Ocimum sanctum, Desmodium triflorum, Chenopodium album, Tritis vulgaris, Launaea procumbens* these are weed plants belongs to different family and inhibited to mycelial growth of selected pathogenic fungi because in weed plants are present in various types of antagonistic and microbial substances (Jaskaran *et al.,* 2017). In vitro antifungal activities of common weed extracts on mycelial growth of *Alternaria solani* (Ell. and Martin) Jones and grout.

Material and Methods;

Collection of plant material:

To study antifungal activity of leaf extract of certain weed plants. The from local region of Aurangabad. Most of the weed plants were collected from campus of Dr. Babasaheb Ambedkar Marathwada University Aurangabad. The selected plants for study were *Physalis minima, Salix* sp., *Melilotus* sp., *Solanum nigrum, Lantana camara, Datura metel, Convolvulus arvensis, Achyranthes aspera, Parthenium hysterophorus, Cynodon dactylon, Tridax procumbens*, *Cannabis sativa, Ocimum sanctum, Desmodium triflorum,*

Chenopodium album, Triticum aestivum and Launaea procumbens. To manage diseases of vegetables caused by *Alternaria solani* and *Fusarium oxysporum.*

Table 1: List of plants (weed) used in the present study

Sr. No	Botanical name	Common name	Family
1	*Ocimum sanctum* (L.)	Tulasi	*Lamiaceae*
2	*Launaea procumbens* (L.)	Pathari	*Asteraceae*
3	*Tridax procumbens* (L.)	Jakhamjodi	*Asteraceae*
4	*Solanum nigrum* (L.)	bhuiringi Night shade	*Solanaceae*
5	*Lantana camara* (L.)	Lantana weed	*Verbenaceae*
6	*Datura metel* (L.)	Datura	*Solanaceae*
7	*Convolvulus arvensis* (L.)	Bindweed	*Convolvulaceae*
8	*Achyranthes aspera* (L.)	Aghada	*Amaranthaceae*
9	*Partheniumhysterophorus* (L.)	Congress grass	*Asteraceae*
10	*Cynodon dactylon* (L.) pers.	Haraali	*Poaceae*
11	*Melilotus* sp. (L.)	Honey clove	*Fabaceae*
12	*Cannabis sativa* (L.)	Kardali	*Cannabaceae*
13	*Physalis minima* (L.)	Groundcherry	*Solanaceae*
14	*Desmodium triflorum* (L.) Dc.	Creeping Tick	*Fabaceae*
15	*Chenopodium album* (L.)	Chakwat	*Amaranthaceae*
16	*Triticum aestivum* (L.)	Wheat	*Poaceae*
17	*Salix* sp. (L.)	Willow	*Salicaceae*
18	N*icotiana* sp.	Texmex Tambaku	*Solanaceae*

Preparation of plant extract:

The fresh weed plants were collected in clean sterile polythene bag. A separate polythene bag was used for each type of plant and brought to the laboratory. The mature leaves of each plant removed and weighed. The 100 gm of fresh leaves were crushed in 20 ml of distilled water. And squeezed through muslin cloth and adjusted to 100 ml by adding sterile distilled water. The potato dextrose agar medium was used for study to see. The effect of 10% concentration leaf extract, 10 ml leaf extract added in 90 ml of boiled potato extract in sterile conical flasks of 250 ml size 2.5 gm of agar and 2.5 gm of dextrose was added in flasks containing leaf extract and potato extract (100 ml medium). The flasks was ploughed with non-absorbent cotton plague and sterilized in autoclave at 15 lb pressure (120^0 C) for 20 minutes and switched off, same procedure was used to prepare leaf extract and medium for each type of weed plants selected for study.

Slightly cooled sterile medium were poured in sterile petri dishes 10 ml in each plate. Three media amended petri plates having on specific leaf extract, were inoculated with 4 mm disc of study *Alternaria solani*, fungal disc was removed with the help of sterile borer. The inoculated petri dishes were incubated at room temperature 23 ± 1^0C and observed radial growth mycelium colony after 7^{th} day's inoculation period, same procedure was used to *Fusarium oxysporum*. Same methods are followed by (Jaskaran *et al*., 2017).

Experimental Result

Table .2. *In vitro* management of *Alternaria solani* by different weed plant extracts on 8^{th} day of inoculation period.

Sr. No.	Weed plant	Radial growth on 8^{th} day (mm)			
		2 day	4 day	6 day	8 day
1	*Triticum aestivum*	12	32	74	85
2	*Chenopodium album*	04	21	42	51
3	*Ocimum sanctum*	-	O6	19	32
4	*Tridax procumbens*	-	O2	09	22
5	*Cynadon dactylon*	07	35	54	69
6	*Parthenium hysterophus*	-	04	11	21
7	*Achyranthes aspera*	-	05	18	27

8	*Convolvulus arvensis*	05	23	49	63
9	*Datura metel*	-	03	11	17
10	*Lantana camara*	04	13	47	58
11	*Solanum nigrum*	15	37	61	72
12	*Melilotus* sp.	13	29	59	70
13	*Salix* sp.	04	O8	22	30
14	*Physalis minima*	09	17	37	48
	Control	-	-	-	88
	S.D.	4.32	12.56	21.54	24.09
	S.Em ±	1.12	3.25	5.57	6.22

Values: Average of three replicates.
* The result is significant at $p < 0.01$.
* The result is significant at $p < 0.05$.

Result showed that many weed plants are used for control fungal diseases because it consist of antifungal compounds this activity is due to presence of different phyto-chemical components such as, Tanins, Saponins Alkaloid, Essential oil and flavonoids (Tapwal *et al.,* 2011). The antimicrobial activity of Plants oil and extract has formed the basis of many applications, including raw and processed food preservation, natural therapies, as alternative medicines, pharmaceuticals (Lis-Balchin and Deans, 1997). Plant material were selected for present study viz. *Triticum aestivum, Chenopodium album, Ocimum sanctum, Tridax procumbens, Salix sp., Cynodon dactylon, Parthenium hysterophus, Achyranthes aspera, Convolvulus arvensis, Datura metel, Lantana camara, Solanum nigrum, Melilotus sp.,* and *Physalis minima.*

The results of in vitro management of weed plants extracts summarized in table no.2**.** The management of test fungus by different weed plant extract was determined by food poison technique. All weed plant extract significantly reduced radial growth of *Alternaria solani* as a compare to control (without plant extract). The results were observed in petridish. Graph 1. Indicated that maximum inhibition mycelial growth of *Alternaria solani* were obtained by *Datura metel* extract 17 mm. Followed by *Parthenium hysterophorus* 21 mm, *Tridax procumbens* 22 mm, *Achyranthes aspera* 27 mm, *Salix* sp., 30 mm, ocimum sanctum 32 mm. weed plant extract media was also reduced mycelial

growth of *Alternaria solani* such as, *Physalis minima* (48 mm), *Chenopodium album* (51 mm), and *Lantana camara* (58 mm) respectively. and also other weed extract treatment were *Melilotus alba* (70 mm), *Solanum nigrum* (72 mm) controlled highly significantly mycelia radial growth of *Alternaria solani* Experimental result indicated that extract of *Datura metel, Parthenium hesterophus, Tridax procumbens, Achyranthes aspera,* maximum responsible source for control *Alternaria solani*. And otherwise weed plant extract also reduced mycelial growth.

Present findings also supported by (Shivastava and Singh 2011). Reported that bio fungicides are easily bio degradable, selective and locally produced, especially for the farmers who can not afford expensive synthetics fungicides. By using weed plant species as raw materials for plant derived fungicides, can manage the disease, and at the same time might create economic uses for these unwanted species. (El-Shemy *et al.,* 2007). Studied that inhibitory effect of Salix sp. (willow) aqueous extract against *Alternaria solani* could be explained by the presence of salicin i.e. glucoside of salicyl alchohol. Salicin may bind with receptors on the surface of pathogen cells and penetrates to the fungal cells which could be killed through denaturation of some enzymes and proteins. Salicin may be the major compound that shows the antifungal effect but other metabolites may increase the potency of the *Salix* sp. (willow) extracts compared with pure salicin. And also (Jaskaran and Biswas *et al.*, 2017). Suggested that antifungal activity of weed plant extract against *Alternaria solani*. The extract of *Datura metel Parthenium hysterophorus, Achyranthes aspera Salix* sp. most effective against *Alternaria solani*.

Discussion and Conclusion

In vitro antifungal activities of weed plant on mycelial growth of *Alternaria solani* . The Antifungal activity of plant extract was determined by food poisoning technique (kumar and tyagi 2013). The weed plant extracts *Datura metel* (17 mm), *Parthenium hysterophorus* (21 mm), *Tridax procumbens* (22 mm) inhibited mycelial growth of *Alternaria solani*, Whereas, *Achyranthes aspera* (27 mm) *Salix* sp., (30 mm), *Physalis minima* (48 mm), *Chenopodium album* (51 mm), and *Lantana camara* (58 mm) respectively. the weed extract also reduced mycelium growth of *Alternaria solani*.. Present findings also supported by (Shivastava and Singh 2011). Reported that bio fungicides are easily bio degradable, selective and locally produced, especially for the farmers who cannot afford expensive synthetics fungicides. By using weed plant species as

raw materials for plant derived fungicides, can manage the disease, and at the same time might create economic uses for these unwanted species.

(El-Shemy *et al*., 2007) studied that Causing dry potato tuber rot when treated with Allium sativum extract. The inhibitory effect of Salix sp. (willow) aqueous extract against *Alternaria solani.* (Jaskaran *et al.,* 2017) reported that antifungal activity of weed plant extract against *Alternaria solani*. The extract of *Datura metel Parthenium hysterophorus Achyranthes aspera, Salix* sp. most effective against *Alternaria solani*. Result is agreement by (Pal and Kumar, 2013). reported that in-vitro mycelia inhibition of *Fusarium* with *Achyranthes aspera* and *Parthenium hysterophorus* extracts. (Jalender and Gachande 2012), studied that the leaf extract of *D stramonium* and *D. innoxia* at 20% concentration was found more inhibitory activity against *F.oxysporum.* While the extract of *D. stramonium* at 20% concentration was inhibitory against *Alternaria solani.* (Shrestha and Tiwari 2009). Suggested that complete inhibition of mycelial growth of *Fusarium solani* when treated with *Allium sativum* extract.

The weed plant extract of *Datura metel* maximum ability to controlling pathogenic fungi against *Alternaria solani*

Parthenium hysterophorus and *Tridax procumbens* more effective against *Alternaria solani* that was 21 and 22 mm radial growth.after 8th day of inoculation period.

Achyranthes aspera extract found efficient against *Alternaria solani*

Salix sp. Extract inhibited radial growth of *Alternaria solani* (30 mm).

Ocimum sanctum extract give strong ability of controlling against pathogenic fungi *Alternaria solani*.

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Ethanobotanical Studies of Some Medicinal Plants In Buldhana District (MS) India

A.P. Shelke
Department of Botany

M.T. Nikam
Department of Zoology

Shri Shivaji Science and Arts College, Chikhli, Dist. Buldhana (MS) INDIA

ABSTRACT

Buldhana District of Maharashtra state (India) has a rich biodiversity of medicinal plant species. The deprived tribal people of Buldhana district Maharashtra (India) do not receive adequate primary healthcare. They have been necessarily still utilizing traditionally the plants in their surrounding for various purposes including ethnomedicine old people. An ethnobotanical survey was carried out in Buldana district, shows that the knowledge about the enthanomedicinal use of plants has been disappearing from generation to generation therefore it is necessary to give this knowledge from old people to young generation.The traditional healers in this area use the wild as well as cultivated plants in the treatment of various disease. Documenting the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources and for the welfare of human being.

Keywords: *Ethanobotany, Tribal People, Conservation, Wild, Medicinal Plants*

Introduction

India has a rich tradition of plant based knowledge on healthcare. A large number of plants are equally used by tribals and folklore traditions in India for treatment of cuts, wounds, and burns. All traditional medicines have their roots in folk medicines and household remedies. WHO has estimated that 80% of the world's populations rely primarily on traditional medicine (WHO, 1978; Okerele, 1992).

There has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the world during the last few decades. Traditional medical knowledge of medicinal plants and their use by indigenous cultures are not only useful for conservation of cultural traditions and biodiversity but also for community healthcare and drug development in the present and future. In India, it is reported that traditional healers use 2500 plant species and 100 species of plants serve as regular sources of medicine (Pei, 2001). Medicinal plants are the backbone of the traditional medicine; this means that, 3300 million people in the underdeveloped countries utilize medicinal plants on a regular basis (Dobriyal and Narayana, 1998).

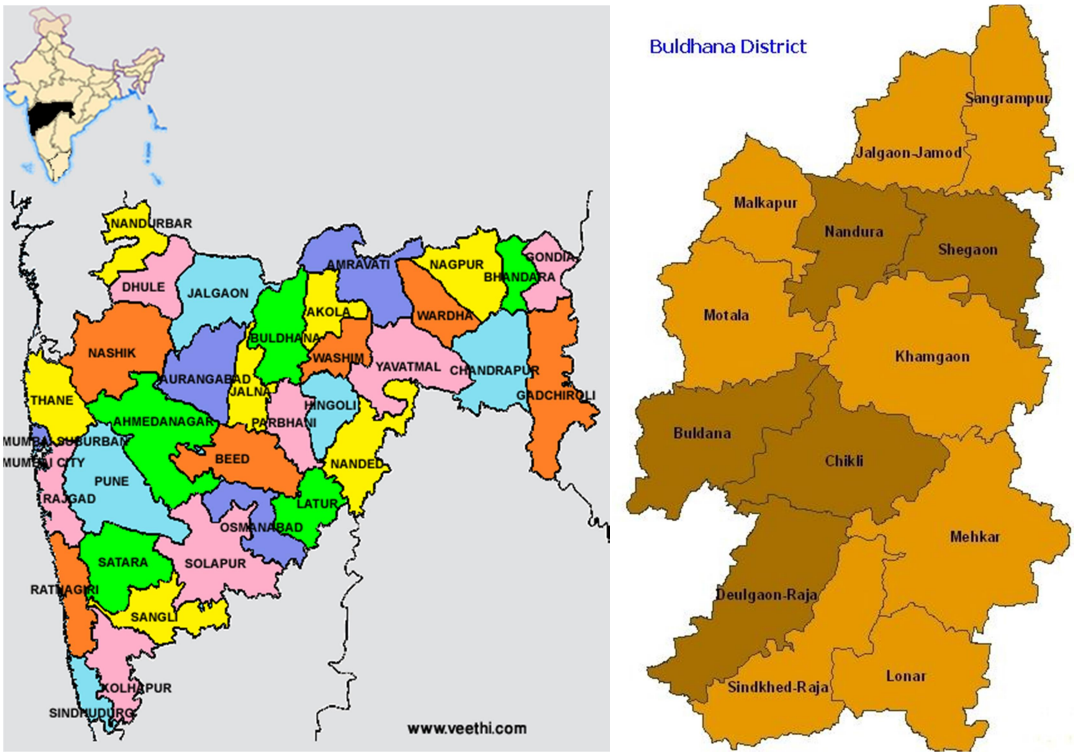
Traditionally all medicinal preparations were derived from plants, whether in the simple form of plant parts or the more sophisticated way of crude extracts, mixtures, etc. Crude herbal formulations claimed to have major medicinal benefits with or without additives. Most of the time, this knowledge is only verbally passed on from generation to

generation and remains consequently in danger of being lost in the goodwill of modern medicine. Though, it signifies for the native folks an opportunity of inexpensive and straight forward treatment. Therefore, the attention and urgency of ethnobotanical investigation are understandable. There is currently a universal renaissance of ethnobotanical surveys of medicinal plants and the necessity for screening precise parts of plants.

Study Area

Buldhana is the western most district of the Vidharbha, of the Maharashtra State. The name of town is derived from the corrupt form of Bhil—Thana i.e. the place of Bhils. The district is situated between 19°.51' and 21°.17' North latitudes and 75°.57' and 76°.49' East longitudes. It is bounded on the north by Nimar district of Madhya Pradesh, on east by the Akola and Amaravati districts, on the west by the Jalgaon and Aurangabad districts and on the south by the Jalna and Parbhani Districts. In Buldhana district Bhilala tribals are natural retainers of traditional knowledge which passed from generation to generation through oral folklore. This tribe is mostly inhabited in Jalgaon Jamod and Sangrampur tahsils, particularly in the remote areas of Satpuda ranges of the district.

Location of Maharashtra in India Map and Buldhana District Map



Materials and Methods

The field study was carried out from April, 2021 to November, 2022 and information on the use of medicinal plants was obtained through, field tours, interviews and informal conversations with traditional healers of tribal community, knowledgeable persons or medicine men, Vaidoos, experienced and aged persons, local healers of the villages. They were consulted for recording local name; parts of plant used methods of

drug preparation and recommended doses. Personal interviews and group discussions with local inhabitants revealed some very valuable and specific information about the plants, which were further authenticated by crosschecking. The plants were collected from remote places in vegetative and blooming conditions, simultaneously, noting the vernacular names and all the relevant information disclosed by the local practitioners. The plants were brought to the laboratory and processed for herbarium specimen. Plants were identified using relevant scientific literature (Hooker 1872 – 1888; Cooke 1967 (Rpr.); Sharma et al. 1996; Naik 1998; Singh and Karthikeyan, 2000, Singh et al. 2001). Subsequent visits were planned to photograph the plants in proper blooming period.

Medicinal Plant and Their Uses

Achyranthes aspera L.

Family: Amaranthaceae

Local Name: Agdya

Parts used: Roots, Leaves, flower, seed

Ethnomedicinal Uses:

The boiled leaves are consumed to relieve internal piles and Decoction of plant in the treatment of kidney stone.

Antiparasitic Activity: It has been studied that dried leaf, flower and seed extract of *achyrathes aspera* are active against the larvae of cattle tick.

The seeds of *achyrathes aspera* is used for snake or reptiles bites and also useful for coronal infection.

The supplements of this plant are used to remove excess body fat by preventing abdominal accumulation.

The juice of *achyranthes aspera* has anti-inflamentary properties hence it is ulcer treatment.

The roots of help to *achyrathes aspera* reduce pain itching, skin rashes and insect bite.

In ayurveda *Achyrathus aspera* is effective for fistula.

The oil of *achyrathus aspera* is used in cough.

It is rich in potassium, it keeps heart healthy.

It has cardiovascular activity.

Abelmoschus manihot

Family: Malvaceae

Local Name: Ran-bhendi

Part Used: Stems, Leaves, Flower, Fruit

Ethnomedicinal Uses:

Cough and Cold: Cough and Cold - 3-4 Young raw fruits consumed once a day for 3-4 days along with honey to test cough.

Anti-inflammatory activity: Extracts of leaves exhibited significant anti-inflammatory activities in a dose-dependent Manner.

Larvicidal activity: The larvicidal activity of the roots of Hibiscus *Abelmoschus manihot* which was evaluated using the larvae of mosquitoes in the genera Anopheles and Culex.

Wound healing activity: The extracts of the woody stems of *Abelmoschus manihot* had significant wound healing activity.

The decotation of *Abelmoschus manihot* flower is traditionally used to treat jaundice and chronic diseses.

It is used in a treatment of urinary infection and inflammation.

It also reduces kidney pain and helps to lower body cholesterol level.

Result

The results reveal that 2 plant species were used for medicine purposes in the surveyed area. The inventoried species comprise 2 families. The medicinal plant parts are roots, stem, leaf and fruit were used in raw or cooked forms. These species were used to treat different diseases. Generally, the medicinal plants are taken orally for the treatment of an illness. The method of preparation of the traditional medicine or dosage form or medications is different for each traditional healer, and it also depends upon the availability of material. Usually, parts of the plant, extract, decoction, juice, paste, and powder are given for treatment. Depending upon the disease or disorder and treatment, single or more than two plant species have been used. Among these medicinal plants, a large number of medicinal plants have been scientifically proven by various groups of researchers for multiple types of pharmacological activities.

The above two species have Anti-inflammatory, anti-arthritic and Anti-oxidant activity, wound healing activity. The plant part used for medicine preparations are root, leaves, flower and fruits. Buldhana district are rich in medicinal plants, many are still not known to us. Present investigation indicates that study area of Buldhana district is blessed with magnificent diversity of ethnomedicinal plants used to cure many diseases. The present study will give new incentive to the traditional system of healthcare.

Discussion

The study of herbal medicines as therapeutic agents of a paramount importance in addressing health problems of traditional communities and third world countries as well as industrialized societies . Previous reports on the ethnobotany of are an evidence for the presence of numerous ethnomedicinal plants used by the tribals (Kumar et. al.,nd Biswas and Mukherjee 2003) reported that about 163 species of plants were used as wound healing plants in Indian systems of medicine such as

Ayurveda, Siddha, Unani and folk medicine (Jain et al. 2009) reported the wound healing activity of the petroleum ether and methanol extracts of *Abelmoschus manihot*.

Conclusion

The results of the present study provide evidence that medicinal plants continue to play an important role in the healthcare system of this tribal community. The results of this study demonstrated the persistence of folk medicine practices in Buldhana district, that the people are still dependent on indigenous knowledge for their health care, providing a cheaper and accessible alternative to the high cost pharmaceutical remedies. In spite of the overwhelming influence and our dependence on modern medicine and tremendous advances in synthetic drugs, many people still rely on herbal drugs the reason is that, if the herbal medicines are used properly they don't have any side effects. The possible benefit of plant-derived medications constitutes a rewarding area of research, particularly in countries such as India which have a rich biodiversity of plant resources coupled with a high prevalence and variety of infectious diseases where sustainable utilization of the biodiversity can be carried out. Therefore, documentation of these plants is the only way to preserve the traditional knowledge of the plant resources endemic to this area. This research paper will definitely help the researchers to explore the different properties of medicinal plants.

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Sub-Lethal effects of fluoride on Total Free Amino Acid (TFAA) & Oxygen consumption in freshwater fish, *Cyprinus carpio*

Suryawanshi V.D.
PG. Dept. of Zoology,
Sant Ramdas Arts, Commerce & Science College
Ghansawangi, Dist. Jalna (MS)
Vijay1351976@gmail.com

Abstract: In the present study has been focused to assess the respiratory response and total free amino acid (TFAA) content in various tissues in fish, Cyprinus carpio. The effects of sub lethal concentration of fluoride on respiratory and total free amino acid content in various tissues were estimated. The changes in oxygen consumption & total free amino acid were observed and discussed in relation to the sub lethal concentration of fluoride. The observations indicate that there was decline in oxygen consuming capacity and fluctuation of total free amino acid in various tissues as compared to control. The significant role of fluoride in Cyprinus carpio is correlated with the findings of the other researcher.

Key words: *- fluoride, oxygen consumption, TFAA, Cyprinus carpio.*

Introduction:

Fluorine is a common element, ranking 13th in abundance and constituting 0.06 to 0.09 % of the earth crust. In nature, fluorine is widely found in sedimentary phosphate rock deposits and minerals (Kirk-Othmer, 1980). Fluoride pollution in the environment occurs through two channels, namely natural and anthropogenic sources. Fluoride is beneficial to health if the concentration in drinking water is less than 1.5mg/lit. Higher concentration causes serious health hazards namely dental, skeletal and non-skeletal fluorosis. Dental fluorosis produces brown stains on teeth and may cause pitting. Skeletal fluorosis causes crippling and severe pain, stiffness of backbone & joints. Respiratory distress is recognized as one of the symptoms of pesticide toxicity (Holden, 1962; Premdas and Anderson, 1963; Ferguson and Good Year, 1967). Changes in the respiratory behavior and metabolic rate of pollutant induced fish have drawn the attention of several biologists, (Singh & Singh, 1979; Roy & Munshi, 1988; Sastry & Shukla, 1990; and Kumar, 1999). But their results are conflicting as some have reported increased gill ventilation and decreased oxygen uptake rate (Singh & Singh, 1979 and Roy & Munshi, 1988) while others have reported an increase in oxygen uptake rate (Anderson *et al.,* 1974 and Natrajan & Rajulu, 1983). Nagabhushanam *et al.* (1983) have reported that the free amino acids serve as supplementary energy source under the condition of emergency during chronic stress. Hence an attempt has been made to investigate the effects of fluoride on the changes in oxygen consumption and TFAA in various tissues.

Material and Methods:

Cyprinus carpio, ranging between weighing about 250gm.were collected from a nursery pond. The animals were brought to the laboratory and were acclimatized to lab condition & fade with rice and groundnut cake. Fluoride waters obtained from nearby areas and tested in Public Health Lab. for presence of fluoride. The report indicates that, bore water contained 4.285mg/lit (F) while the permissible limit is 0.5 to 1.5 ppm. /lit, (WHO, 1994). Water from these areas was diluted hundred times and makes sub lethal concentration of fluoride. The animals were divided in two groups each containing ten animals and were exposed to sub lethal concentration of fluoride, LC_{50} & behavioral changes were recorded. Fluoride content of water has effects on oxygen consuming capacity of the fish. Changes were studied after exposure for various time periods. Changes in oxygen consumed in cc/lit. is found by Winkler's method as modified by Saroja (1965). The oxygen consumed by the animals was calculated by collecting the samples of water from each set of jar before and after experimentation. Amino acid was determined by Danielson methods.

Results:

In the present investigation oxygen consumption in 24h & 48h increased insignificantly while highly significantly $P<0.001$& $P>0.001$ decreased in72h & 96h (Table No.1) Whereas content of amino acid in muscle significantly $P>0.05$ & $P<0.05$ decreases in 24h & 48h and highly significantly $P<0.01$ decreases in 72 & 96h. In the liver highly significantly $P<0.01$ decreases in 48 & 96h, significantly $P>0.05$ decreases in 72h while in 24h it was not quite significant decreases of amino acid content. In the kidney, no any changes were observed in 24h. In 48h highly significantly $P>0.01$ decrease. Slightly decrease insignificantly in 72h &96h. (Table No.2)

Table No.1

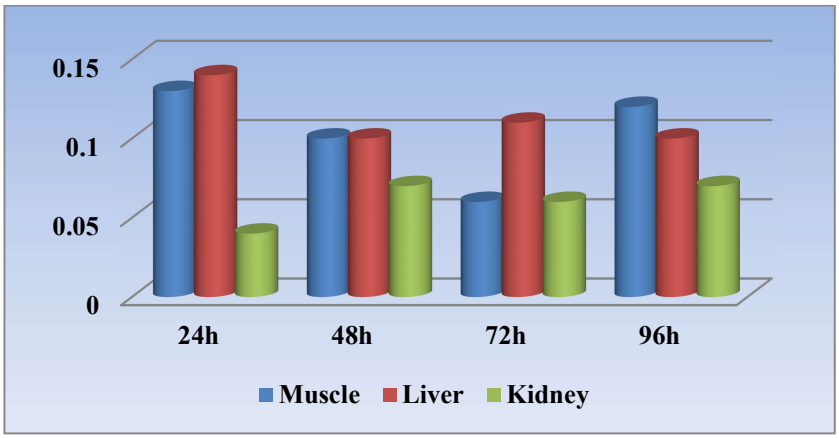
Effect of sub lethal con. of fluoride on whole oxygen consumption (mg/lit/body weight) for different time interval, Mean ±SD N=6, Significant at 0.05, 0.01 & 0.001 % level, NS- Represent Non significant.

Periods of exposure	Control Mean±SD	Sub lethal/ Mean±SD	p-value	t-value
24h	4.81±0.41	5.46±1.66	0.4702	0.7807 (NS)
48h	4.81±0.41	4.83±1.76	0.9804	0.0257 (NS)
72h	4.81±0.41	1.9±0.78	0.0009 P<0.001	7.0134 (SIG)
96h	4.81±0.41	0.48±0.30	0.0002 P>0.001	8.9354 (SIG)

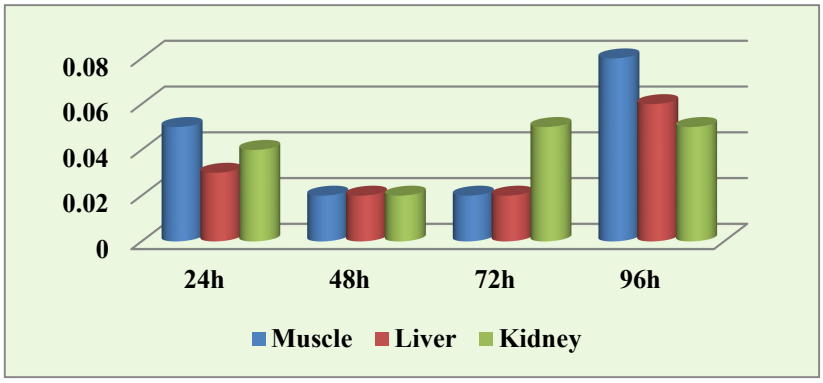
Table No.2

Effects of sub lethal con of fluoride on total free amino acid content (100mg/wet weight of tissue) of fish, *Cyprinus carpio* at different time interval. Mean ±SD,N=6, Significant at 0.05, 0.01, and 0.001 % level

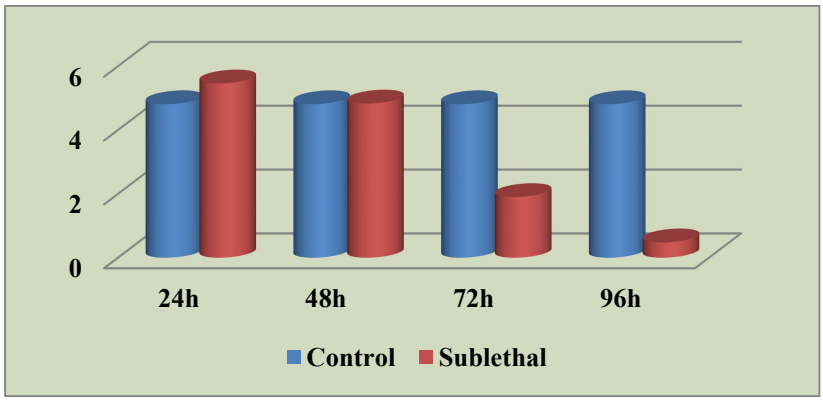
Tissue	Period of Exposure	Control Mean±SD	Sub lethal Mean±SD	P-Value	t-Value
Muscle	24/h	0.13±0.04	**0.05±0.02**	0.0203 P>0.05	3.3502 (SIG)
	48/h	0.10±0.03	0.02±0.01	0.0284 P<0.05	3.0523 (SIG)
	72/h	0.06±0.01	0.02±0.01	0.0021 P<0.01	5.8275 (V SIG)
	96/h	0.12±0.01	0.08±0.01	0.0023 P<0.01	5.7044 (V SIG)
Liver	24/h	0.14±0.03	0.03±0.01	0.0537	2.5115 (NQS)
	48/h	0.10±0.03	0.02±0.01	0.0022 P<0.01	5.7844 (V SIG)
	72/h	0.11±0.02	0.02±0.01	0.0176 P>0.05	3.4833 (SIG)
	96/h	0.10±0.01	0.06±0.01	0.0035 P<0.01	5.1983 (V SIG)
Kidney	24/h	0.04±0.01	0.04±0.01	0.1146	1.9085 (NS)
	48/h	0.07±0.01	0.02±0.01	0.0097 P>0.01	4.0599 (V SIG)
	72/h	0.06±0.01	0.05±0.01	0.1673	1.6148 (NS)
	96/h	0.07±0.02	0.05±0.02	0.2864	1.1929 (NS)



(A)



(B)



(C)

Graph:

(A) Showing amino acid content in diff. tissues of fish, *Cyprinus carpio* for normal water (B) Effects of fluoride (Sub lethal) on amino acid content(/100mg/wet. weight tissue) in diff. tissue at diff. time interval (C) Effect of fluoride on oxygen consumption(mg/body weight) at diff. time interval.

Discussion:

The initial increase in oxygen uptake may be due to the stress imposed on the fish by the changed environment making the animal active to combat the stress, thus incurring an increased energy requirement for the animal. The increase in activity due to stress increase muscular activity and this will results in an increased demand for

oxygen. The increase in activity might be to boost up oxidative metabolism for an increased supply of energy to combat the chemical stress (David, 2003). The reduction of oxygen consumption capacity was found decreased in subsequently two hours same observation was made by Bradbury *et al.,* (1986) stated that the greater decrease in the rate of oxygen consumption in the fish *Cirrhinus mirgala* may be due to internal action of the pesticide as the toxicants alters the metabolic cycle at sub cellular level. Similar observation were also reported by Mushgeri and David (2003) and Jadhav and Sontakka (1977). The decrease in oxygen consumption at sub lethal concentration of the toxicants indicates lowered energy requirement which in turn indicates pronounced haematological changes (Tilak and Satyavardhan, 2002). Similar reduction in oxygen consumption has been reported in *Channa striatus* exposed to organophosphate pesticide (Natarajan, 1981). *Orechromis mossambicus* due to organochlorine intoxication (Vasanthi and Ramasamy, 1987), *Macropodus cupanus* following carbamide treatment (Arunachalam and Palanichamy, 1982). On the whole, the fall in oxygen uptake capacity of the animal suggests the existence of respiratory distress in fluoride exposed animals. The amino acids are the building blocks of proteins. The decreased content of TFAA in the present investigation was found in sub lethal when exposed in fluoride water for different time interval.

The similar results was also given in the decrease in FAA in certain tissues of *Labeo rohita* and *Cirrhinus mrigala,* both in sub lethal and lethal concentration may be due to their utilization for the synthesis of new proteins or for the production of energy to cope with the prevailing toxic conditions due to intoxicant induced stress (Wilson, 1974; James, 1979). The decrease in FAA levels provides substantial evidence for the above assumption.. Amino acids are essentials intermediates in the process of protein synthesis and its degradation products appear in the form of different nitrogenous substances. Amino acid and some nitrogenous compounds play an important part during osmotic stress hence increase or decrease in free amino acid content provide valuable information during stress phenomenon at the tissue level.

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Plankton Diversity from Water Body Near Dr. Vijay Bidkar Vidayalaya Peth, Maharashtra, India

Suvarna Garud[1], Agnes Kharat[2]
Dr. Vijay Bidkar Vidayalaya Peth, Maharashtra[1]
MGV's Loknete Vyankatrao Hiray
Arts, Science & Commerce College Nashik[2]

Abstract:
Water samples were collected from water body surrounding the Dr. Vijay Bidkar Vidyalaya during January 2021 to December 2022. Plankton diversity was observed under a light microscope and identified by using standard literature. Maximum and minimum water temperature readings were noted in May and December, respectively. pH reduces with the addition of rainwater and increases during the summer months when temperatures are higher. The phytoplanktons recorded during present studies are Chlorophyceae, Euglenophyceae, Cyanophyceae and Bacillariophyceae comprising 33 species. 37 species of Rotifera are recorded from collected water samples. Among zooplanktons 10 species of Copepodes, 12 Cladocera, and 08 species of Ostracoda, are recorded from the collected samples.

Key words: Plankton diversity, Phytoplanktons, Zooplanktons

Introduction:
Peth is Taluka place in Nashik District and is the smallest Tahsil of Nashik subdivision of Nashik District, Maharastra, India. It belongs to Northern Maharashtra region. Peth is a Taluka head quarter. It is located 42 KM towards North from District headquarters Nashik. There is a pond named as *Sagameshwari*, at the backside of Dr. Vijay Bidkar Vidyalaya which is overflow most of time during monsoon. Plankton are a mixed group of tiny, living plants and animals that float, drift freely or feebly swim in water column independent of the shore and bottom (Sommer, 1994) and occupy the base level of food chains (autotrophs) that lead up to commercially important fisheries. They are also reliable bio-indicators of water quality (Keller et al., 2008). Additionally, the biogeochemical cycles of numerous critical processes, including the carbon cycle, nitrification, denitrification, remineralization, and methanogenesis, are significantly influenced by plankton communities. For the majority of aquatic organisms, especially those in their larval stages, planktons are the only source of food. After the yolk sac is absorbed, it serves as a food source for many fish species. For a very long time, it has been claimed that planktons are the primary food supply for fish larvae. Planktons are the primary link in the secondary energy transmission, and they have a significant impact on the productivity of any aquatic ecosystem. Planktons are bioindicators of the pollution.

Materials and Methods:
For the present study, water samples were collected from water body surrounding the Dr. Vijay Bidkar Vidyalaya. The samples were collected according to standards and procedure for examination of water and waste water American Public Health Association (APHA-1989). Temperature and pH of water was recorded at the time of sample collection. Temperature is measured with help of glass thermometer. Temperature is recorded after two hours of sunrise while collecting water sample and the same time is maintained through the year. Planktons were collected with 80 mesh size net and 50 liters of water was filtered through net. The water samples containing planktons were carefully transferred to the bottle and brought to the laboratory without disturbance. Samples were collected twice in a month from all four stations of water body, for period of 12 months from January 2021 to December 2022. The samples were collected during morning hours. Planktons were observed under a light microscope and identified by using standard Key, other literature (APHA, 1998; Dhanpati 2000, Permak 1989).

Results and Discussion:

Table 1: List of Phytoplanktons observed from the water samples of Sangameshwar water body, Peth, Nashik, Maharashtra

List Chlorophyceae			
*Scenedesmus incrassatulus*var. *Mononae* G. M. Smith	*Coelastrum sphaericum* Naegeli	*Kirchneriella contorta* (Schmidle)Bohlin	*Closterium diana* var. *arcunatum*. Ehr
Scenedesmus arcuatus Lemmerman	*Chlorella vulgaris* Beyerinck	*Kirchneriella lunaris* (Kirch.)Moebius	*Spirogyra crassa* Kutetzing
Ankistrodesmus convolutes Corda	*Oocystis irregularis* (Petkof) Printz	*Tetrastrum heteracanthum* (Nordst.) Chod	*Cosmarium pseudobroomei* Wolle.
Selenastrum minutum (Naegeli) Collins			
List Cynophyceae			
Chroococus limneticus Lemm.	*Oscillatoria chalybea* (Martens.) Gom	*Merismopedia punctata* Meyen	*Microcystis aeruginosa* Kuetz.
List of Bacilllariophyta			
Navicula pygmaea Kuetz	*Nitzschia tryblionella* Hantzsch v. *levidensis*(W. Smith) Grun.	*Rhopalodia gibberula*(Ehr) OMuell	*Fragilaria ungeriana* Grun.
Navicula rhynchocephala Kuetz. var. *elongata* Mayer	*Synedra ulna* (Nitz.)Ehr	*Gomophonema lanceolatum* Ehr . *v .insiginis (* Greg.) Cleve	*Fragilaria pinnata* Her.f*surotunda* Mayer
Navicula cupsidata Kuetz.	*Gyrosigma kuetzingii* (Grun.)Cleve	*Fragilaria leptostauron*(Ehr.) Hustedtv.*woerthensis* Mayer	*Fragilaria intermedia* Grun.
Mastogloia blatica *Grun.*	*Achanthes microcephala*(Kuetz.) Grun		.
List Euglenophyceae			
Euglena gracilis Klebs	*Phacus caudate* var. *Ovalis* .Drezepolski		

Table 2: List of Zooplanktons observed from the water samples of Sangameshwar water body, Peth, Nashik, Maharashtra

List of Rotifers			
Asplanchna sp.	*Brachionus angularis*	*Brachionus ureceolaris*	*Brachionus calyciflorus*
Brachionus diversicornis	*Brachionus folculus*	*Brachionus falcatus*	*Brancionous calciflorus*
Brachionus quadridentatus	*Brachionus caudatus*	*Brachionus forficula*	*Cephalodella exigna*

Colurella adriatica	*Cephalodella forficula*	*Dicranophorus dolerus*	*Euchlanis dilatata*
Epiphanes clovulata	*Filinia longiseta*	*Filinia opoliensis*	*Keratella tropica*
Kertella valga	*Keratella procura*	*Keratella cochlearis*	*Lecane bidentata*
Lecane bulla	*Testudinella sp.*	*Filina spp.*	*Lepadella ovalis*
Lepadella patella	*Monostyella sp.*	*Notholca acuminata*	*Notomata copeus*
Testudinella patina	*Proales decipiens*	*Rotaria spp*	*Trichocerca tigris*
Tripleuchlanis spp			
List of Copepoda			
Cyclops sp.	*Cyclops viridis*	*Diaptamus spp.*	*Eudiaptomus gracilis*
Heliodiaptomus contortus	*Mesocyclop sps*	*Mesocyclops leuckarti*	*Megacyclops sp.*
Nauplius larvae	*Paracyclops fimbriatus*		
List of Cladocera			
Alona guttata Sars	*Bosmina longirostris*	*Biapertura Moina mircura*	*Biapertura affinis (Leydig)*
Cypris Flurcularia	*Ceriodaphnia pulchella Sars*	*Daphnia cucullata Sars*	*Daphnia sp*
Scapholeberis kingi Sars	*Trophocyclops*	*Macrothrix goeldii (Richard)*	*Macrothrix spinosa (King)*
List of Ostracoda			
Candocypris spp.	*Candona Centrocypris*	*Cyprides Cyprinotus*	*Cypris spp.*
Darwinula Ilyocypris	*Limnocythere*	*Metacypris*	*Potamocypris*

Maximum and minimum water temperature readings were noted in May and December, respectively (Table 3). pH reduces with the addition of rainwater and increases during the summer months when temperatures are higher. Although pH never drops below 7 or an acidic level, which means that the fluctuation is within the range of basic pH (Table 3). The quantity of rainfall and the quality of inlet water through agriculture runoff along with temperature are the important factors that directly or indirectly govern pH of water body.

The phytoplanktons recorded during present studies are Chlorophyceae, Euglenophyceae, Cyanophyceae and Bacillariophyceae comprising 38 species. During investigation period, Chlorophyceae was found to be the largest dominating group. It was observed that Chlorophycean taxa flourished during late winter and summer seasons.

Chlorophyceae class was represented by 16 species. During summer more number was recorded and might be due to availability of more free CO2, sunlight, phosphate and nitrate concentration. Lowest number was recorded during monsoon months particularly in months of July, August and September and might be attributed to high speed of water flow. Bacillariophyceae was second largest dominant group encountered during study period. This group comprised 16 species belonging to 10 genera. The commonly recorded genera of this class are, *Fragilara, Nitzschia, Navicula, Gomphonema, Mastogloia and Synedra.* Cynophyceae was represented by four species. Euglenophyceae class was represented by 2 genera i.e. *Phacus, Euglena,* and 2 species. During late winter and summer seasons their number was remarkable, while during monsoon Euglenoids were sparsely recorded (Table 1)

Among zooplanktons Rotifera, Copepoda, Cladocera and Ostracoda are recorded from the study area. In summer season especially in the month of May all the zooplanktons counted highest in number that is organisms per litter

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Table 3: Temperature, pH and Total Count of Planktons recorded from the water samples (Organisms / Lit.):

Month	Temperature	pH	Rotifera	Copepoda	Cladocera	Ostracoda	Chlorophyceae	Cyanophyceae	Bacillariophyceae	Euglenophyceae
January	23	7.9	95	40	34	33	102	39	89	23
February	20	7.8	112	45	40	27	119	41	104	28
March	26	7.6	126	38	52	29	129	32	119	21
April	27	7.9	134	60	75	38	142	54	123	35
May	32	7.5	148	84	58	53	154	79	131	45
June	29	7.7	143	68	50	45	152	62	133	41
July	28	7.1	127	56	28	36	131	52	117	38
August	23	7.1	92	42	45	18	105	38	83	20
September	26	7.3	96	61	53	33	109	51	82	24
October	22	7.5	109	60	52	37	118	54	101	29
November	21	7.6	123	48	42	37	135	43	113	32
December	19	7.8	93	45	40	38	105	40	81	34

. In winter season that is in December organisms count is less (Table.2). Zooplankton count lowered with the arrival of rainfall in the month of June due to influx of rainwater. In summer season Rotifera, Copepoda, Cladocera and Ostracoda predominate in terms of quantity and diversity than other seasons.

Rotifera dominates the zooplankton community. 37 species of Rotifera are recorded from collected water samples (Table.2). *Brachinus* species dominate among the Rotifera. Among zooplanktons 10 species of Copepodes (Table.2), 12 Cladocera (Table.2), and 08 species of Ostracoda (Table.2), are recorded from the collected samples. It has been observed that rotifera dominated the community throughout the year followed by Ostracoda and then Copepoda and least is Cladocera. Growth rate of population may be highest in summer season especially in the month of May which follow high temperature and count is lowest in winter season during November and December. Thus temperature is the important physical factors that govern the community either directly by influencing the population growth rate or indirectly that is by influencing other physic-chemical parameters. Besides rainfall and quality of runoff influx influence the zooplankton community structure.

Conclusion:

Present investigation has recorded 67 species of zooplanktons and 33 species of phytoplanktons. Total count of Zooplanktons per liter was recorded highest in the month of May. Physico-chemical parameters along with rainfall show peculiar effect on zooplankton diversity.

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Study on the Diversity of Spider Fauna in Forest Regions of Umarkhed Tehsil, District Yavatmal, Maharashtra

Prashant D. Kamble[1]*, Dinesh K. Dabhadkar[2] , Yogesh R. Kayande[3] and Pankaj R. Khandare [4]

[1]Research Students, Department of Zoology, Gopikabai Sitaram Gawande Mahavidyalaya, Umarkhed Dist- Yavatmal, Maharashtra 445 206 (India)

[2]Assistant Professor, Department of Zoology, Gopikabai Sitaram Gawande Mahavidyalaya, Umarkhed Dist- Yavatmal, Maharashtra 445 206 (India)

[3]Research Students Department of Zoology, Matsyodari College, Ambad, Dist. Jalna.

[4]Research Students Department of Zoology, Adarsh College, Hingoli

Email: *prashantkamble19oct@gmail.com*

ABSTRACT:

Spiders are one of the most diverse group of organisms in the arthropods. They are largest order of arachnids and rank seventh in the total species diversity among all orders of organisms. The present study reveals that the species diversity and composition in a landscape of Marsul Lake and region of Penganga Wildlife Sanctuary of Umarkhed Tehsil, district Yavatmal. Spiders in this region are not yet explored and this study sets the systematic inquiry about the diversity of spiders in the related investigation and may serve as the baseline for the development of future research studies in the Yavatmal district. A survey was carried in the related regions of Umarkhed tehsil during June 2022 to December 2022, in which a total number of 38 species found belonging to 9 families were recorded.

Keywords: *Spider, Yavatmal, Diversity, Penganga Wildlife Sanctuary*

INTRODUCTION:

Spiders are primarily insectivorous animals and this characteristic ability makes them crucial in the ecosystem. They are air-breathing predatory animals found on all continents of the earth except Antarctica and nearly any habitat except air and sea. India ranks 8th in the world's most biodiverse countries in the world and Arthropoda is the most diversified phylum in the animal kingdom, in which spiders are one of the most diverse groups in the class Arachnida (Deshmukh and Raut.,2014). Spiders play an important role in maintaining Arthropod population in check by predating on insects and thereby maintaining an ecological equilibrium. Spiders are important predators in terrestrial ecosystem and biological pest control agent against pest in agroecosystem. Spiders act as general predators, which can act against a wide range of insect pests (Gajbe *et al*., 2016).

The area of present study is rich with dense flora along with water reservoir which enriches the biodiversity. The region is comparatively dry-deciduous. During rainy season various types of seasonal plants grows and attracts large number of insect fauna, which

flourishes spiders diversity. Unfortunately in Umarkhed taluka and allied area the spider diversity of this region is not studied yet and present study was the small effort to insight the diversity of spider fauna.

MATERIALS AND METHODS:

Study Area: The Umarkhed taluka of Yavatmal district is located at 19.6° N and 77.7°E. It has an average elevation of 416 metres (1364 feet). It is surrounded by mountains and Ghats from three sides and a plane surface on one of its sides. The temperature rises up to 45 degrees Celsius in the summer, while in the winter it experiences temperatures of 8 to 12 degrees Celsius. Different regions of Umarkhed Taluka in Yavatmal District Maharashtra were visited during the study such as the area near Marsul Lake, Forest area near Morchandi, Kochambi and Islapur villages which lie in the vicinity of Penganga Wildlife Sanctuary of Umarkhed. The present study was carried out and different study areas were visited during June 2022 to December 2022.

Collection:

Spider fauna was collected from study areas from vegetation, on ground, under stones/ crevices, near water streams etc. For collection of spiders insects nets, pitfall trap and stroking sticks were used along with beating sheets, active searching and hand picking. In this method spider specimen were actively searched for 30 minutes per quadrant for searching under rocks, logs, ground debris, and loose dead barks of trees etc. But we used photograph for the identification of spider's species from their natural habitat some specimens were preserved in 70% alcohol, labelled and identified spiders were collected by adopting standard sampling techniques. The keys of Tikader (1987) and Gajbe (2003) were used for identification and classification recording. The identification and classification was also done from expertise working on spider fauna.

RESULTS AND DISCUSSIONS:

A survey was carried in the related regions of Umarkhed tehsil during June 2022 to December 2022. The present study revealed that the maximum number of genera is recorded from September to December. In this study total 23 species recorded belonging to the 17 genera and 8 families. Araneidae was the predominant family constitutes about 31.6% of the total recorded species, followed by Salticidae (23.7%) and Lycosidae and Oxyopidae of which were recorded 2 species of each; which is 10.5% in the percent occurrence. It was then followed by Thomisidae (7.9%), Gnaphosidae (5.2%), Philondromidae (5.2%), Tetragnathidae (2.6%) and Theridiidae (2.6%). The most abundant genus recorded is *Nephila.* The percent occurrence of the species recorded in each family is shown in the table- 1 and fig- 1.

Table-1: Family wise distribution of spider species and genus

Sr. No.	Name of the family	Number of species	Name of species
1	Araneidae	09	*Araneus species. Female* *Araneus mitificus (Simon) Female* *Argiope aemula (Walckenaer) Female* *Chorizopes tikadari(Tikader) Female* *Cyclosa moonduens. (Tikader) Female* *Cyclosa simony Female & Male* *Cyrtophora citricola(Forscal) Female* *Neoscona species. Female* *Neoscona sinhagadensis (Tikader)*
2	Salticidae	05	*Marpissa bengalensis (Tikader) Female* *Marpissa mandali (Tikader) Female* *Euophrys frontalis female* *Opisthoncus species Male* *Phidippus patelli Female*
3	Lycosidae	2	*Lycosa species. Female* *Hippasa species. Female*
4	Oxyopidae	2	*Oxyopus species. Female* *Oxyopus jabalpurensis Male*
5	Thomisidae	2	*Thomisus beutifularis (Basu) Female* *Xysticus species. Female*
6	Gnaphosidae	1	*Sosticus jabulpurensis (Bhandari and Gajbe) Female*
7	Philondromidae	1	*Philodromus species. Female*
8	Tetragnathidae	1	*Tetragnatha maxillosa Female*

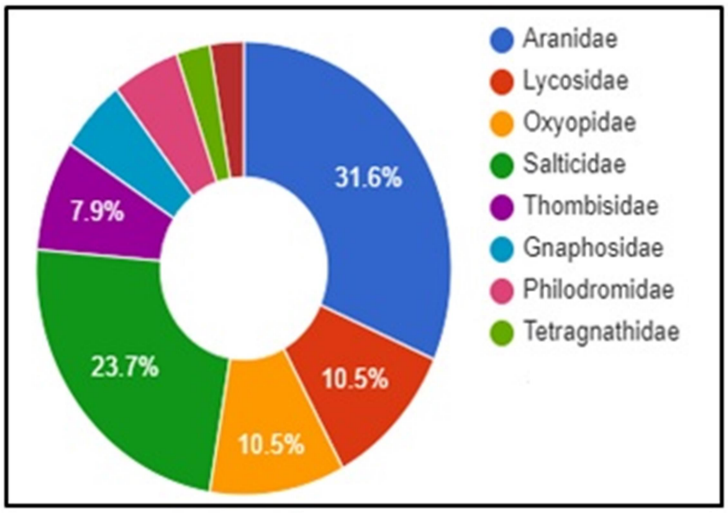


Fig:1 Family wise abundance of spider species in Umarkhed taluka recorded during period of June- 2022 to Dec- 2022

Similar results were recorded by Meshram *et al*., (2011) from Toranmal Sancturary, of Maharashtra and recorded 117 spider species belonging to 20 families and 55 genera. The diversity was observed in the order of Araneidae (20 species), Gnaphosidae and oxyopidae (14 species each) Salticidae and Thomisidae (12 species each) and then Lycosidae (8 species). The Deshmukh and Raut., (2014) also studied the seasonal diversity and status of spiders in Salbardi forest and recorded a total of 1874 individuals belonging to 104 species, 52 genera and 18 families were collected during the study. Among the families the Salticidae was the most abundant (19.23%) followed by Araniedae (18.26%), Thomisidae (12.05%), Oxyopidae (8.65%), Lycosidae (7.69%), Gnaphosidae (6.73%), Philodromidae (4.76%), Eresidae (3.84%), Tetragnathidae (3.84%), Pholcidae (2.88%),Theridiidae (2.88%), Clubionidae (1.92%) and Uloboridae (1.92%). Rajgurav *et al*., (2018), observed that spiders are an important biotic component of ecosystem and indicator of the health of given ecosystem.

CONCLUSION:

This study revealed the presence of diverse spider fauna in Umarkhed taluka of Yavatmal district. But still more study and effort will be required to enlight the spider fauna of this region.

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SIGNIFICANCE OF SACRED GROVES IN CONSERVATION OF TRADITION AND NATURAL RESOURCES

Muley E. D [1], Kayande Y. R[2], Khandare P. R[3]
[1]Department of Zoology, Shivchhatrapati College, Aurangabad.
[2]Department of Zoology, Matsyodari College, Ambad, Dist. Jalna.
[3]Department of Zoology, Adarsh College, Hingoli
Email – muleyeshwar@gmail.com

ABSTRACT

Sacred groves are patches of forest lands which are protected by the local people from many years for their cultural and religious beliefs. Keeping the religious view aside, sacred groves also play an important role in conservation of natural resources, biodiversity of flora and fauna. The present review article flashes on the various important aspects of sacred groves and their significance in conservation of tradition and natural resources.

Key words: *Sacred groves, tradition, natural resources, biodiversity etc.,*

Introduction:

Sacred groves are protected lands in forest areas that usually have a significant religious value for the protecting community. The spaces of these sacred groves are protected by local people because of their religious beliefs and traditional rituals that run through several generations. People believe that these lands have some special power which protects them from different calamities. Sacred groves are found in almost all forest areas worldwide. These groves are known by different names in different countries but, main reason behind this is common i.e., traditional, religious beliefs. Protected areas are thought to be the cornerstones of biodiversity conservation and the safest strongholds for wildlife (Bruner et al. 2001). Since the first national park was set up in Yellowstone, in 1872, some 104 791 protected areas have been established around the world, representing over 12% of the Earth's land surface (UNEP–WCMC 2005).

These groves play a vital role in the preservation of plant species diversity and every possible attempt should be made to fully protect them as a part of a system of nature preserves. In many parts of India, local people follow such traditional conservation practices. They include totemism in which one or more species of plants or animals are protected as spiritual ancestors, conserving certain species for rituals. The sacred conservation practices followed by local people have come into focus of late due to their importance for protecting several delicate ecosystems and threatened species. (Gokhale Y, 2001). These sacred virgin forests date back to

thousands of years when human society was in the primitive state. Gadgil and Vartak (1975) have traced the historical link of the sacred groves to the agricultural, hunting and gathering stage of societies. Hence, these forests are believed to be pre-Vedic in origin. The area of sacred groves ranges from few square meters to several hectares. In India as well as in parts of Asia and Africa, care and respect for nature has been influenced by religious beliefs and indigenous practices. The existence of sacred groves has been reported in many parts of Asia, Africa, Europe, Australia and America by Hughes and Chandra (1998). Sacred groves play crucial role in maintenance of ecosystem by many ways such as conservation of resources, tradition biodiversity etc., The present review article is an attempt to assemble all the relevant information regarding various important aspects of sacred groves.

Sacred Groves in India:

Indian society comprises several cultures, each with its own set of traditional methods of conserving nature and its creatures. Sacred groves are found all over India especially in those regions which are inhabited by indigenous communities. A web-interfaced multimedia database on sacred groves of India was developed by Gaikwad et al. (2004) which is helpful to build the comprehensive information resource documenting biodiversity status of sacred groves. Sacred groves are generally found in the areas dominated by tribal people and are known by different names in ethnic terms (Bhakat 1990) viz., Sarna or Dev in Madhya Pradesh, Devrai or Deovani in Maharashtra, Sarnas in Bihar, Orans in Rajasthan, Devaravana or Devarakadu in Karnataka, Sarpakavu and Kavu in Tamil Nadu and Kerala, Dev van in Himachal Pradesh, Law Lyngdoh or Law Kyntang etc. in Meghalaya, Sarana or Jaherthan in Jharkhand and Lai umang in Manipur. These lands are protected and managed by local communities which have a spiritual relationship with their surrounding environment so they try to sustain it.

Table 1: Total Sacred groves distribution in India (Adopted from Malhotra, 1998 and Malhotra et al., 2001).

Sr. No	State	No. of SGs	Generic Name	References
1.	Himachal Pradesh	5000	Dev ban	Sharma 2000
2.	Kerala	2000	Sarpakkavu/Nagavanam	Rajendra Prasad 1996
3.	Maharashtra	1600	Devrai, Devrahati	Deshmukh et al. 1998
4.	Karnataka	1214	Devarabana/ Sidharavanam	Kalam 1996

5.	West Bengal	670	Bankura	Deb et al. (1997)
6.	Tamil Nadu	448	Kovilkadu/ Nandavana	Amritha Lingam, 1998
7.	Manipur	365	Gamkhap, Umanglai	Devi, 2000; Khumbongmayum et al. 2004
8.	Orissa	322	Jahera/Thakuramma	Malhotra and Das 1997
9.	Meghalaya	79	Ka Law Kyntang	Tiwari et al. 1998
10.	Arunachal Pradesh	58	Gumpa Forest	Chatterjee et al. 2000
11.	Sikkim	56	Gumpa forest area	Chatterjee et al. 2000
12.	Assam	40	Miadaico	Deb et al. 1997
13.	Rajasthan	9	Orans Kenkris	Jha et al. 1998

Centres for Biodiversity Conservation:

Sacred groves play crucial role in the conservation of biological diversity. According to several research reports there is a distribution of rare, endemic and endangered species in sacred groves. Many environmentalists have caried out survey in forest areas and noticed some rare floral and faunal species. Chandrashekara and Sankar (1998) recorded 73 species in sacred groves of Kerala. Khan et al. (1997) reported that about 4% of the total plant species found in Meghalaya are limited to sacred groves. Gadgil and Chandran (1992) have noticed a population of endangered primates, and liontailed macaques around Katlekan sacred grove of Uttara Kannada. Several trees are important for local people in terms of timber, non-timber and medicinal uses (Bhagwat et al. 2005).

Socio-Cultural Practices and Ecological Services:

Sacred groves are protected and maintained by local tribal communities of the specific region. These people protect these lands for various purposes viz., cultural, religious, economic (timber, fruits, medicines etc.,), environmental wellbeing, traditional beliefs etc., In India, major festivals and traditions are related with such land (for example, Buta kola or Daiva kola in tribal areas of Karnataka). So, these land patches are important from the socio-cultural as well as ecological point of view as they provide many ecological services such as conservation of rare, ecologically important plants and animal species.

Ethnobotanical Importance:

Sacred groves are the sources of a various medicinal plants, fruits, fodder, fuelwood, spices, etc. The study of interrelationship between the humans and plants, animals in their surrounding environment (i.e., ethnobiology) is ecologically important. Some interesting ethnobotanical

studies have been conducted by many biologists such as Vartak and Gadgil (1973) who caried out a study in the sacred groves of Maharashtra. Rani et al., 2003 conducted a study on the tree wealth in the life and economy of the tribal people in Andhra Pradesh and explained that various species are used by the different ethnic groups for various purposes including the treatment of common diseases and disorders. So, these land areas are important from the ethological as well as biological point of view.

Threats to the Sacred groves:

Sacred groves are showing decrease in terms of cultural, biological and ecological integrity in different states of the country. Over the past few years many people have lost their rights of forest management to the government. Many researchers have worked on conservation of sacred groves through socio-cultural practices in different parts of India. (Gadgil and Vartak 1975; Boojh and Ramakrishnan 1983; Khiewtam and Ramakrishnan 1989; Rodgers 1994; King-Oliver et al. 1997; Tiwari et al. 1998; Sinha and Maikhuri 1998; Sunitha and Rao 1999; Basu 2000). The main reasons for the decrease include lack of documentation as a result of which it becomes difficult to conserve and maintain them. No legal protection has been implemented so far in India. Lack of awareness in terms of future benefits has also resulted in the destruction of Sacred groves.

Management Strategies:

The protection to the sacred groves and maintenance of their natural identity, the cooperation of people is important. Important sacred groves must be brought under the 'Protected areas' to ensure their proper conservation. It is essential to retain the traditions and beliefs in order to protect and conserve these unique forest lands. The conservation and sustainability of these groves needs legal as well as local contribution. Government agencies as well as local communities should contribute the sufficient efforts for the protection and should show awareness towards the importance of these land patches.

Conclusion:

This article has attempted to assemble all the relevant information regarding various aspects of sacred groves. Many researchers and environmentalists from different parts of the nation have conducted studies on cultural, religious, mythological as well as ecological aspects of sacred groves. Protection and Management of sacred groves through the traditional system is now being challenged by several economic and social issues. These forest patches are no longer free from anthropogenic pressure. Ecological services provided by sacred groves needs to be glorified and people should be made to realize that the conservation of groves is essential for the sustainability of nature.

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A Study on the Correlation between Financial Literacy and Sustainable Development in India

Researcher
Aakanksha Bharat Padghan

Research Guide
Prof. Dr. Dinkar. P. Takale
Principal, Arts and Science College,
Chincholi (Limbaji),
Tq. Kannad, Dist. Aurangabad (MS)

Abstract

According to Oxford Dictionary, Sustainable development is economic development that is conducted without depletion of natural resources. It has 3 mains factors- 1. Environment, 2. Social and 3. Economic. This paper will study the economic factor and specially in that is Financial literacy's correlation with sustainable development. The sustainable development index score shows how much improvement is done in sustainable development, will financial literacy will be able to help in improvement of sustainable development?, this question will be studied and answered in this research paper. Financial literacy is the knowledge of how to make smart decisions with money. In this research paper, secondary data will be analyzed to determined correlation between financial literacy and sustainable development. The Correlation coefficient will be calculated using its formula to know if it is highly correlated. The Result from formula and correlation statistical techniques shows that financial literacy is positively high correlated to sustainable development. It concludes that by improving financial literacy, sustainable development will also improve with it.

Literature Review

Alberto Burchi (2021) and Et al, in their research paper "The Effects of Financial Literacy on Sustainable Entrepreneurship" presented an OLS model that adopts entrepreneurship, financial literacy and macroeconomic variables. The results show a positive and statistically significant relationship between financial literacy and sustainable entrepreneurial activity.[1]

Angel Christy Praveena and S. Rachel, in their research paper "financial literacy as transformative tool to stimulate sustainable development of the economy- an empirical approach" tries to examine the level of awareness of the students belonging to the age group between 18 -22 as this the age where they need to have basic knowledge about finance and have a clear understanding of different terminologies of financial products. Financial literacy enables young minds to understand what is required to achieve a lifestyle that is financially balanced, sustainable, ethical and responsible. Learning to save money, manage credit, avoid unnecessary debt, and invest wisely in financial instruments can result in a strong financial future thereby facilitate sustainable development of the nation at large.[2]

Objectives

To know the correlation between Financial Literacy and Sustainable development in India

To suggests solutions to boost Sustainable development with Financial Literacy

Hypothesis

H0- The Correlation between Financial Literacy and Sustainable development is Positively High H1- The Correlation between Financial Literacy and Sustainable development is not Positively High

Research Gap

The study on correlation between financial literacy and sustainable development for before pandemic and post-pandemic has not done. So as crisis of pandemic reducing, it becomes important to study pandemic effect on correlation between financial literacy and sustainable development.

Statement of proposed problem

To study the Correlation between Financial Literacy and Sustainable development of India. As both the concepts, will be seen in new point of view after pandemic crisis.

Scope of Study

This study will help in determining the correlation between financial literacy and sustainable development. By knowing the correlation, if it is correlated then by improving financial literacy can boost the sustainable development. Sustainable development has many factors affecting it so financial literacy will be one of major factor, so its improvement will be crucial for boosting sustainable development. Same study can be taken place with various other factors and by improving major factors, sustainable development can be improved.

Research Methodology

Qualitative approach-

Study will be quantitative in nature as the correlation between Financial Literacy and Sustainable development will be calculated.

Variables and Components of study

Independent variable- Financial Literacy Rate

Dependent Variable- Sustainable development index score

Data- Secondary data will be used for this research.

Statistical tool – Correlation Coefficient

Data

year	Financial Literacy rate (%)	Sustainable development index score (/100)
2015	24	57.94
2019	28.5	62.19
2022	27.6	63.45

The data of Financial Literacy and Sustainable development are given for 2015, 2019, 2022 year to calculate the correlation between Financial Literacy and Sustainable development of India. 2015 as Pre-covid-19 pandemic period and 2019 as year in pandemic and as now the pandemic is decreasing and economy is recovering so the data of 2022 is taken. This data will be used to analyze the correlation between Financial Literacy and Sustainable development.

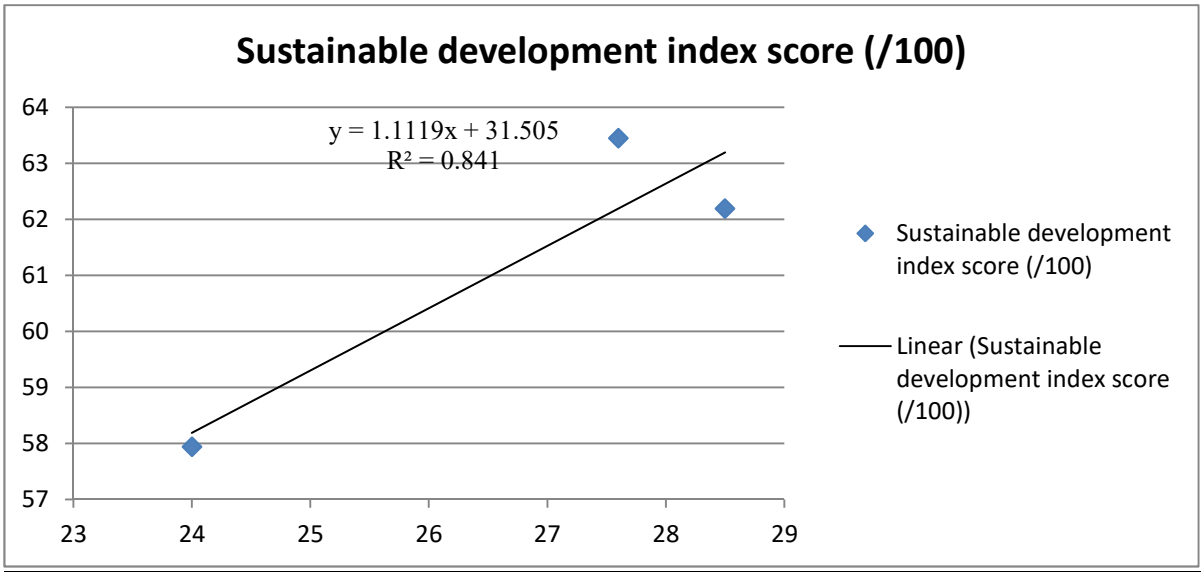
Data Analysis

The following formula is used to correlation Coefficient by using chart-1 data

Correlation Coefficient Formula

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[n\Sigma x^2 - (\Sigma x)^2][n\Sigma y^2 - (\Sigma y)^2]}}$$

By using above formula the Correlation Coefficient for given data is **0.917076**. It means the Correlation between Financial literacy and Sustainable development is **Positive Highly Correlation**.



Graph-1

In graph-1, on the x-axis data of financial literacy and on y-axis the data of sustainable development index score is given. From the graph, it can be determined that financial literacy and sustainable development is positive highly Correlated.

Results

From the data analysis, The H0 that is null hypothesis is accepted and H1 is rejected as correlation is positively high.

Socio-Economic Relevance

This study highlights the economic aspect of sustainable development. It will help to boost economic growth of India by improving financial literacy and increasing financially literate in country. It also has aspect of society, as fraud, scams and issues due to asymmetric information can arise and harms the well-being people. These problems can be reduced through financial literacy and the results will help in sustainable development.

Suggestions

The financial literacy knowledge should be given on broader scale so it will help in boosting economic growth and it will lead to sustainable growth.

The Financial Literacy should become part of curriculum on school level and practical should be focused.

Conclusion

The study on the correlation between financial literacy and sustainable development shown that, they have positively high correlation. So, with increasing financial literacy of India, the Sustainable growth can be improved.

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A STUDY OF THE FOUNDATION OF ENVIRONMENTAL ECONOMICS

Dr. Anil D. Nimbalkar
Assistant Professor, Dept. of Economics
MSS College Ambad.

Dr. Sandip G. Salwe
Assistant Professor, Dept. of Economics
MSS College Ambad.

Introduction

Like Sociology, History, Political Science, Chemistry, Biology, Psychology, etc.., Environmental economics has its own basic concepts, theories and analytical tool. Thus the foundation of ecological economics is strengthened. Many concept in environmental economics are derived from micro economics, macro economics, and welfare economics. Understanding environmental economics requires a clear understanding of its basic concepts, theories and analytical tools.

Summary

In order understand the foundation of environmental economic in the presented research work, mainly the principles of Even marginal principle or Even same principle, economic efficiency, loss cost and low cost, and social cost benefit analysis has been studied in detail.

Keyword - *Financial efficiency, Concepts of loss costing and low costing, Social cost benefit analysis*

Research Objectives

1. Studying Social Cost Benefit Analysis.
2. Understanding the concept of Financial efficiency.
3. Understanding the concepts of loss costing and Low cost concept.

Research Hypothesis

1. The social cost benefit concept is a difficult concept in environmental economics.
2. The Coase Theorem explains the foundation of environmental economics.
3. The foundation of environmental economics is explained through the concept of through the concept of loss cost and marginal cost.

Research Methods

The methods of synthesis and analysis has been used for the completion of the present research work. Also secondary materials have been used for data collection.

Scope of Research

The present research work is limited to the components of economic efficiency, Coast theorem, loss cost and low cost concept, Role of organizations in environmental protection.

Analysis and Discussion

1) Social Cost Benefit Analysis

Social cost benefit analysis is one of the most complex problems in environmental economics. Environmental economics provides a powerful tool for solving environmental problems. Social Cost Benefit Analysis also called economics analysis, is a methodology developed for evaluating investment projects from the point of view of the society as a whole. The special issues that arise in using SCBA and environmental valuation techniques to appraise long run sustainability projects and policies, such as climate change, are summarized.

Advantage of cost benefit analysis

1. The intensity and direction of preference is noted.
2. A variety of different effects can be measured in a single unit.
3. Can be used as a tool to determine where limited funds and resources should be directed.

Problems of cost benefit analysis

1. It is difficult to predict the effect of one change on the entire ecosystem.
2. Understanding the ripple effects of a particular policy on the environment often uncertain.
3. Does not provide an analysis of whether future costs and benefits are worth discounting.

2) Financial efficiency

Financial efficiency include a series of strategies and mechanisms that produce enhanced conservation results relative cost. Financial efficiency means the economics condition in which every resources is optimally allocated to serve each individual or entity in the best possible way while minimizing waste and inefficiency. To see how efficiently an economy works, economists look at the ratio of losses between pure efficiency and reality, which is referred to as waste. The principle of economic efficiency are based on the concept that resources are scarce. The highest level of welfare means is possible on the basis of high functioning available resources. Economics efficiency is important because it allows businesses to reduce their costs and increase output. Each person has different perceived value of the things. And it depends on the theory oe diminishing marginal utility and whether the distribution of final goods in the economy is efficient or inefficient. Allocative efficiency is when each unit of the allocation of consumption goods in the economy is consumed by the individual who values that individual the most relative

to all other individuals. This suggest that this type of efficiency assumes that the extent to which individuals value an economics goods is quantitative and comparable across individuals.

Concept of loss costing and low costing

Pollution damage cost

When the amount of waste released into the environment exceeds the storage capacity of the environment and is released into the environment without any treatment, it contributes to the deterioration of the quality of the environment. The total economic value of the various damages of untreated waste into the environment is known as the pollution damage cost. The total economic value of the various damages caused by the discharge of untreated waste into the environment is known as the pollution damage cost. Estimating the cost of pollution damages is a difficult task and requires good imagination and creative approach. The longer the pollutants persist, the more difficult it is to assess damage costs.

Pollution control costs

Pollution control costs represent direct financial expenditure by society for the purpose of obtainig resources to control pollution. Expenditure on sewage treatment facilities, retaining walls and installation of PUC systems in every vehicle on the are examples of cost of pollution control costs. Costs resuiting from market distortions, market imperfection, or government intervention may not be present in the assessment of pollution control costs.

Conclusion

Environmental economics is very useful in understanding the complexities of pollution damage costs, social benefit analysis.For pollution control it is necessary to spend on various components.

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Exploring the Environmental Impact of Sports: A Comprehensive Analysis and Sustainable Solutions

Mr. Ashish Shankar Prasad Shukla
Research Scholar
aashishshukla90@gmail.com

Suhas D. Yadav
Research Guide
suhasyadav111@gmail.com

Abstract:

This examination paper looks at the crossing point between the climate and sports, intending to reveal insight into the natural effect of different wearing exercises and occasions. Sports, with their gigantic prominence and worldwide reach, can possibly altogether add to natural debasement or go about as impetuses for positive change. Accordingly, understanding the natural ramifications of sports is critical for creating reasonable practices and moderating environmental mischief.

To survey the ecological effect, this study utilizes a multi-layered approach that incorporates assessing the carbon impression related with sports, breaking down squander age and the board, looking at water use and preservation endeavors, and evaluating the effect on biodiversity and regular living spaces. Furthermore, the paper examines the ecological results of developing and keeping up with sports offices, as well as the maintainability drives attempted by sports associations and overseeing bodies.

Besides, this exploration paper investigates contextual analyses of naturally cognizant games, featuring fruitful drives that have limited their biological impression. It likewise talks about the job of innovation and advancement in creating supportable wearing practices, for example, eco-accommodating materials, sustainable power use, and waste decrease procedures.

The discoveries of this study uncover the critical natural effect of sports and the potential for sports-related exercises to add to environmental change, asset consumption, and living space annihilation. Notwithstanding, it likewise distinguishes different open doors for executing supportable practices in sports, advancing natural mindfulness, and empowering eco-accommodating ways of behaving among competitors, fans, and sports associations.

At last, this exploration paper plans to bring issues to light among sports lovers, partners, and policymakers about the natural ramifications of sports and to give bits of knowledge into successful systems to encouraging an additional feasible games industry. By embracing manageable practices and advancing earth capable way of behaving, sports can act as a strong stage for motivating positive natural change and making a greener future.

Keywords: environment, sport, environmental impact, sustainability, carbon footprint, waste management, water usage, biodiversity, sports facilities

Introduction:

Sports assume a huge part in the public eye, spellbinding great many people overall and cultivating a feeling of solidarity and energy. In any case, the natural effect of sports exercises and occasions has gotten restricted consideration in contrast with their social and monetary angles. With developing worries about environmental change, asset consumption, and territory annihilation, it is fundamental to perceive the natural ramifications of sports and investigate ways of coordinating supportability into this compelling area.

Sports, going from proficient associations to grassroots cooperation, can possibly add to ecological corruption through different channels. The development and support of sports offices, for example, arenas and fields, can prompt land change, expanded energy utilization, and waste age. Moreover, games frequently include broad travel, bringing about fossil fuel

byproducts from transportation. The mass utilization of assets, for example, water and energy, during sports contests further adds to their natural impression.

Understanding the natural effect of sports is a complicated undertaking that requires an exhaustive examination of different elements. Measuring the carbon impression related with sports exercises, assessing waste administration works on, evaluating water utilization and preservation endeavors, and breaking down the effect on biodiversity and regular natural surroundings are basic moves toward surveying the environmental outcomes of sports.

This exploration paper expects to overcome any barrier between the climate and game by inspecting the different elements of their relationship. It looks to research the natural difficulties presented by sports and investigate economical practices and arrangements that can moderate their adverse consequence. By bringing issues to light and understanding among partners, policymakers, and sports devotees, we can prepare for an additional reasonable games industry that lines up with worldwide natural objectives.

Literature Review:

The writing survey directed for this examination paper uncovered a developing group of information on the convergence of the climate and sports. Various investigations, reports, and scholastic distributions have investigated different parts of the natural effect of sports and featured the requirement for supportable practices inside the games business. The writing survey zeroed in on key topics and ideas, including:

Carbon Impression of Sports:

A few examinations have explored the fossil fuel byproducts related with sports exercises, including travel, energy utilization in sports offices, and occasion association. These investigations have evaluated the ecological effect of various games, like football, sports, and engine dashing, and underscored the significance of diminishing fossil fuel byproducts through measures, for example, embracing sustainable power sources, advancing energy productivity, and carrying out carbon counterbalancing procedures.

Squander The executives in Sports:

The writing audit featured the difficulties and open doors for squander the board in the games business. Studies have inspected squander age during games, investigated reusing and fertilizing the soil drives, and underlined the significance of diminishing single-use plastics. Supportable waste administration rehearses, for example, executing reusing programs, instructing fans and competitors about appropriate garbage removal, and empowering the utilization of reusable materials, have been distinguished as successful techniques.

Water Utilization and Preservation:

Water utilization in sports, especially in keeping up with battlegrounds, has been a subject of concern. The writing audit uncovered examinations researching water preservation endeavors in sports offices, like utilizing proficient water system frameworks, catching and reusing water, and advancing water-saving ways of behaving among competitors and staff. These investigations feature the requirement for capable water the executives practices to limit the natural effect of sports.

Biodiversity and Natural surroundings

Preservation:

The effect of sports on biodiversity and normal environments has acquired consideration as of late. Research has inspected the impacts of building sports offices on environments, the deficiency of regular natural surroundings because of foundation improvement, and the potential for sports associations to add to preservation endeavors. The writing accentuates the significance of considering biodiversity preservation in sports office configuration, executing feasible land use practices, and supporting drives that safeguard and reestablish normal living spaces.

Reasonable Games Drives:

The writing survey distinguished various instances of sports associations and occasions that have embraced supportability as a center standard. These drives incorporate the utilization of eco-accommodating materials, sustainable power sources, squander decrease systems, and commitment with neighborhood networks on natural issues. Contextual investigations of economical games, like the Olympic Games and major donning competitions, have exhibited fruitful execution of green practices and featured the positive results accomplished.

Partner Commitment and Strategy Structures:

The writing audit featured the job of partners and policymakers in driving natural manageability in sports. It underscored the significance of cooperation between sports associations, competitors, fans, and administering bodies to advance manageable practices. Furthermore, the survey analyzed arrangement systems, affirmations, and rules created by global wearing bodies and ecological associations to support economical practices in sports.

By and large, the writing audit featured the developing acknowledgment of the natural effect of sports and the rising accentuation on supportability inside the business. It gave an establishment to grasping key natural difficulties, best practices, and valuable open doors for advancing an additional economical games area. The discoveries from the writing survey informed the examination procedure and filled in as a reason for additional investigation in this review.

Methodology:

To accomplish the goals of this exploration paper and gain a thorough comprehension of the ecological effect of sports, a multi-layered procedure will be utilized. The system includes a few critical stages and approaches framed beneath:

Writing Survey:

An intensive survey of existing writing, scholarly exploration, reports, and contextual investigations connected with the convergence of the climate and sports will be led. This writing audit will act as the establishment for understanding the present status of information, recognizing research holes, and investigating key ideas and structures in the field.

Information Assortment:

Information assortment will include gathering important data from different sources, including sports associations, natural offices, manageability drives, and academic distributions. Information on fossil fuel byproducts from sports exercises, squander age, water use, and other natural boundaries will be gathered. This might include getting to data sets, official reports, and leading overviews or meetings with key partners in the games business.

Quantitative Investigation:

Quantitative investigation will be performed to survey the ecological effect of sports exercises and occasions. This might incorporate ascertaining the carbon impression related with various games, assessing waste age and the board rehearses, and investigating water utilization designs. Factual procedures, information demonstrating, and natural effect evaluation systems will be applied to get significant bits of knowledge from the gathered information.

Contextual investigations:

Top to bottom contextual investigations of games, associations, and offices known for their economical practices will be directed. These contextual analyses will investigate effective drives and techniques executed to limit the ecological effect of sports. Information will be gathered through interviews, site visits, and examination of significant reports to give an extensive comprehension of the ecological practices embraced and their results.

Near Investigation:

A near investigation will be led to assess and look at the natural exhibition of various games exercises and occasions. This examination will assist with recognizing best practices,

feature examples of overcoming adversity, and distinguish regions where enhancements can be made. Similar measurements, for example, carbon power, squander redirection rates, and water preservation endeavors will be utilized to work with the assessment and benchmarking process.

Subjective Exploration:

Subjective exploration strategies, for example, meetings and overviews, will be utilized to assemble experiences from key partners including sports associations, competitors, fans, and policymakers. These subjective information will give important viewpoints on perspectives, ways of behaving, and discernments connected with natural supportability in sports.

Blend and Proposals:

The discoveries from the writing survey, quantitative investigation, contextual analyses, and subjective examination will be blended to give a complete outline of the natural effect of sports and the possible answers for maintainability. In view of the examination, suggestions and rules for advancing maintainable practices in the games business will be figured out.

The system framed above will empower a thorough assessment of the ecological effect of sports and give bits of knowledge into economical techniques and arrangements. By utilizing a multi-disciplinary methodology and consolidating quantitative and subjective examination strategies, this study expects to add to the current information base and propose useful suggestions for a greener and more manageable games industry.

Results and Discussion:

Carbon Impression of Sports:

The examination of fossil fuel byproducts related with sports exercises uncovered that sports contribute fundamentally to ozone harming substance emanations. The carbon impression changes across various games, with focused energy sports like engine dashing and air travel-escalated games having a bigger carbon impression contrasted with low-power sports. The discoveries stress the requirement for sports associations to embrace measures to lessen emanations, for example, advancing maintainable transportation choices, improving energy effectiveness in sports offices, and carrying out carbon counterbalancing programs. The coordination of sustainable power sources, for example, sunlight based chargers and wind turbines, in sports settings can likewise add to huge outflows decreases.

Squander The board in Sports:

The exploration on squander the executives in games showed that critical measures of waste are created during brandishing rivalries, especially in huge scope occasions. In any case, the execution of reusing and treating the soil programs, alongside the utilization of reusable materials, has shown positive results in squander decrease. The commitment of fans and competitors in legitimate garbage removal rehearses and the arrangement of effectively open reusing offices can additionally improve squander the board endeavors. Also, inventive arrangements, for example, bio-based materials and biodegradable bundling can add to limiting the ecological effect of sports-related squander.

Water Use and Preservation:

The examination of water use in sports featured the significant measures of water drank in keeping up with sports fields, particularly in parched locales. In any case, sports associations and offices that have carried out water protection measures, for example, savvy water system frameworks and water collecting, have shown huge water reserve funds. Advancing capable water use among competitors, taking on water-proficient apparatuses and advancements in sports offices, and bringing issues to light among fans about water protection can add to reasonable water the board in the games business.

Biodiversity and Living space Protection:

The assessment of the effect of sports on biodiversity and living spaces uncovered that the development and improvement of sports offices can bring about natural surroundings misfortune and interruption of environments. Be that as it may, the execution of maintainable

land use rehearses, like coordinating green spaces and saving regular environments, can alleviate these adverse consequences. Sports associations can likewise add to biodiversity preservation by supporting drives, for example, natural surroundings rebuilding projects, advancing feasible land the executives, and bringing issues to light among fans about the significance of safeguarding biological systems.

Reasonable Games Drives:

The examination of supportable games drives displayed various effective instances of sports associations and occasions carrying out harmless to the ecosystem rehearses. These drives incorporated the utilization of eco-accommodating materials, for example, reused or natural materials, the mix of environmentally friendly power sources, and the execution of waste decrease systems, like zero-squander objectives. The discoveries stressed the significance of cooperation between sports associations, competitors, backers, and fans in embracing feasible practices and featured the positive effect of these drives on both the climate and public view of sports.

Partner Commitment and Strategy Systems:

The exploration featured the meaning of partner commitment and strategy systems in driving natural maintainability in sports. The contribution of sports associations, competitors, fans, and administering bodies in manageability drives was viewed as essential for effective execution. Besides, the presence of strategy systems, certificates, and rules gave an establishment to economical practices in the games business. The discoveries highlighted the requirement for proceeded with cooperation and the advancement of far reaching arrangements to help and boost manageable drives in sports.

In general, the outcomes and conversations shed light on the natural effect of sports and the potential for supportable practices to relieve these effects. The discoveries feature the significance of taking on an all encompassing methodology, including different partners, and carrying out imaginative answers for advance natural maintainability in the games business. By embracing feasible practices, sports could not just decrease their natural impression at any point yet additionally go about as strong stages for moving positive ecological change and encouraging a greener future.

Conclusion:

This examination paper has investigated the convergence of the climate and sports, planning to comprehend and address the ecological effect of sports exercises and occasions. The discoveries accentuate the critical ecological difficulties presented by sports, including fossil fuel byproducts, squander age, water utilization, and living space interruption. Notwithstanding, the exploration likewise features the potential for sports to be an impetus for positive change and ecological manageability.

Through the investigation of different viewpoints, including the carbon impression of sports, squander the board rehearses, water utilization, biodiversity preservation, and supportable drives, it becomes clear that the games business has the ability to embrace maintainable practices and limit its natural effect. The joining of environmentally friendly power sources, reception of reusing and treating the soil programs, capable water the board, and conservation of regular living spaces are among the key procedures that can add to an additional feasible games industry.

Also, the examination underlines the significance of partner commitment, including sports associations, competitors, fans, and policymakers, in driving ecological maintainability in sports. Cooperation and organizations between these partners are significant for the effective execution of manageable drives. Moreover, strategy systems, confirmations, and rules assume a critical part in giving an establishment to economical practices in the games business.

By advancing supportable practices, sports could not just diminish their natural impression at any point yet additionally move ecological mindfulness and conduct change

among competitors and fans. Sports have an interesting ability to contact a worldwide crowd and can act as stages for advancing ecological schooling and promotion.

All in all, this exploration paper highlights the requirement for the games business to embrace manageability as a center guideline. It gives bits of knowledge into the natural effect of sports and features compelling systems and drives for encouraging an additional maintainable games industry. By coordinating feasible practices, sports can add to worldwide natural objectives, motivate positive change, and make a tradition of ecological stewardship for people in the future. The aggregate endeavors of partners, policymakers, and sports devotees are fundamental in changing the games business into a power for natural supportability.

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Effect of Environment on Physical and Anthropometric Analytical Status of Coastal, Hilly and Deccan Plateau College Players

Dipak Patil
Research Scholar, Dr. BAM University, Chhatrapati Sambhajinagar (MS)

Dr. Sandeep Jagannath Jagtap
Director of Physical Education
Shri Sant Savta Mali Gramin Mahavidyalaya, Phulambri
Tal. Phulambri Dist. Chhatrapati Sambhajinagar (MS)
Email. ID- sunsport7349@gmail.com

Abstract -

Physical education is an integral part of the total education process is a field of Endeavour which has strain the development of physically, mentally, emotionally and socially fit citizen through the medium of physical activities which has been selected with a view of realising these outcomes. Anthropometrics literally means man (anthro) measurements (metric). It is the measurement of the size and proportions of the human body, as well as parameters such as reach and visual range capabilities. Anthropometrics enables us to properly size items, including system interfaces, to the "fit" the user. Organic development is generally considered to be of importance. This would conclude among other thing. The maintenance of health through good health practices and the development of physical fitness including sufficient strength, cardio respiratory and muscular endurance, to avoid excessive fatigue and to ensure adequate energy levels.

Social development is another objective that is universally listed the ability to function effectively with other and in group is usually considered an important outcome to be sought through physical education. Psychological development summed under this heading would be such things and improved personality characteristics self confidence, self respect and opportunity for self fulfillment and self realization. Cognitive objective is that rationally stresses by teacher of academic subjects. Although health educators have long been concerned with helping students gain understanding of certain facts and principles, physical education has generally limited their cognitive (intellectual) emphasis of knowledge and rules and strategy of sports and games.

Keywords: Environment, Anthropometry, Physical Fitness

INTRODUCATION

Physical education is an integral part of the total education process is a field of Endeavour which has strain the development of physically, mentally, emotionally and socially fit citizen through the medium of physical activities which has been selected with a view of realising these outcomes. Anthropometrics literally means man (anthro) measurements (metric). It is the measurement of the size and proportions of the human body, as well as parameters such as reach and visual range capabilities. Anthropometrics enables us to properly size items, including system interfaces, to the "fit" the user.

OBJECTIVES OF PHYSICAL EDUCATION

Organic development is generally considered to be of importance. This would conclude among other thing. The maintenance of health through good health practices and the development of physical fitness including sufficient strength, cardio respiratory and muscular endurance, to avoid excessive fatigue and to ensure adequate energy levels. Social development is another objective that is universally listed the ability to function effectively with other and in group is usually considered an important outcome to be sought through physical education. Psychological development summed under this heading would be such things and improved personality characteristics self confidence, self respect and opportunity for self fulfillment and self realization. Cognitive objective is that rationally stresses by teacher of academic subjects. Although health educators have long been concerned with helping students gain understanding of certain facts and principles, physical education has generally limited their cognitive (intellectual) emphasis of knowledge and rules and strategy of sports and games.

AIM AND OBJECTIVES OF STUDY

Organic development is generally considered to be of importance. The study will be intend to compare physical and anthropometric variables of coastal, hilly and Deccan Deccan Plateau college Players.

Aim – The aim of the research problem is to find Physical and Anthropometric Variables to know the area wise performs of the games. I hope that by finding Physical and Anthropometric variables coaches and physical Teachers will be benefited to judge the area wise games & players to improvement in performance.

Objectives – To fulfill the aim following objectives should be followed.

To identify the problem and suggestive measures to remove it.

The study will be intended to compare Physical and anthropometric variables of coastal, hilly and Deccan Deccan Plateau college men players.

HYPOTHESIS

It will be hypothesized that the hilly college player may be better in physical variables than coastal and Deccan Plateau college men in physical variable namely agility, power and arm strength.
It will be hypothesized that the Deccan Plateau college player may be better in Physical and anthropometric variables than the hilly and coastal college player.
It will be hypothesized that the coastal and Deccan Plateau college player may be heightening then hilly college player.
It will be hypothesized that the hilly college men may be strengthen then Deccan Plateau and coastal college players.
It will be hypothesized that the hilly college Deccan Plateau college men may be arm length more than coastal and hilly college players.
It will be hypothesized that the coastal college men shoulder length may be better then hilly and Deccan Plateau college player.
It will be hypothesized that the hilly college men Wrist Center of Grip Length may be better then Deccan Plateau and coastal college player.
It will be hypothesized that the coastal college players Elbow Circumference, Straight. Circumference of the elbow in a plane perpendicular to the long axis of the arm at the level of the olecranon center landmark, with the arm straight at the side better than hilly and Deccan Plateau college players.

SIGNIFICANCE OF STUDY

For above we saw importance of find out physical and anthropometric variables of coastal, hilly and Deccan Plateau college players. The physical and anthropometric variables of coastal, hilly and Deccan Plateau college players in importance of coaches and physical teachers to selected the games for better performance of players.

DELIMITATIONS OF STUDY

The study was delimited to the following subject's characteristics.

The Study was delimited to the College men players.
The Study was further delimited to age group of 21 to 25 years.
The study was delimited to only Deccan Plateau, coastal, hilly areas college men.

LIMITATIONS OF STUDY

The study was comparing the Physical and Anthropometric Variable of Coastal, hilly and Deccan Plateau college men. Anthropometric variable such as height, weight, and arm length to investigate each of the group will be better, physical variable as agility, power and arm strength. Subjects were selected randomly from Coastal, hilly and Deccan Plateau counterparts and their performance in agility, power and arm strength will be record and also height, weight and arm strength will be measure and record.

MATERIALS AND METHODS

The procedure for method of experimental, collection and data and then statistical Technique used for analyzing the data have been described.

SELECTION OF SUBJECTS

This study was designed to compare the physical and anthropometric variable of Hilly, Coastal and Plateau Regional College Men in Western Region of India, Coastal from Mumbai, Maharashtra State and to achieve these purpose 300 students from each group, totally 900 college men were selected at random. The boys were between the age group of 21 to 25 years. The subjects were selected from the colleges as noted below.

STATISTICAL ANALYSIS

Correlation matrices were calculated for anthropometric parameters, pulmonary, metabolic, cardio respiratory functions, and 10 times. The variables were expressed in absolute terms to avoid possible bias due to ratio scores in the correlations (13). In a preliminary study, Type II error may be more serious than type I error. A significance level of p=0.10 was chosen to help avoid type II error (not detecting potentially significant correlations) since this study was preliminary.

SCHEFFE'S POST OF HOC TEST TABLE FOR AGILITY

Among Hilly, Coastal and Plateau college men.

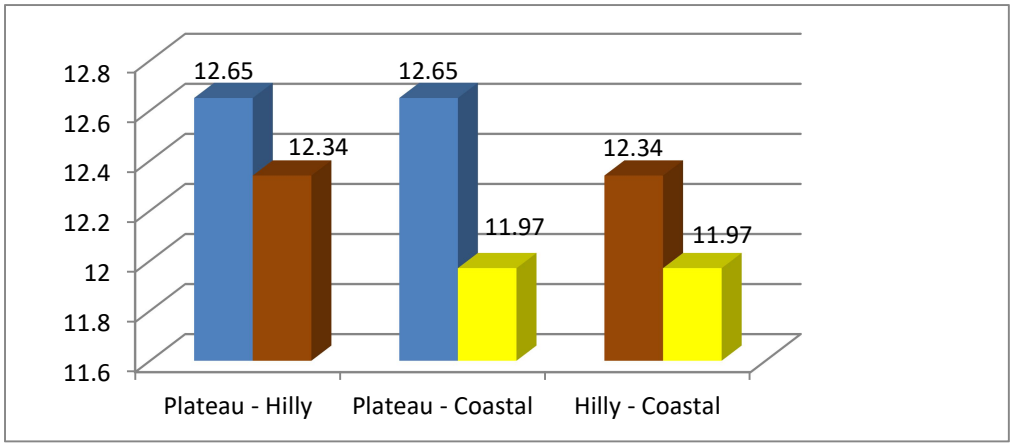
Plateau	Hilly	Coastal	Mean Difference	Confidence Interval
12.65	12.34		0.31	0.49
12.65		11.97	0.68	
	12.34	11.97	0.38	

Significant at 0.05 level

Table No. I indicated the mean difference between plateau-Hilly, Plateau-Coastal and Hilly-Coastal college men and they are 0.31, 0.68 and 0.37 respectively. Difference also showed the confidence interval was 0.49 at .05 levels at confidence.

The result showed that the plateau college men are better in agility. Beside that the Hilly college men have more agility than Coastal college men.

Figure: 1 Comparison of Agility for Pair Mean difference of Hilly, Coastal and Plateau College Men



CONCLUSION

For using Statistical Method and Analysis of Variance I find the Deccan Plateau college men better in anthropometric variables than the hilly and coastal college men. The coastal and Deccan Plateau college men heighten then hilly college players. The Deccan Plateau College men arm length more than coastal and hilly college players. We find that the coastal college men shoulder length better then hilly and Deccan Plateau college players. The hilly college players Wrist Center of Grip Length and arm strength is better than Deccan Plateau and coastal college men. The coastal college players Elbow Circumference, Straight, circumference of the elbow in a plane perpendicular to the long axis of the arm at the level of the olecranon center landmark, with the arm straight at the side better than hilly and Deccan Plateau college players.

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AIR POLLUTION AND NON COMMUNICABLE DISEASES: BIGGEST ENVIRONMENTAL CHALLENGES IN NEW INDIA

Dr. Sinku Kumar Singh : School of Educational Sciences , Swami Ramanand Teerth Marathwada University, Nanded (Maharashtra).

Dr. M.C. Dalvi : IBP Mahila Mahavidyalya , Aurangabad (MS) INDIA

Abstract

Air pollution causes respiratory diseases (asthma), heart diseases, reproductive and neurological diseases etc. Air pollution can be prevented by advocating the use of public transportation and carpooling. It can also be controlled by avoiding wastage of electricity, less use of plastic and increasing awareness in rural and remote areas. The several researches found that air pollution increasing the risk of blockage of arteries, leading to increased incidences of ischemic heart disease. Lung cancer is the uncontrolled division of cells within the lungs, and it is associated with air pollutants, especially particulate matter pollution, and secondhand smoke. Air pollution is not only because of its effect on climate change but also because of its effect on the health of mankind due to increased morbidity and mortality. Long-term effects of air pollution can include cardiovascular disease, cancer, and damage to the immune, neurological, reproductive, and respiratory systems. In extreme cases, it can even lead to death. In addition, air pollution can affect lung development and has been implicated in the development of emphysema, asthma, and chronic obstructive pulmonary disease (a type of respiratory disease that is more common in metro cities). Major sources include pollutants, emissions from refineries and petrochemicals, chemical and fertilizer industries, metallurgy and other industrial plants.

Key Words : Environmental treat, pollution , Diseases, Prevention, environment

Introduction

The most common diseases caused by air pollution include heart disease, stroke, chronic obstructive pulmonary disease (COPD), lung cancer, and acute lower respiratory infections and asthma in children. Air pollution not only adversely affects environmental disease, but also climate change, acid rain (containing harmful amounts of nitric and sulfuric acid), eutrophication (the condition of a water body where high concentrations of nutrients such as nitrogen build up and stimulate algae blooms). does) also adversely affects), smog (sunlight encounters tiny pollution particles in the air). Effects on wildlife (animals may also suffer from health problems), ozone depletion (ozone is a gas that occurs both at ground level and in Earth's upper atmosphere, known as the stratosphere) and crops and forests damage too (air pollution can damage crops and trees). Common symptoms and experiences of air pollution are difficulty in breathing, irritation in the eyes, nose and throat, wheezing, cough and tightness in the chest. (https://www.mass.gov/doc/health-environmental-effects-of-air-pollution). Criteria air pollutants include nitrogen dioxide, carbon monoxide, lead, ozone, particulate matter and sulfur dioxide. Air pollution is the contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere (WHO, 2022). WHO data shows that nearly the entire global population (99%) breathes air that exceeds. WHO guideline limits and contains high levels of pollutants, with low- and middle-income countries at highest risk are suffering. Air pollution can cause diseases, allergies, and even death to humans; It can also harm other living organisms, such as animals and food crops, and damage to the natural environment (for

example, climate change, ozone depletion or habitat degradation) or the built environment (Manisalidis, et.al) (2020). Both indoor and outdoor air pollutants harm people and lead to many non-communicable diseases. Breathing air induced by pollutants due to the burning of natural gas and fossil fuels reduces the heart's ability to pump enough oxygen, causing a person to suffer from respiratory disease.

SOURCES OF AIR POLLUTION

Vehicles burn gasoline, it emits air pollutants. Vehicles emit carbon monoxide, hydrocarbons, nitrogen oxides and particulate matter. Moreover, burning of waste is very harmful to health and environment. Construction sites and raw materials such as bricks and concrete produce smog and foul smell, which is especially dangerous for people, asthmatics and respiratory disease patients. Agricultural activities along with pesticides and fertilizers are the main sources that contaminate the surrounding air and household products cause indoor air pollution such as paints, cleaners and personal care products.(https://www.aqi.in/blog/here-are-the-10-main-causes-of-air-pollution). Most air pollution is caused by the burning of fossil fuels such as coal, oil and gasoline to produce energy for electricity or transportation. Industrial emissions are another source of air pollution that affects air quality more than we imagine. Sugar industry, manufacturing goods, chemical and textile industries release a large amount of carbon monoxide, carbon dioxide (CO2) and organic compounds which adversely affect the environment. (https://www.aqi.in/blog/here-are-the-10-main-causes-of-air-pollution). Other sources include plastic use and lifestyles of high-income people.

There are several diseases responsible for air pollution are as:

OBSTRUCTIVE PULMONARY DISEASE (COPD) :

The increasing number of air pollutants has given rise to breathing problems and health problems. The causes of air pollution have increased health related diseases. Air pollution is the contamination of air due to the presence of substances in the atmosphere that is harmful to the health of humans and other living beings, or damages the climate or materials. Chronic obstructive pulmonary disease (COPD) is a common lung disease. Air pollution and smoking are the main causes of obstructive pulmonary disease

Symptoms of Chronic obstructive pulmonary disease

Symptoms of COPD including difficulty in breathing, cough and phlegm production (WHO). Harmful chemicals in the smoke can damage the lining of the lungs and airways, causing difficulty in breathing and adverse effects on lung and heart disease.

Prevalence of Chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease (COPD) is the third leading cause of death worldwide, causing 3.23 million deaths in 2019, according to the findings of the World Health Organisation. Income countries. Other risk factors include exposure to certain gases or fumes in the workplace, exposure to heavy amounts of secondhand smoke and pollution, and repeated use of cooking fires without proper ventilation.

ASTHMA :

Asthma is a condition in which your airways become narrow and swollen and can produce excess mucus. This can make breathing difficult and can lead to coughing, whistling sounds (wheezing) when you exhale, and shortness of breath (https://www.mayoclinic.org/diseases-conditions/asthma/symptoms-causes).

Causes of Asthma

Air pollution has been associated with an increase in the prevalence of asthma, possibly due

to a number of lifestyle factors. Reducing air pollution exposure to tobacco smoke is important for both the primary prevention of asthma and for disease management. Bad industrial pollution associated with public health can range from irritation of the eyes and throat to respiratory problems, which can sometimes lead to chronic diseases. Nitrogen dioxide is also one of the causes of asthma. Asthma cannot be cured, but good management with inhaled medications can control the disease and enable people with asthma to enjoy a normal, active life. (WHO, 2022).

Symptoms of Asthma

The most common symptoms of asthma are shortness of breath, chest tightness or pain, wheezing while exhaling, which is a common symptom of asthma in children, difficulty sleeping due to shortness of breath, coughing or wheezing, and attacks of coughing or wheezing. worsened by a respiratory virus, such as a cold or flu (https://www.mayoclinic.org/diseases-conditions/asthma/symptoms-causes/syc- 20369653).

Prevalence of Asthma

A lot of research shows that air pollution can make asthma symptoms worse. Asthma affected an estimated 262 million people in 2019 and caused 455 000 deaths (WHO). A study of youth campers with moderate to severe asthma showed that acute asthma episodes were 40 percent more likely to occur on summer days with high pollution compared to days with average pollution levels (Asthma and Allergy Foundation of America). Another study found that older adults were more likely to go to the emergency room for breathing problems when air pollution was high in the summer. Asthma is a major non-communicable disease (NCD), affecting both children and adults, and is the most common chronic disease (WHO).

Cardiovascular Disease :

The several research founds that air pollution increasing the risk of blockage of arteries, leading to increased incidences of ischemic heart disease (http://www.who.int/respiratory/copd/causes/ en/). Cardiovascular diseases (CVDs) are the leading cause of death globally. An estimated 17.9 million people died from CVDs in 2019, representing 32% of all global deaths. Cardiovascular disease (CVD) is a general term for conditions affecting the heart or blood vessels. This is usually associated with a build-up of fatty deposits inside the arteries (atherosclerosis) and an increased risk of blood clots (https://www.nhs.uk/conditions/cardiovascular-disease/) Heart disease, linked to the buildup Calcium or other material, such as fat, within a coronary artery can cause blockages that prevent blood from reaching the heart and other areas of the body.

Lung Cancer

In 2019, 139,682 people died from lung cancer, or 23% of all cancer deaths. 74,909 of these deaths were among men and 64,773 among women. Lung cancer is the leading cause of cancer deaths worldwide (https://www.mayoclinic.org/diseases-conditions/lung-cancer/symptoms-causes). Lung cancer is the uncontrolled division of cells within the lungs, and it is associated with air pollutants, especially particulate matter pollution, and secondhand smoke.

Discussion :

Air pollution is a mix of hazardous substances from both human-made and natural sources. Air pollution exposure leads to diseases including neurological diseases, Asthma, heart disease, chronic obstructive pulmonary disease (COPD) and lung cancer. Policies to reduce air pollution, therefore, offer a win-win strategy for both climate and health, lowering the burden of disease attributable to air pollution, as well as contributing to the near- and long-term mitigation of climate change. Air pollution is linked to an estimated 7 million premature deaths every year. Air pollution and climate change are closely linked.

The air pollution increases the risk of Aggravated respiratory related disease such as emphysema, bronchitis and Asthma. Lung damage, even after symptoms such as coughing or a sore throat disappear, chest pain, wheezing, dry throat, headache or nausea, Reduced resistance to infections and Increased fatigue. The diseases caused by air pollution lead to shorter lives and they make those lives unhappier and tougher in the meantime. For these reasons, we should do all we can to reduce air pollution and stop the diseases associated with them. Air pollution need to implementing smart control strategies, such as instituting emissions standards and creating atmosphere that will reduce emissions. Recently, EPA recommends source control as one of the best strategies to reduce air pollution. Source control involves stopping pollution at its source by doing things like improving the efficiency of industrial processes and using less polluting fuels. There are a several way to reduce the air pollution including, Using public transport is a sure short way of contributing to less air pollution as it provides with less gas and energy, even carpools contribute to it. The energy that the lights take also contribute to air pollution, thus less consumption of electricity can save energy. Use energy saving fluorescent lights to help the environment, recycle and reuse is helpful for air pollution as it helps in reducing pollution emissions. Avoid plastic use (The use of plastic products could be very harmful to the environment as they take a very long time to decompose, due to their material made up of oil.) Reduction of forest fires and smoking, Use of fans instead of Air Conditioner, Use filters for chimneys, Avoid usage of crackers, Avoid using of products with chemicals and Implement a forestation (https://www.aqi.in/blog/10-best-ways-to- reduce-air-pollution/).

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SKILL DEVELOPMENT THROUGH PHYSICAL EDUCATION FOR YOUTH OF MARATHWADA

Dr. BAPPASAHEB MASKE
Head and Director of Physical Education,
Sant Ramdas Mahavidyalaya, Ghansavanti,
Dist. Jalna (MS), bappamaske71@gmail.com

DR. SURESH MANIKRAO NALAWADE
Head & Director of Physical Education
Shiv Chhtrapti Arts College, Pachod,
Tq. Paithan Dist. Aurangabad (Maharashtra)
Sureshnalawade12@gmail.com

Introduction

Today, Marathwada stands tall with its initiative to rebuild and reinvent the golden 'Growth' era. Currently with one of the highest youth population in the world, Marathwada is at the juncture of huge opportunities and challenges together. With 0.8 billion population in the working age, Marathwada is slated to become the world's youngest nation by 2022.

This swelling figure looks like a huge reservoir of manpower but it also draws unprecedented focus towards making this talent pool employable so that they can contribute towards a developing Marathwada. With Marathwada metamorphosing into one of the fastest growing economies, job creation and skill development seem to be natural tools to lead the nation to greener pastures (Business Standard, 2015).

Skill development starts right from birth, really!

A new born baby starts learning how to communicate emotions, control his body movement and how to interact with the world within days of coming into this world. Research shows that 75 percent of brain development occurs after birth (Bodrova and Leong, 2005). Play helps with skill development by stimulating the brain which then helps with the development of fine motor skills, like holding a crayon and gross motor skills such as jumping or running.

Physical Education hones the skills

Physical education has a big role to play in developing motor skills like locomotor (e.g. running, hopping), object control (e.g. throwing, catching, kicking) and stability (e.g. balancing on pole walk, standing on one foot etc.). A good quality physical education is all inclusive; beyond enhancing motor skills, it builds a child's confidence and provides foundation skills and knowledge for a lifetime of activity. This skill can even help in shaping up a future working life in sport if children excel in sports and physical activity.

Why is skill development essential?

Skills and knowledge are the driving forces of economic growth and social development for any country. Marathwada is expected to grow at a rate of 8%, on an average, in the next 10 years (FICCI, 2010). More than 700 Mn Marathwada are estimated to be of working age by nijams. Out of these, more than 500 Mn require some kind of vocational or skill development training (Economic Times, 2012).

The current education and skill development capacity in Marathwada is spread across four categories:

Category	Sub Category
School education	Pre-school to secondary school
Vocational training	ITC
College education	Deemed, 2 State Universities
Technical and professional training	Engg, Polytechnics, Others

Source: Select Educational Statistics 2005-06, Annual Report 2009-10 of Ministry of Labour and Employment

A report in FICCI, 2010 states, "We can observe that the current pool of skilled talent is around 7Mn (inclusive of vocational and technical enrolments)." Clearly there is a huge gap between the skilled talent available (7Mn) and the skilled talent needed (500Mn) to fulfil the economic growth expectancy of Marathwada.

Physical Education contributing its wee bit to the economy

The field of sports and Physical Education could be a promising step towards creating skilled youth. With 50% of the population below the age of 25, if the young people in Marathwada are properly trained in sports, the country can come out as a role model to the entire world, not just economically but also in the tallies of bagful of medallions across Olympics, Asian games etc.

To focus on developing skills and leading them to pursue sports or Physical Education as career options, a structured sports program should be crafted to:

Link PE curriculum with the wider health education agenda.
Support and encourage the provision of a wider range of skilled activities.
Developing skills for all children, taking account of individual starting points.
Provide routes for excellence and career development.

Educational Sports has been contributing towards developing skills, not just amongst school children but by also training teachers and coaches in the schools to deliver a PE program which is fun and engaging for all the children. With seven years of experience and foothold, 4000+ teachers across Educational Sports partner schools have been trained and certified on different modules and an additional 400+ trainers have been given in-house employment.

The future of 'skilled' Marathwada

The Government of Marathwada has adopted skill development as a national priority over the next 10 years to bridge the demand-supply gap. The Eleventh Five-Year Plan has a detailed roadmap for skill development in Marathwada and favours the formation of Skill Development Missions, both at the State and National levels (FICCI, 2012).

Many new initiatives have been launched – Make in Marathwada, Smart Cities, Digital Marathwada, Start Up Marathwada – all focused towards reviving and scaling various aspects of economy (NASSCOM, 2014). Hence, skill development becomes the backbone of all these initiatives that can march the nation to the glory it seeks. Let us work towards it!

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MOTIVATION AND SELF CONFIDENCE IN SPORTS

SANJAY SATHE
Research Scholar,
Dr. Babasaheb Ambedkar Marathwada University,
Chhatrapati Sambhajinagar (MS)

DR. BAPPASAHEB MASKE
Associate Professor and Head
Dept. of Physical Education & Sports
Sant Ramdas Mahavidyalaya, Ghansavangi Dist. Jalna (MS)

Abstract:

Confidence is an inner feeling that allows you to deal and cope with difficulties and challenges that you encounter in life. Confidence is nothing but your mental set up in facing various problems that occur daily. Confidence is the bridge connecting, expectations and performance, investments and result. It is a familiar term used everyday to indicate future prospects in wide variety of circumstances like sports, education, personal and profession life. Confidence is an appropriate skill to achieve the goal in our life.

Keywords: *Motivation and Self Confidence*

Introduction :

Motivation is an internal energy force that determines all aspects of our behaviour, it also impacts on how we think, feel and interact with others. In sport high motivation is widely accepted as an essential. Prerequisite in getting athletes to fulfill their potential. However given its inherently abstract nature, it is a force that is often difficult to exploit fully. Confidence is an inner feeling that allows you to deal and cope with difficulties and challenges that you encounter in life. Confidence is nothing but your mental set up in facing various problems that occur daily. Confidence is the bridge connecting, expectations and performance, investments and result. It is a familiar term used everyday to indicate future prospects in wide variety of circumstances like sports, education, personal and profession life. Confidence is an appropriate skill to achieve the goal in our life.

The present paper focuses on the 'Motivation and Self Confidence in Sport.'

Objectives :

Aim of the Study :

To focus on Motivation and confidence.
To know about the role of motivation and self confidence in sports.

Review of Related Subject :

The research journals, books and other sources of information on the problem.

Motivation :

Motivation can have one or more motives backed by needs and wants with an internal drive to act. It is related to behaviour on the one hand and action on the other, and is a moving or guiding force. Needs set up drives to accomplish goal. Motivation consists of the three interacting and interdependent elements of needs, drives and goal. Motivation is subject to antecedent conditions and consequent behaviour just like perception and learning. It means that is not easy to isolate motivation in absolute terms, while motives are inherent which are manifested in behaviour. Then motives can be inferred from corresponding behaviours.

Self Confidence :

It is commonly defined as the sureness of feeling that you are equal to the task to hand. This sureness is characterized by absolute belief in ability.

Self confidence will play an important role in achieving success and overcoming any fears or crises of confidence you may have along the way.

Importance of Motivation in Sports :

Motivation is to provide a person with a motive to action with positive energy and determination. The right atmosphere can bring out the best in anyone. Performance reflects learning and motivation. Physical characteristics, sense acuity, perceptual and decision making processes acquired skills and developed abilities structure the human system for preparation for competition. The optimal state of arousal encourage the structure to function in a desirable way. Motivation affects the past history of the athlete and any particular contest performance. Behaviours must be considered during the pre-season, the actual competitive season, the pre-event, and the actual event. Optimal motivation levels need to be considered relative to the nature of each athlete and each activity. Excellence in performance is also a function of the affective domain of behaviour. These includes, feelings, araugal level and expectations.

Importance of Self Confidence in Sports :

Self confidence is all about feeling capable of taking action to do something. In sport, it should be based upon how your mind set is and how you feel when you go to perform your respective sporting event. Self Confidence in athletes make the difference between wining and losing greatness and mediocrity.

Self confidence and motivation are not synonymous concepts but they are closely related Athletes, who are highly motivated tend to be very self confident about their abilities.

Suggestion :

Motivation is encouragement to perform well, proper training is also required with motivation to achieve target.

If you take on step forward with self confidence, success will take ten steps towards you.

Conclusion :

Motivation is a key to learning, training, performance, achievement, accomplishment and excellence in sports. It works like a miracle.

Motivation is concerned with factors that stimulate the desire to engage in a behaviour.

Self confidence derives from knowing that you have the right type of skills and interesting goals to achieve. Even the most capable body and mind won't do anything good without the self-confidence.

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ENVIRONMENTAL AND PSYCHOLOGICAL FACTORS AFFECTING PHYSICAL PERFORMANCE

SUBHASH YASHWANT DESHMUKH
Research Scholar, Dr. BAM University, Chhatrapati Sambhajinagar

DR. SANDEEP JAGANNATH JAGTAP
Director of Physical Education
Shri Sant Savta Mali Gramin Mahavidyalaya, Phulambri
Dist. Chhatrapati Sambhajinagar (MS)
Email: sunsport7349@gmail.com

Abstract:
The historical debate on the relative influences of genes (i.e. nature) and environment (i.e. nurture) on human behaviour has been characterised by extreme positions leading to reductionist and polemic conclusions. Our analysis of research on sport and exercise behaviours shows that currently there is little support for either biologically or environmentally deterministic perspectives on elite athletic performance. In sports medicine, recent molecular biological advances in genomic studies have been over-interpreted, leading to a questionable 'single-gene-as-magic-bullet' philosophy adopted by some practitioners. Similarly, although extensive involvement in training and practice is needed at elite levels, it has become apparent that the acquisition of expertise is not merely about amassing a requisite number of practice hours. Although an interactionist perspective has been mooted over the years, a powerful explanatory framework has been lacking. In this article, we propose how the complementary nature of degenerate neurobiological systems might provide the theoretical basis for explaining the interactive influence of genetic and environmental constraints on elite athletic performance. We argue that, due to inherent human degeneracy, there are many different trajectories to achieving elite athletic performance. While the greatest training responses may be theoretically associated with the most favourable genotypes being exposed to highly specialised training environments, this is a rare and complex outcome. The concept of degeneracy provides us with a basis for understanding why each of the major interacting constraints might act in a compensatory manner on the acquisition of elite athletic performance.

Keywords: Environment, Psychology, Physial Performance

Introduction:
Sport is all forms of physical activity which, through casual or organized participation, aim to use, maintain or improve physical fitness and provide entertainment to participants. Sport may be competitive, where a winner or winners can be identified by objective means, and may require a degree of skill, especially at higher levels. Hundreds of sports exist, including those for a single participant, through to those with hundreds of simultaneous participants, either in teams or competing as individuals. Some non-physical activities, such as board games and card games are sometimes referred to as sports, but a sport is generally recognized as being based in physical athleticism. Sports are usually governed by a set of rules or customs. Physical events such as scoring goals or crossing a line first often define the result of a sport. However, the degree of skill and performance in some sports such as diving, dressage and figure skating is judged according to well-defined criteria. This is in contrast with other judged activities such as beauty pageants and body building, where skill does not have to be shown and the criteria are not as well defined. Records are kept and updated for most sports at the highest levels,

while failures and accomplishments are widely announced in sport news. Sports are most often played just for fun or for the simple fact that people need exercise to stay in good physical condition. However, professional sport is a major source of entertainment. While practices may vary, participants in many sports are expected to display good sportsmanship, and observe standards of conduct such as being respectful of opponents and officials, and congratulating the winner after having lost.

Psychological Factors Affecting Physical Performance:

Psychological factors affecting Physical performance in sports is no longer dependent on physiological well-being of the athlete. It is well established by now that there are numerous psychological factors which effect and improve the physical performance. The point where physiological response potential reaches the dead end, the psychological process seems to make the athlete click proving the boost or energy to achieve the goal which physiologically seemed impossible that is why psychological training and conditioning are now - a- days a part and parcel of total sports training programmers. Important psychological factors which affect the physical performance are:

Individual differences among the athletes: Each athlete is unique to oneself. A part form physiological differences such as height / weight, etc, there are bound to be psychological differences as well. Some athletes may be outgoing and extrovert whereas others may be shy, introvert and withdrawn, and they may also differ in their levels of perception. Some athletes are born strong psychologically while others have weak dispositions. Athletes with weak dispositions fail to accomplish their task. Thus, individual differences in sports performance are an inevitable phenomenon and the teacher/coach has to modify his approach according to the nature of each individual athlete.

Personality: The human personality is a marvelously intricate structure, delicately woven of motives, emotions, habits and thoughts into a pattern that balances the pulls and pushes of the outside world, It is the totality of his being and includes his physical, mental emotional and temperamental make up. His experience perception, memory, imagination instincts, habits, thoughts and sense at times constitute his personality. Therefore, personality differences are inevitable, as to individuals cannot possess similar personality traits. Personality traits are basic to sports excellence. It is necessary to identify and cultivate those personality traits which are most conducive to the performance in sports. Hence personality is an important psychological factor which to a great extent determines the result of new athletic output.

Intelligence: Intelligence is the aggregate mental capacity or energy of an individual to act purposefully, to think rationally, and to deal effectively with ones environment. Intelligence involves awareness, is goal directed and has value. It is an ability to undertake the activities that are difficult, complex, and which lead to the creation of something new and different. Intelligence of an individual plays an important role in affecting physical performance. The more complex and the more interpretative the movement, the grater the amount of intelligence necessary to comprehend. Sports activities involve complex skilled actions. Since all skilled behavior is intelligent behavior, relationship between sports performance and intelligence cannot be denied.

Attitude: Attitudes are about thoughts and feelings. Attitude is often thought to predict behavior. Attitudinal responses are also evaluative in nature. They are significant in deciding the kind and extent of the learning that takes place and reflect the likes and dislikes concerning a specified object of action. For example, if a child says "I like running ", it reflects his attitude towards running and if a child says." I don't like running" it shows child's attitude towards running. Attitudes involve knowledge and beliefs. Attitudes are developed though direct experience and inter personal communication. Positive beliefs and values concerning physical

activity result in development of good and positive attitudes, enabling the athlete to strive hard for better performance.

Environment Impacts Sports Performance:

Athletes must overcome many obstacles during their season. Many of them have to do with the environment they are placed in. Home-field advantage is one example.. The road team is at a distinct disadvantage because over 50% of games are won by home teams (Hermsmeyer, 2018). Another example is the uncontrolled environments such as temperature, altitude, and wind have a big impact on the team performance. Higher altitude with a lower partial pressure of oxygen alters physiological conditions (Tang, 2021). This post will examine how the different environments like home-field advantage, uncontrolled environments, the surface they play on, and more can affect the athlete's performance in their sport.

Conclusion:

Regardless of the environmental factors, and unless told otherwise, most athletes will train and compete under most conditions. As an athlete it is your job to learn the best ways you deal with the uncontrollable like the weather, and how crazy the environmental factors you must consider when playing an outdoor sport. Embracing the unpredictable ups and downs of the uncontrolables can help in an athlete's performance.

From the above discussion it is obser ved that Sport is all forms of physical activity which, through casual or organized participation, aim to use, maintain or improve physical fitness and provide entertainment to participants. Sports are usually governed by a set of rules or customs. Physical events such as scoring goals or crossing a line first often define the result of a sport. However, the degree of skill and performance in some sports such as diving, dressage and figure skating is judged according to well-defined criteria. Psychological factors affecting Physical performance in sports is no longer dependent on physiological well-being of the athlete. It is well established by now that there are numerous psychological factors which effect and improve the physical performance. Important psychological factors which affect the physical performance are Individual differences among the athletes, Personality, Intelligence, Attitude, Motivation, and Aggression.

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Environmental Ethics, Religion, and Culture

Dr.Sangeeta Pande
I/C Principal
Adarsh College of Arts and Commerce,
Kulgaon-Badlapur

ABSTRACT

Almost all cultures of the world recognized the importance of the environment in a person's life. An unhealthy polluted environment may give rise to various diseases making man's life unhappy. A good healthy environment is required for peace and happiness. Science, technology as well as religion also aims at peace and happiness. In the lastfew years' innovations and discoveries in science and technology have changed man's life tremendously. On the one hand, it has increased comfort and on the other hand, it has given rise to many new challenges. Many environmental problems like an increase in global temperature, deforestation, desertification, pollution,etc are increasing.

This paper attempts to study the relationship between environment and religion and culture. The first section attempts to throw light on various approachesto environmental ethics, In the second section attempt is made to study the religious perspective of the relation between man and nature and find out how different religions and cultureslook at environmental protection with special reference to Vedantic religion. Third section attempt to evaluate religious customs and rituals. The paper also throws light on the study of values required for facing environmental challenges in New India.

***Key words**: Environmental Ethics, Anthropocentrism, Bio centrism, Eco-centrism, Eco feminism, Vedantic religion*

Introduction

The environment is the surrounding in which living beings are living. The word environment is derived from the French word 'environ' which means surrounding. The surrounding in which one is living cannot be static, it is dynamic, and there are constant changes that are taking place in it. Lithosphere, hydrosphere, Atmosphere, and biosphere are the important segments of the environment.All these segments are interconnected with one another. Any problem in one segment affects the other segments also. The technological and scientific development of man exerts pressure on the environment. Following are the basic aspects of environmental science viznatural processes both physical and biological, the relationship between man and environment, and environmental degradation and increasing environmental problems caused due to human activities, conservation, and management. This paper focuses mainly on the relationship between the environment and living organisms. The environment provides the habitat for living organisms, it fulfills their primary needs of food and shelter. It also affects the lifestyles of various organisms. Among all living organisms' human beings are considered to be superior and intelligent and with the various activities of human beings not only the environment is affected but also he is affecting the basic composition of the environment. Its very important to study ethical questions like what are the responsibilities of human beings towards the environment? What kind of relationship should be there between human beings and nature? How the nature is to be looked upon? This question leads us to one of the important branch of the environment i.e. ecology. Ecology is the science that deals with the ways how the living things relate to one another as well as to the environment where they live. There are different approaches to looking at the relationship between man and nature, they are widely discussed in environmental ethics.

Approaches to Environmental Ethics

Ethics is considered one of the branches of philosophy which deal with the good and bad or right and wrong in human conduct. The word ethics in Latin is called '*ethicus'* and in Greek called '*ethos*' meaning character or conduct. Environmental ethics in its broader sense means conducting environmental activities in a fair manner. It attempts to study man's approach toward the environment. Some of the approaches are Anthropocentrism, Biocentrism, Ecocentrism, Eco-Feminism

Anthropocentrism –this approach considers human beings to be superior than nature and nature is considered as the slave of human beings. Nature is looked upon as having instrumental value only. Under this approach a person considers himself as the master and everything that is there in nature is used and utilized as if it is meant only for human beings. Trees, animals, fields, all natural resources are recklessly used. This is human centered approach. Philosophers like Baruch Spinoza criticized this approach as in this approach things are considered having utility only for human beings. However if we look at the things in the universe, everything has intrinsic value.

Biocentrism- approach considers that human beings are merely one species amongst many. There is this approach is called as living being centered approach. Biocentrism states that nature does not exist simply to be used or consumed by Humans but humans are merely one amongst many species in the universe. Nature is for all the living beings. According to Paul Taylor, proponent of biocentrism, humas are merly one of the member of the community of living beings, all the members of this community are on equal terms. In this community no one is superior or inferior. Every organism is having unique place and purpose.

Eco-Centrism –approach is nature centered. According to Aldo Leopold, the proponent of ecocentrism it recognizes that all species including humans are the product of evolutionary process and are inter related in their life processes. Ecocentrism emphasizes on interconnection among the organisms as well as living and non living systems. Human being should never forget that their life is dependent on the nature. Ecocentrism focuses on the biotic community as a whole and it emphasizes on maintaining ecosystem composition and ecological processes.

Eco-feminism – is an approach which believes that there is similarity between a woman and nature. It believes that the environmental and problems of women are caused by the same social mentality. Both women and nature are exploited by men. Culture of dominance is the root cause of the problems of environment.

All the above approaches look at the relationship of man and nature from different perspectives.

Religious perspective of the relationship between man and Nature

Religion is a product of human thought. Almost all religion semphasize environmental protection. The reasons given by them may differ, Christianity and Islam consider that human beings are created by God and for the sake of human beings earth is created, so nature is all for the utility of human beings, however since it is the creation of God it is the moral duty of human beings to take care of it. Bahai Religion states that Nature is God's will and is its expression through a contingent world. (Tablets of Bahaullah p 142)

Jainism and the Environmental protection, Jaina religion is one of the oldest religion which has been originated in India. According to Jaina view life force exists in the four elements of earth, water, fire and air and also in all the types of living being including microorganisms plants and animals. Jainism belives in five vratas i.e. vows, the first vow is i.e. ahimsa, satya, asteya, bramhacharya&aparigraha. Ahimsa is considerd as the core of jaina thought. Jainism believes that no person should not cause any kind of harm to any living being including micro-organisms, plants animal etc. Each and every living being has a unique place in this nature. Another important vow from the environmental point of view is that of

aparigraha – i.e. minimal ownership of things. Today consumerism and materialism is causing tremendous pressure on environment. The vow of aparigraha teaches individual that our needs should be minimum and we should not hoard the unnecessary things and possess only those which are essential. Jainism believes that each and every living being is to be respected. Human being should not cause any kind of harm to even plant and animal life also.

Buddhism is another religion of Indian origin. Gautam Buddha the founder of Buddhism has given theory of five percepts (Panchasilla) i.e. abstaining from killing not to steal refraining from sexual misconduct renounce the false, complete avoidance of intoxicants. The percepts of abstaining from killing are giving importance to each and every living being. One should respect the living being, everyone is important. In general, five percepts help the person to be disciplined and having controlof over desires. If everyone respects others life and property then there will be less problems in society. Non-Violence not only means not to kill the person but it also encourages love and compassion towards others.In Buddhist philosophy Buddha has given number of discourses on relationship of human beings with environment.

Vedantic Perspective

Upanshads or Vedanta are scripturewhich provides vision and ideals that will help in solving environmental crisis. The fundamental ideals of Upanishads or Vedanta is that the individual soul is identical with the Supreme Soul. In the words of Vivekananda, " Each soul is potentially divine, The goal is to manifest this divinity within". Religion helps one to manifest one's true nature. Vedantic view ' ekamsadviprabahudhavadanti' tells us that Reality is one, it is manifested in many, so ideally speaking man and nature are the manifestations of the same reality. This ideal gives different perspective to look towards nature.

Upanishads provides the answer to the question 'Why should one protect the Environment?' in a different perspective stating that nature is not different from the Supreme or Ultimate Reality viz Brahman/God. Trees, animals, plants are all the parts of that ultimate Reality. As it is expressed in Swetaswetara Upanishad- "The God who is in fire,who is in water,who has entered into the whole world,who is in plants,who is in trees to that God be adoration-yea be adoration" 2.17

Nature has intrinsic worth, man and nature are not different from reality.In the Chandogya Upanishad it is stated 'SarvaKhalvidam Brahman' when there is oneness between nature and man then naturally one can not think of causing harm to oneself. It emphasises harmony between man and man as well as man and nature. This cultural spiritual tradition has equal concern for well being of all objects, human beings,animals,plants etc. if this basic thrust is properly understood then many environmental crisis would be solved to a great extent.

Religious Customs and Rituals

Religion plays an important role in one's life. Vivekananda says, " …our motherland has religion and religion alone for its basis, for its backbone,for the bedrock upon which the whole building of its life has been based" Religion aims at the wellbeing of mankind, and well being of mankind can be achieved when there is safe and healthy environment. Religious customs and rituals are such which can help in protection of environment. Religious practices have been followed by masses blindly and very rarely with proper reasoning or with proper understanding. Its very essential to understand religious practices in its right spirit. Following are few examples of the religious practices which are helping one to understand true worth of nature.

Going for religious pilgrimage/yatra-be with nature. Almost all the religious shrines are located on mountains/hillocks/banks of river or sea and Religious pilgrimage is given which promotes connect of people with nature while also ensuring safeguard of such places of environmental importance.

Sea/rivers are worshipped as Gods/Godesses. This shows how much importance is given to them by considering them as sacred so as to ensure their upkeep and cleanliness. For Eg. River Ganges, Saraswati, Narmada etc are worshipped as mothers and goddesses. This signifies their role in human life.
Bathing at sea/ river considered auspicious thus ensuring the connect of humans with nature.
Offerings are flowers, leaves, fruits –nature's bounty which is offered as a tribute to the gods and goddesses. This would show how much value is given to these natural elements. Each and every part of nature has unique place and importance. Attaching religious value ensures protection of nature.
Trees are worshipped as holy and their protection is also ensured.Tulsi is planted at the doorstep of every household. It is worshipped and today scientifically it is proven to be the purifier and anti-repellent, and also generating more oxygen. Some festivals are attached to the worship of trees,egVatapournima is celebrated by worshipping the banyan tree. It is believed that peepal tree is the abode of Gods. This religious belief ensures protection of the environment.
Rites and rituals –an important part of one's daily Life-Vedic Rishis –imbibe the awareness about natural phenomenon and nature through observing various rituals. Various yagyas were performed, today research have proved that these yagyas can purify atmosphere.
Animals are worshipped as a vehicle of every god and they are protected by religious sentiments attached to them. Lion is considered as vehicle of GodessDurga, Swan is vehicle of GodessSaraswati etc. Snakes are worshipped on Nagpanchami , perhaps this ritual started in order to create awareness about the importance of snakes in the environment. These religious beliefs underline the importance of each and every living being in the environment.
Nirad Chaudhari, writes in Hinduism a religion to live bywrites that "extraordinary feature of Hindus was that it was religion alone which kept them in touch with Nature and its beauties." Religion is not merely following rites and rituals,but it is also to understand the true significance of these religious beliefs and rituals.

Values required for facing environmental challenges for New India.

Values play an important role in human life. Values provide the principles to live by. According to D.K.Chakravarty, "The secret of extra-ordinary vitality of Indian culture lies in its conception of values or purusarthas-dharma,artha,kama and moksha. The dharma as purushartha is about the moral reasoning. Here meaning of dharma is not religion but it is righteousness. Whenever one is involved in any activity that person must be able to distinguish between what is right and wrong or good and bad. This discretionary power will help a person to know what activities are good for the protection of environment and for his selfish motive he will not exploit the nature.Dharma is code of conduct, disciplines, our relationship with others in the pursuit of our desires and means of livelihood. It is the value of Dharma which guides us that one should not cause harm or damage nature for fulfilling one's selfish desires.

Materialism and Consumerism has caused too much damage to the environment. It is the dharma principle which teaches us to have control over our desires. The over materialistic view of life enslaves the man who is holding it. The principle of righteousness can free a man from overindulgence and helps in leading a meaningful life.

The moral concepts Rta and Rna are useful for solving the environmental problems. These concepts signify that there is order in the universe. Whatever is there in the nature it always follows definite order. Human being has freedom whether to follow the order or not to follow, however it is moral duty of every human being to follow this cosmic order, he should not interfere in nature's order, however it has been observed that for fulfilling his selfish desires he is interfering in the order of nature and thereby disturbing it. It is the moral responsibility of human being to protect the earth, must save the natural resources and should

not spoil the environment, The concept of 'Rna' means indebted. There are four rnas i.e. matrupitrurna, deva rna, Rishi rna and manavrna. In Deva rna word 'Deva' can be interpreted as all natural phenomena, a person is indebted to nature, it is one's duty to protect the nature.

Nature provides us so many things for which human beings should be grateful. The value of gratitude is to be cherished, The nature is to be cared and protected not because of its utility but because it is having its own worth. It is our moral responsibility to preserve the sanctity of nature and to conserve and preserve it for future generation.

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Increasing Air Pollution and Its Consequences

Dr. Gawande K. S.
Head, Dept. of History,
MSS Ankushrao Tope College,
Jalna (MS)

Introduction:

The air we breathe has a very exact chemical composition; 99% of it is made up of nitrogen, oxygen, water vapor and inert gases. Air pollution occurs when things that aren't normally there are added to the air. A common type of air pollution happens when human activity releases particles into the air from burning fossil fuels. This pollution looks like soot, containing millions of tiny particles, floating in the air.

Another common type of air pollution is dangerous gases, such as sulfur dioxide, nitrogen oxides, carbon monoxide and chemical vapors. These can take part in further chemical reactions once they are in the atmosphere, creating acid rain and smog. Other sources of air pollution can come from within buildings, such as secondhand smoke. Air pollution is the contamination of air due to the presence of substances in the atmosphere that are harmful to the health of humans and other living beings, or cause damage to the climate or to materials. It is also the contamination of indoor or outdoor surrounding either by chemical activities, physical or biological agents that alters the natural features of the atmosphere. Air pollution is a familiar environmental health hazard. It is a major threat to global health and prosperity.

Consequences of air pollution:

A variety of air pollutants have known or suspected harmful effects on human health and the environment. In most areas of World, these pollutants are principally the products of combustion from space heating, power generation or from motor vehicle traffic. Pollutants from these sources may not only prove a problem in the immediate vicinity of these sources but can travel long distances. Air pollution is induced by the presence in the atmosphere of toxic substances, mainly produced by human activity in recent years. These gases and chemicals generate a number of phenomena and

consequences for the ecosystems and the living beings that populate our planet. Air pollution, in all forms, is responsible for more than 6.5 million deaths each year globally, a number that has increased over the past two decades. Air pollution is one of the greatest environmental risk to health. By reducing air pollution levels, countries can reduce the burden of disease from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma.

In 2019, 99% of the world's population was living in places where the WHO air quality guidelines levels were not met. The combined effects of ambient air pollution and household air pollution are associated with 6.7 million premature deaths annually.

Ambient (outdoor) air pollution is estimated to have caused 4.2 million premature deaths worldwide in 2019. Some 89% of those premature deaths occurred in low- and middle-income countries, and the greatest number in the WHO South-East Asia and Western Pacific Regions.

In particular, air pollution can cause cardiovascular problems, allergies, asthma attacks, conjunctivitis, bronchial diseases, lung or skin cancers, vision problems, blood Problems in the mental development of the child, among others. The most vulnerable are children, the elderly, pregnant women and the sick.

Thus, some scientists have been able to establish a direct relationship between the increase of polluting particles in cities and the thickening of the internal wall of the arteries or atherosclerosis. Numerous studies have also shown that groups of people living in urban areas with high traffic volumes have more respiratory problems than the average and are more likely to develop disease. Cases of children with bronchitis and slow pulmonary development are much more common in large cities.

One of the solutions supported and advocated by the OMPE is to put in place CO2 absorbers on the planet. The latter, by acting as filters, would reduce the excess of toxic and polluting gases in the air (CO, CO2, methane in particular) and microparticles.

Air pollution affects people in different ways. Older people, children and those with pre-existing health conditions are more sensitive to the health impacts of air pollution. In addition, the most deprived people in society often have poorer health and less access to high-quality medical care, increasing their vulnerability.

There is strong evidence linking lower socio-economic status to increased exposure to air pollution. In large parts of Europe, poorer people are more likely to live next to busy roads or industrial areas and thus, face higher levels of exposure to air pollution. At the same time, exposure patterns vary across European cities. In some cities, wealthier people live in central, polluted areas, while in other European cities central areas are inhabited by poorer communities.

Environmental effects of air pollution include damage to plants and long-term forest health, soil nutrient deterioration, accumulation of toxics in the food chain, damage to fish and other aquatic life in lakes and streams, and nitrogen enrichment of coastal estuaries causing oxygen depletion and resulting harm to fish and other aquatic animal populations.

Air pollution has caused several respiratory disorders and heart diseases among humans. Children living near industrial areas are more prone to pneumonia and asthma.Emission caused by greenhouse gases results in an imbalance of the gaseous composition of the air. This has caused an increase in the temperature of the earth. This increase in the temperature of the earth is known as global warming.The combustion of fossil fuels releases harmful gases such as nitrogen oxides and sulfur oxides in the air. The water vapor in the atmosphere combines with these pollutants, becomes acidic, and fall as acid rain which damages human, animal and plant life. The release of chlorofluorocarbons (CFC), halons, and hydro-chlorofluorocarbons in the atmosphere is the major cause of the depletion of the ozone layer. The depleting ozone layer causes the harmful UV-B rays coming from the sun and causes skin diseases and eye problems among individuals. The air pollutants suspend on the water bodies and affect the aquatic lifeforms.

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The Role of Sports in Environmental Awareness and Education in India

Ghorpade Chitra Mohan
Research Scholar
agalechitra2526@gmail.com

Abstract:

This exploration paper investigates the huge job of sports in advancing ecological mindfulness and schooling in India. As the world countenances squeezing ecological difficulties, it is critical to draw in and teach people, especially the young, about the significance of natural protection and reasonable practices. Sports have arisen as a strong stage to bring issues to light and work with learning in different circles, including the climate.

The paper researches the extraordinary characteristics of sports that make them powerful instruments for ecological mindfulness and schooling. It examines the capability of sports to contact a wide crowd and charm their advantage through dynamic support, cooperation, and rivalry. Moreover, the paper looks at how sports can encourage a feeling of association with nature and the climate, ingraining upsides of regard, obligation, and stewardship among members.

Drawing on existing drives and contextual analyses, the examination features effective instances of sports-based natural schooling programs executed in India. It investigates different games disciplines, going from customary Indian games to famous worldwide games, and distinguishes explicit systems and approaches utilized to coordinate ecological messages and information into donning exercises.

Moreover, the paper tends to the difficulties and open doors related with utilizing sports for natural schooling in India. It examines the significance of cooperation among sports associations, instructive organizations, government bodies, and natural NGOs to foster complete projects that integrate ecological subjects into sports educational programs, occasions, and effort drives.

The discoveries of this examination highlight the capability of sports in encouraging natural mindfulness and training among different sections of Indian culture. The paper accentuates the requirement for preceded with exploration and assessment of sports-based natural projects to improve their effect and viability. By saddling the force of sports, India can motivate an age of earth cognizant residents who effectively add to the conservation and maintainable administration of the country's regular assets.

Keywords: sports, environmental awareness, environmental education, India, sustainability, youth, participation, collaboration.

Introduction:

Natural mindfulness and training have become central in this day and age as the worldwide local area wrestles with squeezing environmental difficulties. Perceiving the need to connect with people in understanding and resolving natural issues, different methodologies have been utilized to advance ecological cognizance and supportable practices. Among these methodologies, sports have arisen as an amazing asset to encourage natural mindfulness and instruction, especially among the young. In India, a nation known for its

rich games culture and various natural scenes, the job of sports in advancing ecological stewardship holds colossal potential.

Sports have one of a kind credits that make them compelling vehicles for ecological instruction. They can contact a wide crowd, catch consideration, and make a feeling of fervor and inclusion. Through dynamic support, collaboration, and rivalry, sports can enthrall people and impart in them a feeling of obligation towards the climate. Besides, sports give a stage that empowers individuals to interface with nature and value its magnificence and significance, supporting the meaning of ecological protection.

This exploration paper means to investigate and examine the job of sports in advancing natural mindfulness and training in India. It will look at the particular manners by which sports can be used to bring issues to light about natural issues and move economical activities. By inspecting existing drives and effective contextual analyses, the paper will feature the systems and approaches utilized to incorporate natural subjects into sports-based projects and exercises.

Moreover, the examination will dig into the difficulties and open doors related with utilizing sports for natural schooling in India. It will address the requirement for joint effort among sports associations, instructive establishments, government bodies, and natural NGOs to foster extensive projects that really integrate ecological messages into sports educational plans, occasions, and effort drives.

The discoveries of this exploration will add to the developing assemblage of information on sports-based natural schooling and give bits of knowledge into its expected effect in India. By tackling the force of sports, India can develop an age of ecologically cognizant people who are outfitted with the information and inspiration to add to the reasonable administration and protection of the country's normal assets.

By and large, this examination tries to reveal insight into the job of sports as an impetus for ecological mindfulness and schooling in India, determined to motivate further investigation, development, and execution of sports-based drives that add to a greener and more feasible future.

Literature Review:

Sports as a Vehicle for Natural Instruction:

Various investigations have featured the capability of sports as a way to advance ecological schooling. The intelligent and connecting with nature of sports exercises can work with the transmission of ecological information and encourage social changes. Sports-based programs have been displayed to upgrade's comprehension members might interpret biological ideas, empower favorable to natural mentalities, and advance economical practices (Chawla, 2015; Shibli, 2017).

Youth Commitment and Ecological Mindfulness:

The young segment assumes a vital part in natural mindfulness and activity. Sports have shown to be a compelling device for drawing in youngsters in ecological schooling. By integrating natural messages into sports educational plans, sorting out eco-games, and using competitors as natural ministers, drives have effectively spurred and engaged youth to become ecological stewards (Breuer et al., 2017; Kabisch et al., 2019).

Ecological Topics in Games:

Major games offer exceptional chances to advance ecological mindfulness for a huge scope. Models, for example, the Olympic Games and FIFA World Cup have carried out supportability drives, including carbon nonpartisanship, squander the board, and ecological

training programs. These drives bring issues to light among members and onlookers as well as leave an enduring tradition of natural cognizance (Lobby, 2015; Girginov, 2019).

Conventional Games and Native Information:

India's rich social legacy envelops different conventional games well established in the connection among networks and the climate. These games, like Kabaddi, Kho, and Mallakhamb, give a one of a kind stage to incorporating native natural information and feasible practices. Integrating ecological topics into conventional games can support social qualities and advance natural stewardship among members (Nair et al., 2019; Shinde et al., 2020).

Cooperative Methodologies for Sports-Climate Incorporation:

Fruitful games based natural training drives frequently include joint effort among various partners. Associations between sports associations, instructive organizations, natural NGOs, and government bodies have demonstrated compelling in creating complete projects. These coordinated efforts guarantee the mix of ecological topics across different games disciplines, instructive stages, and strategy structures (Walsh et al., 2020; Jayasinghe et al., 2021).

Influence Assessment and Future Exploration:

While various games based natural drives exist, thorough assessment and exploration are fundamental to survey their adequacy and improve their effect. Concentrates on zeroing in on result estimation, conduct change appraisal, and long haul supportability of sports-based programs are pivotal for refining approaches and illuminating future mediations (Breuer et al., 2017; Shibli, 2020).

All in all, the current writing features the capability of sports in advancing natural mindfulness and training. By connecting with youth, consolidating natural subjects in games, utilizing conventional games, and cultivating coordinated efforts, India can really use sports as a vehicle for ecological cognizance. Nonetheless, further examination is expected to assess the effect of sports-based mediations and foster proof based methodologies for coordinating natural training into sports stages.

Methodology:

This exploration paper utilizes a blended techniques way to deal with research the job of sports in natural mindfulness and training in India. The technique includes both subjective and quantitative exploration strategies to give a complete comprehension of the topic. The accompanying segments frame the exploration plan, information assortment strategies, and information examination procedures utilized in this review.

Research Plan:

The exploration configuration includes a blend of work area based research and exact examination. Work area based research includes a broad survey of existing writing, including scholastic articles, reports, contextual investigations, and pertinent strategy records, to lay out a hypothetical system and distinguish key ideas, approaches, and effective drives in sports-based natural training.

The exact examination includes information assortment through studies, meetings, and perceptions to acquire experiences into the ongoing status, difficulties, and open doors connected with sports-based natural training in India. The experimental exploration plans to give firsthand data from different partners engaged with sports associations, instructive foundations, government bodies, and ecological NGOs.

Information Assortment Strategies:

a. Overviews: A review poll will be planned and conveyed to members addressing different objective gatherings, including competitors, mentors, teachers, understudies, and natural experts. The overview will survey their attention to natural issues, view of the job of sports in ecological schooling, and encounters with sports-based natural projects. The overview reactions will be gathered utilizing on the web stages or in-person organization.

b. Interviews: Semi-organized meetings will be led with key partners, including delegates from sports associations, instructive foundations, government bodies, and natural NGOs. The meetings will investigate their viewpoints, encounters, and difficulties connected with coordinating natural subjects into sports exercises. The meetings will be sound recorded and translated for investigation.

c. Perceptions: Direct perceptions of games, instructional meetings, and sports-based ecological schooling projects will be led to assemble firsthand data on the execution and effect of such drives. Field notes will be taken to report perceptions and catch applicable context oriented subtleties.

Information Examination:

The gathered information will be broke down utilizing a topical investigation approach. Subjective information from meetings, perceptions, and unconditional study questions will be coded and ordered into topics and sub-topics. This cycle will include recognizing repeating designs, separating significant data, and creating experiences connected with the job of sports in natural mindfulness and schooling in India.

Quantitative information from the studies will be examined utilizing measurable strategies, including graphic insights, recurrence examination, and inferential measurements, to sum up and decipher the reactions. The quantitative investigation will give quantitative signs of the degree of natural mindfulness and the viability of sports-based ecological projects.

Moral Contemplations:

Moral contemplations will be guaranteed all through the exploration interaction. Informed assent will be gotten from members before their support in studies, meetings, and perceptions. Secrecy and classification of members' very own data will be kept up with. The exploration will comply with moral rules and guidelines in regards to information assurance and member government assistance.

By utilizing a blended strategies approach, this examination means to give an extensive and top to bottom comprehension of the job of sports in natural mindfulness and schooling in India. The mix of subjective and quantitative information will improve the legitimacy and dependability of the discoveries, adding to the information base and illuminating future mediations in this field.

Results and Discussion:

The outcomes and conversation segment presents the discoveries of the concentrate on the job of sports in ecological mindfulness and schooling in India. The segment is partitioned into subsections, each zeroing in on key subjects and points that rose up out of the information examination. The outcomes are examined considering the current writing, giving bits of knowledge into the ongoing status, difficulties, and chances of sports-based ecological schooling in India.

Ecological Mindfulness among Members:

The review information uncovered that a critical greater part of members, including competitors, mentors, teachers, and understudies, showed a moderate to elevated degree of ecological mindfulness. This shows that there is as of now a groundwork of information and worry for ecological issues among the objective populace.

View of Sports-Based Ecological Schooling:

Members communicated uplifting outlooks towards sports-based ecological schooling, perceiving its capability to really connect with and instruct people. They recognized the capacity of sports exercises to impart upsides of ecological stewardship, advance economical practices, and encourage a feeling of association with nature. The discoveries line up with past examination featuring the adequacy of sports in making mindfulness and conduct change (Chawla, 2015; Shibli, 2017).

Existing Drives and Examples of overcoming adversity:

The review distinguished a few effective drives in India that coordinate ecological subjects into sports exercises. These drives range from local area level projects to public missions. Eminently, conventional games play had a critical impact in advancing natural mindfulness and native information connected with environmental preservation. Models incorporate the consolidation of natural messages during Kabaddi competitions or putting together eco-long distance races in biologically touchy regions. These drives show the different manners by which sports can act as a stage for ecological instruction.

Conclusion:

This exploration paper plays investigated the part of sports in ecological mindfulness and schooling in India, featuring its true capacity as an integral asset to connect with people, especially the young, in understanding and tending to natural difficulties. The discoveries of this study highlight the meaning of sports as a stage for advancing ecological stewardship and maintainable practices.

The exploration has shown the way that sports-based natural training can really raise ecological mindfulness among members. Through dynamic interest, cooperation, and rivalry, sports exercises enthrall people and impart upsides of obligation and regard for the climate. Besides, the coordination of ecological subjects into sports educational plans, occasions, and drives gives open doors to people to interface with nature and foster a more profound comprehension of environmental protection.

The review has recognized fruitful drives and contextual analyses in India that have utilized sports to advance natural mindfulness. Conventional games, specifically, play had a significant impact in consolidating native biological information and encouraging a feeling of ecological stewardship. These drives act as rousing instances of how sports can be incorporated with natural training to make a positive effect.

In any case, the exploration has likewise uncovered provokes that should be tended to for the powerful execution of sports-based ecological schooling programs. These difficulties incorporate restricted assets, an absence of coordination among partners, and the requirement for limit building. It is basic for sports associations, instructive establishments, government bodies, and natural NGOs to team up and put resources into extensive projects that address these difficulties.

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RELATIVE AGE IMPACT IN THE SPORT ENVIRONMENT OF ACTUAL WELLNESS AND MENTAL CAPABILITY OF RUGBY PLAYERS

MAHESH NIMBALKAR
Research Scholar, Dr. BAM University, Chhatrapati Sambhajinagar

ANJANA PANDIT
Research Scholar, Dr. BAM University, Chhatrapati Sambhajinagar

DR. SANDEEP JAGANNATH JAGTAP
Director of Physical Education & Sports
Shri Sant Savta Mali Gramin Mahavidyalaya, Phulambri
Dist. Chhatrapati Sambhajinagar (MS)
Email: sunsport7349@gmail.com

Abstract:
The need to achieve short-term competitive outcomes in sports may influence the emergence of talent selection strategies, which could bias individuals' opportunities. The present study aimed to further explore the relative age effect (RAE), a phenomenon that strongly influences youth sport development. The RAE refers to a disproportionately high percentage in sport teams of athletes born early in the selection year. Our primary focus was to explore whether the RAE is supported by behavioral evidence in favor of better fitness—and especially cognitive-attentional functioning—of early as compared to late-born players. A cross-sectional study was conducted on 105 young athletes (u10, n = 52; 9.8 ± 0.3 years old, and u12, n = 53; 11.8 ± 0.2 years old) attending two youth elite soccer academies. Attentional functioning, anthropometrics, physical fitness, and game intelligence were compared across two Age Groups (u10 vs. u12) and four Birth Quarters (BQ1–BQ4). The RAE was statistically significant ($p < 0.001$), showing that about 50% of participants were born in the first quarter and 75% were born in the first half of the year.

Keywords: RAE; Youth Sport Talent Selection, Maturation, Attention

Introduction:
After the abundant literature that followed the description of "nature vs. nurture" by Francis Galton, further research is needed to an gain understanding of the relative contribution to human performance of inherited and environmental conditions. In sport, as in other contexts, the performance of athletes is the result of a complex interaction between genetic and environmental factors. To excel in their sport disciplines, athletes experience a continuous adaptation process that impacts their physical and cognitive attributes. In fact, various studies have highlighted that the potential benefits of physical activity (PA) on cognitive functioning are modulated by the environmental characteristics of their sport context. Expert athletes have shown better performance than non-experts in sport-specific tests that assess memory, attention, information pick-up, anticipation, and decision-making skills. The perceptual-cognitive adaptations that athletes may experience as a result of sport training might be constrained by their individual characteristics. In youth sport, one of the most influencing individual constraints is chronological age, while considering that athletes are mainly grouped by their date of birth in a selection year.

Materials and Methods:

Study Design and Participants

A cross-sectional study was conducted. The sample included one hundred and five (105) young male soccer players aged 9.2–12.2 years (10.8 ± 1.0 years old) that were enrolled in two youth elite academies of ADRA Rugby Club in the Chhatrapati Sambhajinagar District of Maharashtra State. The best two u10 teams (n = 52; 9.8 ± 0.3 years old) and two u12 teams (n = 53; 11.8 ± 0.2 years old) in each club participated in the study. The cut-off date that was fixed by Chhatrapati Sambhajinagar District Rugby Association and the Maharashtra Rugby Association from January 1st to December 31st was followed. Nevertheless, the analyses of attentional performance were performed on data from 87 participants, after excluding participants who could not perform the task appropriately. A sensitivity analysis was conducted while using G* power. It showed that with our sample size (n = 87) divided into eight groups (i.e., four birth-date quarters in each Age Group), the minimum effect size that could be detected for $\alpha = 0.05$ and $1 - \beta = 0.80$ was $f = 0.30$ (i.e., minimum detectable effect).

Participation in the study was voluntary and all of the participants and their parents or legal guardians were properly informed regarding the risks and benefits of the study prior to any data collection and signed an institutionally approved informed consent document. All of the participants were informed about their right to leave the experiment at any time. The managers of the clubs were debriefed in regards to the purposes of the study and given an explanation of the main results with easily understandable data.

The Attentional Networks Test for Interactions 2.2. Apparatus, Materials and Procedure

The participants were evaluated in three different sessions (Attentional Assessment Session, Anthropometrical Assessment, and Physical Fitness Assessment Session) in a counterbalanced order. Testing was performed in the first training session of the microcycle, scheduled at least 48 h later than the previous training session or competition match. All the data were collected under standard conditions of time (from 4 pm to 7 pm) and temperature (ranging from 13 °C to 23 °C) from February to May 2018. The participants were cited 60 min. before the training session and were assessed in the media room (Attentional Assessment Session), medical room (Anthropometrical Assessment) and soccer pitches (Physical Fitness Assessment Session) of their club's training facilities.

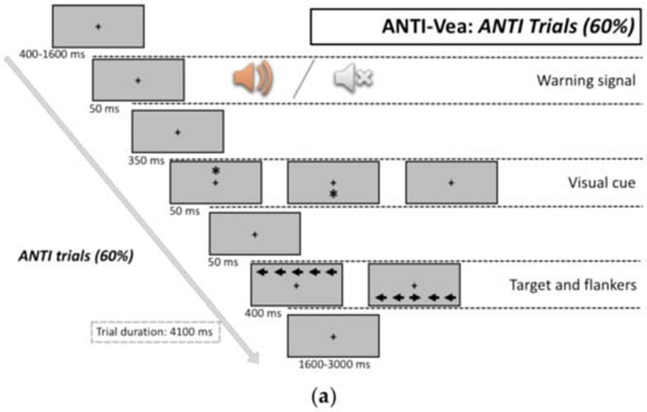


Figure 1.
Experimental procedure and stimuli sequence in the Attentional Networks Test for Interactions and Vigilance—executive and arousal components (ANTI-vea) task: ANTI trials (a), executive vigilance (EV) trials (b), and arousal vigilance (AV) trials (c)

In the EV trials (20% of the trials), the same procedure was followed, except that the target was vertically displaced from the central position. The participants had to detect the vertical

displacement by pressing the spacebar, while ignoring the direction of the target (See Figure 1b). Data from the various conditions of the warning signal, visual cue, and congruency variables were collapsed and not taken into account in the analyses. HITs were calculated as the percentage of displaced targets that were identified correctly. False alarms (FAs) were defined as the proportion of space bar responses (i.e., the response for infrequent stimuli) given to non-displaced targets. Finally, the mean RT and SD of RT were calculated.

In AV trials (20% of the trials), no tone, visual cues, or arrows were presented. These trials started in the same way as the ANTI and EV trials, and then the fixation point remained fixed in the screen for 500 ms (i.e., the same duration as the tone plus the visual cue signals in the ANTI and EV trials). Next, a red millisecond counter appeared in the center of the screen, starting at 1000 and going down to zero. The participants were asked to stop the counter as fast as they could by pressing any key of the keyboard (see Figure 1c). The mean and SD of RT were considered. Before the experimental task, participants completed several practice blocks with visual feedback. First, they were given instructions to perform the ANTI trials, with a practice block of 16 such trials. Next, they received instructions to complete the EV trials, with a practice block of 32 randomized trials (16 ANTI and 16 EV trials). After that, they received instructions to complete the AV trials, followed by a practice block of 48 randomized trials (16 ANTI, 16 EV, and 16 AV trials). Finally, the participants performed a last practice block of 40 randomized trials (24 ANTI, 8 EV, and 8 AV trials) without visual feedback. At this point, if the participants still had any doubts, they could ask questions or perform the last practice block again. Otherwise, they continued with the experimental section of the task, which included three blocks of 80 randomized trials each (48 ANTI, 16 EV, and 16 AV trials per block), with no pause and no visual feedback.

Physical Fitness Assessment

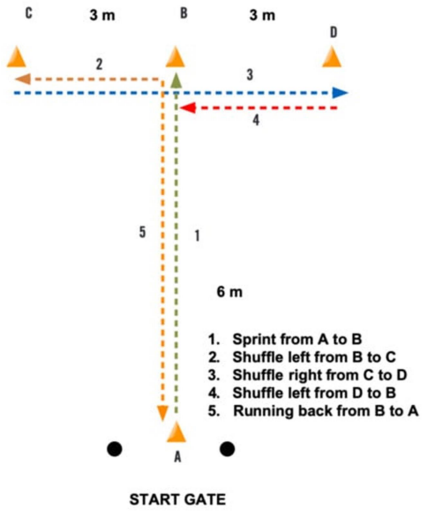


Figure 2.

Set Up of the Modified T-Test for Agility Measurement

All of the physical fitness tests were performed between 5 and 8 pm during the first training session of the week (at least 48 h later than the previous training session or competition match). Ambient temperature was 17.3 ± 3.2 °C and humidity was 75 ± 4%. Prior to the testing, the participants followed the same supervised warm-up procedure with 10 min. of jogging, change of direction, and sprint drills. Finally, the participants performed a modified version of the agility T-test, a 24-m speed test, and the Leger Multi-stage fitness test. Agility: Modified T-test. The T-test is a useful agility test for the assessment of multidirectional

movement (i.e., forward, lateral, and backward) and leg power, leg speed, and agility. A marked course on the soccer field using four cones was set up, as depicted in Figure 2. A photocell gate system (Sports Metrics, Chhatrapati Sambhajinagar, Maharashtra) that was connected to an electronic chronograph with 1 ms accuracy (i.e., 1000 Hz sampling frequency) (Sports Metrics, Chhatrapati Sambhajinagar, Maharashtra) was used to record the time. The infrared beam of each photocell was placed 0.9 to 1.0 m from the ground, depending on the player's height, so that the photocell beam cut at the hip level.

Following previous recommendations, the athletes completed a modified agility T-test. At the starting position, the player placed his foot just behind the start line, with the knee of the advanced limb in semi-flexion and the arms flexed to avoid cutting the infrared beam. The forward body movement cutting the infrared beam started the stopwatch. After explaining the purpose of the T-test, the experimenter described and demonstrated the proper route and technique. Athletes had to keep their body facing forward at all times and physically touch each cone with the correct hand. On the experimenter's command, the participants sprinted forward from the start at cone A to cone B and touched the top of the cone with their right hand. Subsequently, they shuffled left to cone C and touched it with their left hand. After that, they shuffled right to cone D and touched it with their right hand. They shuffled back to cone B and touched it with their right hand before running backward to pass the start gate (cone A). All of the participants underwent three practice trials before performing the test. The goal of the test was to complete the course as quickly as possible. Two maximal trials were completed with three minutes of recovery between them. The time of both trials was recorded, but only the fastest time was considered for later statistical analyses.

Conclusions:

Although the age group differences (u10–u12) that were observed in all of the anthropometric, physical fitness and sustained attention variables were restricted to sample size and characteristics (i.e., elite club academies) of our study, they were not modulated by BQ. Similarly, the correlation between chronological age and anthropometrics, physical fitness, and sustained attention variables that were observed in the overall sample completely disappeared within each age group. Similarly, no BQ effects were found on the functioning of the attentional networks. Bayesian analyses supported the absence of BQ effects, corroborating that relative age was an inconsistent predictor of performance in the physical and perceptual-cognitive variables that were evaluated in the present study. Another crucial variable that may modulate the pattern of interrelations between the main variables of the present study is maturation. The present findings suggest that the selection process of soccer players may mitigate the age-related (i.e., BQ) differences that could be expected in some variables if the scouting process that lead to the birth asymmetries were not driven by short-term performance. The individual maturational state of players is likely to be one of the main variables that modulate this effect.

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Waste Management in Sports Events: Strategies for Effective Recycling and Waste Reduction in India

Manesh Sukhdev Mashke
Research Student

Dr. Shivaji Suryavanshi
Research Guide

Abstract:

Squander the executives in games assumes a urgent part in advancing manageability and decreasing ecological effects. This examination paper looks at methodologies for compelling reusing and squander decrease in India's games. The point is to distinguish best practices that can be executed to limit squander age, boost reusing rates, and cultivate a reasonable waste administration framework with regards to games.

The review utilizes a far reaching writing survey way to deal with examine existing examination on squander the board in games, zeroing in on India. It investigates different systems utilized around the world and looks at their appropriateness and adequacy in the Indian setting. The examination additionally considers the particular difficulties and open doors related with squander the board in games, like the high volume of single-use plastics, various waste streams, and calculated limitations.

The discoveries feature the significance of taking on a comprehensive waste administration approach that incorporates squander counteraction, reusing, treating the soil, and public commitment. Key methodologies recognized incorporate the execution of successful waste isolation frameworks, the foundation of associations with reusing organizations, the use of manageable bundling choices, and the advancement of mindfulness and conduct change among occasion participants.

Keywords: waste management, recycling, waste reduction, sports events, sustainability, India.

Introduction:

Games have acquired tremendous fame lately, drawing in huge groups and creating critical monetary and social advantages. Nonetheless, the ecological effect of these occasions, especially with regard to squander age, has turned into a developing concern. The ill-advised administration of waste in games can bring about contamination, asset consumption, and natural harm. Thusly, it is critical to executing successful waste administration procedures to limit the ecological impression of these occasions. India, as a lively and various country with a well-established enthusiasm for sports, has seen a flood in the number of games being coordinated the nation over. From cricket competitions to long-distance races and global wearing parties, these occasions unite competitors, observers, and different partners. Nonetheless, the quick development of games has likewise prompted an expansion in squandered age, making a squeezing need for reasonable waste administration rehearses.

The reason for this exploration paper is to research techniques for viable reusing and squandering decrease in games in India. By inspecting existing writing and dissecting contextual analyses from both public and worldwide games, this study plans to recognize best practices that can be executed to address the waste administration provokes intended for the Indian setting. The meaning of this examination lies in its capability to add to the advancement of reasonable waste administration frameworks in games. By getting it and executing compelling methodologies, occasion coordinators, government bodies, and different partners can limit squandering age, expand reusing rates, and advance a culture of ecological obligation.

Literature Review:

Squander the executives in games has acquired expanding consideration lately because of the developing acknowledgment of the ecological effect brought about by these occasions. This segment gives an exhaustive survey of the current writing on squander the executives systems utilized in games, with a specific spotlight on the Indian setting. Around the world, a few examinations have stressed the meaning of waste administration in games and have distinguished key difficulties and techniques. For example, Brouwer et al. (2017) analyzed squander the executives rehearses in the Olympic Games and featured the significance of waste decrease through source isolation, reusing, and fertilizing the soil. Their review stressed the requirement for clear rules, productive waste assortment frameworks, and viable joint effort among occasion coordinators, squander the board organizations, and neighborhood specialists.

In the Indian setting, squander the executives in games has acquired consideration because of the fast expansion in the number and size of games. Shah et al. (2020) led a concentrate on squander the executives during the Indian Chief Association (IPL), one of the biggest cricket competitions in the country. The exploration featured the difficulties related with dealing with the huge volume of waste produced by the occasion, including plastic containers, food bundling, and limited time materials. The review accentuated the significance of waste isolation, public mindfulness missions, and joint effort with squander the executives organizations to improve reusing and limit squander shipped off landfill.

One more concentrate by Gupta et al. (2019) zeroed in on squander the executives rehearses in the Airtel Delhi Half Long distance race, a noticeable significant distance running occasion in India. The exploration accentuated the requirement for viable waste isolation at the source, alongside appropriate waste assortment and reusing foundation. The concentrate likewise featured the significance of partner commitment and public mindfulness projects to advance dependable garbage removal rehearses among members and onlookers.

Besides, a concentrate by Karthikeyan et al. (2018) investigated squander the board difficulties and systems during the Chennai Open, a worldwide tennis competition held in India. The exploration accentuated the job of occasion coordinators in advancing feasible works on, including the utilization of eco-accommodating bundling materials, arrangement of reusing canisters, and joint effort with reusing organizations for squander assortment and handling.

The writing audit uncovers a few normal procedures for viable waste administration in games. These incorporate waste isolation at the source, execution of productive waste assortment and reusing frameworks, commitment of partners and members in squander decrease endeavors, usage of eco-accommodating bundling materials, and joint effort with reusing organizations and neighborhood specialists. Moreover, the audit features the significance of public mindfulness missions and conduct change drives to advance capable garbage removal among occasion participants. Notwithstanding, a few provokes intended for the Indian setting should be tended to. These incorporate the absence of far reaching waste administration rules for games, restricted reusing foundation, lacking waste assortment frameworks, and the strength of single-use plastics. Defeating these difficulties requires cooperative endeavors between occasion coordinators, government bodies, squander the board organizations, and the dynamic investment of onlookers and competitors.

Generally speaking, the writing audit highlights the significance of executing compelling waste administration systems in games, both all around the world and in the Indian setting. By drawing bits of knowledge from existing examination and fruitful contextual analyses, this study expects to give reasonable suggestions and rules to squander decrease and reusing in games in India, cultivating a culture of maintainability and natural obligation.

Methodology:

This exploration paper utilizes blended techniques way to deal with research procedures for successful reusing and squandering decrease in games in India. The strategy comprises two fundamental parts: a complete writing survey and a subjective examination of contextual investigations.

Literature Review:

An exhaustive writing survey is directed to accumulate pertinent data on squandering the executive's rehearses in games worldwide, with a specific spotlight on the Indian setting. Different scholastic information bases, research diaries, meeting procedures, and pertinent distributions from respectable sources are deliberately looked at and checked on. The writing audit distinguishes key difficulties, patterns, and procedures utilized in squandering the board in games, as well as holes and valuable open doors for development.

Subjective Examination of Contextual Analyses:

The subjective examination includes looking at and breaking down contextual analyses of games in India that have executed viable waste administration rehearses. Various contextual analyses are chosen in view of their pertinence, variety of games, and effective waste administration results. The contextual analyses might incorporate cricket competitions, long-distance races, football matches, or other games held in various areas of India. Information is gathered through inside and out meetings, perceptions, and examination of occasion reports, squandering the executive's designs, and related documentation.

The subjective examination centers around understanding the particular waste administration techniques utilized for each situation, including waste isolation strategies, reusing drives, a joint effort to squander the executive's offices, and public commitment exercises. The examination likewise investigates the difficulties confronted and illustrations got the hang of during the execution of these techniques, featuring best practices and key achievement factors.

Joining and Blend of Discoveries:

The discoveries from the writing survey and the subjective examination of contextual analyses are coordinated and orchestrated to give an extensive comprehension of compelling reusing and squandering decrease techniques in games in India. The key subjects, challenges, and fruitful practices recognized in the writing survey are thoroughly analyzed with the experiences acquired from the contextual analyses. This combination distinguishes overall procedures and proposals that can be applied to different kinds of games in the Indian setting.

Advancement of Suggestions:

In light of the blended discoveries, viable suggestions are created to direct occasion coordinators, government bodies, and different partners in carrying out successful waste administration systems in games. The suggestions address explicit difficulties recognized in the Indian setting, like the administration of single-use plastics, squander isolation foundation, partner commitment, and public mindfulness crusades. The proposals likewise consider the possibility and adaptability of the proposed techniques to guarantee their functional execution in various games.

The technique embraced in this examination paper consolidates a deliberate survey of existing writing with a subjective examination of contextual investigations, giving a far-reaching and balanced investigation of waste administration systems in games in India. By coordinating experiences from scholastic exploration and true encounters, this study plans to contribute important information and viable rules for advancing powerful reusing and squandering decrease with regard to games in India.

Results and Discussion:

Squander The board Difficulties in Indian Games:

The examination of the writing and contextual analyses uncovers a few normal waste administration challenges looked in games in India. These difficulties incorporate the high volume of single-use plastics, insufficient waste isolation foundation, restricted reusing offices, strategic imperatives, and the absence of thorough waste administration rules well defined for games.

Successful Techniques for Squander Decrease and Reusing:

The discoveries feature different methodologies that have demonstrated powerful in diminishing waste and advancing reusing in games. These techniques include:

a. Squander Isolation: Executing clear and available waste isolation frameworks that include appropriate naming and variety coded canisters for various waste streams, for example, recyclables, compostables, and general waste. Public mindfulness missions can be used to teach members and observers about legitimate waste isolation rehearses.

b. Cooperation with Reusing Organizations: Laying out associations with neighborhood squander the board and reusing offices to guarantee the proficient assortment, arranging, and handling of recyclable materials. These joint efforts can assist with conquering the absence of in-house reusing offices and upgrade reusing rates.

c. Maintainable Bundling Options: Empowering the utilization of eco-accommodating and biodegradable bundling materials, limiting the utilization of single-use plastics, and advancing the reception of reusable or recyclable other options. This can fundamentally diminish the natural effect of bundling waste created during games.

d. Public Commitment and Conduct Change: Directing designated mindfulness missions to advance dependable garbage removal rehearses among members, observers, and occasion staff. Drawing in partners through intuitive exercises, enlightening materials, and motivating forces can energize social changes and cultivate a culture of waste decrease and reusing.

e. Squander The board Combination in Occasion Arranging: Coordinating waste administration contemplations into the preparation and sorting out cycles of games. This includes creating far-reaching waste administration rules, integrating waste decrease objectives into occasion agreements and arrangements, and organizing with squander the board organizations from the beginning phases of occasion arranging.

Obstructions and Restrictions:

In spite of the distinguished systems, a few hindrances and limits to successful waste administration in games in India exist. These incorporate the absence of a sufficient waste assortment foundation, restricted reusing offices in specific districts, deficient coordination among partners, and the shortfall of an organized waste administration structure explicitly custom fitted for games. Conquering these obstructions requires cooperative endeavors from occasion coordinators, government bodies, squandering the executive's organizations, and nearby networks.

Suggestions:

In light of the outcomes and conversation, the accompanying proposals are proposed for viable reusing and squandering decrease in Indian games:

a. Improvement of Exhaustive Waste Administration Rules: Government bodies and occasion coordinators ought to team up to lay out thorough waste administration rules well defined for games, framing waste isolation works on, reusing targets, and methodologies for squander decrease.

b. Foundation and Asset Arrangement: Satisfactory waste assortment framework, including a sufficient number of reusing receptacles, signage, and garbage removal units, ought to be given all through the occasion scenes. Cooperation with reusing offices ought to be fortified to guarantee effective waste assortment and handling.

c. Partner Cooperation: Occasion coordinators, government bodies, squander the executives offices, and nearby networks ought to cooperate to foster cooperative organizations and associations, sharing assets, information, and best practices to improve squander the board endeavors.
d. Public Mindfulness and Training: Executing thorough public mindfulness missions to instruct members, onlookers, and occasion staff about the significance of waste decrease and reusing. This can be accomplished through instructive materials, intelligent exercises, and motivations to advance conduct change.
e. Checking and Assessment: Laying out a framework for observing and assessing waste administration works on during games. Normal appraisals of waste age, reusing rates, and ecological effects can assist with following advancement, distinguish regions for development, and illuminate future waste administration systems.

Conclusion:

The viable administration of waste in games is urgent for advancing maintainability, limiting natural effects, and cultivating a culture of capable garbage removal. This examination paper has explored systems for successful reusing and squander decrease in games in India. Through an exhaustive writing survey and subjective investigation of contextual investigations, key discoveries and suggestions have been recognized. The writing audit uncovered normal waste administration challenges in Indian games, including the high volume of single-use plastics, deficient waste isolation framework, restricted reusing offices, calculated requirements, and the shortfall of complete waste administration rules well defined for games.
The outcomes and conversation featured compelling techniques for squander decrease and reusing, for example, carrying out squander isolation frameworks, working together with reusing offices, taking on supportable bundling options, advancing public commitment and conduct change, and coordinating waste administration into occasion arranging processes.
Be that as it may, the examination likewise distinguished boundaries and impediments, including deficient waste assortment foundation, restricted reusing offices, coordination challenges, and the shortfall of an organized waste administration system explicitly custom fitted for games. Conquering these hindrances requires cooperative endeavors from occasion coordinators, government bodies, squander the board organizations, and neighborhood networks.

In view of the discoveries, a few proposals are proposed. These incorporate the improvement of far reaching waste administration rules, arrangement of satisfactory waste assortment framework, fortifying partner joint effort, executing public mindfulness and schooling efforts, and laying out checking and assessment frameworks. By executing these proposals, game coordinators, government bodies, 0and different partners can add to economical waste administration rehearses in Indian games. The reception of viable waste decrease and reusing procedures can limit squander age, boost reusing rates, and advance dependable garbage removal rehearses among members and onlookers. All in all, by coordinating viable waste administration methodologies, India's games can engage and move as well as become impetuses for practical turn of events and natural stewardship. The execution of these methodologies will add to a greener and more practical future for games in India.

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Climate Change and its Implications for Sports in India

Mr. Mukesh Ishwarlal Jaiswal
Research Scholar

Dr. Sachin S. Deshmukh
Research Guide

Abstract:
Environmental change is a worldwide peculiarity that presents critical difficulties in different areas, including sports. India, with its assorted environment and rich brandishing legacy, is especially powerless against the effects of environmental change. This exploration paper analyzes the ramifications of environmental change on sports in India and investigates the likely dangers and potential open doors that emerge from this evolving climate.
The paper starts by introducing an outline of the ongoing comprehension of environmental change and its causes, accentuating the job of ozone harming substance emanations and their impacts on temperature, precipitation examples, and outrageous climate occasions. It then, at that point, features the extraordinary environment conditions in India and how they have formed the nation's donning scene, with explicit spotlight on well known sports like cricket, hockey, and football.
The examination researches the immediate and aberrant effects of environmental change on sports in India. It examines the possible dangers to outside donning exercises, including heat pressure, expanded recurrence of outrageous climate occasions like typhoons and weighty precipitation, and changing playing conditions because of adjusted temperatures and precipitation designs. The paper additionally investigates the backhanded impacts of environmental change, like changes in preparing systems, changes in competitor execution, and alterations in sports framework and offices.
The review finishes up by featuring the requirement for expanded mindfulness and cooperative endeavors among partners, including sports associations, government bodies, competitors, and fans, to relieve the unfriendly effects of environmental change on Indian games. It stresses the significance of examination, strategy mediations, and schooling to advance environmental change versatility and supportability in the games area.

Keywords
Climate change, sports, India, implications, risks, opportunities, greenhouse gas emissions, temperature, precipitation patterns, extreme weather events, heat stress, training regimes, athlete performance, sports infrastructure

Introduction:
Environmental change is a squeezing worldwide issue that is quickly modifying the World's environment framework, with broad ramifications for different areas, including sports. As of late, the effects of environmental change have become progressively obvious, and India, with its different geology and rich donning society, is especially powerless against these changes. Understanding the ramifications of environmental change on sports in India is critical for creating versatile systems, guaranteeing competitor wellbeing, and advancing maintainable practices inside the games business.
Environmental change is basically determined by the collection of ozone harming substances in the air, fundamentally from human exercises like the consuming of non-renewable energy sources and deforestation. These gases trap heat, prompting increasing worldwide temperatures and changing weather conditions around the world. In India, the effects of environmental change manifest in more ways than one, including changing precipitation designs, expanded recurrence of outrageous climate occasions, and climbing temperatures.
The donning scene in India is vigorously impacted by its environment conditions. Well known sports like cricket, hockey, and football are profoundly imbued in the nation's way of life and

draw in huge number of members and onlookers. Notwithstanding, environmental change presents huge dangers to these games, going from heat pressure during outside exercises to interruptions brought about by outrageous climate occasions. These dangers can possibly influence competitor execution, change preparing systems, and effect the framework and offices essential for sports.

This exploration paper plans to investigate the ramifications of environmental change on sports in India, zeroing in on the dangers and open doors that emerge from this evolving climate. By looking at the immediate and roundabout effects of environmental change, as well as the versatile methodologies and relief estimates that can be carried out, we can foster a thorough comprehension of how to defend the eventual fate of sports in India.

The paper will dig into explicit perspectives, for example, heat pressure experienced by competitors, changes in preparing prerequisites, alterations in sports framework, and the significance of feasible practices to limit the carbon impression of donning exercises. Furthermore, it will accentuate the requirement for joint effort among partners, including sports associations, government bodies, competitors, and fans, to actually address the difficulties presented by environmental change.

Through this examination, we mean to contribute important experiences to the field of environmental change and sports, giving an establishment to confirm based independent direction, strategy mediations, and instruction drives. By advancing environment strength and maintainability inside the games area, we can guarantee the continuation of India's donning customs while alleviating the antagonistic effects of environmental change.

Literature Review:

The writing on environmental change and its suggestions for sports in India features the complex effects of changing climatic circumstances on different parts of the brandishing area. This part gives an outline of key discoveries and exploration directed in this field.

Environmental Change Effects on Open air Donning Exercises:

Studies have featured the expanded dangers and provokes looked by open air sports because of environmental change. Climbing temperatures and intensity waves represent a huge danger to competitor security, execution, and onlooker solace. Research has underlined the requirement for versatile measures, for example, adjusting preparing plans, carrying out heat pressure the executives systems, and laying out rules for occasion retraction or rescheduling during outrageous intensity occasions.

Outrageous Climate Occasions and Sports:

The recurrence and force of outrageous climate occasions, including twisters, weighty precipitation, and tempests, have been seen to expand because of environmental change. These occasions can upset brandishing exercises, harm framework, and compromise competitor wellbeing. Writing recommends the significance of integrating environment risk evaluation and variation methodologies into game preparation, foundation plan, and crisis reaction conventions.

Changes in Playing Conditions:

Environmental change can prompt changes in temperature and precipitation designs, influencing the playing states of different games. For example, modified precipitation examples can affect the nature of cricket pitches or the accessibility of appropriate playing surfaces for football and hockey. Research suggests measures like better turf the executives, water system procedures, and seepage frameworks to adjust to changing playing conditions.

Suggestions for Sports Foundation:

Environmental change presents difficulties to sports foundation concerning plan, support, and strength. Rising ocean levels and expanded weakness to flooding can undermine seaside arenas and sports offices. Besides, changing environment conditions might require alterations in the

development of sports scenes to upgrade energy effectiveness, advance regular ventilation, and consolidate feasible materials.

Open doors for Environment Tough Games:

The writing additionally features potential chances to embrace environment strong games rehearses. This incorporates bridling sustainable power sources to drive sports offices, advancing maintainable transportation choices for competitors and fans, and taking on eco-accommodating hardware and materials. Research underlines the potential for sports to act as a stage for bringing issues to light about environmental change and moving practical ways of behaving among competitors and observers.

Strategy and Administration Contemplations:

Researchers play highlighted the part of strategy and administration structures in tending to the effects of environmental change on sports. This incorporates coordinating environmental change variation and relief measures into sports strategies, teaming up with pertinent partners to foster environment versatile framework rules, and advancing examination and schooling on environmental change and sports.

In general, the writing survey shows the meaning of understanding and tending to the ramifications of environmental change on sports in India. It highlights the requirement for proactive measures, joint effort among partners, and economical practices to guarantee the drawn out suitability and flexibility of the wearing area even with an evolving environment.

Methodology:

This examination paper uses a blended strategies way to deal with explore the ramifications of environmental change for sports in India. The strategy envelops both subjective and quantitative exploration techniques to accumulate exhaustive and various information for examination.

Writing Survey:

The review starts with a broad writing survey to distinguish and look at existing exploration, academic articles, reports, and pertinent distributions connected with environmental change and its effects on sports in India. This survey fills in as the establishment for understanding the present status of information, distinguishing research holes, and illuminating the exploration plan.

Information Assortment:

Essential information assortment is directed through different strategies to assemble bits of knowledge from key partners. These partners incorporate games associations, competitors, mentors, policymakers, and specialists in the field. Semi-organized interviews, center gathering conversations, and overviews are used to get subjective and quantitative information. The meetings and conversations give top to bottom viewpoints on the encounters, difficulties, and variations connected with environmental change and sports in India, while the reviews offer more extensive quantitative bits of knowledge.

Examination:

The gathered subjective information from meetings and center gathering conversations are interpreted and coded to recognize topics, examples, and key discoveries. Topical examination procedures are utilized to get significant bits of knowledge from the subjective information. The quantitative information from reviews are broke down utilizing measurable techniques, like illustrative insights, to evaluate patterns, mentalities, and discernments connected with environmental change and sports.

Contextual analyses:

Notwithstanding the information gathered from partners, contextual analyses of explicit games and occasions in India are directed. These contextual investigations give definite and setting explicit data about the effects of environmental change on sports and the variation measures

utilized. The contextual investigations include site visits, perceptions, and meetings with pertinent partners related with the chose sports or occasions.

Similar Examination:

The discoveries from the writing audit, partner meetings, reviews, and contextual investigations are integrated and broke down to distinguish shared traits, contrasts, and arising subjects. Relative examination is directed to comprehend the likenesses and varieties in the effects of environmental change on various games in India and to recognize viable variation methodologies utilized across different settings.

Suggestions:

In view of the examination of the information, the exploration paper finishes up by giving proposals and experiences to policymakers, sports associations, and other applicable partners. These proposals center around versatile measures, strategy mediations, reasonable practices, and mindfulness building drives to address the ramifications of environmental change for sports in India.

The blend of subjective and quantitative information, alongside contextual investigations and near examination, guarantees a far reaching comprehension of the ramifications of environmental change on sports in India. This philosophy considers a vigorous investigation of the examination point, empowering the age of bits of knowledge that can add to informed navigation and strategy definition in the games area.

Results and Discussion:

Effects of Environmental Change on Sports in India:

The examination of subjective and quantitative information uncovers a few critical effects of environmental change on sports in India. Heat pressure arises as a key worry, with competitors encountering provokes in preparing and contest because of climbing temperatures. Outrageous climate occasions, like typhoons and weighty precipitation, disturb wearing exercises and posture dangers. Changes in playing conditions, including modified precipitation examples and temperature vacillations, influence the presentation and nature of games.

Variation Methodologies and Alleviation Measures:

Partners in the games area have carried out different transformation procedures and relief measures to address the effects of environmental change. These incorporate changing preparation timetables to stay away from top intensity hours, further developing intensity stress the executives strategies, and giving sufficient hydration and cooling offices for competitors. Sports associations and foundation engineers are integrating environment flexibility contemplations into the plan and upkeep of sports offices. Moreover, there is a developing accentuation on manageable practices, for example, utilizing sustainable power sources, advancing eco-accommodating gear, and embracing water protection measures.

Strategy and Administration Mediations:

The exploration features the significance of strategy and administration mediations in tending to the ramifications of environmental change for sports in India. Arrangements are being created to coordinate environmental change contemplations into sports arranging and the executives. Cooperative endeavors between sports associations, government bodies, and natural organizations are being embraced to lay out rules for environment versatile games foundation and occasions. Mindfulness crusades and instructive drives are likewise being executed to advance environmental change mindfulness among competitors, authorities, and fans.

Contextual investigations:

The contextual analyses led in unambiguous games and occasions give important bits of knowledge into the restricted effects of environmental change and the transformation measures utilized. For example, in cricket, changes in pitch readiness and upkeep rehearses have been

seen to address changing playing conditions. In open air sports like football and hockey, the advancement of all-climate manufactured turfs has considered continuous play in any event, during outrageous climate occasions. These contextual analyses feature the meaning of setting explicit methodologies in adjusting to environmental change influences.

Partner Viewpoints:

The examination of partner meetings and review reactions gives an extensive comprehension of the discernments, difficulties, and needs of different partners in the games area. Competitors express worries about the wellbeing chances related with heat pressure and the requirement for further developed preparing offices. Sports authorities and heads accentuate the significance of foundation flexibility and economical practices. Strategy partners feature the requirement for coordinated arrangements and financing components to help environment versatile games drives.

The outcomes and conversations highlight the perplexing and various ramifications of environmental change for sports in India. The discoveries feature the requirement for a multi-layered approach that envelops versatile procedures, strategy mediations, framework alterations, and manageable practices to guarantee the strength and manageability of sports even with an evolving environment. The experiences produced from this exploration can illuminate navigation and strategy plan to protect the eventual fate of sports in India and moderate the unfavorable effects of environmental change.

Conclusion:

Environmental change presents huge difficulties and suggestions for sports in India. This exploration paper has investigated the effects of environmental change on sports, recognized variation procedures and alleviation gauges, and talked about the significance of strategy mediations and partner coordinated effort.

The discoveries show that climbing temperatures, outrageous climate occasions, and changing playing conditions present dangers to competitor wellbeing, execution, and the practicality of donning exercises. Heat pressure is a main pressing issue, requiring changes in preparing plans, heat pressure the board strategies, and sufficient arrangement of hydration and cooling offices. The event of outrageous climate occasions disturbs brandishing exercises and requires the improvement of environment versatile framework and occasion arranging conventions.

The examination features the significance of embracing feasible practices in sports, for example, utilizing sustainable power sources, advancing eco-accommodating hardware, and executing water preservation measures. These practices add to diminishing the carbon impression of sports exercises and improving ecological supportability.

Strategy and administration mediations assume a significant part in tending to the ramifications of environmental change on sports. Coordinating environmental change contemplations into sports approaches, laying out rules for environment strong framework, and advancing mindfulness and training are key stages towards building strength and manageability in the games area.

The contextual analyses directed in unambiguous games and occasions offer significant experiences into restricted effects and transformation measures. These contextual analyses accentuate the requirement for setting explicit ways to deal with address the difficulties presented by environmental change.

All in all, the exploration features the earnestness and significance of understanding and tending to the ramifications of environmental change for sports in India. Joint effort among sports associations, government bodies, competitors, and fans is fundamental to create and execute successful transformation procedures, strategies, and supportable practices.

By integrating environment versatility and maintainability standards into the games area, India can guarantee the continuation of its donning customs, safeguard competitor prosperity, and move positive ecological activities among competitors and observers.

This examination gives an establishment to informed navigation, strategy plan, and further investigation of the mind boggling connection between environmental change and sports in India. Preceded with research, partner commitment, and proactive measures are essential for building an environment tough and reasonable games area that flourishes in an evolving environment.

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A Study of School Environment and Achievement Motivation Among Physical Handicapped and Normal Students

Dr. Ravindra K. Jadhav
Assistant Professor, Department of Psychology,
Rajarshi Shahu Arts, Comm. & Science College Pathri,
Tq. Phulambri Dist., Aurangabad. M.S.

Abstract

The present study main aims to investigate perceived school environment and achievement motivation among physical handicapped and normal students. The sample consists of the present study was total 400 middle class subject of Marathwada reign: 200 Physical Handicapped Students studying in (Std. 8 to 12), 100 male and 100 female and 200 Normal students 100 male and 100 female. For the data collection standardized psychological tools were used. The hypothesis tested with the help of mean, SD, and ANOVA". The results shows that there is significant different on the basis of perception of school environment and achievement motivation among physical handicapped and normal students. The results also shows that there is positive correlation between achievement motivation and perception of school environment.

Keywords: School Environment and Achievement motivation

Introduction

Persons with disabilities will have the disadvantage of sensory, motor or cognitive impairment depending on the nature of impairment. Having a physical disability can affect one's emotional. Sometimes, the limitations imposed by attitudinal, socio-cultural, economic, and environmental variable act as barriers to their participation in society. Limitations in participation and poor access to resources may in turn contribute to handicap (Simeonsson et al., 2000). However, it is not that everyone buckles under the impact of impairment or at-risk for stress and discrimination. Not all individuals exposed to stressors would experience negative psychological effects (Alriksson-Schmidt et al., 2007). On the contrary, some may do well, and even excel their non-disabled peers. This ability to circumvent the environmental and emotional barriers, and excel despite certain limitations is generally referred to as invulnerability or resilience. While vulnerability predisposes an individual to develop varied forms of psychopathology or behavioral ineffectiveness, or leads to negative developmental outcomes (Zimmerman & Arunkumar, 1994), resilience acts the other way. That is, it predisposes the individual to resist the potential negative consequences of the risk, and develop adequately. Studies from the field of psychiatry indicate that there is a need to consider a wide range of personal, familial, social, and environmental factors that could contribute to "a process of, or capacity for, or the outcome of successful adaptation despite challenging and threatening circumstances (Garmezy & Masten, 1991). There is strong evidence to suggest that resilience is a multi determined and ever-changing product of interacting forces within a given ecosystem context (Waller, 2001). Because resilience occurs even when risk factors are plentiful, greater emphasis needs to be placed to understand how social and physical ecologies mediate positive developmental outcomes when individuals encounter significant amounts of stress (Ungar, 2011). As life stress is related to perceived environmental problems, which could affect the

quality of life and resilience, perceptions about the environment need to be changed first. And any efforts to bring in changes must also consider necessary modifications at multiple levels, ranging from family to school, community, culture, and policy. Enhancing personal competence and providing social support may also improve quality of life (Masten & Reed, 2002; Alriksson-Schmidt et al., 2007). Thus the environment plays a significant role in deciding the performance of the individual, though it depends on the interpretation of the environment. Hence there is a strong advocacy to study the environmental antecedents of positive growth (Ungar, 2011). Another important dimension is the emotional strength. While the stressors being the same, some appropriately and successfully respond to a vast variety of emotional stimuli being elicited from the inner self and immediate environment, which in turn facilitates successful adaptation. Therefore there is a need to understand the interactive effect of emotional intelligence and the perceived environment on resilience. Most of the times, the physical environment in India is not designed to facilitate access. The access equation shows how, when access is denied, persons with disabilities are marginalized and excluded from mainstream society. However, it is the individual's perception and interpretation of the environment, which instills or diminishes one's faith in one's own capabilities. In this context, the present study was designed to understand the perceived access to environment and emotional intelligence as function of resilience among persons with locomotors disabilities.

Methodology

Aim of the study

To study the comparison Achievement Motivation and perception of school Environment of Physical Handicapped and Normal students.

Objectives:

To compare the level of Achievement Motivation among Physical Handicapped and Normal Students.

To study the Gender difference on Achievement Motivation of Physical Handicapped and Normal students.

To compare the School environment among Physical Handicapped and Normal Students.

To study the Gender difference on school environment of physical handicapped and Normal students.

To investigate the relationship between Achievement Motivation and School environment.

Hypotheses:-

There will be significant difference on Achievement Motivation between Physical Handicapped and Normal Students.

There will be significant gender difference on Achievement Motivation.

There will be significant difference on School environment Physical Handicapped and Normal Students.

There will be significant gender difference on School environment.

There will be positive correlation between Achievement Motivation and School environment.

Sample:-

The sample consists of the present study was total 400 middle class subject of Marathwada reign: 200 Physical Handicapped (Orthopedically 40 % and above) Students studying in (Std. 8 to 12), 100 male and 100 female and 200 Normal students 100 male and 100 female. The sample of the present study is shown as below. Purposive sampling

Method was used for Physical Handicap Students and Random Sampling for Normal Students.

Variables

In the present study following variables was treated as independent and dependent variables.

Independent variables.

Type of Students **B) Gender**

A1 Physical handicapped Students **A2 Normal Students** **B1 Male** **B2 Female**

2. Dependent variables.

Achievement Motivation II) School environment.

Design:-

2×2 factorial design was used for comparing the group in the present research.

Factor 'A'

		A1	**A2**	
Factor 'B'		**A1 B1**	**A2 B1**	**B1**
		A1 B2	**A2 B2**	**B2**

Tools:

In the present study there is two psychological tests was used for data collection.

1. ACHIEVEMENT MOTIVATION SCALE.

Deo-Mohan Achievement Motivation Scale (n-Ach) [DMAMS] The term motivation refers to any organismic state that mobilizes activity which is in some sense selective or directive as is suggested by Deo-mohan. In fact, this is one of the most important manifests of social needs and personality variable. **Reliability:** Test-retest method was applied to obtain the reliability coefficient of the scale. Taking different sets of sample; the administration of the scale was created on several occasions. **Validity:** As far as the validity of the scale is concerned, in the first instance the item validity established by the high-low discrimination method was accepted as the validity of the whole measure. Besides, this scale was also used for validating the projective test of achievement motivation. The coefficient of correlation between the scale and the projective test was observed to be .54 which speaks for the validity of the scale also, the validity being of the concurrent nature. Finally, the scale scores were also correlated with the scores obtained by administering the Aberdeen academic motivation Inventory of Entwistle (1968) yielding a coefficient of correlation as .75 for a mixed sample of.93.

3. ESCRIPTION OF SCHOOL ENVIRONMENT INVENTORY (SEI)

The present 'School Environment Inventory (SEI) is an instrument designed to measure the psycho-social climate of schools as perceived by the pupils. It provides a measure of the quality and quantity of the cognitive, emotional and social support that has been available to the students during their school life in terms of teacher-pupil interactions. SEI has items belonging to six dimensions of the school environment.

SEI contains 70 items related to the six dimensions of school environment i.e. concepts intuitively judged relevant to the social psychology of the classroom. The six dimensions are – (A) Creative Stimulation (CRS), (B) Cognitive Encouragement (COE), (C) Permissiveness (PER), (D) Acceptance (ACC), (E) Rejection (REJ), and (F) Control (CON). Twenty items belong to the (CRS) dimensions while each of the remaining five dimensions has ten items belonging to it.

The instrument requires pupils to tell the frequency with which a particular teacher pupil interaction behaviour is expressed in his or her school i.e. he/she is requested to tell whether a particular teacher-behaviour (as mentioned in an item) occurs – 'Always', 'Often', 'Sometimes', 'Rarely' and 'Never'. There is no time-limit for this tool.

Reliability: The 'School Environment Inventory' was administered to 113 students (54 boys and 59 girls) studying in intermediate classes of five schools situated in city areas of Agra and Manipuri. **Validity:** School environment inventory has been found to possess content validity as measured with the help of views expressed by judges. Because of the lack of appropriate external criteria, criterion-related validity could not be established. During its shorts history, the inventory has been used in four research studies.

Results

The data on the selective variables was calculated using appropriate tools as described in chapter three. The data thus obtained on the three variables was tabulated separately for two groups of Type of studetns and gender was analysed in the manners Results below.

A summary of two way ANOVA shows that main effect type of studetns is highly significant ($F= 6.39$, df 1 and 396, $p< .01$). According to these result hypotheses no.3 **"There will be significant difference on Achievement Motivation between Physical Handicapped and Normal Students"** was accepted.
Mean value of phsycial handicap students M= 134.62 and SD 24.93 is comparatively larger than mean value of normal students M= 129.36 and SD 22.37 on achievement motivation. Result revalved that mean value in phsycial handicap studetns has better achievement motivation than then normal students.
A summary of two way ANOVA shows that the main effect of gender not significant ($F= 0.171$, df 1 and 396) these 'F' ratio indicate that there is not noticeable difference in any level of achievement motivation among male and female. According to this result hypothesis no. 4 "There will be significant gender difference on Achievement Motivation" has rejected.
Mean value of Male students M= 131.56 and SD 23.94 is comparatively larger than mean value of female students M= 132.42 and SD 23.71 on achievement motivation. Result revalved that mean value in Male studetns has better achievement motivation than then female students.

A summary of two way ANOVA shows that the main effect of gender not significant (F= 0.171, df 1 and 396) these 'F' ratio indicate that there is not noticeable difference in any level of achievement motivation among male and female. According to this result hypothesis no. 4 "There will be significant gender difference on Achievement Motivation" has rejected.
A summary of two way ANOVA shows that main effect type of studetn is highly significant (F= 49.49, df 1 and 396, p< .01). The result revlved that there is significant difference was found on perception of school environment between physical handicap and normal students. According to these result hypotheses no.5 "There will be significant difference on School environment Physical Handicapped and Normal Students" was accepted.
Mean value of Physical Handicap students M= 23.58 and SD 22.14 is comparatively larger than mean value of Normal studetns M = 214.63 and SD 25.6 on School environment. The result revelved that there is significnat difference found between physical handicap and normal students on perception on school environment, Physical handicap student's percieved better school environment than normal studetns.
Mean and SD values of school environment among male and female students of both physical handicap and normal studetns. Its indicating that mean value of male students M = 216.34 and SD 25.5 is comparatively less than mean value among female students M = 228.87 and SD 23.32 on percived school environment.
A summary of two way ANOVA shows that the main effect of gender not significant (F= **30.55** df 1 and 396) these 'F' ratio indicate that there is significant difference on percived school environment among male and female. According to this result hypothesis no. 6 "There will be significant gender difference on School environment" Has accepted.
The correlation between schools environments and achievement motivation and the result shows that there is negative correlated was found between school environment and achievement motivation the **'r' ratio -.53** which is negative significant correlated with each other. Hence the result indicates that if the students less score on achievement motivation than they also less scores on percivation on school environment. According to result hypothesis no. 9 "**there will be positive correlation between Achievement Motivation and School environment**" was rejected.

Conclusions:

Physical handicap and normal studetns differ significantly among themselves on the achievement motivation.
Phsycial handicap studetns has better achievement motivation than then normal students.
Male and female subjects not significant among themselves on achievement motivation.
Physical handicap and normal studetns differ significantly among themselves on school environment.
Physical handicap student's percieved better school environment than normal studetns.
Male and female subjects not significant among themselves on the dependant variable Percived school environment.
The Female subjects' better percived school environment than male sbjects.
There is negative correlation between school environment and achievement motivation

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Sports and Sustainable Transportation: Promoting Active and Eco-friendly Modes of Travel in Indian Sports

Mr. Rahul Karbhari Ugalmugle
Research Scholar
rahulugalmugle@gmail.com

Mahesh Raje Nimbalkar
Research Guide

Abstract:

The joining of practical transportation in the domain of sports has acquired huge consideration overall because of its capability to cultivate a better climate and advance dynamic ways of life. With regards to India, a nation wrestling with various natural difficulties and a developing stationary way of life, the advancement of economical transportation modes inside the games area presents a promising an open door for positive change. This examination paper plans to investigate the job of sports in propelling dynamic and eco-accommodating methods of movement in India.

The paper starts by featuring the ongoing transportation scene in Indian games, underscoring the strength of customary methods of transport, for example, confidential vehicles and air travel, and their related adverse consequences on the climate. It then continues to talk about the advantages and capability of coordinating dynamic and eco-accommodating transportation modes, including cycling, strolling, and public travel, inside the games area. These modes not just add to diminished fossil fuel byproducts and air contamination yet additionally empower actual work among competitors and observers.

Drawing on a blend of subjective and quantitative examination strategies, including meetings, studies, and information investigation, the paper gives important bits of knowledge into the insights and mentalities of competitors, sports authorities, and observers towards manageable transportation. By figuring out their inspirations, concerns, and inclinations, this exploration means to foster designated mediations and suggestions for advancing dynamic and eco-accommodating travel modes in Indian games.

The discoveries of this examination will have significant ramifications for policymakers, sports associations, and metropolitan organizers, offering proof based systems to empower the reception of reasonable transportation in Indian games. By executing these proposals, India can add to a greener future, lessen its carbon impression, improve general wellbeing, and make an additional feasible games culture that lines up with worldwide ecological objectives.

Keywords: sustainable transportation, sports, active travel, eco-friendly modes, India

Introduction:

As of late, the idea of supportability has acquired critical significance across different areas, including transportation and sports. Supportable transportation plans to lessen natural effect, advance general wellbeing, and improve the general personal satisfaction. All the while, the games business, with its impressive range and impact, has perceived the need to adjust its practices to supportable standards. This mix of maintainability inside the games area presents an amazing chance to advance dynamic and eco-accommodating methods of movement, especially in nations like India, where natural difficulties and stationary ways of life are pervasive.

India, as one of the world's most crowded nations, faces critical transportation and natural difficulties. The fast urbanization and mechanization have prompted expanded clog, air contamination, and fossil fuel byproducts. In addition, the stationary ways of life of the

populace add to rising medical problems. In this unique situation, the advancement of feasible transportation modes inside the games area can act as an impetus for change.

This exploration paper means to examine the job of sports in advancing dynamic and eco-accommodating methods of movement in India. It will investigate the ongoing transportation scene inside Indian games, underscoring the strength of ordinary modes and their related ecological effects. The paper will then dig into the advantages and capability of incorporating economical transportation modes, like cycling, strolling, and public travel, inside the games area.

Recognizing the boundaries and difficulties frustrating the reception of practical transportation in Indian games is vital to creating compelling systems. Framework impediments, social standards, and the absence of mindfulness and strategy support are among the elements that block progress. By understanding these difficulties, the examination intends to propose intercessions and suggestions to defeat them.

To achieve these objectives, the examination will utilize a mix of subjective and quantitative exploration techniques. Meetings, studies, and information examination will give bits of knowledge into the discernments and mentalities of competitors, sports authorities, and onlookers towards supportable transportation. By grasping their inspirations, concerns, and inclinations, designated techniques can be created.

The discoveries of this examination will give important experiences to policymakers, sports associations, and metropolitan organizers. Proof based systems and best practices from homegrown and worldwide games will be featured to direct the advancement of manageable transportation in Indian games. Carrying out these proposals will add to a greener future, diminished carbon impression, worked on general wellbeing, and the foundation of a maintainable games culture lining up with worldwide ecological objectives.

In general, this examination attempts to reveal insight into the amazing open doors and difficulties related with coordinating dynamic and eco-accommodating methods of movement in Indian games. By perceiving the capability of practical transportation and working cooperatively, India can outfit the force of sports to drive positive natural and cultural change.

Writing Audit:

The writing encompassing the reconciliation of maintainable transportation in the games area features the developing worldwide interest in advancing dynamic and eco-accommodating methods of movement. A few examinations have inspected the natural, wellbeing, and social advantages related with supportable transportation, giving an establishment to figuring out its likely inside the setting of Indian games.

One conspicuous area of concentration in the writing is the ecological effect of ordinary transportation modes utilized in sports. Confidential vehicles and air travel have been recognized as significant supporters of fossil fuel byproducts and air contamination. A concentrate by Gössling et al. (2019) uncovered that air travel represented a critical part of fossil fuel byproducts in the games business. Furthermore, research by Chatterjee and Nguyen (2018) showed the unfriendly impacts of private vehicle use, like clog and expanded carbon impression, in games.

Conversely, dynamic and eco-accommodating transportation modes certainly stand out enough to be noticed for their capability to relieve natural effects while advancing actual work. Cycling, specifically, has been widely read up for its positive results. A concentrate by Rissel et al. (2019) found that advancing cycling framework and projects in games prompted expanded support rates and decreased vehicle use. Likewise, research by Winters et al. (2017) featured the natural and medical advantages of strolling and cycling as transportation modes.

The writing additionally investigates the obstructions and difficulties impeding the reception of maintainable transportation in sports, which can illuminate methodologies for conquering these deterrents. Foundation limits, like lacking cycling paths and person on foot pathways, have been recognized as huge hindrances in a few examinations (Faulconbridge et al., 2020; Johnson et al., 2019). Social standards and perspectives towards transportation modes have additionally been found to impact travel decisions (Carver et al., 2019). Moreover, the absence of mindfulness and strategy support for practical transportation inside the games area has been perceived as a test (Kellens et al., 2018).

To beat these difficulties, the writing features fruitful drives and best practices from both homegrown and worldwide games. The joining of reasonable transportation modes in the London 2012 Olympics, for instance, exhibited the possibility and advantages of advancing cycling and public travel (Caulfield et al., 2020). Likewise, the Velo-city meeting series has exhibited different procedures for consolidating cycling in games (Parkin et al., 2017).

Methodology:

This examination paper uses a blended techniques approach, joining subjective and quantitative exploration strategies, to research the job of sports in advancing dynamic and eco-accommodating methods of movement in India. The system plans to give a thorough comprehension of the ongoing transportation scene in Indian games, as well as the obstructions and valuable open doors for coordinating manageable transportation modes.

Information Assortment:

a. Writing Survey: An exhaustive survey of existing writing on practical transportation in sports will be led to lay out a hypothetical structure and recognize key exploration holes.

b. Interviews: Semi-organized meetings will be led with competitors, sports authorities, policymakers, and transportation specialists. The meetings will investigate their viewpoints, encounters, and suppositions with respect to manageable transportation in Indian games. Purposive inspecting will be utilized to choose a different scope of members.

c. Studies: Online overviews will be dispersed to competitors, sports authorities, and observers to accumulate quantitative information on their movement examples, inclinations, and perspectives towards reasonable transportation. The reviews will use Likert-scale and different decision inquiries to guarantee consistency and simplicity of investigation.

Information Examination:

a. Subjective Examination: The meeting information will be deciphered and specifically broke down utilizing procedures like coding and arrangement. This examination will recognize key subjects, examples, and viewpoints connected with feasible transportation in Indian games.

b. Quantitative Investigation: The study information will be examined utilizing factual programming to create unmistakable measurements, like frequencies and rates. The information will be examined to recognize patterns, inclinations, and relationships connected with movement conduct and perspectives towards manageable transportation.

Similar Investigation:

The discoveries from the writing survey, meetings, and reviews will be combined to give a thorough comprehension of the present status of practical transportation in Indian games. Near investigation will be directed to recognize likenesses and contrasts between the points of view of various partner gatherings and investigate the possible techniques and mediations for advancing dynamic and eco-accommodating methods of movement.

Proposals and Mediations:

In view of the exploration discoveries, designated mediations and proposals will be created to advance manageable transportation in Indian games. These suggestions will address foundation enhancements, strategy support, mindfulness missions, and partner commitment. The proposals will draw upon effective drives and best practices distinguished in the writing audit and contextual analyses from homegrown and worldwide games.

The examination technique illustrated above will give significant bits of knowledge into the discernments, inclinations, and difficulties connected with feasible transportation in Indian games. The blend of subjective and quantitative information will add to an exhaustive comprehension of the point, empowering proof based suggestions for advancing dynamic and eco-accommodating methods of movement in Indian games.

Results and Conversation:

The aftereffects of the examination concentrate on advancing dynamic and eco-accommodating methods of movement in Indian games uncovered a few critical discoveries and experiences. These discoveries are examined underneath:

Current Transportation Scene:

The examination featured the predominance of customary transportation modes, for example, confidential vehicles and air travel, inside Indian games. This dependence on high-outflow modes adds to ecological corruption and expanded fossil fuel byproducts. The discoveries accentuated the pressing need to move towards reasonable transportation choices.

Advantages of Feasible Transportation:

The review exhibited the various advantages related with coordinating dynamic and eco-accommodating transportation modes in Indian games. These advantages incorporate decreased fossil fuel byproducts, further developed air quality, upgraded general wellbeing through expanded actual work, and the advancement of a reasonable games culture.

Hindrances and Difficulties:

The examination distinguished a few boundaries and difficulties obstructing the reception of economical transportation in Indian games. Foundation restrictions, including deficient cycling paths and walker pathways, were recognized as huge obstacles. Social standards and mentalities towards transportation modes, as well as the absence of mindfulness and strategy support, were additionally recognized as need might arise to be tended to.

Discernments and Perspectives:

The exploration discoveries shed light on the discernments and mentalities of competitors, sports authorities, and observers towards economical transportation in Indian games. Competitors communicated a positive tendency towards dynamic methods of movement, especially cycling, because of its medical advantages and decreased natural effect. Be that as it may, concerns in regards to somewhere safe and secure and comfort were likewise raised. Observers showed an eagerness to embrace economical transportation choices whenever gave helpful and very much arranged other options.

Effective Drives and Best Practices:

The review inspected effective drives and best practices from both homegrown and worldwide games. Models incorporated the mix of cycling foundation, arrangement of public travel choices, and mindfulness crusades advancing practical transportation. These drives showed the attainability and positive results of advancing dynamic and eco-accommodating methods of movement in games.

Conversation:

The aftereffects of the examination study stress the significance of coordinating supportable transportation in Indian games. The discoveries affirm that regular transportation modes have huge natural effects and add to stationary ways of life. The advancement of dynamic and eco-accommodating modes, like cycling, strolling, and public travel, arises as a feasible answer for address these difficulties.

The exploration features the requirement for designated intercessions to conquer the obstructions and difficulties recognized. Further developing framework by making devoted cycling paths, person on foot amicable pathways, and coordinating public travel frameworks can energize the reception of economical transportation. Social standards and perspectives can be tended to through mindfulness crusades and instructive drives that advance the advantages of dynamic travel.

The review highlights the job of partners, including policymakers, sports associations, and metropolitan organizers, in driving the change towards supportable transportation in Indian games. Cooperation and commitment among these partners are critical for creating and executing successful procedures. Policymakers need to offer the essential help and motivating forces, while sports associations can assume a crucial part in pushing and carrying out manageable transportation rehearses.

Besides, the exploration discoveries underscore the requirement for proceeded with examination and assessment of reasonable transportation drives in Indian games. Long haul observing and appraisal of the natural, wellbeing, and social effects will give important bits of knowledge and backing the refinement of systems and mediations.

By incorporating the exploration discoveries and suggestions, India has the potential chance to make a manageable games culture that advances dynamic and eco-accommodating methods of movement. This progress will add to a greener climate, worked on general wellbeing, decreased fossil fuel byproducts, and arrangement with worldwide supportability objectives.

Conclusion:

The coordination of manageable transportation in Indian games presents a huge chance to advance dynamic and eco-accommodating methods of movement, moderate natural effects, and upgrade general well-being. The examination concentrate on directed on this point has given significant experiences into the ongoing transportation scene, boundaries, and valuable open doors inside Indian games.

The discoveries highlight the predominance of traditional transportation modes, for example, confidential vehicles and air travel, and their negative natural results. Be that as it may, the concentrate additionally featured the advantages of feasible transportation, including diminished fossil fuel byproducts, further developed air quality, and upgraded actual work among competitors and onlookers.

Hindrances and difficulties, like framework constraints, social standards, and the absence of mindfulness and strategy support, were recognized as obstacles to the reception of economical transportation in Indian games. Defeating these difficulties will require designated intercessions and cooperative endeavors from policymakers, sports associations, and metropolitan organizers.

The review's assessment of partner discernments and mentalities uncovered a positive tendency towards manageable transportation among competitors and observers. Be that as it may, concerns in regards to somewhere safe and secure and accommodation should be addressed to support a more extensive reception of dynamic methods of movement.

Drawing on fruitful drives and best practices from homegrown and worldwide games, the examination concentrates on giving an establishment to creating powerful techniques.

Framework enhancements, mindfulness missions, and partner commitment arose as key proposals to advance supportable transportation in Indian games.

The exploration study accentuates the significance of focusing on practical transportation in Indian games. Proceeded examination, assessment, and cooperation among partners will be fundamental to driving positive change and making an additional economical and earth-cognizant games area in India. Through these endeavors, India can set a model for different nations and add to a worldwide shift towards supportable transportation in the games business.

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Comparative Study of Selected Fitness Skill and Physiological Variables of Male Basketball Players at Different Levels of Competition

Sanjay Ranjitsing Jadhav
Research Scholar

Dr.Suhas Dnyaneshwar Yadav
Head Department of
Physical Education and Sports,
Sant Tukaram Mahavidyalaya
Kannad, Dist Aurangabad.

Abstact -

The purpose of the study was to compare the physical & physiological variables among the Inter District & Inter State Levels of Basketball players. Sixty (60) Male basketball players (30 inter district and 30 interstate) were randomly selected from Maharashtra State as a subject. The age of the subjects were ranged from 17-28 years. It was hypothesized that there would be a significant difference in the physical fitness variables and physiological variables among the Indian basketball players of different levels of competitions. The physical variables chosen were speed, endurance and power which were measured by 50m dash(sec), 2.4km. run(min.) and sergeant jump. The physiological variables were resting heart rate measured by manual methos and vital capacity which is measured by dry spirometre. The data collected on the different level of basketball player were analyzed by independent "t" test. The level of significance for testing the hypothesis was set at 0.05 level of confidence. It is found that the inter state level players were better than inter district players with respect to speed, power and endurance. In terms of physiological variables namely RHR and vital capacity both the group were not differ significantly.

Keywords: *Vital Capacity, Power, Resting Heart Rate, Spirometre*

INTRODUCTION

In today's age of scientific knowledge man is making rapid progress in all walks of life including the area of games and sports. The progress of games and sports may be attributed to the scientific invention for the performance of sportsmen and women, improved scientific and specific training methods and also to the better understanding of the human organism. The performance in most of the sports is determined by such factors as physical fitness, techniques and tactics, tough their relative contribution varies from sport to sport. In addition of these, other factors like physique, body composition and psychological traits also have an overall effect on the performance. These factors also influence the physical fitness status and technical and tactical capabilities of the sportsman of all these factors the most important one that of the physical fitness, as a high level of efficiency in techniques and tactics are also dependent upon physical fitness. Therefore, it is necessary that during the selection of sportsmen for competition a relatively high weightage should be given to physical fitness. It has been recognized by experts and sports scientists that performance in basketball team game does not directly depend upon the mastery of skills but also on the optimum development of physical, psychological, and physiological capacities of the athletes. High level performance in basketball not only requires certain physical qualities like speed, endurance, explosive power, agility, flexibility, strength etc., but also physical structure. In addition to the techniques and tactics of a player or a team, physical and physiological characteristics help him for his better

performance. The physical & physiological fitness of sportsmen differ at different levels of competitions. Therefore in the present study the investigator intends to find out the differences in physical & physiological fitness of Indian male basketball players at different levels of competitions. Gilbert (1969) investigated a study of selected variables in predicting basketball players. It was demonstrated that a battery of four independent variables selected from a total of 10, best reflect composite basketball ability and performance at the college level. These four variables are ability criterion, arm strength, penny-cup test, and speed pass test. However, since the derived multiple 'r' of 95 was not reached. This limits the utilization of this battery as a predictive measure of basketball ability. Gallagher (1970) conducted a study on the relationship of agility to performance in Women's inter collegiate basketball. The hypotheses were that high positive relationships would exist between items of the test (Mc Canliff Agilit Components Test) and performances were not supported.

METHODS

Sixty male basketball players (30 inter district and 30 interstate) were randomly selected from from Maharashtra State as a subject. The age of the subjects were ranged from 17-28 years.

A. Selection of Variables

TABLE I
PHYSICAL FITNESS VARIABLES

Variables	Tests
Power	Sargent Jump (cm.)
Endurance	2.4(k.m) Run/Walk (min.)
Speed	50 Yard Dash Run (sec)

TABLE II
PHYSIOLOGICAL VARIABLES

Variables	Tests
Resting Pulse Rate	Palpation of radial artery (beats/min)
Vital Capacity	Dry Spirometer (liters)

HYPOTHESES

1. It was hypothesized that there may be significant differences in the physical fitness variables among the Indian basketball players of different levels of competitions.
2. It was hypothesized that there may be significant differences in the physiological variables among the Indian male basketball players of different levels at competitions.

STATISTICAL PROCEDURE

To determine the differences in selected physical and physiological variables of basketball players at different level of participation (viz. Inter district & Inter state), an Independent 't' test was used. The level of Significance was set at 0.05 levels ($p < 0.05$).

RESULTS

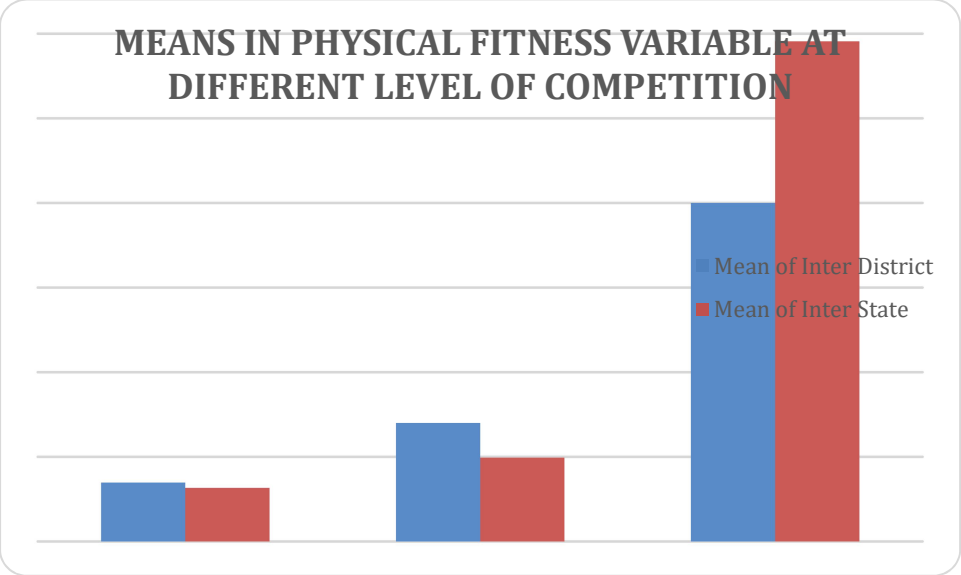
Findings pertaining to each of the selected physical & physiological variables of different groups which were subjected to the 't' ratio & mean difference method has been given in Table. Table III reveals that there were significant differences in speed, endurance & power variables as the obtained 't' value is higher than the required 't' value. Table III shows that Inter State Level players were significantly superior in speed, endurance and power variables as compared to the Inter District Players.

TABLE III
SIGNIFICANCE OF DIFFERENCE OF MEANS IN PHYSICAL FITNESS VARIABLE AT DIFFERENT LEVEL OF COMPETITION

Variable	Mean of Inter District	Mean of Inter State	D.M	't' ratio
Power	6.96	6.34	0.62	1.68*
Endurance	14.01	9.91	4.1	6.21*
Speed	40	59.1	19.1	10.10*

Significant at 0.05 level t(0.05) (58) = 1.671

From Table IV it is revealed that the 't' ratio obtained was not significant in the case of all physiological variables i.e., resting heart rate, vital capacity as the observed 't' value is lesser than the required 't' value at 0.05 level of significance.



CONCLUSIONS

Based on the findings and with in the limitations of the present study the following conclusions are drawn:

1. The Inter State level players are better than Inter District play with respect to speed, power and endurance.
2. In terms of physiological variables namely resting heart rate and vital capacity both the groups do not differ significantly.

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RELATIONSHIPS WITH BMI FOR PHYSICAL FITNESS, SPORTS CLUB PARTICIPATION IN PRIMARY SCHOOL CHILDREN IN SOCIOECONOMICALLY DISADVANTAGED AREAS OF AHMEDNAGAR DISTRICT

Vijay Deshmukh
Research Scholar, Savitribai Phule Pune University, Pune (MS)
vijaydeshmnukh11@gmail.com

Dr. Deepak Mane
Research Guide and Director of Physical Education & Sport
Savitribai Phule Pune University, Pune (MS)

Abstract : *We investigated physical fitness factors, body mass index (BMI), sports club participation and health-related quality of life (HRQoL) in children aged 8-11 years living in socio-economically disadvantaged areas of Ahmednagar district.) were investigated for their relationship with Between May and October 2019, 432 children completed the Kidscreen-27 HRQoL questionnaire and leisure-time physical activity survey, as well as a battery of physical fitness tests, including the 20m shuttle run test (20mSRT) and grip strength (handgrip). bottom.) and long jump, standing jump (long jump), and sit and reach. Data were collected on height, weight, BMI, and somatic maturity. Comparisons with the reference population were made using a quintile framework. Relationships between components of physical fitness and her HRQoL variables were assessed using linear and quantile regression. Using the UK Multiple Deprivation Index, 90% of children were from the most disadvantaged quintile and 39% were overweight or obese. More children performed worse in her HRQoL domains of physical health (40%) and mental health (45%) than did the reference population (31%). Fitness scores were generally rated as 'low' to 'very low' (42-58%). 20mSRT and long jump performance explain an additional 10.7% of the difference in physical health after adjusting for BMI z-score, gender and age (overall R2 21.2%). Quantile regression identified a subgroup of children who rated themselves as having high physical fitness regardless of their performance on the 20 mSRT. Sports club participation was associated with improvements in 20m SRT and long jump performance, and in all domains of HRQoL. Our data show that some components of physical fitness and participation in sports clubs, regardless of BMI z-score, are positively associated with quality of life for children in socioeconomically disadvantaged areas. I'm here. Interventions to improve HRQoL should consider both aspects.*

Keywords: *Aerobic fitness, BMI, Quality of life, Child health*

Introduction

Health-related quality of life (HRQoL) is a complex, multidimensional concept, including social, emotional and physical functioning and well-being, related to the individual's health state (Seid et al., 2000). In children, enhancing HRQoL is essential for their present and future well-being (Wallander and Koot, 2016) and widely considered a priority area for health interventions (Cartwright-Hatton et al., 2006, Ravens-Sieberer et al., 2014). Nonetheless, HRQoL appears to have declined in young people, with 10.3% of American adolescents

reporting fair or poor health in the 2009–2010 National Health and Nutrition Examination Survey compared with 6.3% in 2001–2002 (Cui and Zack, 2013). Modifiable factors associated with HRQoL in children need identification, to develop appropriate public health interventions.

Materials and methods

The cross-sectional study was approved by Newcastle University Faculty of Medical Sciences Ethics Committee (approval number 1614/7165/2018) and conducted in accordance with the Declaration of Helsinki for experiments involving humans. Recruitment was undertaken by the Newcastle United Foundation (an independent registered charity).

Study participants

An academic trust covering four primary schools in connecting wards of Newcastle upon Tyne was approached; three schools responded and agreed to participate. Headteachers provided informed written consent for their school's participation. Newcastle upon Tyne is a relatively deprived area, rated 74/317 local authorities in Ahmednagar District, where 1 = most deprived (Ministry of Housing Communities & Local Government, 2019b). The consenting schools are located in areas that, by 2019 Index of Multiple Deprivation (Ministry of Housing Communities & Local Government, 2019b) ranking, are below the 0.1, 2nd and 14th centiles, respectively (where lower is more deprived). Parents/carers of Year 4 to 6 pupils (age 8–11-years, n = 469) received study information and the opportunity to opt-out their child. Six parents chose this option. Participating children were given verbal information and provided written or verbal assent to participate. There were no exclusion criteria. Data collection took place during the 2019 summer and autumn terms (May-July, and October 2019). Schools provided the sex, ethnicity, date of birth, home postcode of each child. Individual-level index of multiple deprivation (IMD) data were obtained using home postcode and freely-available IMD data (Ministry of Housing Communities, 2019a).

Measures

Physical fitness was assessed via the following age-appropriate, reliable, validated (Ruiz et al., 2011, Tomkinson et al., 2018) components of the Eurofit (EUROFIT, 1988) testing battery: 20mSRT, Handgrip, Broad Jump and sit-and-reach performance. Test procedures have been published previously (Weston et al., 2019), but briefly, measurements were as follows:

Height, seated height and weight were measured to the nearest 0.1 cm and 0.1 kg respectively, with the participant barefoot in light indoor clothing, using a portable stadiometer (Leicester Height Measure, SECA UK LtD, Birmingham, Ahmednagar District) and calibrated scales (Shekel H151-7, Shekel Scales Ltd, Israel). Duplicate measures were taken and mean values used for analysis. Using the LMS Growth excel add-in, BMI and age- and sex-specific BMI z-scores relative to UK 1990 reference data (Cole et al., 1995) were calculated. Population-sensitive cut-points categorised children as either "underweight" (≤2nd centile or below), "healthy weight" (>2nd < 85th centile) "overweight" (≥85th < 95th centile) "obese" (≥95th < 99.6th centile) or "severely obese" (≥99.6th centile and above). Leg length was calculated by subtracting seated height from stature. Somatic maturity was estimated for each participant by predicting years from attainment of peak height velocity (PHV) via sex-specific

equations (Mirwald et al., 2002). Participants were then classified as pre-peak or post-peak height velocity. Aerobic fitness was indirectly assessed via 20mSRT performance using the British National Coaching Foundation protocol (Ramsbottom et al., 1988). Researchers ran alongside the children, encouraging them to run between cones 20 m apart in time to an audible bleep signal. Participants ran until they failed to maintain the pace for two consecutive bleeps, or at their own volition. Test performance was expressed as the total number of shuttles completed.

Statistical analysis

Data were analysed using SPSS v.24 (IBM) and R (R Core Team, 2020) (Quantreg package). To account for possible clustering due to the use of schools, a mixed model analysis with random effects was carried out, using school as the random effect variable, and physical fitness components/BMI z-score/HRQoL domains as dependent variables. The estimates of covariance parameters for school (as the intercept) were all $p > 0.4$, indicating that there was no clustering effect due to school. Data were therefore analysed as one group. Children were able to opt-out of elements of testing; missing data was not interpolated, analysis was performed on the data available.

Results

Results are restricted to those who completed the Kidscreen-27 questionnaire (n = 432, 93% of potential population, 54% male). Missing questionnaires were due to absence or incomplete entries. Most children were from the White ethnic background (90.4%, with 4.2% Black, 2.6% Asian, 1.9% Mixed Ethnicity, 0.9% other ethnic background) and 90.0% of children were from the most deprived IMD quintile, followed by 5.1%, 4.6%, 0.0% and 0.2% in the second, third, fourth and fifth quintiles, respectively. School 1 contributed n = 108 children (25%), school 2 n = 87 children (20.1%), school 3 n = 237 children (54.9%). Of this total, n = 135 (31.3%) were in English Year 4 (age 8-9y), n = 144 (33.3%) Year 5 (age 9-10y), and n = 153 (35.4%) Year 6 (age 10-11y). One child of 12.0y was included.

Three children (0.7%) were classed as underweight relative to UK90 reference data, 245 (59.5%) were healthy weight, 55 (13.4%) overweight, 74 (18.0%) obese, and 34 (8.3%) severely obese. Twenty-one children did not have weight and/or height data due to absence or refusal. There were no statistically significant differences in BMI, BMI z-score or age between boys and girls, but the maturity estimates suggest that girls were closer to PHV (Table 1) and five were classed as post-PHV, whereas all boys were pre-PHV.

The relationship between Physical Wellbeing and 20mSRT and Broad Jump was generally linear throughout most of the distribution (children with a higher 20mSRT and Broad Jump performances consistently rated their Physical Wellbeing as high), however there was some heteroscedastic variance, (Fig. 1A and 1B). Quantile regression showed that the slopes of the lines across the 5th, 25th, 50th and 75th percentiles were relatively consistent, but the 95th percentile demonstrated a group that rated their Physical Wellbeing highly, regardless of their performance in the 20mSRT/Broad Jump.

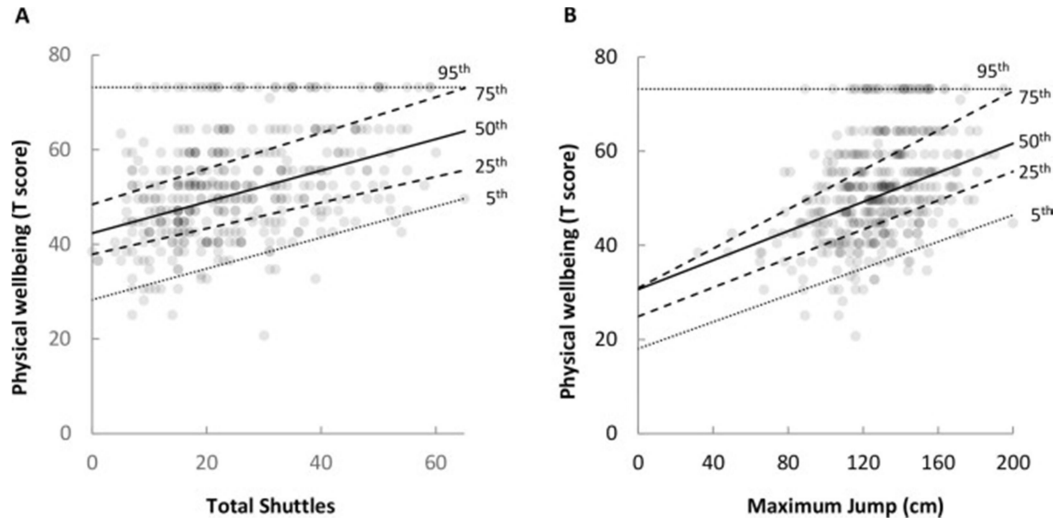


Fig. 1. Quantile (5th, 25th, 50th, 75th, 95th) regression illustrating better 20mSRT (total shuttles) and Broad Jump (maximum jump distance) are associated with better Physical Wellbeing except for those with the best Physical Wellbeing for their physical fitness (95th quantile).

Conclusions:

We have demonstrated that children from a deprived part of Ahmednagar District scored poorly on two of five domains of HRQoL, (Physical Wellbeing and Psychological Wellbeing), had inadequate physical fitness, and a large proportion were overweight. Future interventions seeking to improve HRQoL should consider both physical health and social angles, as collectively these aspects may be most impactful on populations in greatest need.

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Environmental Ethics in Global Politics: Towards a Sustainable and Secure Future

Vivek Aware
Assistant Professor
Department of Political Science
Vivekanand Arts S.D. Commerce and Science College Aurangabad

Abstract:

In the 21st century, environmental issues have become a critical global issue. In this century many new trends and issues have been included in the field of study of international politics. Environmentalism or Environmental issue is one of them. With the advancement in science and technology, human intervention in the natural environment is also crossed its limits. And this intervention is supposed to be the main cause of the imbalance in the environment. The pace at which natural resources are being exploited and pollutants are being emitted into the environment would intensify severe and complex issues that will persist in the future. The international community is taking concrete steps in this direction by adopting various conventions and resolutions to tackle growing environmental problems. The United Nations and other regional and international environmental organizations or institutions are working in this direction. At the international level, various environmental agreements and regulations are being adopted. The global community has realized the need to curb environmental issues in time. While it is true that these issues can be resolved through collective efforts on an international scale, individual nations must also actively contribute by following environmental ethics. Environmental ethics is a broad concept that includes anthropocentrism, biocentrism, sustainability, and awareness of the surrounding natural environment. For effective environmental protection and conservation, it is not sufficient to rely completely on international treaties, agreements, conventions, and regulations. Nations must also adhere to these principles at the individual level to ensure their successful implementation.

Keywords: Environmental ethics, Environmental issues, Global Environmental issues, Environmentalism. Climate Change.

Introduction:

The environment is a natural surrounding around all living and non-living things on the Earth. It plays an important role not only in human life but in the entire living creation. All living things originated and evolved in the natural environment. The existence of all living creatures depends on this environment. Although this environment has very much significance in human life it was exploited for the unending human desire for wealth and prosperity. When such exploitation of the natural environment started and crossed its limits its adverse effects were seen before the world. Along with advances in science and technology in the 18th century, large-scale exploitation of nature began. The present world is facing a major environmental crisis which was aroused by human greed. Many of those environmental issues require urgent attention. Limitless use of conventional energy sources and an increase in greenhouse gas emissions are causing rapid climate change. It poses an existential threat to the whole planet. Problems like desalination of land, loss of biodiversity, increasing pollution, and water crisis are affecting the natural environment very much. The loss of the natural environment and its adverse effects are not limited to one country or a certain region. All the countries of the entire earth, all human communities and other life forms will be affected. Addressing these environmental challenges is critical to safeguarding the future of the planet and requires a collective effort. From this realization, collective efforts have started at the international level. Although the direction of the efforts was right, the speed was slow. The equal intensity of commitment from all countries was lacking. All countries need to participate in protecting the environment by following environmental ethics. Environmental ethics must be followed in world politics. Although the nature of international politics tends towards realism, the inclusion of idealistic environmental values has become the need of the hour. In this research article, the world's major environmental issues have been reviewed and the importance of environmental ethics has been underlined.

Many scholars and researchers have written extensively on environmental issues and their implications. These scholars have presented various studies on the increasing exploitation of the natural environment and its potential impact on living beings. The findings from various published articles, reports, and books over the past ten years on topics such as international environmental agreements, global environmental governance, and international cooperation on environmental issues are studied here. These studies emphasize the challenges of gathering consensus among different countries, the need for increased ambition to reduce emissions, and the role of financial and technical support for developing nations. It also highlights the importance of UNEP's capacity-building initiatives and knowledge-sharing networks to

facilitate international cooperation and promote best practices. Along with this, limitations in resources and a lack of political determination were also highlighted. Various studies have examined specific agreements such as the Montreal Protocol, the Basel Convention, and the Rotterdam Convention, highlighting their effectiveness in addressing specific environmental challenges. These studies discuss the importance of compliance mechanisms, monitoring mechanisms, and technological innovation to ensure successful implementation of these agreements. This literature review acknowledges the importance of international efforts to address environmental issues. Initiatives such as the UNFCCC, UNEP, CBD, SDGs, and international environmental agreements play significant roles in promoting global cooperation, knowledge sharing, and resource pooling. Challenges such as political barriers, resource constraints, and implementation gaps were also identified. One thing that stands out is the limited role of individual countries in this collective effort. Here, all the countries of the developed, developing, and underdeveloped groups have to make efforts collectively and responsibly. It is doubtful that this will be achieved by making international regulations alone. Every country needs to comply with environmental ethics. These ethics will guide towards environmental protection and conservation.

Global Environmental Issues

Many serious environmental problems have arisen in the current global era. Environmental damage is not only lethal to non-human living beings but can ultimately harm human existence itself. This is evident from the following issues.

Climate Change: Climate change is a phenomenon which indicates an increase in the Earth's temperature. Such an increase is believed to be caused by human activities mainly. This results in long-term climate changes. Here, greenhouse gases are primely responsible for the rapid increase in global temperature. The heat from the Sun is reflected from the surface of the Earth. But due to the green gases, it is absorbed by the surrounding atmosphere of the planet without being fully reflected. This leads to an increase in the average temperature of the planet, which is commonly known as global warming. The effects of climate change are far-reaching and include rising temperatures, melting glaciers, rising sea levels, more frequent and severe weather events (such as hurricanes, droughts, and heat waves), altered precipitation patterns, and environmental changes. Their adverse effect is also seen in the wildlife habitat.

At present, the amount of carbon dioxide in the air is 420 ppm, and the rate of global temperature increase is 1.15 °C. (Robinson, 2023) Since the last 4 billion years, the ratio of CO2 (Carbon Dioxide) has increased to such an extent. The results of this are being seen all over the world. Wildfires in America and Australia, increased locust infestations in Africa,

reduced crop yields in Central and East Asia, and increased temperatures in Antarctica are all side effects of global warming.

Loss of Biodiversity: Biodiversity loss is the reduction in the diversity and abundance of species and ecosystems on Earth. These include extinction of species, degradation of habitats and disruption of ecological processes. The severity of biodiversity loss is a major global concern, as it has major implications for ecosystem functioning, human well-being and the survival of our planet. The following are the consequences of the loss of biodiversity.

Habitat Loss: Habitat destruction and fragmentation are major causes of biodiversity loss. Activities such as deforestation, urbanization, conversion of natural habitats for agriculture, and infrastructure development contribute to habitat loss, reducing the available space and resources for species to survive. It also increases the risk of extinction of ancient rare species.

Extinction of Ancient Rare Species: The current rate of species extinction is estimated to be 100 to 1,000 times higher than the natural background rate. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment Report, nearly one million species are at risk of extinction if current trends continue. The extinction of one species can affect the survival of the other species. Such rapid extinction of species will ultimately lead to serious consequences for human existence.

Overexploitation: Nature is being exploited on a large scale to meet growing needs. Overfishing and hunting, along with the harvesting of many species for food, medicine and trade, are leading to rapid exploitation and rapid degradation of biodiversity. It disrupts the ecosystem, affects the population of the species and can lead to their extinction.

Melting of Polar Ice Caps and Rise in Sea Level: One of the major effects of climate change is sea level rise. Both land ice and sea ice are melting due to rising global temperatures. Land ice, which includes glaciers and ice shelves formed from frozen freshwater, is found on every continent except Australia, while ice shelves are found only in Antarctica, Greenland, and the Arctic. Ice caps, which are large masses of glacial ice on land, are found only in Antarctica and Greenland. Melting land ice leads to sea level rise while melting sea ice does not affect it. Because when the sea ice melts, the amount of water in the sea does not change. However, as land ice melts, it mixes with seawater and increases its volume. Melting glaciers have caused a 21% rise in sea levels over the past two decades. If the entire Greenland ice sheet were to melt, sea levels would rise by six meters. (Tandon, 2021) Sea level rise will have devastating effects on settlements in coastal regions. According to the research and advisory group Climate Central, sea-level rise in this century could flood coastal areas home to 340 million to 480

million people, forcing them to move to safer areas and increasing population pressure on resources in the areas they move to. This creates a new problem.

Climate change is causing sea levels to rise at an alarming rate as land ice melts. This poses a great threat to the coastal region and its inhabitants. Bangkok (Thailand), Ho Chi Minh City (Vietnam), Manila (Philippines) and Dubai (United Arab Emirates) are among the cities which are at risk of sea level rise and flooding. (Igni, 2023)

Food security: Food and water insecurity are also becoming a global challenge. It affects millions of people worldwide, especially in regions with limited resources and environmental as well as socioeconomic vulnerability. These problems pose significant threats to human health, well-being and overall sustainable development. Food insecurity is the persistent lack of adequate, safe and nutritious food to meet dietary needs for an active and healthy life. It includes both quantitative aspects (inadequate food availability and scarcity) and qualitative aspects (lack of diversity and nutrients). Food insecurity can manifest in many forms, including chronic hunger, malnutrition and even obesity resulting from limited access to healthy food options. Food security is becoming a critical issue in modern times. The Food and Agriculture Organization of the United Nations (FAO) has predicted that global food demand could increase by 70% by 2050. According to this estimate, 820 million people worldwide will be deprived of adequate food. According to UN Secretary-General Antonio Guterres, "Without immediate action, the looming global food security emergency will have long-term consequences for millions of adults and children."

Apart from these major problems, numerous environmental problems such as air pollution, food waste, plastic pollution, water, soil, and air pollution, the increasing acidity of oceans, and the decreasing nutritional value of agricultural produce are intensifying day by day. These problems are interrelated. If one problem occurs, it may ignite the other problems. These problems are more complex. Of course, as mentioned earlier, these problems cannot be solved at the individual level. For this, countries need to make collective efforts at the international level. Such efforts are undertaken by the United Nations and other international organizations. In this collective effort, the active participation of all member countries is very essential. Here, countries have to follow environmental ethics at an individual level while contributing to collective efforts.

Environmental Ethics

Environmental ethics is a branch of ethics that examines the ethical relationship between humans and the natural environment. It analyzes moral principles, values and theories and guides the individual in his thoughts, actions and responsibilities towards nature.

Environmental ethics acknowledges the intrinsic value of the environment and argues that it deserves environmental protection through ethical considerations beyond its utilitarian value to human well-being. Promotes a holistic and sustainable approach to our relationship with nature, recognizing the interconnectedness of all living things and ecosystems. The concept of environmental ethics includes the following aspects:

Anthropocentrism: An anthropocentrism is an approach that gives human interests priority over environmental values. This approach often prioritizes human well-being and economic development over the intrinsic value of non-human animals and ecosystems. Humanism can lead to the exploitation of natural resources without adequate consideration of the potential long-term effects on the environment and other species. Organisms other than humans are not adequately well-thought-out here. But since the need for the environment is necessary for human existence and the interest of the environment is considered for the benefit of future generations.

Biocentrism: Biocentrism is also part of environmental ethics. In this, morality is extended beyond human beings. This approach acknowledges the inherent value and moral considerations of all living beings. This approach asserts that non-human animals are also important and should be given equal importance. Biocentrism advocates the conservation of biodiversity by emphasizing the interconnectedness and interdependence of all life forms.

Ecocentrism: Ecocentrism is an approach that assigns intrinsic value to the whole ecosystem or the earth as a whole. It emphasizes the interrelationships between all living and non-living components of an ecosystem and acknowledges the intrinsic value of the environment beyond its instrumental value to humans. Ecocentrism asserts the protection and preservation of ecological integrity and recognizes the inherent values of nature.

Sustainability: Sustainability is a guiding principle that promotes the responsible use and conservation of natural resources to meet the needs of the present without compromising the ability of future generations to meet their own needs. It aims to achieve a balance between environmental, economic, and social well-being while acknowledging the finiteness of resources. Sustainability recognizes the imperative to preserve and conserve the environment for future generations. It is asserted here that natural resources should be used to meet their limited needs rather than being used excessively and irresponsibly.

Environmental ethics thus includes the values and perspectives of anthropocentrism, biocentrism, ecocentrism, and sustainability. Environmental ethics addresses ethical issues related to environmental issues, including climate change, biodiversity loss, pollution, and resource exploitation. It defines environmental justice, equitable distribution of resources and the responsibilities of individuals, governments and related organizations to protect and preserve the environment. Overall, environmental ethics provides a framework for considering moral responsibilities and making informed decisions that promote the well-being of the natural world and future generations.

Global Politics and Environmental Ethics

Global politics deals with the study and analysis of political activities, relationships and dynamics that appear at the international level. It includes an examination of interactions among nations, international organizations and institutes. It studies political, social, economic and environmental contexts. Environmental issues that affect global structure are also focused here. At present, environmental issues have become critical and can only be solved through collective efforts at a global scale. Environmental ethics can be a guiding factor here in this regard. Environmental ethics considers long-term consequences and leads to the achievement of effective outcomes. It Promotes environmental awareness and biodiversity protection and conservation by placing ecological values at the centre. Furthermore, incorporating environmental ethics ensures the equitable distribution of benefits and responsibilities and enables the resolution of environmental justice issues. By integrating these ethics, global politics can achieve sustainable development by considering the needs of present and future generations. Environmental ethics can be implemented in world politics in the following ways.

Stewardship: States should contribute by seeing themselves as custodians of natural resources. Protecting and preserving ecosystems should be a priority for states. States should be aware that man must care for and protect the environment. States should adopt an environment-friendly approach while designing and implementing internal and external policies. States should adopt policies that promote the concept of sustainable development and support initiatives that protect biodiversity and natural habitats.

Sustainability: Sustainability is a key principle of environmental ethics. States should adopt a holistic approach that integrates economic, social and environmental considerations in the decision-making process. This means pursuing development strategies that meet the needs of the present without compromising the ability of future generations to meet their own needs. This includes promoting renewable energy sources, promoting resource efficiency and implementing policies that address climate change and environmental degradation.

Precautionary Principle: The precautionary principle suggests that states should take preventive action in the face of potential environmental risks. This principle emphasizes how to avoid potential harm to the environment and human health. States should prioritize the protection of ecosystems and species, regulate the use of potentially harmful substances, and ensure that new technologies and methods are rigorously evaluated before widespread implementation.

Conservation of Biodiversity: Biodiversity is essential for the protection and conservation of the environment. States should prioritize the conservation and protection of biodiversity through various measures. These include designating protected areas, establishing wildlife corridors, implementing sustainable land and marine management practices, and preventing illegal wildlife trade. States should also support research and monitoring activities to better understand biodiversity dynamics and promote the restoration of degraded ecosystems.

Global Cooperation: Environmental problems transcend national boundaries, requiring coordination and cooperation among states. Recognizing this, states must actively participate in global efforts to address environmental challenges. This includes participating in international environmental agreements, sharing scientific knowledge and best practices, supporting capacity-building initiatives in developing countries, and promoting the transfer of environmentally friendly technologies. States should work together to address transboundary environmental issues such as air and water pollution and conservation of shared ecosystems.

Transparency and Accountability: Transparency and accountability are important in the environmental decision-making process. States should ensure that relevant information on environmental issues, including data on pollution levels, resource use, and environmental impacts, is readily available to the public. Governments should actively involve stakeholders, including civil society organizations and local communities, in policy development and implementation. Transparent and accountable governance structures help build trust, facilitate public participation, and ensure that decision-makers are held accountable for their actions and the outcomes of their policies.

Education and Awareness: Environmental education and awareness programs are important to promote the principle of environmental responsibility. States should invest in initiatives that educate citizens about the importance of environmental conservation, sustainable practices, and the interrelationship between human well-being and the natural world. This includes incorporating environmental education into the formal curriculum, supporting public awareness campaigns, and encouraging sustainable changes in personal behaviour.

Integrating Science and Policy: Sound scientific knowledge is essential for effective environmental management. States should ensure that environmental policies are based on the best available scientific evidence and that scientific expertise is integrated into the policy-making process. This requires fostering collaboration between scientists, policymakers, and other stakeholders, creating mechanisms for evidence-based decision-making, and supporting research and monitoring programs to inform environmental policies and practices.

By incorporating these environmental ethics into their approaches, states can establish a solid foundation for sustainable and responsible environmental governance. These principles guide decision-making processes, shape policies and inform actions that contribute to the well-being of present and future generations by protecting the creation around us.

Conclusion

Environmental issues are becoming a truly global problem. At the same pace as human life is progressing, environmental issues are also getting worse. In the 21st century, the new concepts and challenges that are mainly considered in world politics or the study of world politics, and global environmental issues are one of them and are considered first. Environmental issues can affect the entire planet. The impact of these issues is not limited to a particular country or region. Almost all the countries will have to suffer more or less the consequences of this. The awareness and seriousness of this problem have been taken by the international community. And appropriate steps have also been taken in that direction. If the success of these efforts is to be achieved, member states must adhere to environmental ethics at the individual level. All member states should take environmental responsibility, adopt sustainable policies, demand policies to reduce environmental problems, adopt environmentally compatible approaches in domestic and external policies, develop educational programs to increase environmental awareness among citizens and facilitate the environment while adopting science and technology. It is important to follow environmental ethics by adopting a global approach and increasing global cooperation.

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Environmental Ethics in Global Politics: Towards a Sustainable and Secure Future

Vivek Aware
Assistant Professor
Department of Political Science
Vivekanand Arts S.D. Commerce and Science College
Aurangabad

Abstract:

In the 21st century, environmental issues have become a critical global issue. In this century many new trends and issues have been included in the field of study of international politics. Environmentalism or Environmental issue is one of them. With the advancement in science and technology, human intervention in the natural environment is also crossed its limits. And this intervention is supposed to be the main cause of the imbalance in the environment. The pace at which natural resources are being exploited and pollutants are being emitted into the environment would intensify severe and complex issues that will persist in the future. The international community is taking concrete steps in this direction by adopting various conventions and resolutions to tackle growing environmental problems. The United Nations and other regional and international environmental organizations or institutions are working in this direction. At the international level, various environmental agreements and regulations are being adopted. The global community has realized the need to curb environmental issues in time. While it is true that these issues can be resolved through collective efforts on an international scale, individual nations must also actively contribute by following environmental ethics. Environmental ethics is a broad concept that includes anthropocentrism, biocentrism, sustainability, and awareness of the surrounding natural environment. For effective environmental protection and conservation, it is not sufficient to rely completely on international treaties, agreements, conventions, and regulations. Nations must also adhere to these principles at the individual level to ensure their successful implementation.

Keywords: *Environmental ethics, Environmental issues, Global Environmental issues, Environmentalism. Climate Change.*

Introduction:

The environment is a natural surrounding around all living and non-living things on the Earth. It plays an important role not only in human life but in the entire living creation. All living things originated and evolved in the natural environment. The existence of all living creatures depends on this environment. Although this environment has very much significance in human life it was exploited for the unending human desire for wealth and prosperity. When such exploitation of the natural environment started and crossed its limits its adverse effects were seen before the world. Along with advances in science and technology in the 18th century, large-scale exploitation of nature began. The present world is facing a major environmental crisis which was aroused by human greed. Many of those environmental issues require urgent attention. Limitless use of conventional energy sources and an increase in greenhouse gas emissions are causing rapid climate change. It poses an existential threat to the whole planet. Problems like desalination of land, loss of biodiversity, increasing pollution, and water crisis are affecting the natural environment very much. The loss of the natural environment and its adverse effects are not limited to one country or a certain region. All the countries of the entire earth, all human communities and other life forms will be affected. Addressing these environmental challenges is critical to safeguarding the future of the planet and requires a collective effort. From this realization, collective efforts have started at the international level. Although the direction of the efforts was right, the speed was slow. The equal intensity of commitment from all countries was lacking. All countries need to participate in protecting the environment by following environmental ethics. Environmental ethics must be followed in world politics. Although the nature of international politics tends towards realism, the inclusion of idealistic environmental values has become the need of the hour. In this research article, the world's major environmental issues have been reviewed and the importance of environmental ethics has been underlined.

Many scholars and researchers have written extensively on environmental issues and their implications. These scholars have presented various studies on the increasing exploitation of the natural environment and its potential impact on living beings. The findings from various published articles, reports, and books over the past ten years on topics such as international environmental agreements, global environmental governance, and international cooperation on environmental issues are studied here. These studies

emphasize the challenges of gathering consensus among different countries, the need for increased ambition to reduce emissions, and the role of financial and technical support for developing nations. It also highlights the importance of UNEP's capacity-building initiatives and knowledge-sharing networks to facilitate international cooperation and promote best practices.

Along with this, limitations in resources and a lack of political determination were also highlighted. Various studies have examined specific agreements such as the Montreal Protocol, the Basel Convention, and the Rotterdam Convention, highlighting their effectiveness in addressing specific environmental challenges. These studies discuss the importance of compliance mechanisms, monitoring mechanisms, and technological innovation to ensure successful implementation of these agreements. This literature review acknowledges the importance of international efforts to address environmental issues. Initiatives such as the UNFCCC, UNEP, CBD, SDGs, and international environmental agreements play significant roles in promoting global cooperation, knowledge sharing, and resource pooling. Challenges such as political barriers, resource constraints, and implementation gaps were also identified. One thing that stands out is the limited role of individual countries in this collective effort. Here, all the countries of the developed, developing, and underdeveloped groups have to make efforts collectively and responsibly. It is doubtful that this will be achieved by making international regulations alone. Every country needs to comply with environmental ethics. These ethics will guide towards environmental protection and conservation.

Global Environmental Issues

Many serious environmental problems have arisen in the current global era. Environmental damage is not only lethal to non-human living beings but can ultimately harm human existence itself. This is evident from the following issues.

Climate Change: Climate change is a phenomenon which indicates an increase in the Earth's temperature. Such an increase is believed to be caused by human activities mainly. This results in long-term climate changes. Here, greenhouse gases are primely responsible for the rapid increase in global temperature. The heat from the Sun is reflected from the surface of the Earth. But due to the green gases, it is absorbed by the surrounding atmosphere of the planet without being fully reflected. This leads to an increase in the average temperature of the planet, which is commonly known as global warming. The

effects of climate change are far-reaching and include rising temperatures, melting glaciers, rising sea levels, more frequent and severe weather events (such as hurricanes, droughts, and heat waves), altered precipitation patterns, and environmental changes. Their adverse effect is also seen in the wildlife habitat.

At present, the amount of carbon dioxide in the air is 420 ppm, and the rate of global temperature increase is 1.15 °C. (Robinson, 2023) Since the last 4 billion years, the ratio of CO2 (Carbon Dioxide) has increased to such an extent. The results of this are being seen all over the world. Wildfires in America and Australia, increased locust infestations in Africa, reduced crop yields in Central and East Asia, and increased temperatures in Antarctica are all side effects of global warming.

Loss of Biodiversity: Biodiversity loss is the reduction in the diversity and abundance of species and ecosystems on Earth. These include extinction of species, degradation of habitats and disruption of ecological processes. The severity of biodiversity loss is a major global concern, as it has major implications for ecosystem functioning, human well-being and the survival of our planet. The following are the consequences of the loss of biodiversity.

Habitat Loss: Habitat destruction and fragmentation are major causes of biodiversity loss. Activities such as deforestation, urbanization, conversion of natural habitats for agriculture, and infrastructure development contribute to habitat loss, reducing the available space and resources for species to survive. It also increases the risk of extinction of ancient rare species.

Extinction of Ancient Rare Species: The current rate of species extinction is estimated to be 100 to 1,000 times higher than the natural background rate. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment Report, nearly one million species are at risk of extinction if current trends continue. The extinction of one species can affect the survival of the other species. Such rapid extinction of species will ultimately lead to serious consequences for human existence.

Overexploitation: Nature is being exploited on a large scale to meet growing needs. Overfishing and hunting, along with the harvesting of many species for food, medicine and trade, are leading to rapid exploitation and rapid degradation of biodiversity. It disrupts the ecosystem, affects the population of the species and can lead to their extinction.

Melting of Polar Ice Caps and Rise in Sea Level: One of the major effects of climate change is sea level rise. Both land ice and sea ice are melting due to rising global temperatures. Land ice, which includes glaciers and ice shelves formed from frozen freshwater, is found on every continent except Australia, while ice shelves are found only in Antarctica, Greenland, and the Arctic. Ice caps, which are large masses of glacial ice on land, are found only in Antarctica and Greenland. Melting land ice leads to sea level rise while melting sea ice does not affect it. Because when the sea ice melts, the amount of water in the sea does not change. However, as land ice melts, it mixes with seawater and increases its volume. Melting glaciers have caused a 21% rise in sea levels over the past two decades. If the entire Greenland ice sheet were to melt, sea levels would rise by six meters. (Tandon, 2021) Sea level rise will have devastating effects on settlements in coastal regions. According to the research and advisory group Climate Central, sea-level rise in this century could flood coastal areas home to 340 million to 480 million people, forcing them to move to safer areas and increasing population pressure on resources in the areas they move to. This creates a new problem.

Climate change is causing sea levels to rise at an alarming rate as land ice melts. This poses a great threat to the coastal region and its inhabitants. Bangkok (Thailand), Ho Chi Minh City (Vietnam), Manila (Philippines) and Dubai (United Arab Emirates) are among the cities which are at risk of sea level rise and flooding. (Igni, 2023)

Food security: Food and water insecurity are also becoming a global challenge. It affects millions of people worldwide, especially in regions with limited resources and environmental as well as socioeconomic vulnerability. These problems pose significant threats to human health, well-being and overall sustainable development. Food insecurity is the persistent lack of adequate, safe and nutritious food to meet dietary needs for an active and healthy life. It includes both quantitative aspects (inadequate food availability and scarcity) and qualitative aspects (lack of diversity and nutrients). Food insecurity can manifest in many forms, including chronic hunger, malnutrition and even obesity resulting from limited access to healthy food options. Food security is becoming a critical issue in modern times. The Food and Agriculture Organization of the United Nations (FAO) has predicted that global food demand could increase by 70% by 2050. According to this estimate, 820 million people worldwide will be deprived of adequate food. According to UN Secretary-General Antonio Guterres, "Without immediate action, the looming global

food security emergency will have long-term consequences for millions of adults and children."

Apart from these major problems, numerous environmental problems such as air pollution, food waste, plastic pollution, water, soil, and air pollution, the increasing acidity of oceans, and the decreasing nutritional value of agricultural produce are intensifying day by day. These problems are interrelated. If one problem occurs, it may ignite the other problems. These problems are more complex. Of course, as mentioned earlier, these problems cannot be solved at the individual level. For this, countries need to make collective efforts at the international level. Such efforts are undertaken by the United Nations and other international organizations. In this collective effort, the active participation of all member countries is very essential. Here, countries have to follow environmental ethics at an individual level while contributing to collective efforts.

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Anthropocentrism: An anthropocentrism is an approach that gives human interests priority over environmental values. This approach often prioritizes human well-being and economic development over the intrinsic value of non-human animals and ecosystems. Humanism can lead to the exploitation of natural resources without adequate consideration of the potential long-term effects on the environment and other species. Organisms other than humans are not adequately well-thought-out here. But since the need for the environment is necessary for human existence and the interest of the environment is considered for the benefit of future generations.

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important and should be given equal importance. Biocentrism advocates the conservation of biodiversity by emphasizing the interconnectedness and interdependence of all life forms.

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Sustainability: Sustainability is a guiding principle that promotes the responsible use and conservation of natural resources to meet the needs of the present without compromising the ability of future generations to meet their own needs. It aims to achieve a balance between environmental, economic, and social well-being while acknowledging the finiteness of resources. Sustainability recognizes the imperative to preserve and conserve the environment for future generations. It is asserted here that natural resources should be used to meet their limited needs rather than being used excessively and irresponsibly.

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biodiversity protection and conservation by placing ecological values at the centre. Furthermore, incorporating environmental ethics ensures the equitable distribution of benefits and responsibilities and enables the resolution of environmental justice issues. By integrating these ethics, global politics can achieve sustainable development by considering the needs of present and future generations. Environmental ethics can be implemented in world politics in the following ways.

Stewardship: States should contribute by seeing themselves as custodians of natural resources. Protecting and preserving ecosystems should be a priority for states. States should be aware that man must care for and protect the environment. States should adopt an environment-friendly approach while designing and implementing internal and external policies. States should adopt policies that promote the concept of sustainable development and support initiatives that protect biodiversity and natural habitats.

Sustainability: Sustainability is a key principle of environmental ethics. States should adopt a holistic approach that integrates economic, social and environmental considerations in the decision-making process. This means pursuing development strategies that meet the needs of the present without compromising the ability of future generations to meet their own needs. This includes promoting renewable energy sources, promoting resource efficiency and implementing policies that address climate change and environmental degradation.

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By incorporating these environmental ethics into their approaches, states can establish a solid foundation for sustainable and responsible environmental governance.

These principles guide decision-making processes, shape policies and inform actions that contribute to the well-being of present and future generations by protecting the creation around us.

Conclusion

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शाश्वत विकास : मराठवाड्यातील बहुआयामी दारिद्र्य एक अभ्यास

चव्हाण उदयराज चंदन
संशोधक
सामाजिकशास्त्रे संकुल,
स्वा.रा.ती.म.विदयापीठ, नांदेड.
मो.न. ९८३४१२८०१९
udayrajchavan143@gmail.com

प्रा. डॉ.बिरादार माधवराव नरसिंगराव
सहयोगी प्राध्यापक
दिगंबरराव बिंदू महाविद्यालय,
भोकर
मो.न. ९४२१७६८४३९

प्रस्तावना:

शाश्वत विकास म्हणजे दीर्घकाळ टिकणारा विकास होय. २००५ ते २०१५ हे दशक शाश्वत विकासासाठी च्या शिक्षणाचे दशक म्हणून जाहीर केले. शाश्वत विकसांतर्गत शाश्वत विकास ध्येय हे २०१५ मध्ये जागतिक पातळीवर अभ्यास करून ठरवण्यात आले. त्या अगोदर सहस्त्र विकास ध्येय २००० ते २०१५ या कालावधी पर्यंत एम. डी. जी. आठ ध्येय साध्य करायचे होते परंतु ते ध्येय साध्य होऊ शकले नाही मग पुढे न्यू यॉर्क येथे २५ ते २७ सप्टेंबर २०१५ शाश्वत विकास परिषद भरली होती त्या परिषदेत शाश्वत विकासासाठी २०३० पर्यन्त आपले जग बदलते (transforming our world the 2030 agenda for sustainable development) या विषयावर चर्चा झाली होती. त्याआधारे शाश्वत विकासाची ऐकून १७ ध्येय आणि १६९ उद्दिष्टे ठरवण्यात आली आणि ते २०३० पर्यन्त साध्य करण्याचा निराधार संयूक्त राष्ट्राने केला आहे. त्यात विशेष म्हणजे शाश्वत विकास ध्येय हे बाहुआयमी दारिद्र्य निर्देशांक लागू होतात. १७ एस. डी. जी पैकी ७ ध्येय एम. पी. आय. संबधित आहेत.

अभ्यासाची व्याप्ती :

शाश्वत विकास ध्येय ही संकल्पना वापरुन जागतिक पातळीवर त्याचा अभ्यास केला आहे परंतु विषयाची मर्यादा लक्षात घेत केवळ शाश्वत विकास ही संकल्पना आणि मराठवाड्यातील बहुआयामी दारिद्र्य यांचाच अभ्यास केला जाणार आहे. हीच या विषयाची व्याप्ती आहे.

संशोधन विषयाची उद्दिष्टे:

शाश्वत विकास ही संकल्पना अभ्यासणे.
शाश्वत विकास ध्येय आणि बहुआयामी दारिद्र्य निर्देशांक संबधित घटकाचा आढावा घेणे.
मराठवाड्यातील बहुआयामी दारिद्र्य वस्तुस्थिती जाणून घेणे.

संशोधन विषयाची ग्रहीतके :

मराठवाड्यातील जिल्हा निहाय बहुआयामी दारिद्र्य प्रमाणात तफावत दिसून येते.

संशोधन पद्धती :

विषयाचे उद्दिष्टे विचारात घेवून संशोद्काने वर्णनात्मक संशोधन पद्धतीचा उपयोग करण्यात आला आहे. संशोधकर्ता व्दितीय स्रोत मध्ये विविध अहवाल, संशोधन पत्रिका, मासिके, पुस्तके, विविध लेखाचा माध्यमातून माहिती संकलित केले आहे. त्या माहितीच्या आधारे पुढील विश्लेषण मांडले आहे.

शाश्वत विकास संकल्पना :

शाश्वत विकास ही संकल्पना मर्यादित संसधनाचा वापर आणि भविष्यातील पिढी साथी राखून ठेवणे होय. ही संकल्पना विकास आणि पर्यावरण या दोन्ही परस्पर विरोधी नाहीत तर ते पूरक आहेत म्हणून मानवी विकास हा सामाजिक, आर्थिक आणि पर्यावरण या दृष्टिकोनातून शाश्वत विकास होणे अपेक्षित आहे. सर्वप्रथम शाश्वत विकास ही संकल्पना बरूटलंड यांनी १९८३ मध्ये मांडले, पर्यावरण जागतिक आयोग अध्यक्ष बरूटलंड होते आणि हा अहवाल बरूटलंड आयोग म्हणून ओळखला जातो. भावी पिढीच्या राहणीमनाच्या दर्जा स्थिती बिघाड न होऊ देता भावी पिढी साथी रोखून ठेवणे म्हणजे शाश्वत विकास होय.

व्याख्या :

बरूटलंड आयोग : भावी पिढीच्या गरज भागविण्याची क्षमता टिकून ठेवणे आणि स्वतच्या गरज भागविणे म्हणजे शाश्वत विकास होय.

सर्वसाधरपणे : नैसर्गिक साधन स्रोत विवेकपूर्ण वापर करून मानवाच्या आर्थिक, सामाजिक,पर्यावरण गरजा भागवून भावी पिढ्यासाठी टिकून ठेवणे म्हणजे शाश्वत विकास होय.

शाश्वत विकासाची आवशकता:

पर्यावरण संवर्धन करणे.
भावी पिढीच्या गरजा भागविणे
नैसर्गिक संसाधनाचा योग वापर करणे.
पर्यावरण प्रदूषण रोखणे
जंगल तोंड रोखणे
स्वच्छ हवा
सामाजिक, आर्थिक, पर्यावरण टिकून ठेवणे.
वंचित समूहाला विकासाच्या प्रक्रियेत समावून घेणे.
मानवी आरोग्य चांगले ठेवणे
परिसंस्थाचे रक्षण करणे
उर्जेचा सुयोग्य वापर करणे

वरील संगीतल्याप्रमणे शाश्वत विकास होणे गरजेचे आहे कारण आज जर सर्व गोष्टी उपभोग घेतला आणि भविष्यातील पिढीसाठी काहीच शिल्लक ठेवले नाहीतर परिस्थिती हाताबाहेर जावून बसते, त्याच्यासाठी शाश्वत विकास होणे आवशक आहे जेणे करून भविष्य कालीन पिढी त्या गोष्टी उपभोग घेतील.

शाश्वत विकास ध्येय आणि बहुआयामी दारिद्र्य निर्देशांक :

आरोग्य :	
कुपोषित	शून्य उपासमार ध्येय 2
बाल मृत्युदर	चांगले आरोग्य ध्येय 3
शिक्षण :	
शालेय वर्ष	शिक्षणाची गुणवत्ता ध्येय 4
शाळेतील उपस्थिती	शिक्षणाची गुणवत्ता ध्येय 4
राहणीमान :	
1) इंधनाचा वापर	परवडणारी स्वच्छ ऊर्जा ध्येय 7
2) सांडपाण्याची व्यवस्था	स्वच्छ पाणी आणि सांडपाणी ध्येय 6
3) पिण्याचे पाणी	स्वच्छ पाणी आणि सांडपाणी ध्येय 6
4) घर पक्के	शाश्वत शहरे आणि समुदाय ध्येय 11
5) वीज पुरवठा	परवडणारी स्वच्छ ऊर्जा ध्येय 7
6) मालमत्ता	दारिद्र्य नाहीसे करणे ध्येय 1

स्त्रोत : sdg india index and dashboard 2020-21

वरील तक्त्यावरून असे दिसून येते की एम.पी.आय. चे घटक एस.डी.जी. शी संबधित आहेत परंतु या हे घटक जागतिक पातळीवर ठरवण्यात आले आहे त्याचा राज्य, जिल्हा, तालुका, गावपातळी वर एकत्रित अभ्यास केलेला नाही. एम.पी.आय. आणि एस.डी.जी घटक एकत्रित मोजमाप केले तर नक्कीच फायदा होईल.

मराठवाड्यातील बहुआयामी दारिद्र्य वस्तुस्थिती :

मराठवाड्यात एकूण आठ जिल्हे आहेत त्याचा बहुआयामी दारिद्य खालीलप्रमाणे.

मराठवाड्यातील जिल्हे	बहुआयामी दारिद्राय प्रमाण
जालना	२९.४१ %
हिंगोली	२८.०५ %

नांदेड	२७.४८ %
परभणी	२३.३९ %
बीड	२२.६६ %
लातूर	१७.९० %
उस्मानाबाद	१७.८४ %
औरंगाबाद	१४.८६ %

स्त्रोत : national multidimensional poverty index basline report based on nfhs 4 (2015-16)

वरील तक्त्यावरून असे लक्ष्यात येते की, मराठवाड्यातील दारिद्रायचे स्थिती चांगली नाही. जिल्हानिहाय बहुआयामी दारिद्राय प्रमाणात तफावत दिसून येते आणि ही बाब चिंताजनक आहे त्याला वेगवेगळी कारणे असू शकतात ते पुढील प्रमाणे वाढती लोकसंख्या, महगाई, बेरोजगारी, उपसामार इत्यादी. शाश्वत विकास ध्येय एक २०३० पर्यंत साध्य करायचे असेल तर दारिद्य समूळ उच्चाटन करणे गरजेचे आहे अन्यथा मराठवाड्यातील अजून मागास भाग म्हणुन गणला जाईल त्यावर वेळीच योग अमलबजावणी होणे आवशक आहे. तरच मराठवाड्यातील बहुआयामी प्रमाण कमी होईन जिल्हा निहाय तफावत दूर होण्यास लाभ होईल अन्यथा ही दारिद्रायचे प्रमाण वाढतच जाईल त्यामुळे दारिद्रायचे मोजमाप योग पद्धतीने होणे आवश्क आहे त्यासाठी जिल्हा निहाय अभ्यास करणे गरजेचे आहे .

निष्कर्ष :

आज च्या काळाची स्थिती जर पाहली तर विकास होणे गरजेचे आहे परंतु शाश्वत विकास झाला पाहिजे जे करून पुढील पिढीसाठी लाभदायक ठरतील आणि तसा जर विकास झाला नाही तर हे विनाशाकडे जात आहे असे लक्षात येते म्हणून शाश्वत विकास होणे अत्यत आवशक आहे. मराठवाड्यातील बहुआयामी दारिद्राय प्रमाण जिल्हा निहाय तफावत दिसून येते हे गृहीतकुत्य खरे ठरेल आहे. मराठवाड्यात आजून दारिद्रयचे सावट संपलेले नाहीत. योग्य वेळी उपाय योजना कले तर शाश्वत विकास ध्येय एक २०३० पर्यंत दारिद्रय नाहीसे करणे हे ध्येय साध्य होऊ शकेल अन्यथा नाही. शाश्वत विकास ध्येय आणि बहुआयामी दारिद्य निर्देशांक याचे एकत्रित मोजमाप केवळ जागतिक पातळी वर केलेला आहे जेव्हा याचा एकत्रित मापन राज्य,जिल्हा,तालुका, गावपातळी होईल तेव्हा खरोखरच शाश्वत विकास ध्येय साध्य होतील आणि बहुआयामी मधून लोक बाहेर पडतील. तसे जर झाले तर आजून काही दशके लागू शकतात शाश्वत विकास ध्येय साध्य करण्यासाठी दारिद्रयाचे प्रमाण देखील कमी होणार नाही.

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मानसिक आरोग्यात पर्यावरणीय वातावरणाची भूमिका

प्रा. डॉ. रामकिसन बेलनुर
प्रा. डॉ. सुरेश पाटील
मानसशास्त्र विभाग,
मस्त्योदरी कला, विज्ञान व वाणिज्य महाविद्यालय, अंबड

गोषवारा

आरोग्या मध्ये शारिरीक प्रमाणेच मानसिक घटकांचा समावेश होतो. शारिरीक आजाराप्रमाणे मानसिक आजार देखील पर्यावरणीय वातावरणामुळे होत असतात. जागतिक आरोग्य संघटनेच्या मतानुसार जवळपास ५५ टक्के आजार हे मानसिक स्वरूपात असतात. सदरील संशोधनासाठी दृत्तिय साधनाचा वापर करण्यात आला आहे. यामध्ये संशोधन लेख, पुस्तके, वर्तमानपत्र, इत्यादींचा समावेश होतो. व्यक्तीमत्व विकासात वातावरणाचा खुप मोठा वाटा आहे. अनुवंशिता समानच परिवेश किंवा वातावरणरा प्रभाव दिसुन येते हे अनेक संशोधनातून दिसुन आले आहे. तसेच पुर, भुकंप, वादळे, इत्यादी पर्यावरणीय वातावरणमुळे देखील चांगले मानसिक आरोग्य असणाऱ्या व्यक्तीमध्ये देखील समस्या तयार होतात. त्यांना ताणतणाव, नैरास्य, चिंता, डिपरेशन, भिती, घाबराट, मनोकायिक विकृती, छिन्नमनस्कता, इत्यादीं निर्माण होतात. मानसिक आरोग्य संवर्धनासाठी आहार, व्यायाम, झोप, विश्रांती, इत्यादी घटक करणे गरजेचे आहेत. जे पर्यावरणास पुरक आहेत. यावरून असे दिसुन आले आहे की, व्यक्तीच्या वर्तनावर तसेच मानसिक आरोग्यावर वातावरणाचा प्रभाव दिसुन येते.

शब्द सुची: मानसिक आरोग्य, पर्यावरणीय वातावरण, व्यक्तीमत्व, आरोग्य, उपाय

प्रस्ताविक:

आरोग्य धन संपदा या प्रमाणे कोविड १९ पासुन सर्व जग आरोग्य विषयक फार जागरूक झाले आहे. या काळापासून आरोग्य संदर्भात जनसामान्य काळजी घेत असल्याचे दिसुन येत आहे. 'आरोग्य़ म्हणजे शारीरिक आणि मानसिक दृष्टिने व्यवस्थित आणि रोगमुक्त असल्याची अवस्था होय'.—विकीपीडीया. सदरील व्याख्यावरून असे दिसुन येते की, शारिरीक आरोग्य बरोबरच मानसिक आरोग्य देखील महत्वाचे आहे. आज शारीरिक आरोग्य विषयक प्रत्येक व्यक्ती जागृत दिसुन येते. तसेच बाह्य वातावरणाचा होणारा आरोग्यावर होणारा परिणामाचा देखील विचार करताना दिसुन येतात. मात्र मानसिक आरोग्य संदर्भात दूरलक्ष होताना दिसुन येत आहे. जागतीक आरोग्य संघटनानुसार आरोग्यमध्ये एकुण आजारापैकी ५५ टक्के आजार हे मानसिक स्वरूपाचे असतात. यावरून मानसिक आरोग्याची व्याप्ती लक्षात येते. अमेरिकन सायकोलॉजी असोशषन नुसार

डी. एस. एम. ही आवृत्ती मानसिक आजारासंदर्भात, त्यांच्या लक्षणासंदर्भात आणि उपाय संदर्भात आवृत्ती प्रकाशित करत असतात. या मध्ये स्पष्ट दर्शवले आहे की, मानससिक विकृती तयार होताना जैविक कारणा बरोबरच पर्यावरणाचा तसेच व्यक्ती ज्या समुहात राहतो याचा देखील परिणाम होते.

सामान्यपणे प्राचीण, मध्ययुगीन आणि आधूनिक काळात बहुतेक संस्कृतीनी मन आणि शरीर एकत्र गुफलेले वा जोडलेले असतात असे मानलेले आहे. यानुसार बाहय पर्यावरणाचा जसा शरीरावर परिणाम होते तसाच मनावर देखील होते. आजार होण्यामध्ये वातावरणासोबत केवळ शारीरिकच नव्हे तर मानसिक घटकाचा सहभाग देखील महत्वाचा असतो. वातारणातील बदलामुळे मानसिक आरोग्यावर देखील परिणाम होते. काही व्यक्ती मध्ये हिवाळा याकाळात नैरास्याचे प्रमाण जास्त होताना दिसुन येते. उन्हाळा का काही व्यक्तीमध्ये आक्रमक्ता वाढलेली दिसुन येते. असे अनेक संशोधनातुन दिसुन येत आहे.

संशोधनाचे महत्व: शारीरिक आरोग्याप्रमाणेच मानसिक आरोग्यावर वातावरणचा परिणाम होते. या संदर्भात जनमानसात माहिती कमी प्रमाणात आहे. या मुळे सदरील संशोधन महत्वाचे आहे.

उद्दिष्टये: मानसिक आरोग्यावर पर्यावरणीय वातावरणाचा परिणाम अभ्यासणे.

गृहितके: मानसिक आरोग्यावर पर्यावरणीय वातावरणाचा परिणाम होते.

संशोधन पध्दती: सदरील संशोधनासाठी दृत्तिय साधनाचा वापर करण्यात आला आहे. यामध्ये संदर्भ साहित्याचा आढावा, पुस्तके, आरोग्य विषयक मासिक, वृत्तपत्रे, संशोधन लेख, इत्यादींचा वापर करण्यात आला आहे.

संशोधन विश्लेषन: पर्यावरणीय वातावरणाचा आरोग्यावर परिणाम दिसुन येत असते. म्हणुन पुर्वी ऋषी मुनी एकांतात राहुन ध्यान धारणा करून आपले कार्य करत असत. आजच्या स्पर्धाच्या युगात प्रत्येकाला यश मिळवण्यासाठी स्पर्धा करावी लागत आहे. यामुळे मानसिक आरोग्यावर परिणाम होत असताना दिसुन येत आहे. पुढील पर्यावरणीय घटक मानसिक आरोग्याला बाधा किंवा कारणीभुत आहेत. भुकंप, ज्वलामुखी, सुनामी, दुष्काळ, महापुर, चक्रीवादळे, वाढलेले जागतीक तापमान, वाढलेली व्यसनाधिनता, एकांताचा अभाव, प्रदुशण युक्त हवा, अपुरा सुर्ये प्रकाश, इत्यादी. यामुळे व्यक्तीमध्ये भिती, चिंता, नैराश्य, चिडचिड, कायीक विकृती, संशय विकार, अतिउत्साह, छिन्नमन्स्कता, व्यसनाधीनता, एकाग्रतेचा अभाव, इत्यादी. मानसिक समस्या दिसुन येतात.

मानसिक आजार: कुठलाही आजार होण्यासाठी आवश्यक, पुरेशी व सहभागी कारणे आवश्यक असतात. असे अनेक संशोधनातुन दिसुन आले आहे. यामध्ये पर्यावरणीय वातावरणाचा सहभाग असतोच. नवीन

परिस्थितीमध्ये समायोजन साधताना व्यक्तीला ताणाचा सामना करावा लागतो. आजच्या युगात व्यक्तीला दररोज या ना त्या माध्यमातुन ताणाचा प्रत्यक्ष अनुभव येत असतो. तसन म्हणजे जीवनाच्या गुणवत्तेला, शारीरिक व मानसिक स्वास्थ्याला असणारा धोका होय. पर्यावरण किंवा परिवेश परिस्थितीवर ताण तणाव अवलंबून असतो. लाझरस आणि सहकारी १९८४ यांच्या मते ताण ही अशी परिस्थिती आहे. ज्यामध्ये परिस्थितीने व्यक्तीकडून केलेल्या शारीरिक अथवा मानसिक स्वरूपाच्या अपेक्षा वा मागण्या आणि त्यांची पूर्तता करण्यासाठी व्यक्तीजवळ उपलब्ध असलेले जैविक, मानसिक आणि सामाजिक प्रणालीचे स्त्रोत यांच्यातील विसंगतीचे आंतरक्रियात्मक विनिमयाच्या माध्यमातून संवेदन होते. ताणाला सामारे जाताना एखाद्या व्यक्तीद्वारे धोकाजनक घटना पुसंगांचे स्पष्टीकरण किंवा मूल्यांकन कसे केले जाते. यावर त्या व्यक्तीला ताणतणावांचा अनुभव येईल की, नाही हे अवलंबून असते.

युध्द, भूकंप, मानसिक व शारीरिक छळ अशा तीव्र ताण उत्पन्न करणाऱ्या प्रसंगी उत्तम मन:स्वास्थ असणाऱ्या व्यक्ती देखील कोलमडून जातात. त्यांच्यामध्ये घबराट, चिंता, ताणतणाव निर्माण होतो. कायिक विकृती आणि वियोजनात्मक आजार यामध्ये ज्या अवस्थेत कोणताही शारीरिक बिघाड किंवा आजार झालेला नसतानाही जेव्हा त्यासंबंधीच्या तक्रारी व्यक्ती करतेत्र त्या अवस्थेला मानसिक समस्या कायिक अवस्थेतून बोलत असते. मन:स्थितीतील बदल किंवा चढउतार हे सर्वसामान्य व्यक्तीच्या बाबतीत नेहमीच घडत असतात. हे बदल जेव्हा अतिशय तीव्र होतात तेव्हा त्या व्यक्तीच्या मनास्थितीत बदल झाला आहे असे समजले जाते. छिन्नमनस्कता ही व्यक्तीच्या मन: स्वाथ्य संपूर्णपणे कोलमडून पडते असल्याचे निदर्शत होत असते. यामध्ये व्यक्तीला वास्तववाचे भान नसते. त्यांचा वास्तव परिस्थितीशी संबंध तुटलेला असतो.

उत्तम मन:स्वास्थ असणाऱ्या व्यक्तींचा आयुष्य भर विकास होत असतो. त्या सतत स्वत:मध्ये बदल करीत असतात. आयूष्याच्या वेगवेगळया परिस्थितीशी समायाजन साधून तसेच मर्यादा संभाळून ते आनंदी राहतात. पर्यावरणासी समायोजन हे एक महत्वाचे आनंदाचे माध्यम आहे.

आरोग्य संवर्धन हा सध्याच्या युगातील अत्यंत संवेदनशील विषय असल्याचे दिसून येत आहे. आरोग्य संवर्धक वर्तन संवेदनशील विषय असल्याचे दिसून येत आहे. आरोग्य संवर्धकवर्तन हे ाकरात्मक दृष्टिकोनानुसार जीवन जगण्याचे साध असुन ते आरोग्याची इष्टतमता आणि आत्मवास्तविकता वाढ विण्यास मदत करते. आरोग्य संवर्धक वर्तनात आहार, व्यायाम, झोप, विश्रांती, लसीकरण, तपासणी आणि अपघात प्रतिबंध, इत्यादींचा समावेश होतो. अंत:प्रेरणा आणि त्या व्यतिरिक्त इतर काही छोटी मोठी घटक व्यक्तीला आपल्या पूनर्संचयित प्रक्रियेबददलच्या विचारांसाठी मार्गदर्शन करतात. तथापि आरोग्य संदर्भात असा विश्वास आहे की, विश्रांती वर्तन नुतनिकरण आणि गचत करणे या गोष्टी आरोग्यासाठी लाभदायक असतात. त्यामध्ये

सुटटीसाठी घरी जाणे, परिक्षेनंतर आराम करणे, फिरणे किंवा सर्यास्ताचा आनंद घेणे, यांसारच्या पर्यावरण पूरक गोष्टींचा समावेश होतो.

अचुक मापनावर अचुक निदान अवलंबून असते व अचुक निदानावर उपचारांची योग्य अयोग्यता अवलंबुन असते. मानसिक आरोग्य तपासण्यासाठी निरीक्षण करणे, वेगवेळया मानसशास्त्रीय चाचण्यांचा वापर करणे, प्रयोग पध्दतीचा वापर करणे, इत्यादी शास्त्रीय पध्दतीचा वापर केला जातो. यामध्ये निरीक्षण परिक्षण करून व्यक्तीची लक्षणे ओळखून त्यावर उपचार केले जातात. समस्या उत्पन्न करणाऱ्या मुख्य घटकांचे मूल्यमापन करणे. उपचार उपयुक्त ठरू शकतील अशा बलस्थानांचा शोध घेणे. परिस्थितीने व्यक्तीकडुन केलेल्या अपेक्षा व त्याला मिळणारा आधार या दोन गोष्टींचा रूग्णाच्या मन:स्वास्थ्यावर बराच परिणाम होत असतो.

मानसिक आरोग्यवरील समस्यावर उपाय करताना प्रमुखाने पर्यावरण संवर्धन करणे गरजेचे आहे. मानसिक आरोग्यासंदर्भात सकारात्मक विचार वाढणे, लढाउवृत्ती विकशीत करणे, मानसोपचारतज्ञ आणि समुपदेशक यांची मदत घेणे, समाज प्रभोधन, समुह उपचार पध्दती, कुटुंब उपचार पध्दती, वर्तनोपचार पध्दती, बोधात्मक उपचार पध्दती, इत्यादींचा समावेश होतो.

संशोधन निष्कर्ष: सदरील संशोधनावरून असे दिसुन आले आहे की, मानवी वर्तनावर पर्यावरणाचा परिणाम दिसुन येते. यामुळे मानसिक आरोग्य प्रभावीत होत.

संशोधनाची मर्यादा: संशोधनामध्ये फक्त दुयम सांधनाचा वापर करण्यात आला आहे.

संदर्भ सुची:

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मानसी राजहंस आणि सहकारी (२००४), अपसामान्याचे मानसशास्त्र, विद्या प्रकाशन, पुणे.
बी. एन. बर्वे (२०१०), मानसशास्त्रातील संशोधन पध्दती, पुणे, विद्या प्रकाशन.
एम. डी. कानडे आणि सहकारी (२०१५) ग्रामीण व शहरी लोकांचे जीवनमान उंचावण्यासाठी मानसशास्त्राचे योगदान, औरंगाबाद, रूद्रायणी ऑफसेट.
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मराठवाड्यातील साहसी क्रीडा प्रकार - एक अभ्यास

नलभे सुधीर रावसाहेब
सहशिक्षक
प्रतिष्ठान महाविद्यालय,पैठण

डॉ झेंडे वसंत गजाबा
क्रीडा संचालक

गोषवरा :-
मानव हा साहस जन्माबरोबर घेऊन येतो असे म्हटल्यास वावगे ठरणार नाही. पण ते सहज कसे प्रदर्शित करतो तो मार्ग महत्त्वाचा साहसाची प्राथमिक अवस्था म्हणजे मानवाच्या निर्मितीपासून निसर्गनिर्मित संकटे प्राणीमात्र इत्यादी पासून येणाऱ्या अडचणी संकटावर मात करण्याचे साहस मानवाने दाखवून तो आजच्या आधुनिक मानवापर्यंत उत्क्रांत झालेला आहे साहस हे वृत्तीमध्ये असते सहा शब्द उच्चारला तरी गिर्यारोहण हा सारखे क्रीडाप्रकार आपल्या नजरेसमोर येतात उदाहरणार्थ पुराणातील युद्धकथा इतिहासातील अनेक पराक्रमी योद्धे युद्धप्रसंग देशभक्त क्रांतिकारक यांनी केलेली साहसे ही आजच्या आधुनिक सामाजिक जीवनाला प्रेरणादायी आहेत जय हनुमान बाल गणेश सुपरमॅन स्पायडरमॅन बॅटमॅन मोटर शक्तिमान यासारख्या मालिका सिनेमा लहान मुले तसेच मोठ्यांच्या मनातील साहसी वृत्ती चालना देतात विविध वाहिन्यांवर प्रसारित होणारे शब्दाशी यासारखे साहसी क्रीडा प्रकार यावर आधारित कार्यक्रम माणसाच्या मनावर अधिक प्रभावीपणे ठरतात असे साहसी क्रीडा प्रकार प्रामुख्याने छंद प्रसिद्धी उच्चांक विक्रम आर्थिक ला निसर्गाशी जवळीक निसर्गाशी एकरूप ता निसर्ग रक्षण निसर्ग संवर्धन संशोधन व्यायाम या अनुषंगाने सहासी क्रीडा प्रकारांकडे पाहिले जाते राष्ट्रीय व आंतरराष्ट्रीय स्तरावर विविध साहसी क्रीडा प्रकार अस्तित्वात आहेत महाराष्ट्रात साहसी क्रीडा संस्थांचा विकास व वाढ सामाजिक करण्याच्या प्रक्रियेत मानवाच्या सुरक्षिततेसाठी उपयुक्त आहे साहसी क्रीडा प्रकार नैसर्गिक आपत्ती अपघात अशा कठीण प्रसंगी देखील निश्चितपणे उपयुक्त आहेत.

प्रस्तावना:-

साहसी क्रीडा या सारखे छंद ही एक आधुनिक संकल्पना असून ते एक तरुणांमधील वेड असले पाहिजे. पण हे खरे नाही, आपण इतिहासाचे परीक्षण केले तर रामायण, महाभारतापासून किंबहुना त्यापूर्वी हा छंद जोपासला जात होता. लीळाचरित्रा मध्ये देखील चक्रधर स्वामींनी पर्वत क्रीडा म्हणून गिर्यारोहणस संबोधले आहे अठराव्या शतकापासून हिमालयात व इतर ठिकाणी गिर्यारोहण केले जात आहे.

मराठवाड्यातील औरंगाबादच्या सागर राजू बडवे याने मराठवाड्यातील एकमेव जलतरणपटू म्हणून जिब्राल्टर जिब्राल्टर ची खाडी पोहण्याचा पराक्रम केला त्यामुळे त्याला २०१८-१९ या वर्षी साहसी क्रीडा पुरस्कार मिळाला आहे असे अनेक साहसी पुरस्कार मराठवाड्यातील तरुणांना मिळालेले आहेत मराठवाड्याच्या वेगवेगळ्या जिल्ह्यातून चांगल्या क्रीडा संकुलाचे आवश्यकता

आहे व त्यासाठी मराठवाड्यात आंतरराष्ट्रीय दर्जाचे क्रीडा संकुल उभारण्यासाठी प्रयत्न होत आहेत औरंगाबाद मध्ये मराठवाड्यातील पहिले क्रीडा विद्यापीठ होणार आहे घोषणा देखील झाली आहे, नांदेड ला कवठा येते तीस एकर जागेवर आंतरराष्ट्रीय दर्जाचे अद्यावत क्रीडा संकुलाचा निर्णय झाला आहे मराठवाड्याचा साहसी क्रीडा विषयाचा इतिहास तितकाच चित्तथरारक व रोमहर्षक आहे स्वतःच्या जीवाला धोक्यात टाकून एक वेळ साहस करण्याचा प्रयत्न म्हणजे साहसी क्रीडा होय. पण या वेड्या साहसाने ही मराठवाड्यातील अनेक तरुणांना बोलविले आहे अशा घटना साहसी क्रीडापटू होण्यास प्रेरणादायी ठरतात.

महाराष्ट्राचे कुलदैवत छत्रपती शिवाजी महाराज म्हटले की सहसा विषयी वेगळे काही सांगावे लागत नाही. असा जाज्वल्य इतिहास मावळ्यांच्या पराक्रमाची गाथा, साहसी किरणांची पार्श्वभूमी आहे. आजही मराठवाड्यातील अजस्त्र आणि अवघड कोट साहसी वीरांना साद घालत आहेत.मराठवाड्यातही अनेक गडकोट व किल्ले आहेत. त्यातील अनेक गडकोट व किल्ले साहसी क्रीडाप्रकारांची माहेर घरे आहेत. शिवाजी महाराजांच्या शूर साहसी मावळ्यांनी गिर्यारोहणाची अनेक तंत्रे वापरून त्याकाळी असणाऱ्या तुटपुंज्या साधनांचा उपयोग करून अनेक गडकोट शत्रूकडून हिसकावून घेतले. त्याची अनेक उदाहरणे इतिहासात सापडतात. प्रसंगी आपल्या प्राणाची बाजी लावून मावळ्यांनी किल्ले जिंकले व स्वराज्य अबाधित राखले. हे मराठवाड्यातील साहसी क्रीडापटूंना प्रेरणादायी आहे .त्यामुळे मराठवाड्यातील औरंगाबाद लातूर बीड परभणी उस्मानाबाद हिंगोली नांदेड या शहरातील तरुणवर्ग अधिक मोठ्या प्रमाणावर या क्रीडा प्रकारात सहभागी होताना दिसतो. अनेक अपंग, अंध, मतिमंद खेळाडू देखील या क्षेत्रात सहज साध्य नसणाऱ्या अनेक क्रीडा प्रकारात सहभागी होतात, जिद्दीच्या जोरावर यश संपादन करू लागले आहेत

सदर विषयाची व्याप्ती लक्षात घेऊन संशोधन विषय संबंधित संदर्भ ग्रंथ वर्तमानपत्रे, मासिके, एम एड ची लघु संशोधने, प्रकाशित अप्रकाशित पीएच.डी शोध प्रबंध, संकेतस्थळे इ. माध्यमातून अनेक संदर्भाचा मागोवा घेतला आहे. १.सहस्त्रबुद्धे, पु. ग. (१९९४) "महाराष्ट्राची संस्कृती". या ग्रंथात इ.स. पूर्व २२५ ते इ. स. १९४७ या सुमारे बावीसशे वर्षाच्या काळातील महाराष्ट्राच्या संस्कृतीचे त्यामध्ये मराठवाड्यातील संस्कृतीचे विवेचन केले आहे. या ग्रंथात धर्म, राजकारण, समाजकारण, अर्थकारण, विज्ञान, कला साहित्य व शिक्षण अशा संस्कृतीच्या अष्टप्रधान अंगाचा विचार केलेला आहे. २.लांजे, हिरामण, (२०००) "महाराष्ट्राची लोकनृत्य, नाट्यधारा महाराष्ट्र संस्कृती": या ग्रंथात महाराष्ट्राचा सांस्कृतिक इतिहास इसवी सन पूर्व ३२५ ते इसवी सन १९४७. तसेच सातव्या शतकात इसवी सन ६३९ हुएन्तसंग हा चिनी प्रवासी भारतात आला तेव्हाच्या प्राचीन राजवटी विषयी विवेचन, व विविध कला नाट्यप्रकार नृत्यप्रकार प्राचीन खेळ याविषयी प्रस्तुत ग्रंथात विस्तृत माहिती दिलेली आहे. ३.अक्कलकोट, सतीश. (२००४) 'दुर्ग'. : प्रस्तुत ग्रंथात मराठी मुलखातील दुर्ग जिल्ह्यानुसार नकाशा सहित माहिती दिलेली आहे. मराठवाड्यातील सर्व जिल्ह्यात सहित दुर्गांची माहिती संदर्भसूची,रंगीत छायाचित्रे, दुर्गांची छायाचित्रे अशा स्वरूपात सदर खंड अतिशयसोप्या भाषेत लिहिलेला आहे मासिके ४.मुटाटकर,

रामचंद्र.(जानेवारी-२००७)हाकारा,५. नाहटा, विजय. (मार्च)२०११ लोकराज्य,६.राज, आज सुनील (ऑगस्ट-२००६) 'जिद्द',७. बावडेकर श्रीप्रसाद, अश्वरोहन- सर्वकष व्यायाम, ८. राम सहस्त्रबुद्धे यशवंत, एक रोमहर्षक आणि आत्मविश्वासक नियतकालिका,९ .कुरुलकर प्रदीप, सर्वांग सुंदर क्रीडा- अश्व रोहन., १०.जमेनिस शर्वरी, अश्व रोहन- एक वेगळा आत्मविश्वास. अशाप्रकारे वेगवेगळ्या ग्रंथांमधून मासिकांमधून प्रस्तुत भूत संशोधनाच्या संदर्भ साहित्याचा आढावा घेता येतो.

सदर संशोधन हे संपूर्ण मराठवाड्यात व्याप्त आहे. अभ्यासाच्या सोयीसाठी मराठवाड्यातील आठ प्रमुख जिल्ह्यांमध्ये विभागणी केलेली आहे. औरंगाबाद, जालना, नांदेड, परभणी, बीड, उस्मानाबाद, लातूर, हिंगोली इत्यादी. सदर संशोधनामध्ये मराठवाड्यातील विविध कायद्याखाली नोंदणी केलेल्या, नोंदणी न केलेल्या, खाजगी संस्था, क्लब व त्यांचे सभासद, तज्ञ प्रशिक्षकांचा अभ्यासासाठी समावेश आहे.

साहसी क्रीडा यांची त्रिसूत्री म्हणजे, ओढ, महत्त्वकांक्षा आणि साहस होय. तसेच उर्मी, धाडस, जिद्द, असल्याशिवाय साहसी वृत्ती जोपासता येत नाही. सुरक्षा प्रणाली विषयी प्रशिक्षण, प्रशिक्षित तज्ञांची संख्या, साहसी क्रीडा प्रकार हे प्रामुख्याने निसर्ग, हवामान, वातावरण, पर्यावरण या प्रमुख घटकांच्या अभ्यासावर आधारित आहेत. आधुनिक समाजासाठी साहसी क्रीडा उपयुक्तता, आपत्कालीन परिस्थिती निर्माण झाल्यास साहसी क्रीडा प्रकारांच्या कौशल्यांचा, तंत्राचा वापर समाजाच्या या हितासाठी होऊ शकतो. साहसी वृत्तीला वाव, तांत्रिक प्रशिक्षण, हिमशिखरे सर करण्यातून साहसी वृत्ती निर्माण होऊ शकते. आपले हेच कौशल्य समाजासाठी वेगवेगळ्या प्रकारे उपयोगात आणता येते. समाजाच्या मदत कार्यासाठी, तसेच शारीरिक क्षमताचा विकास करण्यासाठी तसेच महाराष्ट्रातील संस्था, खेळाडूंचा अभ्यास करण्याची गरज आहे, साहसी क्रीडा प्रकारांच्या, स्पर्धा साहसी क्रीडा बाबत असणाऱ्या समस्या यांची ओळख, सामाजिक प्रतिसाद, समस्यांच्या समाधानासाठी, साहसी क्रीडा प्रकार ताण तणाव मुक्तीसाठी, साहसी क्रीडा प्रकार साहसी खेळांच्या माध्यमातून तरुणांनी सक्षम व्हावे, गिर्यारोहणाचे धाडस व्यक्तिमत्त्वाला पोषक ठरते.

सारांश

मराठवाड्यातील साहसी क्रीडा प्रकारांची वाढ, विकास, प्रचार आणि प्रसार होणे महत्त्वाचे आहे. मराठवाड्यातील साहसी क्रीडा प्रकारांच्या बाबत असणाऱ्या समस्या, खंत, अडचणी, उनिवा व इतिहास यासाठी सदर संशोधन विषयाचे महत्त्व आहे. साहसी क्रीडा प्रकार हे माणसामाणसांमध्ये सकारात्मक भावना निर्माण करतात, विशेषतः युवकांमध्ये, मोठ्या संख्येने युवक-युवतीसाहसी क्रीडा प्रकारात सहभागी होणे आवश्यक आहे.

मराठवाड्यातील साहसी क्रीडा संस्था व साहसी क्रीडा प्रकारांच्या माहितीचा आढावा व्यापक होणे आवश्यक आहे. साहसी क्रीडा प्रकारांचा विविध दृष्टिकोनातून अभ्यास करणे आवश्यक आहे. (विविध दृष्टिकोन: साधने, साहित्य, साहसी क्रीडा प्रकार, यशापयश, स्पर्धा व स्पर्धक, तज्ञ व प्रशिक्षक, शासकीय अनुदान, आधुनिक साधने यांचा अभ्यास.) साहसी क्रीडा प्रकारांचे

सामाजिक योगदान अभ्यासणे, नैसर्गिक आपत्तीच्या वेळी चे कार्य. (आपत्कालीन कार्य). साहसी क्रीडा प्रकारांच्या उपयोजनात्मक कार्यक्रमांचा अभ्यास होणे आवश्यक आहे.

गिर्यारोहन या साहसी क्रीडा प्रकार यामुळे शारीरिक आणि मानसिक आरोग्याचा विकास व व्यक्तिमत्व विकास होण्यास मदत होते. सहासी क्रीडा बाबत समज, गैरसमज आणि अज्ञान आहे. प्रशिक्षकांची गुणवत्ता, साधन साहित्याचा दर्जा, सुरक्षितता याकडे गांभीर्याने पाहिले जात नाही. साहसी क्रीडा प्रकारांसाठी शासकीय अनुदान मिळत नाहीत.

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५. लोकसत्ता

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पर्यावरण प्रदूषण- एक सामाजिक समस्या

डॉ. रामदास वैद्य
समाजशास्त्र विभागप्रमुख
अंकुशराव टोपे महाविद्यालय, जालना

किशोर लक्ष्मण साळवे
संशोधक विद्यार्थी

प्रस्तावना :-

पर्यावरण म्हणजे आपल्या सभोवतालची परिस्थिती.आपल्या सोबत आजचे वृक्ष, पक्षी, मानव, प्राणी, हवा, डोंगर इत्यादी घटक या सर्वांचे एकत्रित स्वरूप म्हणजे पर्यावरण होय. शिकारी ते शेतकरी अशा क्रमाने मानवाचा विकास होत गेला जीवन अधिकाधिक सुखी व समृद्ध करण्यासाठी आधुनिक कौशल्याचा वापर करायला सुरुवात केली त्यातूनच मानवी उत्क्रांती व विकास याचा इतिहास घडत गेला. वाढत्या लोकसंख्येच्या वाढत्या गरजा भागवण्यासाठी मानवाने औद्योगिक क्रांतीचा आधार घेतला आणि निसर्गाचे मूळ रूपच बदलायला लागले. नैसर्गिक साधन संपत्तीचा बेसुमार वापरामुळे मानवी हव्यासापोटी पर्यावरणाचा मोठ्या प्रमाणात रास होऊ लागला याचाच परिणाम सजीव सृष्टीवर होण्यास सुरुवात झाली. मानव आणि पर्यावरण यांचा घनिष्ठ संबंध मानवाच्या पृथ्वीवरील अस्तित्वापासून आहे. पृथ्वीवरील जीवसृष्टी या विशिष्ट आदिवासी नैसर्गिक परिस्थितीत जगते त्या सर्व पार्श्वभूमीला सामान्यता पर्यावरण असे म्हणतात. पर्यावरणावर सजीवांची रंग, रूप, वाढ, निर्मिती, अस्तित्व या गोष्टी अवलंबून असतात. मानव आणि पर्यावरण यांच्यातील नाते दुहेरी समजले जाते. पर्यावरणाच्या असमतोलामुळे त्याचा मानवी आरोग्यावर मोठ्या प्रमाणात परिणाम होत आहे. त्या बरोबर सजीव सृष्टीलाही धोका निर्माण झाला आहे. पर्यावरणाचा मानवावर जसा परिणाम होतो तसेच मानवाचाही पर्यावरणावर परिणाम होत असतो. मानवाच्या अतिरेकी, लोभी, स्वार्थी प्रवृत्तीमुळे पर्यावरणीय गुणवत्तेचा जगभर क्षय होत चालला आहे. प्रदूषणामुळे गंभीर स्वरूपाचे पर्यावरणीय संतुलन. मानवाने मुद्दाम अथवा न कळत टाकाऊ अथवा वाया गेलेले पदार्थ पर्यावरणात सोडल्यामुळे सजीव सृष्टीच्या दृष्टीने आवश्यक असलेल्या पाणी, हवा, भूमी या घटकात प्रतिकूल परिणाम व बदल घडून होऊन सजीवांना उपभोग घेण्यासाठी जेव्हा ते बाधक होतात व त्यांची गुणवत्ता व शुद्धता कमी होते त्यास प्रदूषण असे म्हणतात.

पर्यावरण व मानव यांचे अतूट अशा प्रकारचे नाते आहे. मानवाबरोबरच सर्व सजीव सृष्टी पर्यावरणाशी या नात्या नात्याने अनुबंधित झालेली आहे. निसर्गातील पाणी, हवा, वृक्ष, वनस्पती, जमीन, पशुपक्षी आणि मानव प्राणी यांच्या पारस्परिक नात्यात जेव्हा नैसर्गिक समतोल असतो तेव्हा पर्यावरण संतुलन आहे असे म्हणतात. कोणत्याही प्रदेशातील नैसर्गिक पर्यावरण हा सजीवांसाठी साधनसामग्रीचा अनमोल ठेवा असतो याचा वारसा हक्क व जतन ही सर्वस्वी मानवी पिढ्यांची जबाबदारी आहे.

संशोधन पद्धती :-

प्रस्तुत संशोधन हे प्रामुख्याने दुय्यम श्रोतावर आधारित असून त्यामध्ये प्रकाशित, अप्रकाशित लिखाण, संदर्भ ग्रंथ ,मासिक, साप्ताहिके, नियतकालिके, पर्यावरणास बाधित वेगवेगळे अहवाल, इंटरनेट इत्यादी दुय्यम श्रोतांचा उपयोग करण्यात आलेला आहे.

प्रदूषण ही आजही जागतिक स्वरूपाची समस्या आहे. काळाच्या ओघात विचार केल्यास वाढत्या लोकसंख्येबरोबरच वाढत्या गरजांच्या पूर्ततेसाठी उपलब्ध पर्यावरण संपदा वरील ताण दिवसेंदिवस वाढत आहे गेल्या शतकापासून पृथ्वीचे तापमान हळूहळू वाढत असल्याचे शास्त्रज्ञाच्या नजरेस आले आहे.

पर्यावरण प्रदूषणाची कारणे :-

पृथ्वीवर वनस्पती, प्राणी, मानव ज्या पर्यावरणात किंवा परिसरात राहतात त्या पर्यावरणातील विविध घटकांमध्ये संतुलन प्रस्थापित झालेली असते. सध्याच्या अनिर्बंध मानवी संस्कृतीमुळे पृथ्वीच्या पर्यावरणातील नेहमीच्या घटका व्यतिरिक्त इतर अपायकारक घटक मोठ्या प्रमाणावर पर्यावरणात सोडले जातात आणि त्यामुळे पर्यावरणाच्या विविध घटकातील संतुलन बिघडत चाललेले आहे पृथ्वीवरील वनस्पती व प्राणी यांच्या जीवनाच्या सातत्याने धोका निर्माण झालेला आहे. अशा क्रियाप्रक्रियामुळे प्रदूषण घडू लागते पर्यावरण प्रदूषणाचे कारणे पुढील प्रमाणे आहेत-

लोकसंख्या वाढ, शहरीकरण वाहतूक व इंधन ज्वलन रासायनिक खते, जंतुनाशकांचा वापर, औद्योगिक अपघात अनुप्रकल्प, युद्धे, औद्योगीकरण, जंगलतोड इत्यादी पर्यावरण प्रदूषण निर्माण होण्यासाठी प्रामुख्याने लोकसंख्या वाढ हे कारण कारणीभूत आहे. जगाची लोकसंख्या दिवसेंदिवस वाढत आहे त्याचबरोबर नैसर्गिक साधन संपत्ती मध्ये कपात होऊन पर्यावरणाची हानी होऊ लागले आहे. जनतेच्या गरजा भागवण्यासाठी नैसर्गिक वनस्पतीचा ऱ्हास जंगलतोड यामुळे दिवसेंदिवस पर्यावरण प्रदूषणात मोठ्या प्रमाणात वाढ होत आहे. त्यामुळे व्यक्तींना वेगवेगळ्या आजारांना सामोरे जावे लागत आहे सजीवांच्या जीवनाला प्रदूषणापासून होणारा त्रास हा मानव निर्माण झाल्यापासूनच आहे परंतु अठराव्या शतकापासून मात्र परिस्थिती झपाट्याने बदलत आहे मानवाकडून परिसरात ढवळाढवळ तिथे केली जात आहे प्रचंड प्रमाणात जंगलाचा विनाश होत आहे. उद्योगधंद्याचा वेगाने वाढ होत आहे. मानवाने अवलंबलेल्या औद्योगिकीकरणामुळे विसाव्या शतकाच्या सुरुवातीपासून निकेल, कोबाल्ट यासारखी विषारी मूलद्रव्य वातावरणात विखुरली गेली. औद्योगिकीकरणाचा वेग त्यानुसार झालेले हवेचे व पाण्याचे दूषितिकरण कचऱ्याचे प्रचंड वाढ शहरीकरण त्यामुळे गलिच्छ रस्त्याची अनिर्बंध वाढ वाहनांची संख्या आवाजाच्या वेगापेक्षा अधिक वेगाने प्रवास करणारी अत्याधुनिक जेट विमाने या सर्वच घटकामुळे घटकांचा प्रश्न दिवसेंदिवस गंभीर होत आहे प्रदूषणाची तीव्रता कोणत्याही वेळी मानवाच्या सर्वनाश करण्यास समर्थ आहे

पर्यावरण प्रदूषणाचे प्रकार:-

1. हवा प्रदूषण :-

वायु प्रदूषण म्हणजे हवेत अशा अवंचित वायू धूळ इत्यादीचे अस्तित्व असणे जे लोक आणि निसर्गासाठी एक धोका बनते. पृथ्वीभोवतीच्या वातावरणात 78% नायट्रोजन 21 टक्के ऑक्सिजन 0.3 टक्के कार्बन डाय-ऑक्साइड तसेच उर्वरित गॅसेस असतात सजीवांसाठी हे वायू घटक आवश्यक असतात एक सामान्य व्यक्ती दिवसातून 22000 वेळेस श्वास घेतो. वर्तमान स्थिती व संतुलित अशा औद्योगिक विकास विकासामुळे वायू प्रदूषण तीव्र गतीने वाढत चालले आहे. वातावरणातील रसायने आणि इतर सूक्ष्म कणांचे मिश्रण वायू प्रदूषण असे म्हणतात वायू प्रदूषण सहसा कार्बन मोनॉक्साईड सल्फर डाय ऑक्साईड उद्योग आणि मोटार व वाहनांमधून सोडल्या जाणाऱ्या प्रदूषकामुळे उद्भवते. धूर हे वायू प्रदूषणाचा परिणाम आहे. धूळ आणि मातीचे सूक्ष्मपण फुफ्फुसापर्यंत पोहोचू शकतात आणि बऱ्याच रोगांना कारणीभूत ठरू शकतात.

2.जल प्रदूषण:-

उपचार न केलेले न वापरलेले पाण्याचे सांडपाणी पाण्यात टाकून आणि क्लोरीन सारख्या रासायनिक प्रदूषकांना मिसळून पाण्याचे प्रदूषण पसरते पाण्याचे प्रदूषण पाण्यामध्ये राहणाऱ्या वनस्पती आणि सजीवांसाठी हानिकारक आहे. कोणत्याही व्यक्तीसाठी पाणी जीवन आहे. जमिनीवरील 71 टक्के पाण्यापैकी केवळ 3 टक्केच पाणी गोड आहे पाण्यामध्ये वेगवेगळी प्रदूषके मिश्रित होत असल्यामुळे पाण्याचे प्रदूषण होते पाण्यात प्रविष्ट केल्या होणाऱ्या किंवा निर्माण झालेल्या प्रदेशांच्या अस्तित्वात जल प्रदूषण असे म्हणतात.

3.ध्वनी प्रदूषण:-

वाहनाचा कारखान्यातील यंत्र वाहनाचा मोठा कर्कश आवाज, तसेच गाण्याचा मोठा आवाज यामुळे ध्वनी प्रदूषण होते एका विशिष्ट डेसिबल पेक्षा अधिक ध्वनी असल्यास हे ध्वनी प्रदूषणाचे कारण ठरतो. ८० ते १२० डेसी वर पर्यंतच्या तीव्रतेचा ध्वनी किंवा आवाज हानिकारक ठरू शकतो. ध्वनी प्रदूषण ही एक पर्यावरणाविषयक महत्त्वाची समस्या असून ध्वनीच्या गोंगाटामुळे मानवास असाय वेदना होऊन मन बेचैन होते. अशा त्रासदायक आवाजात ध्वनी प्रदूषण असे म्हणतात

4.भूमी प्रदूषण :-

भूमीचा मुक्त व अविवेकी वापर केला जात असल्यामुळे भूमी प्रदूषण मोठ्या प्रमाणात आढळून येते. वृक्षांची मोठ्या प्रमाणात तोड होत आहे. त्यामुळे मानवी हितासाठी किंवा मानवाला आपले अस्तित्व कायम अबाधित ठेवण्यासाठी नैसर्गिक साधन संपत्ती अविवेकी उपयोग केला जात असल्यामुळे वनसंपत्तीचा नाश मोठ्या प्रमाणात होत आहे. औद्योगिक क्रांतीनंतर वाढणाऱ्या औद्योगिक उद्योगामुळे हवा, पाणी आणि ध्वनी प्रदूषणाबरोबर भू प्रदूषण निर्माण होत आहे.

5. सागरी प्रदूषण :-

वाढत्या औद्योगिकीकरणामुळे वेगवेगळ्या प्रकारचा औद्योगिक प्रसारामुळे प्रदूषित पाणी समुद्रात सोडल्यामुळे सागरी पाणी प्रदूषणामुळे जलचर आणि मानवी आरोग्यात धोका उत्पन्न करत असेल तर त्या सागरी प्रदूषण असे म्हणतात.

पर्यावरणाचा वाढत्या वापरामुळे निर्माण होणारे परिणाम व प्रदूषण:-

जैवविविधतेचा ऱ्हास :-

वाढत्या लोकसंख्येसाठी अन्नाचे तरतूद याचा अर्थ नैसर्गिक वस्ती स्थानाचे मोठ्या प्रमाणात शेतीत रूपांतर असा झालेला आहे जवळपास 43% उष्णकटिबंधीय शुष्क मोसमी वने 45% समशीतोष्ण कटिबंधीय वने मिश्र जंगले जागतिक स्तरावर शेती रूपांतरित केली गेली आहे कृषी विकासासाठी आवश्यक समजले गेलेले रस्ते व अन्य पायाभूत सुविधा उदाहरणार्थ जलसिंचन कालवे भूभागाला छेदतात त्यामुळे वन्यजीवांच्या मुक्त हालचालीस व वनस्पतीच्या प्रजातीच्या प्रसारास अडथळा निर्माण होतो वन्य स्वतःपासून अन्नाची तरतूद केली जाते तेथे अतिउत्पादन व मासेमारीच्या काही विशिष्ट पद्धतीचा प्रजातीच्या रचनेवर मोठा परिणाम होतो

धोकादायक व घातक टाकाऊ पदार्थाचा संचय :-

संयुक्त राष्ट्र पर्यावरण कार्यक्रमाच्या अहवालानुसार रसायने हा दैनंदिन जीवनाचा भाग आहे सध्या एक लाखाहून अधिक रसायने वापरात असून त्यामुळे जगभरात कामधंदे व्यापार वाढवून आर्थिक भरभराट होते असे एकही आर्थिक क्षेत्र नाही येते रसायने महत्त्वाची भूमिका बजावत नाहीत मात्र योग्य खबरदारी न घेतल्यास मानवी आरोग्य व पर्यावरणाला धोका पोहोचवण्याचे सामर्थ्य रसायनामध्ये आहे व्यावसायिक कृती व दूषित पाणी अन्न खाणे दूषित हवेत श्वसन करणे आणि त्वचेची रसायनाचा थेट संपर्क अशा दैनंदिन कृतीमुळे लोकांचा रसायनशी संपर्क येतो आरोग्याची संबंधित परिणामांमध्ये तीव्र विष बागेपासून दीर्घकालीन परिणामाचा समावेश होतो जागतिक उत्पादनात वाढ व्यापार व रसायनाचा वापर यामुळे रसायनाची व घातक टाकाऊ पदार्थाची समस्या अजूनही उग्र झाली आहे.

नत्राचा नायट्रोजनचा संचय :-

नायट्रोजन तसा विषारी नाही पण त्याची वातावरण परिसंस्था यामधील अतिरिक्त पाण्यातील उपस्थिती ही समस्या आहे याचे प्रमुख कारण म्हणजे खतांचा वापर होईल शेतात वापरलेल्या खतांपैकी फार थोड्या प्रमाणातील खते ही प्रत्यक्षात पिकांच्या वाढीसाठी वापरली जातात. अतिरिक्त खते जमिनीतील पाण्यात व किनारी भागात मिसळली जातात. नायट्रोजन वाढीच्या इतर कारणामुळे जीवाश्म इंधन ज्वलन जमिनी साफ करणे यांचा समावेश होतो. मानवनिर्मित नायट्रोजनचे प्रमाण प्रतिवर्षी 2100 लाख मॅट्रिक टन आहे. नैसर्गिक क्रियामुळे प्रतिवर्षी 1400 लाख मॅट्रिक टन नायट्रोजन निर्माण होते असा निष्कर्ष आहे.

टाकाऊ पदार्थ साचत राहते/ महासागरांचे अम्लीकरण :-

कचराही मूळ समस्या नाही कारण तो निसर्गातील कच्च्या मालाच्या चक्रात पुन्हा मिसळून जातो कचरा एकाच जागी साचत राहते यामुळे समस्या निर्माण होते. पृथ्वीवरील

महासागरांची वाढण्याची प्रक्रिया म्हणजे महासागराचे अम्लीकरण होईल गेल्या शतकात मानवाने वातावरणात सोडलेल्या कार्बन डाय-ऑक्साइड पैकी जवळपास निम्मा कार्बन डाय-ऑक्साइड महासागरामध्ये नद्यांमध्ये व सरोवरामध्ये विरघळला आहे. वाढलेल्या अमलतेचा सागरी जीवावर परिणाम होतो याचा परिणाम म्हणजे सागरी अन्नसाखळ्यांना धोका उत्पन्न होतो .

हवामानातील बदल :-

मानवी कृतीमुळे कार्बनडा-ऑक्साइड व इतर हरितगृहे वायूचे उत्सर्जन हे सध्या हवामान बदलाचे प्रमुख कारण आहे. कार्बन डायऑक्साइड प्रमुख स्रोत म्हणजे जीवाश्म इंधनाचे ज्वलन 2000 ते 2009 हे दशक सर्वाधिक उष्ण म्हणून दिले गेले. गेल्या शतकातील सर्वाधिक तापमानाच्या आर्थिक प्रदेशात झाली हवामान बदल सर्वाधिक सामना करतो त्या वातावरणीय बदलाशी संबंधित आहे.

निष्कर्ष:-

पर्यावरणाचा मानवावर तसा परिणाम होतो तसेच मानवाचाही पर्यावरणावर परिणाम होतो मानवाच्या लोभी, स्वार्थी प्रवृत्तीमुळे पर्यावरणीय गुणवत्तेचा जगभर क्षय होत आहे. कोणत्याही प्रदेशातील नैसर्गिक पर्यावरण हा सजीवांसाठी साधन सामग्रीचा अनमोल ठेवा आहे त्याचा वारसा हक्क व जतन ही सर्व मानवी पिढ्यांची अनुषंगिक जबाबदारी आहे प्रदूषण ही आजची जागतिक समस्या आहे काळाच्या ओघात वाढत्या लोकसंख्येवर वाढत्या गरजांच्या पूर्ततेसाठी उपलब्ध पर्यावरण संपदा वरील ताण दिवसेंदिवस वाढत आहे उद्योगधंद्यासाठी आवश्यक कच्चामाल लाकूड इमारतीचे लाकूड इत्यादींची गरज भागवण्यासाठी मोठ्या प्रमाणावर जंगलतोड होत आहे पृथ्वीचे तापमान हळूहळू वाढत असल्याचे शास्त्रज्ञाच्या नजरेस आले आहे. तसेच हवा, ध्वनी, जल, भूमी, सागरी प्रदूषण हे मानव व इतर सजीव प्राण्यांना त्रासदायक होत आहे. तसेच पर्यावरणाच्या वाढत्या वापरामुळे जैविक जैवविविधतेचा ऱ्हास धोकादायक व घातक टाकाऊ पदार्थांचा संचय नत्राचा संचय टाकाऊ पदार्थ,साचत राहणे महासागरांच्या अमलीकरण, हवामान बदल इत्यादी परिणाम होत असलेले दिसून येत आहे.

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पर्यावरणीय घटकांचे इतिहासावरील परिणाम

प्रा. कृष्णा अण्णासाहेब नागवे
सहाय्यक प्राध्यापक
इतिहास विभाग,
मत्स्योदरी कला, विज्ञान व वाणिज्य महाविद्यालय,
अंबड, जि. जालना.

सारांश:
'भूगोलाच्या रंगमंचावर इतिहास अवतरत असतो.' म्हणजेच इतिहास आणि भूगोलाचा महत्वपूर्ण घटक असणारे पर्यावरण हे एकमेकास संगत असते. ऐतिहासिक कालखंडात प्राचीन काळापासून ते आधुनिक कालखंडापर्यंत पर्यावरणीय घटकांचा इतिहासावरती दूरगामी परिणाम झालेला आहे. इतिहासातील घटना ह्या कोणत्यातरी भागात किंवा प्रांतात होत असतात आणि सभोताली असणाऱ्या पर्यावरणीय घटकांचा परिणाम हा मानव समाजावर होतो. हा झालेला परिणाम हा इतिहास घडण्यापूर्वी व्यक्ती जीवनावर परिणाम करतो त्याचाच परिणाम म्हणून इतिहास हा प्रभावित होत असतो. ऊन, वारा पाऊस आणि नैसर्गिक घटक हे इतिहासाचे स्वरूप ठरवत असतात.

मुख्य शब्द: पर्यावरण, इतिहास, पर्यावरणीय घटक, पर्यावरणाचा इतिहासावरील परिणाम.

विषयाचे महत्व:

इतिहासाच्या निर्मितीपूर्वी इतिहास हा पर्यावरणीय घटकाच्या कमी अधिक असण्याने आणि नसण्याने प्रभावित होतो. जसे एखादी लढाई जिंकण्याची शक्यता असतांना हरणे याची कारणे महापूर, पाण्याचा तुटवडा, अन्नाची कमतरता अशी असतात तेंव्हा पर्यावरणीय घटक अत्यंत महत्वाचे ठरतात. प्रस्तुत संशोधन विषयातून इतिहास आणि पर्यावरण यांचा कसा जवळचा संबंध आहे याची सांगड घालण्यात येईल आणि इतिहासाच्या निर्मितीत पर्यावरणीय घटक कसे महत्वपूर्ण आहे हे समजून घेण्यासाठी हा विषय महत्वपूर्ण आहे.

संशोधनाची उद्दिष्टे:

पर्यावरण आणि इतिहास यांचा संबंध जाणून घेणे.

पर्यावरणीय घटकांचे इतिहासावरील परिणाम तपासणे.

इतिहासाची गती कमी आणि अधिक करण्याची ताकत पर्यावरणीय घटकात असते हे दाखवून देणे.

प्राचीन ते आधुनिक काळातील इतिहास पर्यावरणाने कसा प्रभावित झाला हे ऐतिहासिक उदाहरणाच्या सहाय्याने मांडणे.

संशोधनाची गृहीतके:

१. पर्यावरण आणि इतिहास यांचा संबंध एकमेकांशी संबंध असतो.
२. पर्यावरणीय घटक इतिहासावर परिणाम करतात.
३. इतिहासाची दिशा पर्यावरणीय घटक बदलू शकतात.

विषय विवेचन:

इतिहास हा नेहमी माणसाचा असतो. त्यात मानवी विकासाची स्थित्यंतरे रेखाटली जात असतात. व्यक्तीच्या जडण-घडणीत पर्यावरणीय घटक महत्वाचे असतात. इतिहास हा नेहमी माणसाचा असतो. त्यात मानवी विकासाची स्थित्यंतरे रेखाटली जात असतात. व्यक्तीच्या जडण-घडणीत पर्यावरणीय घटक महत्वाचे असतात. निसर्गातील सजीव आणि निर्जीव घटकांचा सहसंबंध दर्शिविण्याचे महत्वपूर्ण कार्य पर्यावरण शास्त्रात केले जाते.

अश्मयुगीन मानवाची वाटचाल ही पर्यावरणावर विशेष अवलंबून होती. दगडाची हत्यारे आणि अवजारे हा त्या काळातील माणसाचा प्रमुख आधार होती. आपल्या सभोताली नैसर्गिकरित्या मिळणारे अन्न आणि फळे, कंदमुळे खाऊन आपल्या पूर्वजांनी दिवस काढले. हिंस्र पशु आणि पक्षी यांच्या सानिध्यात त्यांची वाढ झाली. त्यामुळे अतिशय कणखर बनत गेले. निवारा हा भीमबेटका सारख्या गुहा होत्या.[१] त्या गुहा ह्या माणसाने निर्माण केल्या नाही तर त्या पर्यावरणीय अविष्कार होता ज्याचा तत्कालीन मानवाने फायदा घेतला. म्हणजे अश्युगीण मानवाने पर्यावरणातील उपलब्ध घटक यांच्या सहाय्याने आपला उदरनिर्वाह चालविला.

हडप्पा संस्कृतीसारखी विकसित संस्कृती भारतात उदयास आली आणि नष्ट देखील झाली. ही संस्कृती सिंधू नदी आणि तिच्या उपनद्या यांच्या सानिध्यात निर्माण झाली. शेतीच्यासाठी पाणी उपलब्ध होते त्यामुळे कृषी प्रगत झाली. मानवाचे जीवन सुसह्य झाले. व्यापारासाठी सभोतालच्या नद्या आणि मौल्यवान वस्तू हे लोक का निर्माण करू शकले याचे कारण पर्यावरणीय घटकांची उपलब्धता होय. पण ज्यावेळी इतकी विकसित असणारी सिंधू किंवा हडप्पा संस्कृती ही नद्यांनी मार्ग बदलल्याने अल्प कालावधीत नष्ट झाली.[२] म्हणजे पर्यावरणीय बदल मानवी जीवनाला नकारत्मक आणि सकारात्मकरीत्या प्रभावित करत असतात. वैदिक काळात नैसर्गिक घटकांना देवी देवतांच्या रुपात पुजण्यात आले. सूर्य, वायू, अदिती अशा नैसर्गिक शक्तीची पूजा करणारे वैदिक काळातील लोक हे पर्यावरण आणि सभोताली घडणाऱ्या नैसर्गिक घटकांच्या नैसर्गिक घडामोडींना चमत्कार मनात होते. याचाच अर्थ प्राचीन मानव हा वैदिक काळात पर्यावरणीय घटकांना मनात होता. ऋग्वेदिक काळातील नद्यांचे वारंवार येणारे उल्लेख तत्कालीन पर्यावरण आणि निसर्ग यांची साक्ष देतात.[३] रामायण आणि महाभारत या महाकाव्यांमध्ये वनवास आणि वनवासी जीवन यांचे उदाहरणे आली आहे. यातून पर्यावरणाची उपयोगिता सिद्ध होते. जीवन जगण्यासाठी लागणारे फळे, कंदमुळे ही आसपासच्या परिसरात उपलब्ध होती. हीच त्यांचा मित्र आणि आधार. राम सीता, पांडव यांच्या वनवास

आणि अज्ञातवास या दरम्यान नैसर्गिक गोष्टी त्यांच्या जीवनात महत्वाच्या होत्या. त्यांचा इतिहास हा पर्यावरणाशिवाय शक्य नव्हता.

लाव्हारस आणि जलवायू परिवर्तन यामुळे मानवी जीवन ढवळून जाते. एखादा रोग किंवा रोगराई मानवी जीवनाला कलाटणी देते. अनेक वंश आणि मोठमोठ्या सत्ता कधी काळी पर्यावरच्या शिकार होतात. अनेक राज्य नैसर्गिक घटकांच्या उपलब्धतेमुळे विकसित होतात. छत्रपती शिवाजी महाराज असो वा देवगिरीचे राज्य किल्ल्याच्या नैसर्गिक स्थानामुळे सुरक्षित झाल्याचे दिसून येते. व्यक्तीच्या जडण-घडणीत निसर्ग, वातावरण म्हत्वाचे असतात. शिवाजी महाराज आणि त्यांचे मावळे काटक, चपळ बनण्याच्या पाठीमागे निसर्ग आणि वातावरण महत्वपूर्ण होते. अनुकूल आणि प्रतिकूल परिस्थिती माणसाची विकास क्षमता निर्माण करत असतात. उघड्या मैदानावर शिवाजीमहाराज आपले स्वराज्य निर्माण करू शकले असते का? हा प्रश्न कुणालीही पडू शकतो. लाखाची फौज हजाराने थांबविणे अवघड झाले असते. पण पर्यावरणीय घटकाने शिवाजी महाराज आणि मावळे यांना एक कवच प्राप्त करून दिले होते.[४] मुघल आणि आदिलशाही फौजा ह्या अडगळीच्या रस्त्याने आणि अवघड कडी कापर्यांने जातांना घायाळ व्हायच्या. याचा फायदा स्वराज्याला झाला होता.

मध्ययुगीन काळात नैसर्गिक साधन संपत्ती ही मोठ्या प्रमाणवर सरंजामशाही घटकांच्या हाती गेल्याने मोठे जमिनीचे तुकडे हे जमीनदार आणि जहागीरदार यांच्या हातात गेले. परिणामी संसाधने एकाच वर्गाच्या हाती गेल्याने भूमी, भूमीवरील संपदा मोजक्या लोकांच्या जवळ जमा होऊन जनसामान्य लोक जमिनीचे मालक न राहता जमीन कसणारे झाले. तात्पर्य जमीन म्हणजे भूमी, नैसर्गिक साधने या अर्थाने घेतले तरी पर्यावरण आणि इतिहास यांचा एकमेकांशी संबंध असल्याचे जाणवते.

मराठवाडा विभागात निजामाचे राज्य होते. निजाम आणि बाजीराव यांच्यात झालेली पालखेडची लढाई बाजीराव प्रथम याने कशी जिंकली याची माहिती घेतली असता जाणवते की, बाजीरावाने पालखेडच्या लढाईत नाल्याचे पाणी अडवल्याने पाणी मिळेनासे झाले, रसद तोडण्यात आल्याने निजामाच्या सैनिकांची अन्नान्न दशा झाली.[५] त्यामुळे तहाची बोलणी करावी लागली. यावरून आपणास लक्षात येते की, पर्यावरण आणि साभोताल्चे वातावरण इतिहासावर खोलवर परिणाम करत असते. पानिपत लढाईचे उदाहरण देखील याच प्रकारचे आहे. पानिपत लढाई हि उघड्या मैदनावरील होती. मराठ्यांना मात्र उघड्या मैदनावर लढाई करण्याचा सराव नसल्याने उघडे मैदान आणि सैनिकांची कमी हा मुद्दा नाकारात्मक ठरला.

कॉन्स्टेटीनोपालचा पाडाव हा ब्रिटीश आणि इतर युरोपियांच्या आगमनाचे कारण देखील एक मार्ग हातातून गेल्याने दूसरा मार्ग शोधण्याच्या कृतीतून भारताचा शोध लागला आणि वसाहतवाद, साम्राज्यवाद आणि सत्ताधीश ब्रिटीशांच्या हातचे भारतीय लोक बाहुले बनणे ह्या गोष्टी समुद्री मार्गाचा शोध आणि त्यांची अनुकुलता यावर अवलंबून आहे.

आधुनिक काळातील विचारवंत देखील आपल्या सभोतली घडणाऱ्या घटकाचे अपत्य असतात. समाजात एखाद्या वर्गावर होनारा अन्याय हा कुण्यातरी एखाद्या वर्गाकडून होतो.

म्हणजे समाजातील एक वर्ग हा अन्याय सहन करणारा आणि एक अन्याय करणारा असतो. अन्यायाचा वाढता तणाव माणसाला अस्वस्थ करतो. त्यामुळे माणूस क्रांती करण्यास तयार होतो. भूदान आंदोलन, जंगल सत्याग्रह, आदिवासींचे उठाव याची उत्तम उदाहरणे आहेत. रोगराई, दुष्काळ, महापूर, भूकंप इत्यादीमुळे इतिहासाची गती बदलते. कधी कधी गौरवशाली इतिहास गौराव्हीन होतो.

पर्यावरण आणि वातावरणीय बदल यामुळे मानवाचे जीवन खूप प्रभावित होत असते. २०२० मध्ये कोरोना महामारीमुळे माणसाच्या जीवनात संकट आले. पूवी असणारे जीवनमान बदलले आणि लोक भीतीयुक्त वातावरणात जगू लागले. काही लोक भीतीने मृत्यूला पोहचले. जगातील १८ लाख लोकांना संसर्ग झाला तर ४० लाख लोक मृत्युमुखी पडले.[६] एक विषाणूमुळे सगळे जग हादरले. म्हणजेच पर्यावरण हे मानवी जीवन आणि इतिहासला परिवर्तीत करीत असतात.

समारोप:

एकूणच विचार करता असे दिसते की, व्यक्ती हा समाजाचा घटक म्हणून देखील पर्यावरणाचा अविभाज्य घटक आणि इतिहासाचा देखील. ऐतिहासिक घटना होण्यासाठी कारणे आवश्यक असतात. पर्यावरणीय बदलांचा परिणाम हा इतिहासावर होत असतो. इतिहास हा नेहमी परिवर्तने अभ्यासतो. ही परिवर्तने काळाच्या पोटात दडलेली असतात. प्राचीन इतिहास ते आधुनिक सर्व इतिहास हा नैसर्गिक, पर्यावरणीय आणि सभोतालच्या वातावरणाने प्रभावित होत असतो. याचाच परिणाम म्हणून इतिहासाची गती पर्यावरणीय बदलामुळे आणि त्याच्या उपलब्धतेमुळे किंवा कमतरतेमुळे नेहमी बदलत असते.

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पर्यावरणवादी स्त्रीवाद (Ecofeminism): भारतीय संदर्भ

प्रा. डॉ. ए. आर. वागडव
समाजशास्त्र विभागप्रमुख
विवेकानंदकला, स. द. वाणिज्यव
विज्ञानमहाविद्यालय, छ. संभाजीनगर.

प्रस्तावना:-

भारतातील पुरुष प्रधान समाजव्यवस्थेत स्त्रीला पुरुषांच्या तुलनेत नेहमीच दुय्यम स्थान दिले गेले आहे. प्राचीन काळात तर स्त्रीला एकदा सी मानले गेले आहे. सामाजिक संकेत आणि मूल्यांच्या नावाखाली तिला 'माणूस' म्हणून स्थान नाकारण्यात आले होते. तिच्यातील मानवत्त्व नाकारून तिला वस्तूरूप दिले गेले होते. स्त्रीला गुलाम म्हणूनच वागविणे कसे योग्य आहे याचे उदात्तीकरण धर्म ग्रंथातही करण्यात आलेले आहे. स्त्री शोषणास अनुकूल अशी व्यवस्था समाजात निर्माण करण्यात आली आहे. अशा प्रकारच्या लिंगभेदाच्या (Gender Discrimination) विरुद्धची कृतिशील चळवळ म्हणजे स्त्रीवाद होय. स्त्रीजीवनाचाइतिहासपाहिलातरअसेदिसूनयेतेकी,
स्थीरकृषीसंस्कृतीपासूनपुरुषप्रधानसमाजव्यवस्थाअस्तित्वातयेईपर्यंतस्त्रीलागौनस्थानदिलेलेहोते. तिचेकार्य 'चूलआणिमूल' इतकेमर्यादितठेवण्यातआलेहोते. पुरुषाच्याअधिपत्याखालीराहूनतिनेघरसांभाळावेत्याच्यामर्जीप्रमाणेआपलेजीवनजगावेअसाअलिखीतनियमहोता. याअवस्थेतस्त्रीलाएकउपभोग्यवस्तूम्हणूनपाहिलेजातहोते. तिचाबौद्धिकआणिमानसिकविकासहोऊदिलानाही.
अशाअवस्थेतूनस्त्रीलामुक्तकरण्यासाठीचाजोविचारपुढेआला,
त्यातूनचस्त्रीवादाचाजन्मझालाआहे.1

जगभरातीलस्त्रियांच्याशोषणाचाविचारकरताना,
स्त्रीवादीअभ्यासकांनीपुरुषप्रधानव्यवस्थेतपुरूषवर्चस्वाखालीस्त्रियाकशादडपल्यागेल्यायाचेमूळ शोधण्याचाप्रयत्नचालविलातेव्हाइतिहासक्रमातवसंस्कृतीच्याजडण-घडणीतअत्यंततर्कनिष्ठपणे, पुराव्यासहस्त्रीच्यादुय्यमतेचीझालेलीघडणत्यानादिसूनयेतगेली.
कुटुंबातवसमाजातस्त्रियांचेटप्याटप्यानेहोणारेशोषण, स्त्रियांनासत्ताविहीनठेवण्याचेकारस्थान, स्त्रियांच्याशरीरावरआणिपुनरूत्पादनावरठेवलेलाताबा,
दुय्यमत्वाचेअंगवळणीपाडलेलेसंस्कारहेप्रकाशातआणण्याचेकार्यसुरूझालेवस्त्रियांच्याचळवळीं नीत्याविरोधीकृतीच्यादिशाशोधायलाप्रारंभकेला.
शतकानुशतकांचीस्त्रीचीगुलामगिरीव्यवस्थानिर्मितआहेयाचीस्त्रीलाजाणीवझालीवत्याविरूध्दतिने बंडकरण्याससुरूवातकेली. त्यासंघर्षाचीफलश्रुतीम्हणून "स्त्रीवाद" अस्तिवातआला. त्यासंबंधीअश्विनीधोंगडेम्हणतात,
"संस्कृतीच्याहजारोवर्षाच्याइतिहासानेबाईचेमाणूसपणनाकारूनतिलाजीपशुतुल्यअवस्थाप्राप्तक रूनदिली, त्यातूनबाहेरपडूनआपलेहक्कप्रस्थापितकरूनघेण्यासाठीनिर्माणझालेले 'स्त्रीवाद' हेएकव्यासपीठआहे.2

स्त्रीवादही 1960 नंतरच्यादशकातवेगानेपुढेआलेलीविचारप्रणालीआहे. पुरुषसत्ताकसमाजव्यवस्थेतस्त्रियांनामिळालेल्यादुय्यमस्थानाचाप्रतिवादकरणेआणिसामाजिक, राजकीयवआर्थिकसत्तास्थानातपुरुषांच्याबरोबरीचेस्थानप्राप्तहोण्यासाठीडावपेचआखणेहेस्त्रीवादाचेस्वरूपआहे. स्त्रीवादहीएकराजकीयविचारप्रणालीआहे.

समाजजीवनातीलस्त्रीशोषणाचेप्रत्येकक्षेत्रशोधूनतेउखडूनटाकण्याच्यादृष्टीतूनयोजकतेनेक्रियात्मकहोणारीहीविचारप्रणालीआहे.
तीप्रस्थापितस्त्रीशोषणाच्यापरंपराउधळूनलावणारेविचारव्यूहनिर्माणकरते.
मानवंशातीलसर्वस्त्रीसंदर्भातअन्यायकारकबाबींवरतीबोटठेवते.
अशाप्रकारेसर्वक्षेत्रातीलपुरुषीवर्चस्वालातीआव्हानदेतेवस्त्रियांनान्यायमिळवूनदेते.

स्त्रीवादप्रथमपाश्चात्यदेशातजरीरुजलाअसलातरीभारतातहीगेल्यातीनदशकाततोआपलीपाळेमुळेरोवूलागलाआहे. स्त्रियांच्यासमाजातीलदुय्यमस्थानासाठीयेथीलसामाजिक, सांस्कृतिक, धार्मिकपरिस्थितीजशीजबाबदारहोतीत्याचप्रमाणेअलीकडच्याकाळातविकासाच्यानावाखालीपर्यावरणाचेजेअतोनातशोषणमानवजातीकडूनझालेआहे.
त्याचाहीविपरीतपरिणामस्त्रियांवरझालेलाअसूनस्त्रियापर्यावरणसंरक्षणासाठीपुढेआलेल्यादिसतात. त्यातूनचपर्यावरणीयस्त्रीवादउदयासआला.
भारतातीलस्त्रीवादाचीस्वरूपसमजूनघेणेतसेचपर्यावरणीयस्त्रीवादाचेस्वरूपवसंदर्भजाणूनघेण्याचाप्रयत्नसदरशोधनिबंधातकरण्यातआलेलाआहे.

संशोधनाचेउद्देश-

स्त्रीवादाचीसंकल्पनास्पष्टकरणे.
पर्यावरणीयस्त्रीवादाचीसंकल्पनास्पष्टकरणे.
पर्यावरणीयस्त्रीवादाचेस्वरूपस्पष्टकरणे.
भारतातीलपर्यावरणीयस्त्रीवादाचेस्वरूपवसंदर्भस्पष्टकरणे.

संशोधनपध्दती-

सदरशोधनिबंधहाप्राथमिकवद्वितियकतथ्यांवरआधारितअसूनत्याच्याउद्दिष्टानुरुपसंशोधनासाठीअन्वेषणात्मकसंशोधनआराखड्याचावापरसंशोधकानेकेलेलाआहे.
माहितीमिळविण्यासाठीसंशोधकानेसदरविषयाशीसंबंधितसंदर्भग्रंथ, विविधसंस्थांचेअहवाल, वृत्तपत्रातीललेख, इंटरनेटवरीलमाहितीअशाअनेकसाधणांचावापरकेलेलाआहे.

स्त्रीवादव्याख्या-

रोझॅलिन्डडेलमारयांच्यामते,
"स्त्रीवादहीस्त्रियांचीराजकीयचळवळअसूनस्त्रियाआणिपुरुषयांच्यामधीलआंतरविरोधातूनस्त्रीवादाचीनिर्मितीहोते.
स्त्रीवादीचळवळम्हणजेस्त्रियांनीस्वत:च्यादडपणुकीलादिलेलीतीव्रप्रतिक्रियाआहे.
पुरुषांनाखऱ्याअर्थानेज्यासत्ताकिंवासवलतीमिळतातत्यातूनचस्त्रीवादनिर्माणहोतो."3
मिशेलबॅरेटच्यामते,
"स्त्रीवादफक्तपुरुषअथवास्त्रियाअथवादोघांनावर्तमानाततेजसेआहेतत्यापेक्षावेगळेबनवितो,
इतकेचनाहीतरत्यादोहोंमधीलनातेबदलण्याचाप्रयत्नकरतो."4
सिमॉनदिबोव्हुऑरयांच्यामते, "स्त्रीवादम्हणजेकेवळस्त्रीहक्कांचेसमर्थननव्हे, तरस्त्रीची 'स्त्री' अशीओळखकरूनदेणेहोय. स्त्रीप्रश्नांप्रतीआस्थानिर्माणकरणे."5
डॉ. विद्युतभागवतयांच्यामते, "स्त्री-
पुरूषांमधीलसत्तसंबंधांचीराजकीयजाणीवम्हणजेस्त्रीवादहोय.
हापर्यायीजीवनशोधण्याचालढाआहे. स्त्रीवादम्हणजेस्त्रीमुक्तीवादनाही.
'स्त्रीमुक्ती'मध्येस्त्रीलाकोणीतरीजखडलेलं, गुलामकेलेलंआहेहेगर्भितार्थानेयेतं.
स्त्रीवादातत्यासहआणखीकाहीआहे."6
कमलाभसीनयांच्यामते,
"समाजातकामाच्याठिकाणीवकुटुंबातस्त्रियांवरकेलेजाणारेजुलूमआणित्यांचेशोषणयाबद्दलजाग

रूकताआणिस्त्रीवपुरूषदोघांकडूनहीहीपरिस्थितीबदलण्यासाठीजाणीवपूर्वककेलीजाणारीकृती म्हणजेस्त्रीवादहोय.7

वरीलसर्वव्याख्यांचेनिरीक्षणकरताअसेनिदर्शनासयेतेकी,
स्त्रीवादाच्याविविधछटाअसल्यातरीव्यक्तीस्वातंत्र्य,
स्वत:चेआयुष्यस्वत:लास्वायत्तपणेघडविण्याचाअधिकारयामूळधारणांवरस्त्रीवादीचळवळींचाअधिकभरआहे. स्त्रीचेमाणूसपणनाकारूनतिलादुय्यमस्थानदेऊनरूढसमाजव्यवस्थेतीलधार्मिक, सांस्कृतिक, आर्थिक, राजकीय, बौध्दिक, भाषिकअशासर्वचव्यवस्थास्त्रीचेशोषणकरतात, याप्रस्थापितलिंगभेदाधिष्ठितपुरूषकेंद्रीअशासर्वव्यवस्थांविरोधीवदृष्टीकोणांविरोधीझगडण्यासाठी स्त्री-पुरूषांनीएकत्रितचळवळउभीकरूनजीवनाच्यासर्वचक्षेत्रांतस्त्री-पुरूषसमानताप्रस्थापितकरण्यासाठीकृतीशीलपध्दतीनेउभीकेलेलीचळवळ/वादम्हणजेस्त्रीवाद होय.

स्त्रीवादाचेस्वरूप:-

स्त्रीवादीविचारधाराहीएकसामाजिक, राजकीयचळवळआहे. तिच्याशीस्वातंत्र्य, समताआणिन्याययांचेसिध्दांतजोडलेआहेत.
स्त्रियांचेअधिकारहेमानवअधिकारकक्षेतमानलेजावेत, संपूर्णसामाजिकजीवनाच्यासंदर्भातस्त्री-पुरुषसमानतास्त्रीकारलीजावी,
स्त्रियांनापारंपरिकपराधीनअवस्थेतूनमुक्तकरूनस्त्रीत्वालाएकनवीनपरिभाषादिलीजावीहेस्त्रीवादीआंदोलनाचेप्रमुखमुद्देआहेत.
स्त्रीवादहीप्रामुख्यानेस्त्रियांच्याचप्रश्नांचेविश्लेषणवस्पष्टीकरणदेणारीआधुनिककाळातीलतत्वप्रणालीआहे.
स्त्रियांचेदुय्यमत्ववलिंगभेदावरआधारलेलीविषमतानष्टकरण्यावरस्त्रीवादमहत्वाचीभूमिकाघेतो.

स्त्रीमुक्तीच्याआधुनिकचळवळीचेश्रेयहेपाश्चिमात्यसंस्कृतीकडेजाते. यामध्येअमेरिका, फ्रान्स, जर्मनीवब्रिटनहीयुरोपीयराष्ट्रेप्रामुख्यानेयेतात.
यादेशातीलस्त्रियांनीअन्यायवअत्याचारांचाफारतीव्रपणानेमुकाबलाकरूनस्त्रियांच्याराजकीयहक्कांसाठीचळवळीसुरूकेल्या.
स्त्रीवादाने१९७०च्यादशकातठसठशीतरूपधारणकेलेआणिजगभरातयाप्रवाहानेलक्षवेधूनघेतले.
याचापरिपाकम्हणून 'युनो'नेस्त्रियांच्याप्रश्नांकडेप्राधान्यानेलक्षवेधून१९७५हेवर्ष 'जागतिकमहिलावर्ष' म्हणूनव१९७५-१९८५हेदशक 'जागतिकमहिलादशक' म्हणूनसाजरेकेले.
स्त्रीआणिपुरुषातभेदकरणाऱ्याविषमतावादीविचारसरणीलावपुरूषीकाव्यालास्त्रीवादविरोधकरतो. "अभावमूलकविचारसरणीलानकारदेणे, स्त्रीहीअपूर्णमानवअसल्याचीसमजूतनष्टकरणेआणिस्त्रीविषयकनवीनमापदंडनिर्माणकरण्यासाठीव्यूहरचनाकरणेहीस्त्रीवादाचीथोडक्यातभूमिकाआहे.8

पर्यावरणीयस्त्रीवाद:-

पर्यावरणीय स्त्रीवाद किंवास्त्रीवादीपर्यावरणवादह्यासंकल्पनापर्यावरणाविषयीच्याआणिस्त्रीवादीचळवळींनाजोडणारादुवाआहे. ह्याएकत्रितचळवळीद्वारेसमाजातीलफक्तस्त्रीयांवरहोणाऱ्याअन्यालाचवाचाफोडलीजातेअसेचनव्हेतरसमाजातीलसर्वचप्रकारच्याशोषणांनाविरोधकरुनत्यांचेनिर्मूलनकरण्यासाठीप्रयत्नकेलेजातात.
पाश्चिमात्यदेशातीलऔद्योगिकीकरणाच्याअपरिहार्यपरिणामातूनपृथ्वीचानैसर्गिक, जैविकवभौगोलिकसमतोलबिघडूनत्याचेगंभीरपरिणाममानवीजीवनावरझाल्यामुळे पर्यावरणीय स्त्रीवादहीसंकल्पनाउदयासआली.

१९७०च्यादशकातहीसंकल्पनावापरातआलीअसूनफ्रेंचस्त्रीवादीविचारवंतफ्राँस्वायांनी *फेमिनिझ मअॉफडेथ* याआपल्यापुस्तकात 'इकोफेमिनिझम' हाशब्दपहिल्यांदावापरला. त्यांनीआपल्यालेखनातूनस्त्रीवपर्यावरणयांचाघनिष्ठसंबंधअधोरेखितकरततत्कालिकपाश्चिमात्यदेशांतीलविचारसरणीपर्यावरणाच्याऱ्हासालावस्त्रियांच्याशोषणालाकारणीभूतठरवली.9

पर्यावरणीयस्त्रीवादानेपर्यावरणआणिस्त्रीयांच्यासहसंबंधाचाखोलवरविचारकरतऔद्योगिकीकरण वआधुनिकीकरणामुळेआधुनिकशेती, हायब्रीडबी-बियाणे, रासायनिकखते, औषधेइत्यादीघटकांमधूननिसर्गातीलप्राणी, जमीन, वायूइत्यादीघटकांचेअपरिमितशोषणहोतअसल्यानेत्याचाथेटपरिणामस्त्रीयांवरतीझाल्याचीमांडणी केली. विकासअथवाप्रगतीमध्येनिसर्गालानियंत्रितकरण्याची, नियमितकरण्याचीक्षमताअसूनविकासाच्याप्रक्रियेचापितृसत्तेशीघनिष्ठसंबंधआहे, असेअनेकअभ्यासकांचेमतआहे. थोडक्यात, विकासाचीप्रक्रियाचपितृसत्ताकराहिलीआहे. त्यामुळेपर्यावरणाचामुद्दादेखीलविकासाबाबतच्याविचारांमध्येझालेल्याबदलांच्याअनुषंगानेपुढेआला.

स्त्रीवनिसर्गयांतीलसहसंबंधअधोरेखितकरतानाअथवापर्यावरणीयस्त्रीवादाचीमांडणीकरतांनाकाही अभ्यासकांनीस्त्रियांवरीलविविधश्रमिकजबाबदाऱ्यात्यांनानिर्सगाजवळघेऊनजातअसल्यामुळे स्त्रियांचेनिर्सगाशीनाळजुडलीआहे, असेम्हटले. उदा., स्त्रियांचेकामहेनिर्वाहासाठीकेलेल्याशेतीतून, घरगुतीकामांतूनआणिमोबदल्यासाठीकेलेल्याखुरपणीसारख्याशेतकामाच्यामाध्यमातूनपर्यावरणा शीजोडलेलेअसते. पर्यावरणाच्याऱ्हासाचापरिणामम्हणूनयातीलबरेचकामहेअधिककष्टाचे, वेळखाऊआणिकिचकटबनते. ग्रामीणभागातीलस्त्रियांचाशेतीवशेतीसंलग्नकामांमध्येआणिघरादारांतविशिष्टभूमिकावजबाबदाऱ्यां मुळेमाती, पाणी, वृक्ष, जंगलयांसारख्यानैसर्गिकसंसाधनांशीसंबंधयेतो. त्यांच्यासंरक्षणवसंवार्धानामध्येकळीचीभूमिकाबजावतानात्यादिसतात. त्यामुळेपर्यावरणीयस्त्रीवादअसेमानतोकी, पितृसत्ताकविकासाच्याप्रक्रियेतहोणारापर्यावरणाचाऱ्हासआणिस्त्रियांचेशोषणयादोन्हीलढाईहाता तहातघालूनलढावीलागेल.

पर्यावरणीयस्त्रीवादहाशब्दपाश्चात्यस्त्रीवादीमहिलाविचारवंतांनीवापरातआणलाअसला, तरीभारतातीलचिपकोआंदोलन, केन्यातीलग्रीनबेल्टचळवळ, पाश्चात्यदेशातला अण्वस्त्रविरोधीचळवळीतीलमहिलांचासहभागइत्यादीप्रकारच्याविविधचळवळीं नीएकत्रितपणेपर्यावरणीयस्त्रीवादाच्यातत्त्वज्ञानालाआकारदिलेलाआहे. आजपर्यावरणीयस्त्रीवादाचाविचारविविधपातळ्यांवरदेशातविकसितहोतानादिसतो. त्यामध्येआपल्यासंस्कृती, परंपरांचीचिकित्साकरतनवाअर्थदेणे; त्यातूनसंघर्षआणिआंदोलनेउभेकरतदलित, आदिवासी, लहानशेतकरी, अण्वस्त्रविरोधकयुद्धइत्यादींनाविरोधकरणे; विस्थापितांशीनातेजोडतनिसर्गाचाऱ्हास, नैसर्गिकसंसाधनांवरीलवर्चस्वालाविरोधकरणेइत्यादींच्याविरोधातपर्यावरणीयस्त्रीवादउभाराहता नादिसतो.10

पर्यावरणवादी स्त्रीवादीविचारधारेमध्येअसेगृहितधरलेजातेकी, स्त्रीयांच्याशोषणाच्यापध्दतीआणिनिसर्गाच्याशोषणाच्यापध्दतींमध्येकाहीसाम्यआहेआणितेसाम्य स्त्रीया, काळेलोक, मुले, गरिबइ. वत्याचप्रकारेनिसर्सगातीलप्राणी, जमिन, पाणीआणिवायूह्यागटांच्याशोषणामध्येहीवर्चस्ववादीगटांकडूनवापरलेजाते. ह्यासर्वंचमानवजातीतीलआणिनिसर्गातीलदमितगटांनापाश्चात्यपुरुषसत्तेच्यासत्तेखालीदमनालासा मोरेजावेलागते. पर्यावरणवादीस्त्रीवाद्यांचेअसेमतआहेकी, ज्यागुणांना'बायकी'

म्हटलेजातेतेसर्वंचगुणनिसर्गातीलघटकांनालावूनपाहिलेजातात, जसेकी, सहयोग, सर्जनशिलता, देवाणघेवाणजेनिसर्गातआणिस्त्रीयांमध्येसमानरित्याअस्तित्वातअसतात.11

इको-फेमिनिझमचेप्रकार :-

इकोफेमिनिझमच्याविचारप्रणालीमध्येस्त्रीआणिनिसर्गयांच्यातीलदुव्याच्याविश्लेषणपध्दतीबाबतम तभिन्नताआढळते.
कॅरोलिनमर्चंटयास्त्रीवादीविदुषीनेइकोफेमिनिझमचेउदारमतवादीमूलतत्ववादीआणिसमाजवादी असेप्रकारपाडले.12

i) उदारमतवादीइकोफेमिनिझम :-

यासिध्दांतानुसारनिसर्गाचीअफाटवाढझाली.
शिवायप्रदुषकांवरहीनियंत्रणठेवतानआल्यानेपर्यावरणाचेप्रश्ननिर्माणझालेआहेत.
त्यामुळेस्त्रियांनापुरुषांबरोबरसमानशिक्षणदिलेतरपर्यावरणीयदृष्ट्यानिरंतनअसणाऱ्यासामाजि कउत्पादनाच्यामाध्यमातूनयासमस्येवरतोडगानिघूशकतो.
मात्रविकासप्रक्रियेमुळेहोणाऱ्यानिसर्गाच्याहानीबद्दलविचारमांडण्यातयासिध्दांतालायशआलेनाही .

ii) मूलतत्ववादीइकोफेमिनिझम :-

इकोफेमिनिझमच्यायामांडणीतस्त्रियांचेनिसर्गाशीअसलेलेनाते,
त्यांचेपुनरूत्पादनक्षमतेचेसामर्थ्यजमिनीशीतोलूनइतरहीउपजतगुणांचेगौरवीकरणकेलेजाते.
त्याचादुष्परिणाममम्हणजेपुरुषप्रधानसंस्कृतीलानिसर्गवस्त्रीच्याहासालाजबाबदारधरलेतरीत्यातून स्त्री-पुरुषांच्यापारंपरिकभूमिकांनाप्रोत्साहनमिळूशकते. 'स्त्रीत्व' विरुध्द 'पुरुषत्व' अशामांडणीमुळेस्त्रियांचीउत्पादककार्येकेवळनैसर्गिककिंवाजीवशास्त्रीयदृष्ट्यामहत्वाचीठरविली जातात.13सिसिलीजॅक्सनआणिजेनेटबिलयासारख्यास्त्रीवादीविद्वानांच्यामतेजमीनआणिस्त्रीमधी लपुनरूत्पादनाचेसाधर्म्यहेस्त्रियांनामुक्तीच्यामार्गाकडेनेण्यापेक्षामागेखेचूनआणखीमागासबनवते वलिंगभेदअजूनठळककेलाजातो.
त्यामुळेलिंगभेदावरआधारीतश्रमविभागणीस्वाभाविकआवश्यकववैश्विकमानलीजाऊनस्त्रियांच्या व्यवस्थापनातीलक्षमता, ऊर्जाआणिस्वातंत्र्यावरबंधनेघालणाऱ्यासामाजिक, सांस्कृतिकपध्दतीकडेदुर्लक्षकेलेजाते. याशिवायसिध्दांतातवंश, वर्गवइतरभेदांचाविचारकेलाजातनाही. एकंदरीतचहासिध्दांतस्त्री-पुरूषसमतेचादृष्टीकोनएकप्रकारेनाकारतोहीयातीलउणीवआहे.

iii) समाजवादीइकोफेमिनिझम :-

इकोफेमिनिझमचाहासमाजवादीदृष्टीकोनस्त्रियांचाएकमूलभूत 'वर्ग' करूनसर्वस्त्रियांनाएकाचप्रकारचाअनुभवयेतो,
म्हणजेस्त्रियांचाअनुभवसर्वत्रसारखामानूनत्यालावैश्विकरूपदेतो. वर्ग, वंशाधारितनिकषांवरस्त्रियांच्याभिन्नअनुभवालासमजूनघेण्यातयासिध्दांतालाअपयशआले.
शिवायस्त्रियांसाठीजीवनाचेपुनरूत्पादनहाचकेंद्रवर्तीमुद्दायातमांडलागेला.
भांडवलशाहीतीलसामाजिकउत्पादनालास्त्रियांच्यादृष्टीनेयातदुय्यमस्थानदेऊननिसर्गवपुनरूत्पाद नालाअधिकमहत्वदिलेगेले.

iv) सांस्कृतिकपर्यावरणवादीस्त्रीवाद-

'सांस्कृतिकपर्यावरणवादीस्त्रीवाद'
च्याअनुसारस्त्रीआणिनिसर्गयादोघांतनिसर्गत:चकाहीविशेषगुणविद्यमानआहेतजसेकी,

तोम्हणजेयाजीवसृष्टीलागतीमानताप्रदानकरण्याचागुणयादोघांमध्येआहे.
स्त्रीहाशब्दचमुळातनिसर्गाचापर्यायीशब्दआहे.
स्त्रीयासंस्कृतशब्दातमुळातनिसर्गाचेतीनगुणम्हणजेचसत्वगुण,
तमोगुणआणिरजोगुणयाशब्दांचेसंमिश्रणआढळते.
अर्थातस्त्रीमध्येनिसर्गातीलचगुणांचेसंमिश्रणदिसते.
यादृष्टीकोणातूनपाहिल्यासस्त्रीआणिनिसर्गयादोघांतहीसर्जनात्मकगुणआढळतात.
स्त्रीआणिनिसर्गदोघातहीपृथ्वीचीप्रजननाचीक्षमताअसलेलीदिसते.
त्यामुळेचस्त्रीयांचेसांस्कृतिकलक्षणे/विशेषकधीचविनाशकारी, शोषक,
अपक्षयीकिंवाहिंसकअसलेलेदिसतनाहीत.
तरज्याप्रकारेनिसर्गआपल्यासर्वचसजीवांचेपालनपोषणकरतेत्याचप्रकारेएकस्त्रीआपल्यामुलाबाळांचेसंगोपनकरते. यादृष्टीनेस्त्रीआणिनिसर्गयांच्यातजैविकसमानताआढळते.
याउलटआधुनिकविकासवऔद्योगिकीकरणाचीप्रक्रीयेवरपुरूषीप्रभावअसूनत्यातउपभोगवादी,
भांडवलशाहीसभ्यतेचाप्रभावअसलेलादिसूनयेतो.
पृथ्वीवरीलजीवनअधिकसुंदरवआरोग्यदायीहोण्यासाठीविकासप्रकीयेतीलपुरूषीसत्तात्मकविध्वंसतेच्याजागेवरस्त्रीमधीलसृजनक्षमताविकसितहोण्याचीगरजआहे.
थोडक्यातसर्वांच्याअंतर्गतस्त्रीत्वाचाविकासझाल्यासजीवनसहजसुंदरहोऊशकते.14

इकोफेमिनिस्टांमध्येवैचारिकमतभिन्नताकाहीप्रमाणातअसलीतरीपर्यावरणाच्यासमस्यावस्त्री-समस्यायामधीलआंतरसंबंधातीलएकरूपतेवरसर्वांचेठामएकमतआहे.
थोडक्यातपर्यावरणवादीस्त्रीवादानेपुरुषकेंद्रीसंस्कृतीतस्त्रीदेहालामिळालेल्यादुय्यमस्थानाचाप्रतिवादकेला. तसेचस्त्री-देहाचेसृष्टीशीनातेजोडूनतिच्याविकासातीलअडसरदूरकरण्यासाठीयोग्यसामाजिकवातावरणनिर्मितीकरण्यावरभरदिला.
त्यासाठीस्त्रियांनाकेवळयाविषमतामूलकनफेखोरीवरआधारलेल्याविकासप्रक्रियेतसामावूनघेऊनप्रश्नसुटणारनाहीतवसमताहीप्रस्थापितहोणारनाहीअशीमांडणीकरूनचंगळवाद, शोषणवस्त्री-पुरूषभेदहेसर्वप्रश्नमानवमुक्तीच्यालढ्याचेअसूनप्रचलितविकासाचीपुनर्मांडणीकरूनत्याजागीसमतावादी,
निसर्गानुकूलअशापर्यावरणपूरकचिरस्थायीविकासनितीचाशासनानेअवलंबकरावाअशीभूमिकापर्यावरणवादीस्त्रीवादघेतो.

भारतातीलविकासनीती,
त्यातूनझालेलापर्यावरणीयविनाशआणिपर्यावरणवादीस्त्रीवादीविचार-

अतिप्राचीनकाळातस्त्रीचीसर्जनक्षमताहीभूमीच्यासुफलनक्षमतेबरोबरचीमानल्यानेमानवीसमूहातस्त्रीबद्दलविशेषआदराचीभावनाहोती.
जीशक्तीअर्भकालाजन्मदेतेतीचशक्तीभूमीतूननवाअंकुरनिर्माणकरते,
यानिरीक्षणावरूनमानवानेभूमीवस्त्रीलाएकरूपस्वरूपातमानले.
'स्त्रीआणिभूमीयांच्यातीलनवनिर्मितीचेसामर्थ्यजाणूनत्यांच्यातीलसाधर्म्यआणिसहचर्ययावरनिश्चितस्वरूपाचेठोकताळेत्यांनीबांधले, त्यालाचफ्रेझरस्युडोसायन्स (Psudoscience) म्हणतो.15आजभांडवलशाहीच्यायुगातमात्रविज्ञानाच्याआणितंत्रज्ञानाच्याताकदीवरस्त्रीवनिसर्गयादोन्हीशक्तीवरवर्चस्वमिळविल्याचादावाकरूनपुरुषप्रधानसत्तेचापायादृढकरतनिसर्गाच्याव्यवस्थापनाबाबतबेफिकिरीदाखवतोआहे.
पर्यावरणाचामानवीजीवनावरहोणारापरिणामस्त्रियांनाप्राधान्यानेजाणवतो.
कारणमानवीसंवर्धनहात्याच्यारोजच्याजगण्यातीलविषयआहे.

पाणी,
जमीनवखनिजपदार्थयानैसर्गिकसंसाधनांच्याआणिनिसर्गातीलजैवविविधतेच्यासहाय्यानेमानवानेप्रगतीचाटप्पागाठला. मानवाचेआर्थिक,
सामाजिकवसांस्कृतिकस्वास्थ्यहेपर्यावरणाच्यासमतोलावरअवलंबूनआहे.
परंतुआजपर्यावरणासंबंधातअनेकसमस्याभेडसावतआहेत.
विकासाच्यानावाखालीहोणारीप्रचंडवृक्षतोड, खाणकाम, हवा,
पाणीवजमिनीचेप्रदूषणयासारख्यागंभीरसमस्यावाढतअसतानानैसर्गिकसंसाधनांचाहीऱ्हासहोत
असूननिसर्गव्यवस्थाउद्ध्वस्तहोतआहे.
मानवाच्यासुखासाठीनिसर्गाचीओरबडणूककरूनपर्यावरणाच्याहोणाऱ्याऱ्हासाकडेमात्रदुर्लक्षकेले
गेले. पाश्चिमात्यराष्ट्रांनीभांडवलशाहीच्यानावानेविज्ञान-
तंत्रज्ञानाच्यामार्गानेभारतासारख्याराष्ट्रांवरहीवर्चस्वनिर्माणकेले.
भांडवलशाहीच्याविकासानेप्रस्तुतकेलेल्याजागतिकीकरण,
मुक्तआर्थिकधोरणवखुल्याबाजारपेठांसारख्याधोरणामुळेसमाजातविषमतावाढूनजेदुष्परिणामहो
तगेलेत्यामध्येआधीचसमाजातीलदुय्यमस्थानावरअसणाऱ्यास्त्रियांवरनकारात्मकपरिणामझालेला
दिसूनयेतो. आतापर्यंतथोडेफारमिळूलागलेलेस्वातंत्र्यहीविविधमार्गानधोक्यातयेऊलागलेआहे.
शिवायजागतिकीकरणाच्यायाप्रक्रियेतकष्टकरीस्त्रियाअधिकभरडल्याजातआहेत.

भारतातस्वातंत्र्योत्तरकाळातस्वीकारलेल्याविकासाच्याप्रतिमानाचेपर्यावरणावरगंभीरपरिणामझाले
. त्यातूनपर्यावरणाचीहाणीझाली,
निसर्गाचेअसंतुलननिर्माणहोऊनकधीअतिवृष्टीतरकधीतीव्रदुष्काळयाचेमानवीजीवनावरदुरगामी
परिणामझाले. त्याचीझळस्त्रियांनाहीसोसावीलागलीआहे.
स्त्रीशोषणाचेमूळपर्यावरणशोषणातचआहे.
भारतातअनेकपर्यावरणविषयकचळवळीझाल्यात्यातीलचिपकोआंदोलनसर्वश्रुतआहे.
चिपकोआंदोलन हेझाडांनावाचविण्यासाठीझालेलेआंदोलनहोते.
एप्रिल१९७३मध्येअलकनंदाखोऱ्यातीलमंडलगावात 'चिपको' आंदोलनाचीसुरुवातझाली.
अलकनंदाखोऱ्यातीलजंगलाचाएकभूभागक्रीडासाहित्यतयारकरणाऱ्याएकाकंपनीलादेण्याच्यासर
कारच्यानिर्णयालाविरोधकरण्यातूनआंदोलनउभेराहिले. यामध्येवृक्षतोडीचाविरोधकरण्यासाठी
स्त्रियांनीसहभागनोंदविलावतोडहोणाऱ्यावृक्षालाकवटाळूनठेवले.
याआंदोलनामुळेशेकडोझाडांचीजंगले, हजारोपक्षी, प्राण्यांचीनिवासस्थानेवाचली.
याआंदोलनातकगौरादेवी, सुदेशादेवी, बचनीदेवीयांसारख्यास्त्रियाहिरिरीनेउतरल्या.
गौरादेवीनेगावागावांतफिरूनस्त्रियांनाएकत्रआणलेआणिजंगलात 'चिपको'
आंदोलनसुरूकेले.16

भारतातीलसुप्रसिध्दचिपकोआंदोलनातीलस्त्रियांचासहभागलक्षातघेऊनपर्यावरणवादीस्त्रीवाद्यांनी
स्त्रियांचेनिसर्गाशीनातेमूलत:
निर्मितीक्षमअसतेआणिभारतीयसमाजातीलहिंसाचाराचेमूळपाश्चिमात्यविज्ञान,
तंत्रज्ञानआणिआंतरराष्ट्रीयसाम्राज्यवादाचाप्रभावयातपाहिले.
तिसऱ्याजगातीलशेतकरीस्त्रियांना"स्त्रीशक्ती'' 'प्रकृती'
चेमूर्तरूपमानूनत्यांनाहिंसाचारालाप्रतिशहदेणारेकर्तेपणदेण्याचेप्रयत्नअशाविचारातदिसतात.
निसर्गआणिमानवीजीवनस्त्रीत्वानुसारपुन्हाबांधलेगेलेपाहिजेअसाआग्रहयेथेदिसतो.
स्त्रीवादीराजकीयभानअसणारेअभ्यासकमात्रपर्यावरणवादाच्याचळवळीकडेस्त्रियांनाजमिनीसार
ख्यास्थावरसंपत्तीतवाटामिळालापाहिजेयादृष्टीनेपाहतात.
परंतुस्त्रियांनामिळालेलासंपत्तीतीलअधिकारत्यांच्यावरीलवाढत्याहिंसाचाराचेएकमोठेकारणआहे

याचीनोंदहीअनेकअभ्यासकांनीकेलीआहे.17भारतातवाढलेल्याकौटुंबिकहिंसाचारातमहिलांचाजाणाराबळीहेत्याचेचद्योतकआहेअसेआपणासम्हणतायेईल.

भारतानेस्वीकारलेल्याविकासनीतीमुळेदुष्काळीपरिस्थितीओठवूनस्त्रियांच्यासमाजातीलदर्जावरहीविपरीतपरिणामझालाआहे. पृथ्वीवरीलजीवनासाठीपाणीहीएकमूलभूतगरजआहे. तथापि, जगभरातीलबऱ्याचलोकांनापिण्याचेपुरेसेशुद्धपाणीउपलब्धहोतनाही.
भारतातीलदुष्काळग्रस्तभागातहीपरिस्थितीसामान्यआहे. महाराष्ट्रहेदेशातीलएकअसेराज्यआहे जिथेदरवर्षीअनेकजिल्ह्यांनादुष्काळाचासामनाकरावालागतो.
जलसंकटाचासामनाकरण्यासाठीमहाराष्ट्रातीलडेंगणमाळयागावानेबहुपत्नीत्वाचाएकअसामान्यउपायशोधलाआहे. याचाअर्थयागावातपाणीआणण्यासाठीएकापेक्षाजास्तपत्नीकेल्याजातात, यापत्नीला 'पाणीपत्नी' किंवा 'पाणीबाई' असेम्हणतात. डेंगणमाळहेपश्चिममहाराष्ट्रातीलएकछोटेसेगावआहे, जेमुंबईपासून 185 किमीअंतरावरआहे. हेगावखडकाळप्रदेशातवसलेलेआहेआणि 500 लोकसंख्याआहे. येथीलघरांनापाण्याचीपाईपलाईनचीजोडणीनाहीआणिउन्हाळ्यातयाभागातदुष्काळपडतो.येथील गावकऱ्यांनापाण्याचाएकमेवस्त्रोतम्हणजेनदीआणिभातसाधरणआहे. दोघेहीइतकेदूरआहेतकी, ये-
जाकरण्यासाठीजवळपास१२तासलागतात. पुरुषशेतीकामकरतातत्तरपहिलीपत्नीघरकामवमुलांच्यापालनपोषणामुळेपाणीआणण्यासाठीवेळचनसतो.
परिणामीपाणीआणण्यासाठीकेवळदुसराविवाहयागावातकेलाजातो.
गावातीलविधवाकिंवानिराधारमहिलेशीपुरुषदुसराविवाहकरतात.
यास्त्रीकडेकेवळपाणीघेऊनयेण्याचीजबाबदारीअसते. कौटुंबिकनिर्णयप्रक्रीयेततिलास्थाननसते. तसेचकुटुंबाच्यासंपत्तीवरअधिकारहीनसतो.
हेस्त्रियांच्याहक्कअधिकाराचेउल्लंघनअसते.18नैसर्गिककारणांमुळेमहिलांवरअशीहीनपरिस्थिती ओठवलीआहे.
त्यासाठीपर्यावरणसंवर्धनाचीगरजअसूनस्त्रियांचेशोषणथांबवण्यासाठीअशादुष्काळग्रस्तप्रदेशातीलपाणीसंकटदूरकरण्याचीगरजआहे.

सारांश-

पर्यावरणीयस्त्रीवादहाशब्दपाश्चात्यस्त्रीवादीमहिलाविचारवंतांनीवापरातआणलाअसला, तरीभारतातीलचिपकोआंदोलन, केन्यातीलग्रीनबेल्टचळवळ, पाश्चात्यदेशातला अण्वस्त्रविरोधीचळवळीतीलमहिलांचासहभागइत्यादीप्रकारच्याविविधचळवळींनीएकत्रितपणेपर्यावरणीयस्त्रीवादाच्यातत्त्वज्ञानालाआकारदिलेलाआहे.
आजपर्यावरणीयस्त्रीवादाचाविचारविविधपातळ्यांवरदेशातविकसितहोतानादिसतो.
त्यामध्येआपल्यासंस्कृती, परंपरांचीचिकित्साकरतनवाअर्थदेणे; त्यातूनसंघर्षआणिआंदोलनेउभेकरतदलित, आदिवासी, लहानशेतकरी, अण्वस्त्रविरोधकयुद्धइत्यादींनाविरोधकरणे; विस्थापितांशीनातेजोडतनिसर्गाचाऱ्हास, नैसर्गिकसंसाधनांवरीलवर्चस्वालाविरोधकरणेइत्यादींच्याविरोधातपर्यावरणीयस्त्रीवादउभाराहतानादिसतो.

इकोफेमिनिझमच्याविचारप्रणालीनुसारशेती, पशुपालनआणिजंगलाचेसंवर्धनवसंरक्षणइत्यादीचीजैव-
सांगडघालण्याच्याकार्याचावारसास्त्रियांकडेआहे.
शेतीचाशोधस्त्रियांनीलावलाअसलातरीपाश्चिमात्यपध्दतीच्याव्यापारीशेतीव्यवस्थेमुळेस्त्रियांचेनिस

र्गासंबंधीचेपारंपरिकशेतीचेज्ञाननिरूपयोगीठरविलेगेले.
यापूर्वीहीजरीस्त्रीचेसमाजातीलस्थानदुय्यमहोतेतरीशेतीसारखीकाहीक्षेत्रेत्यांच्यासाठीस्वायत्तहोती. परंतुचंगळवादीभांडवलशाहीवपुरूषशाहीएकमेकालापूरकअसल्यामुळेयामधूननैसर्गिकसंसाधनांचीज्यापध्दतीनेलूटमारकेलीजाते, त्याचपध्दतीनेस्त्रियाचेहीशोषणहोते. पुरुषसत्ताकआधुनिकतंत्रज्ञानाधिष्ठितविकासप्रकल्पांनीनिसर्गउधवस्तकरूननिसर्गवमाणसातद्वैत निर्माणकेले.
त्यामुळेपर्यावरणावरमूलगामीपरिणामहोऊनएकूणचनैसर्गिकसाखळीचीजैवसंस्थावमाणसा-माणसामधीलसंबंधावरयाचाविपरीतपरिणामहोऊनपर्यावरणाचावमानवजातीचार्‌हासहोऊशकतो. त्यामुळेयानिती–धोरणांचेमुळापासूनउच्चाटनकेल्याशिवायनिसर्गआणिस्त्रियांचेशोषणवपर्यायानेमानवजातीचेहोणारेनुकसानथांबणारनाही.

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शिवकालीन पर्यावरण संवर्धन

राणी भागवत सावंत
डॉ. बाबासाहेब आंबेडकर मराठवाडा विद्यापीठ,
औरंगाबाद.

सारांश :

ऐतिहासिक वारसा आणि पर्यावरण संपन्नता याबाबतीत महाराष्ट्र प्रदेश कमालीचा समृध्द म्हणावा लागेल. विविधरंगी सुपीक भूमी, नदया, डोंगरदऱ्या, सागरकिनारा आणि जैवविविधता या सर्व नैसर्गिक संसाधनाची निसर्गाने मुक्तहस्ते उधळण केलेली आपणास दिसून येते. पर्यावरण व इतिहास यांचा सहसंबंध असतो. इतिहासाची निर्मिती आणि स्वरुप पर्यावरणाने प्रभावित होत असते.

छत्रपती शिवाजी महाराज हे पर्यावरण संवर्धनात अतिशय संवेदनशील होते. स्वराज्य निर्मितीत पर्यावरणीय घटकांचा छत्रपती शिवाजी महाराजांनी पुरेपूर उपयोग केला. दुर्गनिर्मिती, रचना, जलव्यवस्थापन, वृक्षलागवड व जतन, पिकसंवर्धन इत्यादी बाबींमध्ये ते अत्यंत दक्ष असायचे. रयतेचे राजे शिवाजी महाराज यांनी माणसं आणि वृक्षवेली जीवापाड जपलेली आहेत. त्यांचे पर्यावणपूरक धोरण हे स्वराज्य विस्तारासाठी पोषक ठरलेले आपणास दिसून येते. प्रशासकीय धोरणांची अंमलबजावणी करत असतांना छत्रपती शिवरायांनी नेहमीच पर्यावरण रक्षण व संवर्धन याचा विचार केलेला आहे हे दिसुन येते.

मुख्य शब्द: पर्यावरण, इतिहास, पर्यावरणसंर्वधन, पर्यावरणीय घटक, पर्यावरणाचा इतिहासावरील परिणाम.

विषयाचे महत्त्व :

छत्रपती शिवाजीमहाराज यांचे पर्यावरणपूरक धोरण हे त्यांच्या स्वराज्यनिर्मिती आणि विस्तार याबाबतीतील एक महत्वाचा घटक राहिलेला आहे. सखोलपणे विचार केल्यास शिवकालीन पर्यावरणसंवर्धन हा एक स्वतंत्र अभ्यास विषय होऊ शकतो. महाराष्ट्रातील शिवपूर्वकालीन परिस्थिती मग ती राजकीय, सामाजिक अथवा पर्यावरणीय असो अतिशय बिकट झालेली होती. सर्वच क्षेत्रात पिछेहाट चालू होती. राजकीय आस्थिरता, सुरक्षिततेची हमी नसणे, सततच्या लढाया, परकीय आक्रमणे यामुळे जैतिक – अजैतिक पर्यावरणीय द्वारा हा निरंतर चालू होता. छत्रपती शिवाजी महाराजांनी माणसाबरोबर पर्यावरण रक्षण करणे हे त्यांच्या प्रशासनातील एक महत्वाचे उद्दीष्टे म्हणून नेहमीच अमलात आणलेले आहे हे संशोधनाच्या माध्यामातून आपल्या निदर्शनास येते. रयतेच्या राज्यनिर्मिती दरम्यान पर्यावरण पूरक धोरण व त्याचे संवर्धन हा घटक कसा महत्वपूर्ण आहे हे समजून घेण्यासाठी हा विषय महत्त्वपूर्ण आहे.

संशोधनाची उद्दीष्टे :

१. शितकालीन पर्यावरण संवर्धण जाणून घेणे. २. छत्रपती शिवाजीमहाराजांच्या पर्यावरण संवर्धण धोरणामुळे काय परिणाम झाला ते तपासणे.

३. शिवकाळात पर्यावरणाला कीती महत्त्व होते हे जाणणे.

४. शिवकाळातील इतिहास पर्यावरणाने कसा प्रभावित झाला हे ऐतीहासीक उदाहरणाच्या साहयाणे मांडणे

संशोधनाची गृहीतके :

१. छत्रपती शिवाजी महाराज यांचा स्वराज्य निर्मीती आणि पर्यावरण यांचा ऐकमेकाशी संबंध आहे. २. पर्यावरणीय घटक शिवकाळावर महत्वपूर्ण परिणाम करतात. ३. शिवकाळाची दीशा पर्यावरणीय घटक बदलू शकतात.

विषय विवेचन

छत्रपती शिवाजी महाराजांचा इतिहास हा गौरवशाली आणि प्रेरणादायी आहे. भारतीय मध्ययुगीन ऐतिहासिक कालखंडाचा विचार करता त्यांचे योगदान व स्थान अनन्यसाधारण आहे. छत्रपती शिवाजी महाराजांचे प्रशासन हे लोकाभिमुख होते. त्यांनी नेहमीच रयत शेती व पर्यावरण या घटकांचे हित जोपासलेले आपणास दिसून येते. या अनुषंगाने त्यांना प्रजाहितदक्ष रयतेचे राजे पर्यावरणरक्षक छत्रपती शिवाजी महाराज असे म्हणने कमप्राप्त वाटते. ३५० वर्षा पूर्वी परकीय आक्रमणे आणि मोगल सत्ता निरंकुशपणे थैमान घालत असतानाच या रयतेच्या राजाने स्वराज्य उभे केले. हे करत असतानाच या रयतेच्या सुखदःखाचा त्यांनी विचार केला. राज्यनिर्मितीसाठी बळाचा वापर केला नाही. आरमार उभे करताना रयत आणि पर्यावरण याचा किती सुरेख संगम उभा केला हे आपणास शिवचरीत्रामध्ये दिसून येते..

सांप्रत काळात पर्यावरणचा समतोल ढासळत असताना छत्रपती शिवरायांच्या आज्ञापत्रांचा अभ्यास करणे आवश्यक वाटते. पर्यावरणपूरक धोरण किती मोलाचे आहे हे त्यांची आज्ञापत्रे आभ्यासल्यावर कळते. आज्ञापत्रे साक्षात छत्रपती शिवरायांच्या चरित्राचे दर्शन घडविणारा आरसा आहे. शेतकरी शेती आणि पर्यावरण हे परस्परपूरक घटक - आहेत हे छत्रपती शिवराय जाणून होते. परकीय आक्रमणांपासून शेती आणि शेतकरी म्हणजेच पर्यावरने पर्यावरण वाचले पाहिजे याबाबत शिवरायांनी घेतलेली काळजी आजदेखील पथदर्शक आहे. १९ मे १६७३ रोजी चिपळून येथील जुमलेदार, हवालदार आणि कारकुनांना पाठवलेल्या पत्रात शेतकन्याशी कसे वागावे, याचे नीतिशास्त्रच सांगितलेले आहे. " जनावरांचा चारा काटकसरीने वापरा चाऱ्याची उधळपही कराल तर पावसाळयात जनावरांना उपास पडेल, घोडी मरायला लागतील. मग तुम्ही कुणब्याकडून धान्य, भाकरी, गवत, फांद्या, भाजीपाला आणाल. मग शेतकरी उपाशी मरेल ते निघून जातील. मग ते म्हणतील, की तुम्ही तर मोगलांपेक्षा अधिक जुलमी आहात. शेतकऱ्याचा तळतळाट लगेल. त्यामुळे शेतकन्यांस काडीचा देखील त्रास देऊ नका. तुम्हाला गवत, धान्य, भाजीपाला, लाकूड हते असेल, तर बाजारातून योग्य मोबदला देऊन विकत आणावा. कोणाकडून जुलूम अथवा अत्याचार अथवा भांडण करुन घेऊ नका " याचप्रमाणे दुसऱ्या एका आज्ञापत्रात शिवाजीराजे म्हणतात, " आरामासाठी झाड ह असेल तर आंबा साग तोडू नका. कारण ती एक सालात पैदा होत नाहीत. शेतकऱ्यानी त्यांना अनेक वर्षापासून लेकराबाळाप्रमाणे वाढविलेले असते. ती झाडे तोडली तर शेतकन्यांच्या दुःखास पारावार राहणार नाही. ती तोडणे म्हणजे प्रजापीडन आहे. झाड हते असेल तर जीर्ण झालेले झाड त्याच्या मालकाच्या परवानगीने त्याचा योग्य मोबदला दऊन त्याला आनंदी करुन तोडून न्यावे. अत्याचार सर्वथा न करावा

रयतेची आणि पर्यावरणाची उपयोगिता शिवाजी महाराज जाणून होते म्हणूनच या घटकांना जीवापाड जपणे हे आपले आद्यकर्तव्य आहे असे मानूनच त्यांनी आपले प्रशासन चालविले हे आपणास दिसून येते. छत्रपती शिवरायांच्या आज्ञ सांगणारे राजपत्रे रामचंद्रपंत आमात्य यांनी लिहून ठेवले आहे. त्यांच्या अनेक आज्ञपत्रात पर्यावरण, शेती, रयतेचे रक्षण, झाडाचे महत्व आणि संरक्षिणसिध्दतेसाठी त्यांची आवश्यकता कशी आहे हे आपणास दिसून येते. एका आज्ञापत्रात शिवाजीराजे सांगतात, " गडाची राखण म्हणजे कलारग्याची झाडी, सते झाडी प्रयत्ने वाढताती त्यामध्ये एक काहीही तोड़ो न द्यावी. "

गडाची राखण करण्यासाठी सैन्य जेवढे महत्वाचे असते, त्याच प्रमाणे पर्वतरांगामध्ये असणारी दाट झाडी गडाचे रक्षण करते. ही झाडी प्रयत्नपूर्वक वाढवावीत अशी आज्ञा शिवाजीमहाराज देतात. त्या झाडाची एकही फांदी लागते तेवढी फांदीदेखील तोडू नये, आशा सक्त सूचना शिवाजीराजे देतात. वृक्ष लागवड त त्यांचे संतर्धन याला शिवरायांनी खूप महत्व दिलेले होते. रायगडाच्या पायथ्याला शिवरायांची मोठी आमराई असल्याचा ऐतिहासिक उल्लेख मिळतो. गडावर आंबा, वड, नारळ, साग, शिवस इ. झाडे लावली जात असे. त्यांच्या एका आज्ञापत्रात

वृक्षतोड थांबविण्याचा संदेश देऊन संत तुकाराम महाराजांच्या 'वृक्षवल्ली आम्हा सोयरे वनचरे..... ..' या वचनाचा प्रत्यक्ष जीवनात अवलंब केल्याचे आढळून येते. वर्तमान काळात मोठया प्रमाणात वृक्षतोड आणि पर्यावरणाचा - हास आपण उघडया डोळयाने बघतो आहे, तेव्हा शिवकालीन पर्यावरणनीती अवलंबण्याची आज मोठया प्रमाणात आवश्यकता भासत आहे.

रयतेच्या राज्याची निर्मिती ही अतिशय उदात्त हेतूतून झालेली आहे. हे होत असताना शिवरायांचे भौगोलिक ज्ञान व पर्यावरणीय घटक यांचा मोलाचा वाटा होता. सहयाद्रीच्या डोंगररांगा आणि किनारपट्टीतर दुर्गबांधणी करताना छत्रपती शिवरायांनी पर्यावरणाचा सखोल अभ्यास केलेला आपणास दिसून येतो. सिंधूदूर्ग, विजयदुर्ग या जलदुर्गाचे बांधकाम आभ्यासल्यावर शिवराय हे श्रेष्ठ दर्जाचे पर्यावरण तज्ज्ञ होते हे सिध्द होते. प्रत्येक गोष्टीची निर्मिती करत असताना भौगोलिक घटक आणि पर्यावरण या बाबी शिवरायांनी ध्यानी घेतल्याचे आपल्या लक्षात येते. इ. स. १६६४ साली कुरटे बेटातर सिंधुदूर्ग बांधून घेतला. तत्पूर्वी शिवरायांनी पर्यावरणीय दृष्टया सखोल आभ्यास केल्याचे आपणास दिसून येते. तेथील पाण्यात आडवे तिडवे छूपे खडक असल्याचे बेटाभवती तीन कोसापर्यंत मोठया नौका येणे मुश्कील असे. आणि हेच पर्यावरणीय ज्ञान शिवरायांनी तो दूर्ग बांधताना वापरले. चोहोबाजूला खारे पाणी असूनही तेथे दही बात, साखर बात आणि दुध बात या तीन गोडया पाण्याच्या विहीरी आपणास बघावयास मिळतात. तसेच पर्यावरणपूरक ४० शौचकुप या जलदुर्गावर बांधलेले आहेत. आज आपले सरकार या पध्दतीचे शौचकुप बांधावीत असा आग्रह करताना दिसते ते फार पूर्वीच म्हणजे शिवकाळात प्रत्यक्ष वापरात होते हे आपणास दिसून येते. कोणत्याही गोष्टीची निर्मिती आणि विस्तार करत असताना तो पर्यावरणपूरक असला पाहिजे आणि असे असेल तरच माणव आणि इतर जीव यांच्यामध्ये समन्वय आणि संतुलित सहसंबंध राहू शकतो.

राज्यकर्त्यांना म्हणजेच प्रशासकाला या बाबीचे ज्ञान असणे आवश्यक आहे. अन्यथा पर्यावरणीय दृष्टया ते राज्य प्रशासन येणाऱ्या पिढयाचे रक्षण करण्यास असमर्थ ठरु शकते. शिवकालीन पर्यावरण संतुलित राहण्यामागे छत्रपती शिवाजीमहाराजांचे पर्यावरणीय दृष्टया डोळस आणि दूरदृष्टीचे धोरण कारणीभूत आहे. जैतिक अजैतिक या सर्व घटकांचा विचार आणि त्याचा मानताच्या शाश्वत विकासासाठी तापर याचा खुबीने तापर शिवरायांनी त्यांच्या प्रशासकीय धोरणात केलेला आहे. जैवविविधता टिकवणे हे राज्यरक्षणासाठी व पर्यावरणसंतुलनासाठी आवश्यक आहे, हे शिवरायांनी ओळखले होते. आज्ञापत्रातून आदेश देतांना शिवराय असे सांगतात, गडावर जी झाडे असतील ती राखावावी. याविरहीत जी - जी झाडे आहेत, फणस, चिंचा, वड, पिंपळ आदीकरुन लहान वृक्ष तसेच पुष्पवृक्षवल्ली, किंबहुना प्रयोजक अप्रयोजक जे झाडे होत असेल - ते गडावर लावावे, जतन कराते, त्याला इजा करु नये, ती तोडू नयेत, अगदी ती आपल्या उपयोगाची नसली तरी ती तोडू नये. फुलांच्या झाडांची देखील लागवड करावी. वेगवेगळया तेलींची लागवड करावी, उपयोगी, निरुपयोगी असा विचार न करता सर्व प्रकारच्या झाडांची, फुलांची, तेलींची लागवड करणे थांबू नका, त्या झाडांचे रक्षण करा, ही झाडे भविष्यकाळात नक्की उपयोगात येतात. "इतके दूरगामी न दूरदृष्टीचे धोरण छत्रपती शिवाजी महाराजांनी राज्यकारभार करतानी अमलात आणलेले होते. म्हणूनच शिवकालीन पर्यावरण धोरण हे आजच्या काळातही अनुकरणीय आणि आदर्शवत आहे.

समारोप :

पर्यावरण रक्षण ही काळाची गरज आहे. भविष्यकालीन पिढयांना सुखाचे दिवस आसावेत, जागतिक तापमान वृध्दी थांबाती, ऋतूचक्रामध्ये संतुलन असावे आणि कमीतकमी नैसर्गिक आपत्तींचा सामना व्हाना असे वाटत असेल तर एक जबाबदार नागरिक म्हणून सर्वांनी जागरुकतेने पर्यावरण संवर्धनासाठी पावले उचलणे गरजेचे आहे. लढाई करणारे, रणांगण गाजविणारे, शत्रूना पळताभूई थोडी करणारे छत्रपती शिवाजीमहाराज सर्वांना परिचित आहेत, परंतू स्वराज्यातील आणि परराज्यातील झाडांचे रक्षण झाले पाहिजे, आपल्या लेकराप्रमाणे

झाडांना सांभाळा, त्यांना पीडा देऊ नका, त्यांची लागवड करा असे कृतीशील आचरणातून सांगणारे शिवाजीमहाराज खरेच किती लोकांना माहित आहे? पर्यावरणीयदृष्टया वर्तमानकाळ अतिशय भयानक रूप धारण कत आहे. जैवविविधता नष्ट होत आहे. तथाकथित विकासाचा रणगाडा निसर्गाला उध्वस्थ करत सुसाटपणे धावत आहे.

पर्यावरणाचा अविभाज्य घटक आहे. हे थांबले पाहिजे आणि हे थांबविण्यासाठी शितविचार आणि शिवकालीन पर्यावरणसंवर्धन यांचे कृतीविचारातून अंमलबजावणी ही आपल्या सर्वांची आजची गरज आहे.

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संशोधक विद्यार्थी
सरगर सुंदर प्रकाश.
डॉ.बाबासाहेब आंबेडकर मराठवाडा विद्यापीठ,
औरंगाबाद.
ईमेल - spsargar1234@gmail.com
मो. नं - 9766666552.

मार्गदर्शक
डॉ. सुरेश एकनाथ घुमटकर,
विभाग प्रमुख, अर्थशास्त्र विभाग,
बलभीम महाविद्यालय बीड.
ईमेल - ghumatkarsuresh @gmail.com
मो. नं.8788824820

गोषवारा:-
पर्यावरणीय समस्या हा सध्याच्या स्थितीला जागतिक स्तरावरील चिंतेचा विषय आहे. ही समस्या सर्व पृथ्वीवर समान आहे. म्हणूनच पर्यावरणाच्या शाश्वत विकासाबाबतची जाणीव आज जगभरातील सर्वच देशांमध्ये निर्माण झाली. या समस्यावर चर्चा करण्यासाठी 1992 मध्ये रिओ दी जेनेरो येथे(ब्राझील) संयुक्त राष्ट्र पर्यावरण व विकास परिषद भरवण्यात आली. या परिषदेत घोषित करण्यात आले की विकासाचा हक्क अशा रीतीने साध्य व्हावा की सध्याच्या व भविष्यकालीन पिढ्यांच्या विकासात्मक आणि पर्यावरणीय गरजा समन्यायी पद्धतीने भागविल्या जाव्या. हा शोध निबंध नवभारतासाठी शाश्वत विकास व त्यासमोरील असलेले पर्यावरणीय आव्हाने यांचा पद्धतशीर आढावा आहे.
बीज सज्ञा : शाश्वत विकास, पर्यावरण, हवामान बदल, लोकसंख्या, जैवविविधता, प्रदूषण.

प्रस्तावना:-

औद्योगिक क्रांतीनंतर जलद आर्थिक विकासाचे धोरण प्रत्येक देशांनी राबवल्यानंतर पर्यावरण आणि नैसर्गिक संसाधनांचे अध:पतन होण्यास सुरुवात झाली. यावर विचार करण्यासाठी 1972 साली संयुक्त राष्ट्राने स्टॉकहोम येथे UN conference on human environment (UNCHE) ही परिषद भरवण्यात आली. या परिषदेत पर्यावरण हा एक विकासाचा निर्णय मुद्दा असल्याचे मानण्यात आले. या परिषदेच्या परिणाम स्वरूप UNEP (United nations environment programme) ची स्थापना करण्यात आली. IUCN चे दोन तज्ञ इवा बेलफोर आणि वेक जॅक्सन यांनी 1980 मध्ये जागतिक संवर्धन डावपेच (World conservation strategy) हा अहवाल प्रकाशित केला. त्यामध्ये शास्वत विकास हा शब्द पहिल्यांदा वापरण्यात आला. पुढे ब्रुटलँड आयोग अहवाल 1987 व वसुंधरा परिषदेत (१९९२) शाश्वत विकासाच्या संकल्पनेचा विकास केला.

ब्रुटलँड आयोगाने 1987 साली our common future या नावाने आपला अहवाल जाहीर केला. या अहवालात शाश्वत विकासाची पुढील व्याख्या देण्यात आली. **शाश्वत विकास म्हणजे असा विकास जो भविष्यकालीन पिढ्यांची स्वतःच्या गरजा भागवण्याची क्षमता धोक्यात न आणता वर्तमानातील गरजा भागू शकतो.**

UN च्या महासभेच्या 50 व्या सत्रात MDG- Millennium development goals हा मुख्य दस्तऐवज स्वीकारण्यात आला. त्यात मूलभूत तत्वे व उद्दिष्टे यांचा समावेश होता. त्यावर सप्टेंबर 2000 मध्ये स्वाक्षरी करण्यात आली. ती उद्दिष्टे खालील प्रमाणे होती.

अति दारिद्य व भुकेचे निर्मूलन.

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पर्यावरणीय शाश्वतता .
विकासासाठी जागतिक भागीदारी.

MDG चा कालखंड 2000 ते 2015 संपल्याने आणि जागतिक बहुतेक विकसनशील देशांनी आपली लक्ष्य पूर्ण न केल्याने संयुक्त राष्ट्राने याच्या जागी 2015 ते 2030 या वर्षाच्या कालखंडासाठी 17 शाश्वत विकास उद्दिष्टे स्वीकारली. ती खालील प्रमाणे आहेत. 1.दारिद्र्य नष्ट करणे 2.भूक नष्ट करणे.3.चांगले आरोग्य व सुस्थिती.4. शिक्षण.5. लिंग समानता.6 स्वच्छ पेयजल व स्वच्छता.7. परवडण्याजोगी व स्वच्छ ऊर्जा.8.चांगली कार्य स्थिती व आर्थिक वाढ.9.उद्योग, नावाचार व पायाभूत संरचना.10. विषमता कमी करणे.11.स्वच्छ शहरे व समुदाय. .12.जबाबदार उपभोग व उत्पादन.13.हवामान कृती 14.पाण्याखालील जीवन.15.जमिनीवरील जीवन.16.शांतता, न्याय व मजबूत संस्था. 17.लक्षपूर्तीसाठी भागीदारी.

भारताने वरील उद्दिष्टे साध्य करण्यासाठी अनेक उपाययोजना केल्या आहेत. त्यामध्ये नीती आयोगाने पुढाकार घेऊन भारताचा शास्वत विकास मोजण्यासाठी SDG india निर्देशांकाची सुरुवात 2018 मध्ये केली. तसेच प्रत्येक मंत्रालयाने आपले स्वतःचे कृती कार्यक्रम तयार करून विविध योजना सुरू केल्या आहेत. परंतु असे असले तरी शाश्वत विकास साध्य करण्यासाठी भारतासमोर अनेक अडथळे निर्माण झाले आहेत. त्यामध्ये मुख्य अडथळा हा पर्यावरणीय आव्हानांचा आहे. प्रस्तुत शोधनिबंधातून नवभारतासमोरील शाश्वत विकास व पर्यावरणीय आव्हाने यांचे विश्लेषण केले आहे व शेवटी उपाय सुचवले आहेत.

संशोधनाची उद्दिष्टे

1. भारतातील शाश्वत विकासाचे अध्ययन करणे.
2.भारतातील शास्वत विकासासमोरील पर्यावरणीय समस्यांचे अध्ययन करणे.
3. भारतातील शाश्वत विकासाच्या योजनांचे अध्ययन करणे.

संशोधन पद्धती

सदरील संशोधनासाठी प्राथमिक तथ्यांचा वापर करण्यात आला नाही. हे संशोधन केवळ दुय्यम सामग्रीवर आधारित आहे. तथ्यांचे संकलन करताना संदर्भ ग्रंथ, वर्तमानपत्रे, मासिके, भारत सरकारचे विविध आर्थिक अहवाल, जागतिक प्रमुख संस्थांचे अहवाल. इत्यादी साधनांचा वापर करण्यात आला आहे. प्रस्तुत संशोधन विषयाचा अभ्यास करण्यासाठी **वर्णनात्मक आणि विश्लेषणात्मक संशोधन पद्धतीचा** वापर करण्यात आला आहे.

नव भारतासमोरील शाश्वत विकास व पर्यावरणीय आव्हाने /समस्या.

शाश्वत विकास साधण्यासाठी भारताने 2015 पासून अनेक सकारात्मक पावले उचलली आहेत व त्या दृष्टीने प्रयत्न सुरू केले आहेत. त्यामध्ये शासकीय विकासाच्या योजना राबवून त्या यशस्वी करण्यासाठी निती आयोगाला नोडल एजन्सी म्हणून नियुक्त करण्यात आले आहे. त्या दृष्टीने निती आयोगाने अनेक सकारात्मक पावले उचलली आहेत. त्यासाठी शाश्वत विकास मोजण्यासाठी नीती आयोगाने एसडीजी इंडिया निर्देशांकाची 2018 पासून

सुरुवात केली व संपूर्ण भारताचा एसडीजी इंडिया निर्देशांक मोजला. त्यामध्ये भारतातील अनेक राज्यांनी यामध्ये प्रगती केली आहे तर काही राज्ये पिछाडीवर आहेत. त्यामध्ये केरळ, आंध्र प्रदेश, तामिळनाडू, महाराष्ट्र ही राज्ये शाश्वत विकासाची उच्च प्रगती दाखवतात. तर बिहार, झारखंड, मध्य प्रदेश, उत्तर प्रदेश ही राज्ये कमी प्रगती दाखवतात. परंतु असे असले तरी शाश्वत विकास साध्य करण्यासाठी अनेक समस्या निर्माण झाल्या आहेत. त्यामध्ये प्रमुख समस्या ही पर्यावरण आव्हानांची आहे. भारतासमोरील खालील पर्यावरणीय आव्हाने/ समस्या निर्माण झाल्या आहेत.

1 लोकसंख्या वाढ

भारताला भेडसावणाऱ्या प्रमुख पर्यावरणीय आव्हानांचे मूळ कारण आहे लोकसंख्या विस्फोट. 2023 मधील संयुक्त राष्ट्राच्या आकडेवारीनुसार भारताची लोकसंख्या 142.86 कोटी आहे. पहिल्यांदाच भारताने सर्वाधिक लोकसंख्या असलेल्या देशांच्या यादीत पहिले स्थान पटकावले आहे. 2050 पर्यंत भारताची लोकसंख्या 166.8 कोटी पर्यंत वाढण्याची अपेक्षा आहे. लोकसंख्या वाढीमुळे लोक रोजगारासाठी शहराकडे स्थलांतरित होतात तसेच आर्थिक राजधानी असलेल्या मुंबईत देशाच्या कानाकोपऱ्यातून रोज लाखो लोक रोजगाराच्या शोधात येतात. वाढत्या लोकसंख्येमुळे केवळ पाण्याच्या स्त्रोतावरच ताण पडतो असे नाही तर जशी लोकसंख्या वाढत जाते तसा शहरावर याचा ताण पडतो. त्यात वाहतुकीची समस्या, झोपडपट्ट्यांची निर्मिती, रोगराई, पायाभूत सुविधांची कमतरता, प्रदूषण, अशा अनेक समस्या निर्माण होतात. जगातील एकूण भूमी पैकी भारताकडे केवळ 2.4% भूमी आहे तर जगाच्या एकूण लोकसंख्येच्या प्रमाणात भारताची लोकसंख्या 17.64% टक्के आहे. भारतात लोकसंख्येची सरासरी घनता 382 चौरस किलोमीटर इतकी आहे. त्यामुळे एकूण भूमी, नैसर्गिक स्त्रोत आणि लोकसंख्या यांचा विचार करता भारतावर येणारा ताण हा इतर देशांच्या तुलनेत खूप जास्त आहे व पर्यावरण हनीचे ते प्रमुख मोठे कारण आहे. भारताच्या अति लोकसंख्येमुळे निर्माण झालेले सर्वात मोठे आव्हान म्हणजे देशाच्या संसाधनावर होणारा ताण. अन्न, पाणी, ऊर्जा आणि घरांची वाढती मागणी देशाच्या पायाभूत सुविधांवर लक्षणीय दबाव निर्माण करते. संसाधनाच्या अतिवापरामुळे पर्यावरणाचा ऱ्हास झाला आहे. जंगलतोड, मातीची धूप, जलप्रदूषण या व्यतिरिक्त ऊर्जेच्या वाढत्या मागणीमुळे हरितगृह उत्सर्जनात वाढ झाली आहे. त्यामुळे हवामान बदलास हातभार लागला आहे.

हरित ग्रह वायू उत्सर्जन

पृथ्वीच्या वातावरणात हळूहळू होणाऱ्या तापमान वाढीस जागतिक तापमान वाढ म्हणतात. सामान्यतः पृथ्वीचा पृष्ठभाग सूर्याची काही किरणे शोषून घेतो त्यामुळे तो उबदार होतो. तर काही उष्णता वातावरणात पसरते. वातावरणामध्ये अस्तित्वात असणारे वायू या उष्णतेचा काही भाग अडवतात आणि त्यास पुन्हा अवकाशात जाण्यापासून रोखतात. या वायूमध्ये CO2, मिथेन, नायट्रस ऑक्साईड, सल्फर डाय ऑक्साईड या वायूंचा समावेश होतो. या वायूमुळे तपांबरात उष्णता अडवली जाते. या प्रक्रियेला हरितगृह परिणाम म्हणतात.

भारतातील सर्वात धक्कादायक सूचक म्हणजे हरितगृह वायू उत्सर्जनाचा दर. भारतातील हरितगृह वायू उत्सर्जन जगातील तिसऱ्या क्रमांकाचे आहे. याचा प्रमुख स्त्रोत कोळसा आहे जो अत्यंत स्वस्त असल्यामुळे मोठ्या प्रमाणावर वापरला जातो. भारत दरवर्षी तीन गिगाटन हरितगृह वायू उत्सर्जित करतो. हे प्रति व्यक्ती सुमारे अडीच टन झालेले आहे. जे जगाच्या सरासरीच्या निम्मे आहे. त्यामुळे हरितगृह वायू उत्सर्जन परिसंस्थेतील पर्यावरणीय संतुलन नियंत्रित करण्यासाठी प्रतिबंधित करणे आवश्यक आहे. भारताच्या आर्थिक विकासाला कोळशाच्या ऊर्जेमुळे चालना मिळाली आहे.जी देशाच्या सुमारे 70% वीज पुरवठ्याचे उत्पादन करते. कोळसा हे सर्वात कार्बन केंद्रित जीवाश्म इंधन आहे. 2020 मध्ये भारतात 1.6 गीघाटन CO2 सोडण्यात आला. हे यावर्षी देशाच्या एकूण उत्सर्जनाच्या जवळपास 70 टक्के होते. कोळशावर चालणाऱ्या पावर प्लांट द्वारे प्रचंड प्रमाणात CO2 तयार होतो.

याचा अर्थ वीज आणि उष्णता क्षेत्र हे भारतातील सर्वाधिक कार्बन प्रदूषण करणारे क्षेत्र आहे. भारताच्या स्वतंत्र जलद आर्थिक वाढीने लाखो लोकांना गरिबीतून बाहेर काढले असले तरी ते पर्यावरणावर प्रचंड दबाव टाकत आहेत. हरितगृह वायूमुळे भारतात पर्यावरणावर खालील परिणाम झाले आहेत.

1 तापमान वाढ

जर सध्याच्या दराने हरितगृह वायूचे प्रमाण वाढत राहिले तर सन 2050 पर्यंत पृथ्वीच्या तापमानात 1.5 ते 4.5 डिग्री सेल्सिअस वाढ होईल. पिकांच्या वाढीस व्यत्यय येऊन शेती उत्पादनाचे नुकसान होईल. तापमानाच्या नोंदी सुरू झाल्याच्या 120 वर्षाच्या कालावधीत 2021 हे वर्ष देशातील पाचवे सर्वाधिक उष्ण वर्ष ठरले आहे. या वर्षात देशातील जमिनीलगतचे वार्षिक तापमान सरासरीच्या तुलनेत 0.44 अंश सेल्सिअसने अधिक होते.

इंटरनॅशनल फूड पॉलिसी रिसर्च इन्स्टिट्यूट रिपोर्ट 2022 मधील महत्वाचे मुद्दे:-

1. सन 2021 पर्यंत जागतिक तापमानामध्ये 2.4 डिग्री सेल्सिअस ते 4.4 डिग्री सेल्सिअस वाढ होण्याची शक्यता आहे.
2. सन 2100 पर्यंत उष्णतेच्या लाटांमध्ये तीन ते चार पटींनी वाढ होणार आहे
3. सन 2030 पर्यंत 7.4 कोटी ते 9 कोटी भारतीयांना उपासमारीला सामोरे जावे लागणार आहे.
4. जागतिक तापमान वाढीमुळे 2041 पर्यंत 1.80% पिकांच्या उत्पादनात घट होण्याची शक्यता आहे तर 2080 पर्यंत 23.60% घट होण्याची शक्यता आहे.

समुद्राच्या पातळीत वाढ.

गेल्या शतकात हिमनग वितळल्यामुळे जागतिक समुद्र पातळी १० ते ३० सेंटीमीटरने वाढली. जर ही परिस्थिती कायम राहिली तर लहान-मोठे बेटे बुडतील. गंगेचा त्रिभुज प्रदेश देखील अतिशय धोक्यात येईल. भारत-बांगलादेश यांच्यातील वादाचे प्रमुख कारण असणारे न्यूमूर बेट हे पाण्याखाली गेले आहे. सुंदरबन बेट समुद्रात सामावून जाण्याची धास्ती सातत्याने प्रबळ होत चालली आहे. पुढील 25 वर्षात सुंदरबनला जलसमाधी मिळेल असे मानले जात आहे. आसाममध्ये ब्रह्मपुत्रा नदीच्या मधोमध माजुली हे जगातील सर्वात मोठे नदीतील बेट प्रचंड प्रमाणात जमीन वाहून जाण्याच्या समस्येतून जात आहे. एकेकाळी या बेटाचे एकूण क्षेत्रफळ 1278 चौरस किलोमीटर होते. ते अवघे 400 चौरस किलोमीटर पेक्षाही कमी उरले आहे.

कृषी उत्पादन:-

वातावरण बदल आणि शेती यांचा परस्परांवर परिणाम होतो. भारतीय शेतकऱ्यांमध्ये अतिशय कमी भूधारणा असलेल्यांची संख्या जवळपास 70 टक्के आहे. गेल्या दशकात थंडी, उष्णतेची लाट, दुष्काळ, आवर्षण आणि महापूर यासारख्या नैसर्गिक आपत्तीचा फटका शेतकऱ्यांना अधिक बसला आहे. हरितगृहातील वायू उत्सर्जनात भारतीय शेतीचा वाटा 28% आहे. सध्याच्या शेती लागवड पद्धतीमुळे हरितगृहातील वायू उत्सर्जनात 78% मिथेन, व नायट्रस ऑक्साईड चा वाटा आहे. हवामान बदलाचा वनस्पती व प्राणी यांच्या वाढीवर जैविकदृष्ट्या परिणाम होतो तसेच मातीचा पोत, त्यातील आद्रता, कीड रोग इत्यादीमध्ये बदल होतात. देशातील लागवडी खालील एक तृतीयांश क्षेत्रास नेहमीच अवर्षणास तोंड द्यावे लागते. तर जवळपास चार कोटी हेक्टर शेतीतील पिकांची पुरामुळे हानी झाली आहे. अतिवृष्टीमुळे जमिनीची धूप अधिक होते, सुपीक माती वाहून जाते. परिणामी मातीतील सेंद्रिय पदार्थांचे प्रमाण कमी झाले आहे.

प्रदूषण

वायु प्रदूषण

IQAir ने तयार केलेल्या जागतिक वायू गुणवत्ता अहवालानुसार 2022 मध्ये पीएम 2.5 पातळीनुसार दिल्ली जगातील 50 सर्वाधिक प्रदूषित शहरांपैकी चौथ्या क्रमांकावर आहे. 2022 मध्ये लोकसंख्येची सरासरी 2.5pm

पातळी 53. 3ug/m3 असून भारत 131 देशांमध्ये आठव्या क्रमांकावर आहे. राजस्थान मधील भिवाडी शहर जगातील तिसऱ्या क्रमांकाचे प्रदूषित तर दिल्ली चौथ्या क्रमांकाचे सर्वाधिक प्रदूषित शहर आहे. जगभराचा विचार करता प्रदूषणामुळे भारतात सर्वाधिक मृत्यू होतात असे 2019 सालची आकडेवारी सांगतेय. भारतात एका महिन्यात कोरोनामुळे जेवढे मृत्यू झाले त्यापेक्षा 11 पटीने जास्त मृत्यू हे प्रदूषणामुळे झाल्याचे स्पष्ट झाले आहे.

भारतात प्रदूषणामुळे होणारे मृत्यू 2019

- दरवर्षी होणारे मृत्यू 23.5 लाख.
- दर महिन्याला होणारे मृत्यू 1.96 लाख
- दर दिवशी होणारे मृत्यू 6528.

Lanset या सायन्स मॅक्झिनने या संबंधित The Lanset planetary health report 2019 हा अहवाल प्रसिद्ध केला. त्यामध्ये खालील निरीक्षणे मांडण्यात आली आहेत.

1. 2019 साली प्रदूषणामुळे 90 लाख मृत्यू झाले.
2. भारतात 93% भूभागावर जागतिक आरोग्य संघटनेने सांगितलेल्या गाईडलाईन्स पेक्षा जास्त प्रदूषण असल्याचे स्पष्ट झाले आहे.
3. प्रदूषणामुळे होणाऱ्या 23.5 लाख मृत्यू पैकी 6.50 लाख मृत्यू हे हवा प्रदूषणामुळे होतात.
4. 5 लाख मृत्यू हे जलप्रदूषणामुळे होतात.

जागतिक आरोग्य संघटनेने सांगितलेल्या मानकांच्या तुलनेत भारतातील प्रदूषणाचे प्रमाण हे 20 पटीने जास्त आहे. जगभरातील शंभर शहरांमध्ये भारतातील 63 शहरांचा समावेश आहे.

जल प्रदूषण

भारतात जगभरातील 17.64% लोकसंख्या राहते पण स्वच्छ पाण्याचे स्त्रोत केवळ 4% आहेत. संयुक्त राष्ट्राच्या एका अहवालानुसार मुंबई, दिल्ली, चेन्नई, कोलकत्ता या चार शहरांना 2030 पर्यंत तीव्र पाणीटंचाईला सामोरे जावं लागणार आहे. जलप्रदूषणामुळे आरोग्याची समस्या उद्भवत असून त्यामुळे आरोग्यावर दरवर्षी 5000 कोटी रुपयांचा अतिरिक्त भार पडतोय. आर्सेनिकमुळे केवळ पश्चिम बंगालमध्ये दीड कोटीहून जास्त लोक बाधित आहेत. तर फ्लोराईडमुळे 19 राज्यातील एक कोटीहून जास्त लोक बाधित आहेत.

जैवविविधतेचा ऱ्हास

पृथ्वीवरील जैवविविधतेचे तीन प्रकार दिसून येतात. 1.जनुकीय विविधता.2. जाती विविधता.3. परिसंस्था विविधता. भारतातील जैवविविधता पश्चिम घाट, ईशान्य भारत आणि केरळमधील सायलेंट व्हॅली यामध्ये टिकून आहे. परिस्थितीकीच्या दृष्टीने पश्चिम घाटाला विशेष महत्त्व असून अनेक जातींचे प्राणी, पक्षी व असंख्य प्रकारच्या वनस्पती तेथे आढळतात. भारतात उच्च दर्जाच्या सुमारे सत्तावीस टक्के(4000) वनस्पती आढळतात. त्यापैकी 1800 जातींच्या वनस्पती पश्चिम घाटात पहावयास मिळतात. 1992 साली रिओ द जनेरो(ब्राझील) येथे संयुक्तराष्ट्र परिषदेमध्ये पश्चिम घाटाची गणना जगातील 18 अतिसंवेदनशील प्रदेश अशा पर्यावरणीय क्षेत्रामध्ये करण्यात आली आहे. पश्चिम घाटातील परिस्थितीकी आणि पर्यावरणाचे प्रश्न हे मूलतः लोकसंख्या वाढीचा जमीन आणि शेतीवरील वाढता दबाव, धारण प्रकल्पाखाली येणारी जंगले व जंगलातील जमिनीवर अतिक्रमणे, चहा कॉफीच्या लागवडी, खाणकाम, भू-उत्खनन, जमिनीची धूप या सर्वांशी निगडित आहे. झूलॉजिकल सर्वे ऑफ इंडिया यांनी पश्चिम घाटाच्या केलेल्या सर्वेक्षणावरून असे दिसून येते की जर जंगल संवर्धनाचे कार्यक्रम हाताळले नाही तर पश्चिम घाटातील परिसंस्था येत्या पाच वर्षात नामशेष होतील.

पर्यावरणाच्या शाश्वत विकासासाठी भारताने केलेल्या उपाययोजना :

भारताची नेट झिरो स्ट्रॅटेजी

इजिप्त मधील शर्म अल शेख येथे झालेल्या UNFCCC COP- 27 परिषदेमध्ये भारताने आपले दीर्घकालीन कमी उत्सर्जन विकास धोरण (long term low emission development strategy:LT LEDS) जाहीर केले.

पॅरिस करारांतर्गत सहभागी राष्ट्रांनी 2030 पर्यंत 45% ने उत्सर्जन कमी करण्याच्या आणि 2050 च्या आसपास निव्वळ शून्य उत्सर्जन गाठण्याच्या मोठ्या हवामान उद्दिष्टपुरतीसाठी कार्य करण्याचे मान्य केले आहे.

COP-26 शिखर परिषदेत भारताने आपले कार्बन उत्सर्जन 2070 पर्यंत शून्यावर आणण्याचे वचन दिले आहे. त्यासाठी भारताने अर्थसंकल्पात मिशन पंचामृत ची घोषणा केली.

मिशन पंचामृत 2022

COP-26 परिषदेमध्ये भारताने मिशन पंचामृत ची घोषणा केली. यामध्ये

1. 2070 पर्यंत भारत नेट झिरो लक्ष्य साध्य करेल.
2. 2030 पर्यंत देशाच्या निम्म्या ऊर्जेची गरज अक्षय ऊर्जेद्वारे भागवली जाईल.
3. 2030 पर्यंत कार्बन उत्सर्जन 1अब्ज सणांनी टणांनी कमी करण्यात येईल.
4. कार्बन तीव्रता 2030 पर्यंत 45 टक्क्यांनी कमी करण्यात येईल .
5. 2030 पर्यंत 500 गिगावॅट जीवाश्म ऊर्जा निर्मिती केली जाईल.

ग्रीन हायड्रोजन अभियान 2022.

स्वच्छ ऊर्जेचे उद्दिष्टे साध्य करण्यासाठी ग्रीन हायड्रोजन मिशनची 2022 मध्ये घोषणा केली. या योजनेचे उद्दिष्ट देशातील १२५ GW नूतनीकरण ऊर्जा क्षमतेसह कमीत कमी 5 MMT (मिलियन मॅट्रिक टन) प्रती वर्ष ग्रीन हायड्रोजन उत्पादन क्षमता विकसित करणे. आयात केलेल्या जीवाश्म इंधनावरील अवलंबित्व कमी करणे.

वाहतूक क्षेत्रातील सुधारणा.

भारत स्टेज VI मध्ये (BS-VI) उत्सर्जन मापदंड 1 एप्रिल 2020 पासून लागू केले आहेत. कार्बन उत्सर्जन आणि हवामानातील बदलांना सामोरे जाण्यासाठी भारतीय रेल्वेनेही प्रगती केली आहे. 2023 पर्यंत सर्व ब्रॉडगेज मार्गांचे संपूर्ण विद्युतीकरण करण्याचे उद्दिष्ट ठेवण्यात आले आहे.

इलेक्ट्रॉनिक वाहनांसाठी समर्थन.

जागतिक EV30@30 मोहिमेला पाठिंबा देणाऱ्या काही देशांमध्ये भारत सामील झाला आहे. नुकत्याच प्रकाशित झालेल्या US अहवालानुसार 2030 पर्यंत भारतात विकल्या जाणाऱ्या नवीन वाहनांपैकी किमान 30 टक्के वाहने इलेक्ट्रिक आणि 2035 पर्यंत शंभर टक्के वाहने इलेक्ट्रिक असतील.

प्रधानमंत्री उज्वला योजना 2016

देशातील दहा कोटी कुटुंबांपर्यंत एलपीजी गॅस कनेक्शन पुरविण्यात आले आहे.

प्रधानमंत्री उजाला योजना 2015

या योजनेअंतर्गत देशभरात 367 दशलक्षेपेक्षा जास्त एलईडी बल्ब वितरित केले गेले आहेत. ज्यामुळे दरवर्षी 38.6 दशलक्ष टन कार्बन उत्सर्जन कमी होईल.

निष्कर्ष

शाश्वत विकास साध्य करण्यासाठी सरकारला काही कठोर निर्णय घ्यावे लागतील . सरकारला पर्यावरण संरक्षणासाठी केलेल्या कायद्यांची कठोर अंमलबजावणी करावी लागेल. वस्तूचे उत्पादन करताना त्यांचे पर्यावरणीय मूल्य लक्षात घेऊन सर्व वस्तूंच्या किमतीची पुनर्रचना करावी लागेल. त्याचप्रमाणे अपारंपारिक ऊर्जा साधनांच्या उत्पादनावर सवलत द्यावी लागेल. शाश्वत विकास राष्ट्राच्या आर्थिक, सामाजिक आणि पर्यावरणीय व्यवहार्यतेसाठी

महत्त्वपूर्ण आहे. जागतिक पातळीवर, राष्ट्रीय, प्रादेशिक, स्थानिक पातळीवर वेगवेगळ्या तज्ञांचा सल्ला घेऊन सर्वसामान्य लोकांचा विकास प्रक्रियेमध्ये सहभाग वाढवून होणाऱ्या प्रयत्नांच्या माध्यमातूनच आपण शाश्वत विकास साधू शकतो व पर्यावरणीय आव्हानांचा सामना करू शकतो.

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वायु प्रदुषण: एक भौगोलिक समस्या

प्रा. डॉ. तुकाराम दत्तात्रय गजर
अंकुशराव टोपे महाविद्यालय
जालना

श्री. गणेश अर्जुन खळेकर
संशोधक विद्यार्थी

प्रस्तावना :-

वायु प्रदुषण ही मानवाने निर्माण केलेली एक मोठी समस्या आहे. "मानवाने मानवी स्वार्थी जीवन जगण्यासाठी किंवा मानवी गरजा भागवण्यासाठी निसर्गावर काही गोष्टींवर मात करुन त्या उपभोगन्यासाठी अनेक गोष्टींचा अतिरेक केला आपण म्हणतो की, कोणत्याही बाजुचा अतिरेक हा शेवटी घातकच असतो. त्यापैकीच एक म्हणजे वायु प्रदुषण होय." हवा हा पृथ्वीवरील जीवनाचा एक आवश्यक घटक आहे. सजीव प्राणी आणि प्राणी यापासुन प्राणवायु प्राप्त करतात. जो जीवनाचा स्त्रोत आहे. आणि वनस्पतींना यापासुन कार्बन- डाय-ऑक्साइड मिळतो. ज्यामुळे त्यांचे पोषण होते. वातावरण एक घडी म्हणुन काम करते. तापमान खुप गरम किंवा खुप थंड होण्यापासुन आणि उलकापिंडांना जाळुन नष्ट करते तर खरं तर वातावरण असलेल्या वायुवर बाह्य प्रभावामुळे (नैसर्गिक किंवा मानवी) वायु प्रदुषण होते. आपल्या ग्रहाचे वातावरण ऑक्सिजनसह अनेक वायुनी बनलेले आहे जे मानव आणि इतर जिवंत प्रजातीच्या अस्तित्वासाठी आवश्यक आहे हे वातावरणातील आवश्यक आहे हे वातावरणातील Co2 च्या एकुण प्रमाणाच्या 20% इतके आहे. तथापि जसजसे पृथ्वी बदलते उपलब्ध ऑक्सिजनचे प्रमाण कमी होते आणि अनेक प्रकारचे घातक वायु त्यात विरघळतात.

वायु प्रदुषणाचे स्वरुप :-

निसर्गातील हवा ही प्राणी ऑक्सीजन स्वरुपात घेतात आणि हवेत कार्बन डाय ऑक्साईड सोडतात. जे हिरव्या वनस्पतीद्वारे शोडले जाते. परिणामी चक्र संतुलित होते. घरगुती वापरातुन तसेच उद्योग वाहने यातुन निघणारा धुर आणि इतर सुक्ष्म कण अनेक प्रकारच्या रसायणातुन तयार होणारे हानिकारक वायु धुळीचे कण, किरणोत्सर्गी पदार्थ आणि इतर प्रदुषक हवेत प्रवेश करतात ज्यामुळै संतुलन बिघडते आणि आरोग्याच्या समस्या निर्माण होतात. ते केवळ हेच करत नाहीत ते सर्व सजीवांसाठी विषारी बनतात याला मानव कारणीभुत आहे. यामुळे या सर्वाला वायु प्रदुषण म्हणतात. जेव्हा जेव्हा वायु प्रदुषण होते तेव्हा वातावरणातील नैसर्गिक सौंदर्य नष्ट होते. आणि हानी होण्याचा धोका वाढतो. तसे, वायु प्रदुषण ही एक मोठी मानवी समस्या बनली आहे.

वायु प्रदुषणाचे प्रकार :-

वायु प्रदुषणाचे काही मानवी कृत्यामुळे प्रकार पडतात तर काही नैसर्गिक वायु प्रदुषणाचे प्रकारआहे त्यातीलच पुढील प्रकार म्हणजे नैसर्गिक वायु प्रदुषण :- * धुर आणि धुके :- प्रदुषण "स्मॉग" हा एक शब्द आहे जो आपल्या वातावरणात धुर अणि धुके बनवणाऱ्या पाण्याची वाफ आणि थेंबासारख्या कणांचे वर्णन करण्यासाठी वापरला जातो. या धुके मुळे वातावरण गुदमरुन जाते आणि दृश्यमानताही खूप कमी होते. * जंगलातील आग : नैसर्गिक रित्या काही वनस्पती एक मेकांवर घासुन जंगलात आग लागते त्यामुळे जंगलात अनेक वनस्पती प्राणी, पक्षी, गवत, झाडे या आगेत जळुन खाक होतात.

व हवेमध्ये त्या जंगलातील राखही हवेत मिसळते त्यामुळे सुध्दा वायु प्रदुषण होते. * ज्वालामुखी उद्रेक :- जेव्हा ज्वालामुखीचा उद्रेक होतो तेव्हा मोठ्या प्रमाणात धुर, राख, आणि भुगर्भातील वायु आणि खडकांचे बारीक बारीक तुकडे हवेत मिसळतात. यामुळे सुध्दा हवेचे प्रदुषण मोठ्या प्रमाणात होते.

उच्च वारे आणि वादळामुळे प्रदुषणामुळे धुळीचे कण वातावरणात पसरतात. खनिजे, खानकाम व समुद्रातील मीठाचे कण हे सुध्दा प्रदुषणात भर घालतात. हायड्रोजन संयुगे व काही वनस्पीतीनी तयार केलेल्या पराग कणामुळेही प्रदुषण होते. धुके हा सुध्दा प्रदुषणाचा एक महत्वाचा स्त्रोत आहेत. काही नैसर्गिक घटकामुळे सुध्दा वायु प्रदुषण होते. त्यामुळे आपण पुर्णपणे मानवच हा वायु प्रदुषणला जबाबदार आहे. असे समजणार नाही त्यामध्येकाही अंशी निर्सगही वायु प्रदुष्ज्ञणात जबाबदार आहे.

मानवी कृत्यामुळे होणारे वायु प्रदुषण :-

निसर्गात मानवी कृत्यामुळेही वायु प्रदुषण होते. मानवाने आपल्या विविध क्रिया कलपाद्वारे पार्यावरण किंवा हवा प्रदुषित केली आहे. असा दावा करणे चुकीचे ठरणार नाही. वैविध्यपुर्ण ऊर्जा, उद्योग, वाहतुक, रसायनांचा वाढता वापर व घरगुती इंधन व लाकडाचा वापर आणि इतर घटकांमुळे मानवाला अनेक फायदे झाले आहेत. गॅसोलिन आणि डिझेलवर निर्माण होणाऱ्या नायट्रोजन ऑक्साईडमुळे देखील धुके होते जे सुर्य प्रकाशातील हायड्रोकार्बन्समध्ये मिसळुन घातक फोटो केमीकल धुके तयार होतात. आपल्या देशात वाहनांची संख्या सर्वात जास्त असल्यामुळे औद्योगिक देशाच्या तुलनेत कमी असली तरी आपल्या वाहनांचे इंजन जुने व खराब देखभाल आणि सामान्य वाहनामुळे निर्माण होणाऱ्या वायु प्रदुषणाबाबत वायु प्रदुषण कमी नाहीत विचित्र आहे. जेथे वायु प्रदुषण एकीकडे वाहतुक आणि दुसरी कडे उद्योगामुळे होते वायु प्रदुषण हे खरे तर औद्योगिक क्रांतीचा परिणाम आहे. एकीकडे कारखान्यामध्ये ज्वालनासाठी दगडी कोळसा, इंधन म्हणुन वापरतात या ज्वलन प्रक्रिया आणि दुसरीकडे औद्योगिक चिमण्यांमधुन बाहेर पडणाऱ्या विविध पदार्थाचा धुर वातावरणात विलीन होतो. व प्रदुषण होते जेव्हा कोळसा जळुन औष्णीक ऊर्जा मिळते तेव्हा भरपुर कोळसा जाळ्यामुळे वायु प्रदुषणाचा मोठा धोका असतो. परिणामी सल्फर डायऑक्साईड आणि कार्बन ऑक्साईडसारखी हानिकारक वायु केवळ वातावरणात सोडले जात नाहीत. तर या बरोबर कोळशाची राख आणि कार्बनचे सुध्दा कण देखील वातावरणात सोडले जातात या पासुन सुध्दा मोठ्या प्रमाणात वायु प्रदुषण होते.

जगात जपान या देशातील उद्योगधंद्यामुळे लाँन्स एंजौलिस शहर हे नेहमी धुराच्या ढगात गुर फटलेले असते. यामुळे जपान मध्ये वायु प्रदुषण मोठ्या प्रमाणात होते. * आम्ल पाऊस हा वायु प्रदुषणाचा आनखी एक मोठा प्रकार आहे. सल्फर डायऑक्साइड सल्युरिक ऍसिड (H_2So_4) तयार करण्यासाठी प्रतिक्रिया देते जे सल्फेट आयनाची उच्च एकाग्रता असलेला लहान कणांप्रमाणे पडतात. यामुळे निसर्गातील प्राणी व मानव दोघांचेही मोठ्या प्रमाणात नुकसान होते. * शेतातील किटनाशकांची फवारणी :- शेतातील पिकांवर किटकांचा प्रभाव वाढलाकी शेतकरी मोठ्या प्रमाणात किटनाशकांची फवारणी करतात. यामध्ये अनेक प्रकारचे औषधे व विषारी किटनाशके असतात. या फवारणी मागे शेतकऱ्यांचे बरेचशे औषधी वातावरणातील हवेत पासरुन वायु प्रदुषण होते. शेतकरी फवारणीसाठी लहान ड्रॉन, पेंटस इंधनपंप यांचा वापर करतो. * काही वेळेत मानवी वादामुळे सुध्दा निर्सगात वायु प्रदुषण मोठ्या प्रमाणावर पसरु शकतेच त्याचा परिणाम हा दुरगामी पणे होऊ शकतो याचे उदाहरण म्हणजे जपान देशातील हिरोशीमा व नागासाकी या दोन शहरावर ६ ऑगस्ट व ९ ऑगस्ट १९४५ रोजी

अनुक्रमे दोन अनुबॉम्ब टाकले त्यामुळे त्याठिकाणी इतके प्रदुषित झाले की काही अवशेष अजुनही त्या ठिकाणी दिसु शकत नाही. असे मानवी वादमुळे ही वायु प्रदुषण होऊ शकते.

वायु प्रदुषणाचे परिणाम :-

पृथ्वीचे संरक्षण करणारा ओझोनचा थर वातावरणातील कार्बन डायऑक्साईडचे प्रमाण वाढत असल्यामुळे पातळ होत आहे. परिणामी यातील धोकादायक किरण थेट मानवावर पडतात व त्यापासुन त्वचेच्या कर्क रोगासारखे आजार निर्माण करतात. वायु प्रदुषणामुळे दमा, कर्करोग, डोकेदुखी, पोटाचे आजार ऍलर्जी, हृदयविकाराचे आजार, लहान बालकांना आजार होतात. हे सर्व आपल्या आरोग्यासाठी अत्यंत घातक आहे. या विकारांमुळे दररोज मोठ्या प्रमाणात मृत्यु होतात.

आपल्या वातावरणात ऑक्सीजनचे प्रमाणे असायचे पणते सतत कमी होत आहे. एका अभ्यासानुसार आपल्या वातावरणात ऑक्सिजनचे प्रमाण आता केवळ 22% आहे. शुध्द हवा आणि ऑक्सिजनच्या कमतरतेमुळे प्राणी आणि मानव लवकर मृत्यु मुखी पाडत आहे. तसेच निसर्गात असणाऱ्या विविधी प्रजाती नष्ट होण्याच्या मार्गावर आहे. हवेतील प्रदुषणाच्या अत्याधिक पातळीमुळे पृथ्वीचे संतुलन बिघडत आहे. रोज नवीन संकट कोसळते. कारण प्रदुषण आहे. जर आपल्याला आपली परिसंस्था वाचवायची असेल तर आपण वायु प्रदुषण दुर केले पाहिजे. वायु प्रदुषणाच्या परिणामी शुध्द हवेमध्ये अनेक प्रकारचे धोकादायक संयुगे आढळतात. परिणामी आमलाचा पाऊस पडतो सामान्य मानसाच्या भाषेत याला आम्ल पाऊस असेही म्हणता. कारण ते पाण्यात विरघळते. ते थेट आपल्या शरीरात प्रवेश करते. ज्यामुळे विविध आजार होतात. वायु प्रदुषणाचा परिणाम म्हणुन पृथ्वीचे वातावरण अधिक - अधिक प्रदुषित होते आहे. पृथ्वीचे तापमान दिवसंदिवसे वाढतच आहे. वायुप्रदुषणामुळे विविध घटकांवर त्याचा परिणाम होताने दिसत आहे.

* जगात व भारतात विविध संस्था मार्फत व विविध सरकार द्वारे हवामान व इतर प्रदुषणावर अभ्यास करुन त्याचे संरक्षण करण्याचे उपाय सुचवितात ते पुढील प्रमाणे सांगता येईल.

* भारताची हवामान प्रतिज्ञा :- एका अभ्यासानुसार पॅरिस करार अंतर्गत भारत हा अद्यावत केलेल्या हवामान प्रतिज्ञेचे (अद्यावत राष्ट्रीय कटिबध्दता योगदान) अनुपालन करण्यामये पाचव्या आणि महत्वाकांक्षेमध्ये जगात चौथ्या क्रमांवर असल्याचे आढळले आहे हा "नेचर क्लायमेट चेंज या वैज्ञानिक जर्नलमध्ये हा अभ्यास प्रकाशित झाला आहे. पॅरिस करारावर स्वाक्षरी करणाऱ्या जवळपास सर्व देशांनी संयुक्त राष्ट्रांच्या हवामान बदलावरील परिषदेच्या 26 व्या सत्रादरम्यान त्यांच्या हवामान वचनबध्दतेचे उच्चारण केले आहे." हवामान प्रतिज्ञापूर्व करण्याची शक्यता असलेले राष्ट्र ही राष्ट्रीय कटिबध्दता योगदान अनुपालनाचे उच्च स्थानावर आहेत. पॅरिस करार :- (ज्याला कॉन्फरन्स ऑफ पार्टीज 21 किंवा Cop 21 असेही म्हणतात.) 2015 मध्ये स्वीकारण्यात आला. हवामान बदलाला सामोरे जाण्यासाठी पुर्वीच्या क्योटो प्रोटोकॉलची जागा पॅरिस कराराने घेतली आहे. हा एक जागतीक करार असुन यात सुमारे 200 देशांनी ग्रीन हाऊस गॅस (GHG) उत्सर्जन कमी करण्यासाठी आणि हवामान बदलावर लगाम घालण्यासठी सहकार्य करण्यास सहमती दर्शविली आहे. जागतिक तापमानवाढ औद्योगिकपुर्व पातळीच्या तुलनेत $2^{\circ}C$ च्या खाली शक्यतो $1.5^{\circ}C$ पर्यंत मर्यादित ठेवण्याच्या प्रयत्न या कराराद्वारे केला जातो. या पध्दतीने पॅरिस करारात विविध हवामान बदलावर लक्ष ठेवुन कार्य या पॅरिस करारातुन केले जाते. या पध्दतीने जगामध्ये विविध संस्था हवा / वायु प्रदुषणावर अभ्यास करतात.

* शहरी हवेची गुणवत्ता आणि आरोग्य अहवाल :- गेल्या 10 वर्षात जगभरातील 7000 हुन अधिक शहरांसाठी प्रदुषण आणि जागतिक आरोग्यवरील परिणामांचे विश्लेषण करणार हवा गुणवत आणि शहरांमधील आरोग्य हे जवह पास (2010 ते 2019) या वर्षातील अहवाल ऑगस्ट 2022 मध्ये प्रसिध्द करण्यात आला. या अहवालातील निष्कर्ष :- Pm2.5 पातळी :- 10 सर्वाधिक प्रदुषित शहरांच्या यादीत दिल्ली आणि कोलकत्ता पहिल्या आणि दुसऱ्या क्रमांकावर आहेत. PM2.5 हा 2.5 मायक्रोमीटरपेक्षा कमी व्यासाना वायु मंडलातील कण असुन तो मानवी केसांच्या व्यासाच्या सुमारे 3% एवढा असतो. त्या वायु प्रदुषणामुळे श्वसनाचा त्रास होतो आणि दृश्यमानता कमी होते. या प्रमाणे विविध आजार होतात.

*** वायु प्रदुषणावर जागतिक बँकेचा अहवाल** :-

डिसेंबर 2022 मध्ये जागतिक बँकेने "Striving for clean Air Pollution and Public Health in South Asia" या शीर्षकाचा अहवाल प्रसिध्द केला या अहवालानुसार सध्या 60% पेक्षा जास्त दक्षिण अशियाई लोक PM2.5 प्रदुषकाच्या वार्षिक सरासरी 35 ug/m3 पातळीचे प्रदुषण शान करतात.

*** वायु प्रदुषण कमी करण्यासाठी प्रयत्न करणे**:-

* आज संपुर्ण जग लोकसंख्या विस्ताराच्या समस्येला तोंड देत आहे. जर आपण लोकसंख्या वाढ नियंत्रणात ठेवु शकलो तर वातावरणात कार्बन डायऑक्साईड कमी होईल. * झाडे लावणे हवेतील प्रदुषण कमी करण्यासाठी झाडे लावली पाहिजे कॉर्बनडायऑक्साईड शोषुन घेतात व ऑक्सीजन सोडतात. बहुतेक करुन झाडे हे गलीच्छ हवा ही स्वच्छ करुन सोडतात. * प्रदुषण निर्माण करणारे कारखाने कायमचे बंद केले पाहिजे. त्यापासुन पर्यावरणाचे रक्षण होईल. काही प्रमाणात प्रदुषण करणारे कारखानयाची चिमणी जास्त उंचीवर असावी. * सौर उर्जाचा वापर वाढणे आपण सौर ऊर्जेवर चालणाऱ्या साधनांचा वापर केला पाहिजे. त्यामुळे इंधनापासुन निघणाऱ्या दुर पासुन पर्यावरणाचे रक्षण होईल. * वायु प्रदुषण कमी करण्यासाठी जगभरातील सरकार ने व भारत सरकारने प्रदुषणावर नियंत्रण कायदे केले पाहिजे. व त्याची अमलबजावणी केली पाहिजे. उदा :- भारत सरकारचा 1986 चा कायदा या प्रकार वायु प्रदुषण व इतर प्रदुषणावर ही खुप उपाय सुचविता येतील या प्रकारे वायु प्रदुषण ही भारतातील व जगातील सर्व देशांची सर्वात मोठी समस्या आहे. व ती दिवसेंदिवस ती वाढतच चालली आहे.

संदर्भ :-

प्रा. ए.बी. सवदी-पर्यावरण
टाईम्स ऑफ इंडिया लेख
डॉ. जया विश्वास पाटील लेख
https://hi.m.wikipedia.org.

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Breakfast of Champions: Vonnegut's Environmental Engagement

Mr. Ankit Shahaji Gaikwad
Research Scholar,
Savitribai Phule Pune University, Pune (M.S.)

Breakfast of Champions (1973) depicts a machine-dominated world which is as disastrous to the human spirit as it is to the environment. Here Vonnegut is very much vocal in his criticism of the destruction of the earth and its environment. Like the other environmental novelists, such as D. H. Lawrence, Vonnegut demonstrates with precision the effects of inhuman industrial empire on the life of citizens leaving them impotent, hopeless and neurotic. The present paper is an attempt to explore Kurt Vonnegut's environmental engagement described in his novel ***Breakfast of Champions***. The task Vonnegut undertakes in the novel is to battle with the forces that attempt to annihilate the human spirit and the earth. He focuses his attack on all kinds of spiritual and physical abuses while remaining devoted to human harmony. He suggests that the only way available for us to learn to care humanely for the earth and one another is by coming to grip with what it means to be human. Vonnegut's concern in the novel is aptly put by Todd F. Davis. He says that Vonnegut' novel is a lament over the sacrifices we have made to build the land and its peoples, over the sacrifices we have made to build an economic machine that, in the end, can only consume the earth and all it sustains (Davis 87).

In his moral crusade against American culture, Vonnegut seems to be of the opinion that our problems- environmental, social, personal- stem from the view of the people as machinery. As a creative writer, Vonnegut's mind has been preoccupied with the demonic voices of an American culture bent on its own destruction. By creating the character of Karabekian, he tells that humanity and art play an important role in nurturing the life of the mind and spirit.

Noting the novel's concern John Tomedi says that "the novel is a vicious commentary on almost everything Vonnegut perceived wrong with America in the early seventies: war…notably, discrimination, above all, commercialism and environmentalism" (73). What is rampant in American culture is chaos and environmental rape. The novelist tries to impose an order on chaos and plays the role of savior of the earth and its environment. Before he achieves his aim, Vonnegut provides a panoramic view of the critical human problems that have

resulted from the overdevelopment and over employment of machines without comprehending their social effects or without learning to deal with their waste. This machine dominated world generates in man pessimism followed spiritual death. Vonnegut suggests that the spiritual rebirth is possible by adhering to the cultural ethos which cleanses one within and outside, and injects one to protect the environment. Vonnegut's struggle with machines is comparable with Job's struggle both spiritual and sociological. It is clearly suggested as the novelist gives the quotation from The Book of Job at in front of the novel, thus harping on his concern with the cultural ethos:

> When he hath tried me,
> I shall come forth as gold.
>
> -JOB (Vonnegut x).

In his struggle, Vonnegut has been well tested and comes off as pure as gold from the fire.

The world that Vonnegut envisions through Trout is dying, nearly uninhabitable civilization of rusting junkers out of gas. It has turned the surface of the earth into an asphalt prairie, the atmosphere into poison gas, and the streams, rivers, and seas into sludge. This is not the only case, even the automobiles, along with every form of animal and plant life, are threatened with extinction. The issue of environment is treated so seriously in this novel as nowhere by Vonnegut. He uses Trout's story to discuss the issue metaphorically. The planet Lingo-Three represents the earth that is visited by space travelers "who learned that that the creatures were becoming extinct for this reason: they had destroyed their planet's resources, including its atmosphere" (27). Vonnegut bemoans for the dying earth;

> .. every form of life on that once peaceful and moist and nourishing blue-green ball was dying or dead. Everywhere were the shells of the great beetles which men had made and worshipped. They were automobiles. They had killed everything (29).

Kilgore Trout learns, on his way to Midland City art festival, that the river in Midland City contains not only a washing machine but also a couple of refrigerators, several stoves and infinity of Pepsi-Cola bottles, and a 1968 Cadillac.

Kilgore Trout's journey to Midland City is really a search for truth and beauty because it provides the disdainful commentary on the state of the culture and the planet in the novel. He takes up the issue of pollution more preferably while sitting in a theatre in New York City. There he makes up a new novel about an Earthling astronaut who arrives on a planet where "all the animal and plant had been killed by pollution, except humanoids" (59). The beautiful

human creatures are replaced by the ugly humanoids that "ate food made from petroleum and coal" (59). The picture is grim rather than welcoming: the humans are thought as machines. Kilgore Trout's journey from the New York City to Midland City provides Vonnegut with a space and an occasion to offer his critique of American culture of his time. Robbed of money, Trout asks for free ride in a truck carrying a load seventy-eight thousand pounds of Spanish olives. The truck driver is not only a compassionate man who offers Trout free ride but also environmental conscious man. The dialogues between these two men are a running commentary on how a machine-dominated world has its effect not only on the environment but on human spirit also. The picture they offer is grim and devastating; they see the "poisoned marches and meadows" of New Jersey. The driver used to be a hunter and a fisherman in the past but his heart broke when he saw the manufacturing processes destroyed clean and beautiful marshes and meadows. He is as imaginative as environmental conscious.

Trout tells the driver that a river in Cleveland is so polluted that it catches fire about once a year. He becomes sick at it first but now he laughs at it. The oil tankers are dumped in the ocean and kill millions of birds and billions of fish. Trout tells the driver about God's conservation measure mentioned in the Bible. The driver's concern for the environment creates a guilty conscious in him. He admits to Trout that his truck is turning "the atmosphere into poison gas" and since roads are made everywhere destroying nature, the earth is being "turned into pavement" (84). In the name of development as well as phobia of certain ideology makes America to turn its land into asphalt. The factory where the driver's brother works makes "chemicals for killing plants and trees in Viet Nam" (85). This is done for a purpose that no communists in that can hide from American airplanes. It is so intolerable to the brothers that they seriously think of committing suicide. But Trout advises the driver not to worry about those things. As the truck reaches West Virginia, Trout notes the destructive effects of machines on the land. In the destruction, men are equally responsible:

> The surface of the State had been demolished by men and machinery and explosives in order to make it yield up its coal…The surface of West Virginia, with its coal and trees and topsoil gone, was rearranging what was left of itself in conformity with the laws of gravity…The demolition of West Virginia had taken place with the approval of the executive, legislative, and judicial branches of the State Government, which drew their power from the people (119).

The passage describes the most dramatic visual effects of the machine's power for despoliation as it ravages land surfaces. Vonnegut suggests that human beings often perpetuate their own destruction because it is approved by the government.

Trout observes that even the brooks and rivers are not spared from the pollution. They contain a 1968 Cadillac *El Dorado*, several old home appliances as stoves, a washing machine, and a couple of refrigerators. The pollution reaches to the atmosphere turning it into poison gas. Heat generated in the factories is gone into outer space damaging the atmosphere. The picture is dangerous since, Vonnegut notes, "the atmosphere of Earth relative to the planet wasn't even as thick as the skin of an apple" (123). The novelist uses the metaphor of journey for the purpose of providing much of the disdainful commentary on the state of the culture and planet.

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पर्यावरण और हिंदी

सय्यद अख्तर अजीम
शोध छात्र

डॉ. विनोद श्रीराम जाधव
हिंदी विभाध्यक्ष,
एम्.एस.एस. कला, विज्ञान व वाणिज्य महाविद्यालय,अम्बड, जिला जालना,

पर्यावरण का साधारण अर्थ देखेंगे तो पायेंगे कि जो आवरण मनुष्य के चारों और सदैव ही बना रहता है उसे ही पर्यावरण कहते हैं | इस शब्द को विच्छेदित करके देखेंगे तो परि+आवरण | जहाँ परि का अर्थ आसपास और आवरण का अर्थ ढका हुआ | यानी कि हमारे आसपास जो भी ढका हुआ है या छाया हुआ है वही पर्यावरण कहलाता है | वैसे हम सभी इस बात से भी अनभिज्ञ नहीं है कि पुरुष और प्रकृति हमेशा से ही चोली-दामन से बंधे हैं इनका सम्बन्ध अन्योन्याश्रित है | और इनके सम्बन्ध से ही सृष्टि की रचना होती है | प्रकृति के आभाव में पुरुष की कल्पना तक नहीं कर सकते हैं | इसलिए कह सकते हैं कि मानव अपने पर्यावरण की ही उपज है | स्पष्ट रूप से हम कह सकते हैं कि पर्यावरण वह परिस्थिति हैं जो मानव जीवन को चारों और से घेरे रहती है | इसका बड़ा गहरा असर मनुष्य के जीवन पर पड़ता है और साथ ही साथ मनुष्य की सारी क्रियाओं का असर भी पर्यावरण पर पड़ता रहता है |

पर्यावरण की सटीक परिभाषा के अन्तरगत हम कह सकते हैं कि–**"पर्यावरण संवरक्षण अधिनियम १९८६ धारा-२ के तहत पर्यावरण में जल, वायु, भूमि और मानवीय जीवन व उनकी क्रियाएं प्राणी व पेड़-पौधें इन सभी के अंतर्संबंध सम्मिलित हैं |"(१)** समाज शास्त्रीय मेकयिवर के शब्दों में पर्यावरण को इस तरह से समझा सकते हैं–**"पृथ्वी का धरातल और उसकी प्राकृतिक दशाएं, प्राकृतिक शक्तियां जो पृथ्वी पर विद्यमान होकर मानव जीवन को प्रभावित करती हैं, पर्यावरण के अंतर्गत आती हैं |"(२)** वेबस्टर शब्दकोष के अनुसार–**"पर्यावरण से आशय उन घेरे में रहने वाली परिस्थियों, प्रभावों व शक्तियों से हैं जो सामजिक और सांस्कृतिक दशाओं के समूह द्वारा व्यक्ति व समुदाय के जीवन को प्रभावित करती हैं |"(३)** पर्यावरणविद फिटिंग का मानना है–**"प्राणियों का परिस्थितिकीय मांग ही पर्यावरण हैं |"(४)** युनिवर्सल विश्वकोष के अनुसार–**"पर्यावरण उन समस्त दशाओं, अभिकरणों तथा**

प्रभावों का योग है जो किसी जीव जाति या प्रजाति के विकास-बढ़ोत्तरी, जीवन और मरण को प्रकट करता है |"(५)

पर्यावरण, हम और समस्त जैविक प्रणाली के अंतर्गत हम वर्तमान समय की उपयोगिता को भी चंद शब्दों में स्पष्ट करेंगे–**वास्तव में पर्यावरण भौतिक व जीवित तथ्यों का वह समूह है जिसमें परिवर्तन की प्रक्रिया निरंतर होती रहती हैं |** पर्यावरण का विश्वव्यापी प्रभाव सभी प्राणियों पेड़-पौधों और समस्त मानव जीवन पर प्रत्यक्ष-अप्रत्यक्ष रूप से पड़ता ही हैं | परन्तु वर्तमान समय में क्षेत्रीय विविधता और विश्व के विभिन्न राष्ट्रों ने जन्म ले लिया है | आज हम देखते हैं कि सभ्यता-संस्कृति के साथ साथ जीवन शैली और जीवन मूल्य भी पर्यावरण में शामिल होगये हैं और तो और इसके अंतर्गत धार्मिक आस्थाएं और विश्वास और मानव जीवन की अन्य विविधताएं भी सम्मिलित होगई हैं | निष्कर्षतः कह सकते हैं–**पर्यावरण में सभी बाह्य व आंतरिक परिस्थितियाँ और मानव जीवन पर उनका पड़ने वाला प्रभाव के साथ-साथ यह समस्त जिव-जंतु और वनस्पति के उद्भव, अस्तित्व व विकास का मुख्य आधार भी है |** इसी के साथ-साथ हमें प्रकृति और पर्यावरण के आपसी प्रभाव को भी समझना होगा– प्रकृति पर विजय प्राप्त करने की इच्छा अधिकतर पश्चिमी देशों की रहती है जबकि भारतीय दृष्टिकोण से हम देखेंगे तो पाएंगे कि भारत में सदैव ही प्रकृति को पूजनीय माना है | प्रकृति का पोषण करने से पर्यावरण संतुलित रहता है और नैतिकता का पालन भी होता है |

आज के दौर में हम भूमंडलीकरण और वैश्वीकरण के साथ-साथ आर्थिक् व्यवस्था पर निर्भर जीवन गुजार रहे हैं | इससे हमारा जीवन तो असंतुलित हुआ ही साथ ही साथ और अधिक पैसों की लालसा की अंधी दौड़ में हमने समस्त जीवन प्रणाली और सम्पूर्ण पर्यावरण को भी असंतुलित कर दिया है | कितने ही जीवों का और पर्यावरण के असंतुलन का बड़ा भुगतान करके हम आगे तो बढ रहे हैं किन्तु यह अंधी और वेगवान दौड़ आखिर हमें कहाँ पहुँचाने वाली हैं....? क्या हम सबने यह कभी सोचा हैं...? आज पर्यावरण का निम्नीकरण अत्यंत तेज गति से हो रहा है और इस कठिन समस्या को दूर करने के अथक प्रयत्न सरकार और समाज सेवकों द्वारा तो चल ही रहे हैं किन्तु जन-जन में जागृति लाने के लिए साहित्य ने भी अपनी भूमिका बखूबी निभाई है | साहित्य में हिंदी साहित्य भी पीछे नहीं है | हिंदी रचनाकारों ने अपनी कृतियों के माध्यम से जन-जन में जागरूकता लाने के लिए सुलभ रचनाये की हैं | जहाँ बात सरकारी प्रयासों की आती है तो अभी हाल ही में प्रधानमंत्री द्वारा डिस्कवरी चैनल

के एक कार्यक्रम 'मैंन वर्सेस वाईल्ड' में हिस्सेदारी करना आम समाज में पर्यावरण के प्रति जागरूकता और संवेदना पैदा करने की दिशा में एक प्रभावी कदम है | इस कार्यक्रम में वें पर्यावरण संवरक्षण और पर्यावरण परिवर्तन के बारे में जागरूकता फैलाने के लिए भारतीय जंगलों में जाने का जोखिम भी उठाते हैं | संयुक्त राष्ट्र के पर्यावरण को लेकर चलाये जाने वाले कार्यक्रम यू.एन.इ.पी. द्वारा 'चैम्पियन ऑफ़ द अर्थ' अवार्ड प्रधानमंत्री मोदी जी को दिया गया है | भारत के इन प्रयासों ने भारत को पर्यावरण संरक्षण में फ्रंट रनर बनाये रखा है | भारत यू.एन.ओ. द्वारा कार्बन उत्सर्जन के लिए निर्धारित लक्ष्यों को पूरा कर चूका है साथ ही भारत वाघों के लिए सबसे सुरक्षित और बड़े पर्यावास के रूप में उभर कर सामने आया है | आज हम देखते हैं कि दुनिया के तीन चौथाई वाघ भारत में पाए जाते हैं |

इन सबके बावजूद आज देश कई प्रकार की पर्यावारणीय समस्याओं से जूझ रहा है | तेजी से बढती जनसँख्या के कारण शहरीकरण और औद्योगिकीकरण का विकास भी उतनी ही तेजी से हो रहा है | साथ ही आये दिन समुद्रों से उठते विभिन्न तरह के तूफ़ान और जलवायु परिवर्तन से हवा, पानी, फसलें और जनजीवन अत्यधिक दुर्गति से प्रभावित होते हैं | वैदिक साहित्य और बौद्ध साहित्य में पेड़ काटना सर्वथा निषिद्ध माना गया है | विनय पीटक और त्रिपीटक में भी स्वस्थ पर्यावरण के लिए बहुत कुछ लिखा गया है | अगर कोई भी पेड़ काटता है तो उसे 'पाराजिक' नामक अपराध में रखा जाता है |

"महग्धरुक्खे छिन्नमते पाराजिकं"

चूँकि साहित्य ही समाज का दर्पण होता है अतः पर्यावरण समस्याओं को लेकर भी हिंदी साहित्य अछूता नहीं है | प्रारंभिक दौर में जहाँ हिंदी कविता प्राकृतिक सौंदर्य का वर्णन करते-करते उसी में मानव जीवन के सौंदर्य को खोज रही थी | वहीं अब १९९० के बाद भूमंडलीकरण के कारण बहुराष्ट्रीय कंपनियों के प्रवेश के बाज़ार की दौड़ जंगलों तक पहुंची | इससे ना केवल पर्यावरण प्रभावित हुआ बल्कि वहां के निवासी आदिवासी भी दुष्प्रभावित हुए | इसीलिए अब हिंदी साहित्य में प्राकृतिक सौंदर्य की जगह आदिवासियों के कठिन जीवन यापन की और दूषित पर्यावरण की समस्याएं वर्णित की जाती हैं | पर्यावरण संवरक्षण का सैद्धांतिक आधार सामाजिक न्याय ही है | पृथ्वी किसी एक की संपत्ति नहीं है | यहाँ सुरक्षित व अच्छे तरीके से रहने का अधिकार सभी को है | किन्तु आर्थिक व भौतिक विकास की अंधी दौड़ ने हमारे पर्यावरण को अकल्पनीय क्षति पहुंचाई है | इन्हीं सब बातों को मद्देनज़र रखते

हुए साहित्यकारों ने अपनी लेखनी चलाई हैं | इनमे से **"कठगुलाब"** उपन्यास जो सन १९९६ में सुप्रसिद्ध लेखिका **मृदुला गर्ग** द्वारा लिखा गया है | इसी तरह **अलका सरावगी** द्वारा सन २००८ में लिखा गया उपन्यास **'एक ब्रेक के बाद'** जिसमें पर्यावरणीय समस्याएं और समाधानों को प्रस्तुत किया गया हैं | इसी तरह **'ग्लोबल गाँव का देवता'** और **'गायब होता देश'** उपन्यास हैं जो **रणेंद्र** द्वारा सन २००६ और २००९ में लिखी गई हैं | इसी तरह प्रसिद्द उपन्यासकार संजीव की कुछ उपन्यास भी पर्यावरण और आदिवासी की घोर समस्याओं को लेकर लिखी गई हैं जो इस तरह से हैं–**'सावधान! नीचे आग है', 'धार', 'पाँव तले दूब', 'जंगल जहाँ से शुरू होता है', 'आकाश चंपा', 'रह गई दिशाएं इसी पार',** और **'फांस'** | **'सावधान! नीचे आग है'** इस उपन्यास पर **"काला हीरा"** नामक टेली फिल्म बनी है | प्रकाश झा द्वारा बनी फिल्म **'वेलडन अब्बा'** संजीव की कहानी '**फुलवा की कहानी'** पर आधारित है |

रणेंद्र के साहित्य में भी पर्यावरणीय समस्याओं के साथ-साथ आदिवासियों के कठिन जीवन का घोर संघर्ष अभिव्यक्त किया हैं जो संघर्ष समाज, सरकार और पर्यावरण के अत्यधिक दोहन के कारण उत्पन्न हुआ है | इनके साहित्य में इन्होनें इन आदिवासियों की व्यथा और इनकी दुःख भरी संवेदनाओं को व्यक्त करते हुए इनके विस्थापन का भी दुःख प्रकट किया है जो विकास के नाम पर किया जा रहा है | रणेंद्र के अनुसार–**"व्यवस्था भारत के मूल आदिवासियों को जल, ज़मीन और जंगल से बेदखल कर रही हैं जो अन्यायपूर्वक व्यवहार है | लेखक के अनुसार इससे इनके त्यौहार और उत्सव लुप्त होते जा रहे हैं और इनकी मुख्य संस्कृति व परम्पराएं भी गायब होती जा रही हैं | भूमंडलीकरण, यान्त्रीकरण और उद्योगों द्वारा जल, ज़मींन और जंगलो का दिन पर दिन खात्मा होता जा रहा है साथ ही आदिवासी जीवन बद से बदतर बनता जा रहा है, जो हो रहा है सब अन्याय और भेदभाव पूर्ण हो रहा है |"(६)** इसी तरह से **महुआ मांझी** का उपन्यास **'मरंग गोडा नीलकंठ हुआ'** में जमशेदपुर से मात्र ३० किलोमीटर दूर स्थित जदुगोंदा नामक वह क़स्बा है जहाँ १९६७ में शुरू हुए यूरेनियम खनन से आसपास के १५ गांवों के लोग विकिरण से प्रभावित हुए इसीलिए लेखिका कहती हैं–**"जो ज़मीं यूरेनियम को पीकर नीलकंठ हुई वही दुनिया भर को रोशनी प्रदान करती है |"(७)**

हिंदी साहित्य में पर्यावरण विषय पर विविध पहलुओं और दृष्टिकोणों पर चर्चाएँ होती रहती हैं जिसमें प्राकृतिक सौंदर्य से लेकर दूषित पर्यावरण और उसके बेहद बुरे नतीजे, भूमंडलीकरण, शहरीकरण, औद्योगिकीकरण और यंत्रीकरण के बुरे नतीजों तथा इन सभी समस्याओं का समाधान क्या

हो सकता है..? यही मंथन और चिंतन-मनन होता है | साहित्य ने सदैव ही समाज हित की बात कही है | साहित्य हमें कहता है कि किसी का भी अति उपयोग सदैव बुरा नतीजा देता है | इस बात से भी हम अनभिज्ञ नहीं हैं कि मानव का ही नहीं सम्पूर्ण जैविक प्रणाली का अस्तित्व पृथ्वी से ही जुडा है | फिर क्यों केवल मनुष्य ही पृथ्वी पर व्याप्त संतुलित पर्यावरण का अति दोहन करके स्वयं के साथ-साथ सम्पूर्ण जैविक प्रणाली को ही नष्ट करने को आमदा है ...क्यों आखीर क्यों..?

और अंत में

अतः हम सभी को इस संगोष्ठी के माध्यम से ही क्यों ना हो हम सभी को एक संकल्प लेना चाहिए तथा इस बात को प्रचलित करना चाहिए कि आज से मैं कोई भी ऐसा कार्य नहीं करूँगा जिससे पर्यावरण को ख़तरा पहुंचे | और पर्यावरण को खतरा पहुँचाने का कार्य अगर कोई दूसरा करता हो तो उसे भी मैं रोकूंगा | जिस तरह सुन्दरलाल बहुगुणा ने बहुत समय पहले "चिपको आन्दोलन" चलाया था| हमें सबसे पहले पर्यावरण को ख़तरा पहुँचाने वाले घटकों को जानना व समझाना होगा | और फिर उन घटकों को कैसे तोड़े-मरोड़े और रोके यह सोचना होगा | फिर एकजुट होकर मिलकर सभी को इस दिशा में कार्य करने होंगे | इस मोहिम में आम नागरिक, सरकार और समाज सभी की उपस्थिति अनिवार्य होगी | इसमें किसी प्रकार का भेदभाव और ऊँचनीच की भावना नहीं होगी | पर्यावरण किसी एक देश, समाज, जाति, शहर, गाँव या व्यक्ति की परेशानी नहीं है बल्कि यह समस्या सार्वजनिक है और इसीलिए इस समस्या को मिटाने के लिए सभी को एकजुट होकर मिलकर एकता के भाव से कार्य करने होंगे | हमने संतुलित पर्यावरण बनाने के लिए जो-जो संकल्प लिए हैं उन्हें मरते दम तक पूरे करने होंगे तभी तो एक दिन फिर हमारी पृथ्वी हरी भरी और सुन्दर बनेगी जहाँ स्वच्छ हवा, पानी के साथ-साथ भाईचारा और सौहार्द पूर्ण वातावरण भी मिलेगा | जहाँ कोई किसी का दुश्मन ना होगा, जहाँ कोई किसी से किसी भी बात का बदला नहीं लेगा, जहाँ किसी को भी दुःख न मिलेंगे, जहाँ **साथी हाथ बढ़ाना** की भावना सर्वत्र व्याप्त रहेगी और एक खुशहाल जिंदगी सभी दूर व्याप्त रहेगी | तब ही हमारा मानव होना सार्थक होगा अन्यथ यूँ ही चीख-चीख कर घसीटते हुए हम सभी को अपना जीवन यापन करना होगा | एक छोटा सा प्रयत्न--

यथा संभव प्रदुषण ही ना किया जाए–

(१) 'उपयोग करो और फेकों' की संस्कृति प्रदुषण का बहुत बड़ा कारण है | इसलिए ऐसी चीजों का कम से कम उपयोग किया जाए जो प्रदुषण को बढाते हैं | रिसायकल के माध्यम से प्लास्टिक का पुनः पुनः उपयोग करके भी हम कुछ हद तक प्रदुषण को रोक सकते हैं |

(२) प्रदुषण बढाने वाले उद्योगों की जगह श्रम आधारित कुटीर वल्र उद्योग लगाए जाए

(३) डीज़ल और पेट्रोल चालित व्यक्तिगत वाहनों का उपयोग घटाया जाए और सार्वजानिक वाहनों का उपयोग बढाया जाए |

(४) बसों व मोटरों की जगह ट्रेन यात्राओं को वरीयता दी जाए |

(५) किसी भी प्रकार के कचरे को ना तो जलाया जाए और नाही इधर-उधर फेंका जाये बल्कि रिसायकल विधि से आर्गेनिक खाद बनाई जाए |

सन्दर्भ सूची

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(२) अस्थाना डी.के. एंड मीरा २००६, इन्वायरमेंट प्रॉब्लम एंड सोल्यूशन, एल्सेवियर पब्लिकेशन्स, नई दिल्ली

(३) डेनियल बी.बी. एंड ए.के. एडवर्ड १९८७ इन्वायरमेंट स्टेडिस–द अर्थ एज़ ए लिविंग प्लानेट, ओहिसो, यू.एस.ए.

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(७) मांझी महुआ–मरंग गोडा नीलकंठ हुआ–२०१२ राजकमल प्रकाशन नई दिल्ली

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मानव और पर्यावरण

प्रा.डॉ. हूसे रत्नाकर रावसाहेब

सहायक प्राध्यापक, हिंदी विभाग,

मत्स्पोदरी महाविद्यालय, अंबड, जालना.

मो. 9021506526

प्रास्ताविक

पर्यावरण शब्द परि+आवरण के संयोग से बना है। 'परि'का आशय चारों ओर तथा 'आवरण का आशय परिवेश है। दूसरे शब्दों मे कहें तो पर्यावरण अर्थात वनस्पतियों, प्रणियों और मानव जाति सहित सभी सजीवों और उनके साथ संबंधित भौतिक परिसर को पर्यावरण कहतें हैं। वास्तव में पर्यावरण में वायू, जल, भूमि, पेड़-पौंधे, जीव-जन्तु, मानव और उसकी विविध गतिविधियो के परिणाम आदि सभी का समावेश होता है।

मनुष्य को समाज में जीवन-यापन करते समय पग-पग पर पर्याणवर पर निरर्भर रहेना होता है। मनुष्य के सभ्यना, संस्कृती, धर्म, आचारण, राजनिति, समाजशास्त्र, अर्थ सभी मनुष्य का परिवेश निर्धारत करता है। मनुष्य का खान-पान, ओढ़ाना-पहिराव अर्धात मनुष्य का जीवन पूर्णता-पर्यावरण संबधित होता है- लेकिन मनुष्य की स्वार्थ वृत्ती ने पर्यावरण का विनाश किया केवले मनुष्य ही धरती पर एक लोता प्राणी है जो पर्यावरण केविनाश के लिए कारन भूत है। बाकी एक लाख करोड़ जीवों सें पर्यावरण को कोई खतरा नही है। यह समझने वाली बात है।

पर्यावरण की समस्या यह मानव निर्मित है। कहा जाता है कि वर्तमान युग प्लास्टिक युग है। इस साल के विश्व पर्यावरणण् दिवस पर युनाइटेड नेशंस एनवॉयरमेंट प्रोग्राम की थीम बीट फास्टिक प्लाल्युशन रही। 'टर्निंग ऑफ द टैप'। शीर्वक से आई रिपोट बताती है कि प्लास्टिक प्रदुषण कैसे खत्म कर सकती है और चक्रीय अर्थव्यवस्था कैसे बन सकती है

प्लास्टिक हमारी जीवन का अंग सर्वप्रथाम 1855 में बना, जब एकोक जेंडर पार्क्स ने पार्केसीन की खोज की। दुनिया का पहला पूरी तरह कृत्रिम प्लास्टिक 'बेकलाइट' 1907 में लियो बैकलैड़ नें बतया, उन्होंने ही 'प्लास्टिक' शब्द का निर्माण किया। तबसे प्लास्टिक में कई बदलाव हुए और यह बहुत बड़े पैमाने में उपयोग में लाया जाता है। माइक्रोप्लास्टिक तो करीबन हर चीज में मौजूद है।

यूएन के अनुसार फिलहाल विश्व में हर साल 43 करोड़ मीट्रिक टन फास्टिक का उत्पादन हो रहा है, जिसमें दो तिहाई उत्पादों की उम्र बेहद कम है और इसलिए जलद ही वे कूडे में तबदील हो जाते हैं और यह सिंगल यूज प्लास्टिक (2021) में यह 13.9 करोड़ मीट्रिक टन) लगातर बढ़ रहा है। अगर बिजनेस इसी तरह चलता रहा तो 2060 तक प्लास्टिक का उत्पादन तीन गुना हो जायगा। आज हम 40 करोड टन प्लास्टिक कुड़ा हर साल पैदा कर रहे हैं। वैश्विक स्तर पर महज 10 % प्लास्टिक का ही पुन: इस्तेमाल में आ पाता है। और बड़ी मात्रा में यह कूडा नदियों और बाकी जलस्त्रोतों के जरीए समुंदर में पहुँच जाता है। अनुमान के मुताबिक समुद्रों में 7.5 से 19.9 करोड़ टन प्लास्टिक कुडां मौजूद है। यह कुड़ा सड़कर वापसं हमारी खाद्य श्रृंखाला में लौट आता है। इनसानो के शरीर में 'माइक्रोप्लास्टिक पाया गया है, यहाँ तक कि माँ के दूध में भी।

यूएन ईपी रिपोर्ट में प्लास्टिक प्रदूषण से निपटाने के लिए विस्तृत 'रीयुज' रीसाइकिल और रीओरिएंट' रणनीति की सिफोरिश है। रीयूजेबल उत्पादों को बढ़ावा देकर, चीजों को फेंक देने वाली इकोनॉमी से रीयुज करने वाला समाज बनाकर, बाजार में प्लास्टिक रिसायइकालिंग की गति देकर इसके लिए सुनिश्चित करना होगा कि रिसाइकलिंग स्थायी और फायदे का सौदा हो। प्लास्टिक के सक्टेनेबल विकल्पों के लिए बाजार को आकार देकर हम प्लास्टिक प्रदूषण करीबन 80% तक घटा सकतें हैं। इसके लिए सर्कुलर प्लास्टिक इकोनॉमी को अपनाना और इसे बदावा देना जरूरी है।

वर्तमान में कई देश इस समस्या को हल करनें की कोशिश कर रहे हैं। सभी तरह की प्लास्टिक थौलियोंग व पैकेजिंग पर प्रतिबंध लगाने के दस साल बाद 1) खांड़ा 2009 में प्लास्टिक मुक्त होने वाला पहला देश बना। 2) जर्मनी 2003 में डिपॉजिट, रिटर्न स्कीम लेकर आया, जहाँ ग्राहक

एल्कोहल था नॉन-एलकोहल वाली हर बोतल के एवज में छोटी राशि जमा करते हैं। इससे 99% प्लास्टिक, बोतले रिसाइकलिंग के लिए वापस आ जाती हैं।

3) 2016 में फ्रॉन्स दुनिया का पहला देश बना, जिसने सिंगल – युज प्लास्टिक, कप , कटलरी, प्लेट टेकअवे फूड बॉक्स वस्तुओं के निर्माण, आयात, जमा करना, वितरण, बिक्री और उपयोग पर प्रतिबंध लगा दिया गया है।

4) भारत में जुलाई 2022 से कई सिंगल युज प्लॉस्टिक वास्तुओं के निर्माण, आयात, जमा करना, बीकी और उपयोग पर

अंत: इस दिशा में चल रहे तमाम प्रयासों में सरकार, व्यवसायों की महत्वपूर्ण भूमिका है। हममें से हर कोई इसमें योगदान दे सकता है। हम सिंगल यूज प्लास्टिक का प्रयोग बंद करें चाहे स्ट्रॉ हो या पाणी की बोतल । खरीदारी के लिए कपड़े के थैले को लेजाएं, नैचुरल फेब्रिक, बायोडिग्रेडेबलकॉस्मेटिक्स का प्रयोग करे और कचरा अलग-अलग रखें। लोगों को ऐसा करने के लिए प्रेरित करें। हमें अपने अगले पिढ़ी के लिए एक बेहतर दुनिया बनाने की खातिर ऐसा करना होगा।

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संत तुकाराम यांच्या साहित्यातील पर्यावरणीय विचार

प्रा. डॉ. पंडित रानमाळ

विभागप्रमुख, मराठी विभाग,

अंकुशराव टोपे महाविद्यालय, जालना

प्रास्ताविक:

संत तुकाराम हे एक वारकरी संत - कवी होते. त्यांचा जन्म देहु येथे झाला. पंढरपूरचा विठोबा हे संत तुकारामांचे आराध्यदैवत होते. समाजकार्यामुळे संत तुकारामांना वारकरी 'जगद्गुरू' म्हणून ओळखतात. वारकरी संप्रदायातल्या प्रवचन व कीर्तनाच्या शेवटी - 'पुंडलीक वरदे हरी विठ्ठल, श्री ज्ञानदेव तुकाराम, पंढरीनाथ महाराज की जय, जगद्गुरू तुकाराम महाराज की जय' असा जयघोष करतात. जगद्गुरू तुकाराम लोककवी होते. 'जे का रंजले गांजले! त्यासी म्हणे जो आपुले तोचि साधू ओळखावा! देव तेथेची जाणावा!' अशा प्रकारचे अभंग संत तुकाराम महाराजांनी जनसामान्यांना सांगून ईश्वर भक्तीचा सुगम मार्ग दाखवला. वारकरी संप्रदायाची अखंड परंपरा त्यांनी निर्माण केली.

सामाजिक प्रबोधनाची मुहूर्तमेढ खंबीरपणे रोवणारे सुधारक संत म्हणून तुकाराम महाराजांचा उल्लेख केला जातो. तुकाराम महाराज वास्तववादी निर्भीड आणि वेळप्रसंगी समाजातील दांभिकपणावर रोखठोक शब्दांमध्ये प्रहार करणारे संत होते. तुकाराम महाराज हे साक्षात्कारी व निर्भीड संत कवी होते. वेदान्त तुकोबांच्या अभंगवाणीतून सामान्य जनांपर्यंत प्रवाहित झाला. 'अभंग म्हटला की तो फक्त तुकारामाचाच' एवढी लोकप्रियता त्यांच्या अभंगांना मिळाली. संत तुकारामांची भावकविता म्हणजे अभंग, हे अभंग महाराष्ट्राच्या सांस्कृतिक परंपरेचे महान द्योतक आहेत. वारकरी, ईश्वरभक्त, साहित्यिक, अभ्यासक व सामान्य रसिक आजही त्यांच्या अभंगांचा अभ्यास करतात.

संत तुकारामांच्या साहित्यातील पर्यावरणीय विचार:

संत तुकारामांचे विचार महाराष्ट्राच्या हृदयात अभंगरूपाने स्थिरावले आहेत. त्यांच्या अभंगांत परतत्त्वाचा स्पर्श आहे. त्यांच्या साहित्यातील व काव्यातील गोडवा व भाषेची रसाळता अतुलनीय आहे. कष्टकरी, कामकरी, शेतकरी, महिला यांच्या अधोगतीचे कारण अज्ञानामध्ये आहे त्यामुळे आपण ज्ञानी झाले पाहिजे, हा संत तुकाराम महाराजांचा आग्रह होता. ज्ञान हीच महत्त्वाची संपत्ती आहे, असे त्यांचे मत होते. म्हणून ते म्हणतात.

आम्हा घरी धन। शब्दांचीच रत्ने।
शब्दांचीच शस्त्रे। यत्ने करू।
शब्दचि आमुच्या जीवाचे जीवन। शब्दे वाटू धन जनलोका।

मानव हा सृष्टीतील एक वेगळा प्राणी आहे ज्यास अव्दितीय अशी बुध्दीमत्ता लाभली आहे. निसर्ग हा मानवासाठी सर्वस्व आहे. निसर्गाला मानवाने देव मानले, ही निर्मिक शक्ती असे म्हणू लागलेसूर्य ही . आदिशक्ती ऊर्जेचा प्रमुख स्तोत्र, अगदी आर्यांपासून सूर्य देवता मानून पूजा केली जात असेपृथ्वीवरील . निसर्गाशी जवळीक असेल .श्रीराम हे सूर्य कुळातील .चैतन्य व सर्वांच्या कर्म करण्याची शक्ती म्हणजे सूर्य तर मानवी जीवनअधिक सुकर व सुखकर होते, हे त्या काळात दिसून येतेऋषी मुनींचे आश्रम गुरुकुल . हे .पर्यावरण संवर्धनाचा संदेश बाल वयापासूनच मिळत होता .सतही ठिकाणे निसर्गाच्या कुशीत अ वृक्ष वलिंसह लहान मोठ्या प्राण्यांचे संवर्धन व जतन होत .रामायण महाभारतात ही वाचायला मिळते .असे

वारकरी संप्रदायाचा कळस ठरलेले संत शिरोमणी तुकाराम महाराज यांच्या तुकाराम गाथा यामधून भक्तिरसा बरोबरच मानवी जीवनाचे अनेक पैलू दिसून येतात. पुढे त्यात निसर्गा व पर्यावरण याला महत्वाचे स्थान आहेसंत .निसर्ग आणि पर्यावरणाचे वर्णन असणारे सुंदर अभंग मनाला भावतात . तुकाराम सांगतात

'वृक्षवल्ली आम्हा सोयरे वनचरे'|
पक्षीही सुस्वरे आळविती|

आपले नातेवाईक माणसे असतातच, तसेच वृक्ष वल्ली, प्राणी पक्षी हेही आपले सगेसोयरे आहेत, हे आपण जाणले पाहिजेयासाठी अभंग गाथेचे व . हा महत्त्वाचा संदेश त्यांनी अभंगातून दिला आहे .ाचन केले पाहिजेत्यातून ज्ञानही मिळते व विविध उपयोगी संदेशही प्राप्त होतात अशा सुंदर व चांगल्या . .चा संग्रह म्हणजे तुकारामांची अभंग गाथा आहेविचारां

सामाजिक, सांस्कृतिक प्रदूषण त्यांनी दूर करण्याचा प्रयत्न केलाप्राणीमात्रांवर दया करा ., समाजात समता राखा हा संदेश त्यांनी वेळोवेळी दिला. संत तुकाराम हे अभंग वाणी कीर्तनाच्या माध्यमातून राष्ट्र धर्माची शिकवण देणारे या काळातील महत्त्वाचे संत ठरलेसंत तुकाराम यांनी बहुजन . देवभोळेपणा .समाजाला जागृत करून देव आणि धर्म यासंबंधी ठोस मते पटवून देण्याचा प्रयत्न केला धर्मातील चुकीच्या समजुती त्यांनी प्रयत्नपूर्वक दूर सारण्याचा प्रयत्न केलाना तत्कालीन धर्ममार्तंडांनी त्यां . संत तुकारामांचे धर्मक्रांतीचे समाज प्रबोधन आजही .नंतर ते विरोधक नमले .खूप विरोध केला .मार्गदर्शनपर ठरलेले आहे

निसर्गाच्या सान्निध्यात, जनांपासून दूर विजनांत माणसाचे मन शांत होते. माणूस स्वतःशी संवाद साधू शकतो. आजच्या धावपळीच्या आणि कोलाहलाच्या वातावरणात आपण स्वतःशी संवाद साधू शकत नाही. त्यामुळे मानसिक ताण तणाव वाढून मनोविकारांना बळी पडतो. आज समाजात मनोरुग्णांच्या संख्येत वाढ झाल्याचे चित्र पाहायला मिळते. तुकाराम महाराजांच्या काळात आजच्यासारखी परिस्थिती नव्हती तरीही निरोगी मनासाठी वनांची, पशुपक्ष्यांच्या सहवासाची आवश्यकता कशी असते ते त्यांनी वेगवेगळ्या अभंगातून स्पष्ट केले आहे.

पर्यावरण संरक्षण ही काळाची गरज आहे. निसर्गातील या सग्यासोयऱ्यांशिवाय माणसाचे जगणे अवघड, कष्टप्रद म्हणण्यापेक्षा सर्वस्वी अशक्यच आहे. माणसाला त्याच्या बुद्धीच्या जोरावर केलेल्या प्रगतीमुळे आपण सार्वभौम असून आपणांस कुणाचीही गरज नसल्याचा झालेला आंतरिक भ्रम दुर्देवी आहे.

जगण्यासाठी लागणारे पिण्याचे पाणी निसर्ग देतो. जगण्यासाठी अत्यावश्यक असणारा प्राणवायू निसर्ग देतो. जगण्यासाठी लागणारे अन्नधान्य-मांस निसर्ग देतो. अंगावरच्या पोशाखासाठी लागणारा कच्चा माल निसर्ग देतो. निवारा बांधण्यासाठी लागणारे दगड, खडी, इ. निसर्ग देतो. अन्न शिजविण्यासाठीची उष्णता निसर्गच देतो. याची आम्हां मानवांना जाण नसल्यामुळे या पर्यावरणाची फार मोठी हानी झाली ही गोष्ट निर्विवाद सत्य आहे. त्याचे आम्हाला काहीही पडलेले नाही.

जागतिक पातळीवरील निर्धारीत कार्यक्रमानंतर आजपावेतो भारतात पर्यावरण संवर्धनाबाबत शासकीय पातळीवर विविध योजना, कायदे अंमलात आणले आहेतया .चा अंमल परिणामकारक होणे आवश्यक आहे केवळ एक दिवस .'पर्यावरण दिन' साजरा करून इप्सित साध्य होणार नाहीत्यासाठी प्रत्येकाने . .मनापासून पर्यावरण संवर्धनात खारीचा हातभार लावला पाहिजे

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मराठी साहित्य आणि पर्यावरण

प्रा. दीपक भगवानराव राखुंडे,
मराठी विभाग, मत्स्योदरी महाविद्यालय, अंबड.

प्राचीन साहित्य पासून ते अर्वाचीन मराठी साहित्य पर्यंत मराठी साहित्यात पर्यावरणाचा विचार मांडण्यात आला आहे. तेराव्या शतकात संत ज्ञानेश्वरांनी ज्ञानेश्वरी मध्ये अठराव्या अध्यायात म्हटले आहे की,

जैसे शारदेचे चंद्रकळे | माझी अमृतकन कोवळे| ते वेचिती मने मवाळे | चकोर तलगे ||

वरील ओवीतून संत ज्ञानेश्वर महाराजांनी शरद ऋतूचे नितांत सुंदर वर्णन केले आहे शरद ऋतुतील चांदण्यात चकोर पक्षाची पिले मन मुराद रसास्वाद करत आहेत असे वर्णन अलगदपणे त्यांनी केले आहे त्याचप्रमाणे ज्ञानेश्वरीचा रसास्वाद श्रोत्यांनी घ्यावा यातून त्यांनी शरद ऋतू शितल चांदणे चकोर पक्षी या निसर्ग प्रतिमांचा मोठ्या खुबीने वापर केला आहे पर्यावरणातील हे घटक त्यांनी आपल्या ओवींमध्ये सहजपणे उभे केले आहे. तसेच त्यांनी 'उड उड रे काऊ तुझे सोन्याने मडवीन पाऊ', पैल तो गे काऊ कोकताये, रुणुझुणु रे भ्रमरा, परिमळांमध्ये कस्तुरी अशा निसर्ग प्रतिमांच्या आधारे वेगवेगळे दृष्टांत देऊन सिद्धांत स्पष्ट केला आहे.

संत ज्ञानेश्वर महाराजाप्रमाणेच संत तुकारामांनीही आपल्या अभंगातून निसर्गप्राप्तीमांचा जाणीवपूर्वक वापर केला आहे -

'वृक्षवल्ली आम्हा सोयरी वनचरे| पक्षीही सुस्वरे आळवीती||

आकाश, मंडप, पृथ्वी आसन| रमे तेथे मन क्रीडा करी||'

या अभंगपंक्तीतून निसर्ग, प्रतिमा वृक्ष, वेली, पक्षी या खऱ्या अर्थाने माणसांशी सोयरे धायरे, गणगोतासारखी व्यवहार करतात. असा आशय मांडला आहे. यातून पर्यावरणाबाबतची आपुलकी

जिव्हाळा लक्षात येतो. निसर्ग निकोप करायचा असेल तर बीज हे शुद्ध असले पाहिजे हे सांगताना संत तुकाराम महाराज उल्लेख करतात की, 'शुद्ध बीजापोटी |फळे रसाळ गोमटी||'

ते म्हणतात की बीजात वृक्ष सामावलेला असतो आणि वृक्षापासून पुन्हा बीज तयार होते. या संदर्भात पर्यावरणाचा एक अस्सल नमुना त्यांनी आपल्या अभंगातून व्यक्त केला आहे तो असा की, तरुवर बिजापोटी |बीज तरुवरा शेवटी | तसे तुम्हा आम्हा झाले| एकी एक सामावले||'

भगवंत आणि भक्त ही सुंदर संकल्पना समजावून सांगण्यासाठी संत तुकाराम महाराजांनी वरील निसर्ग विषयक दृष्टांताचा आधार घेतला आहे. त्यांनी जल, आकाश, अग्नी, ग्रह, तारे, पशु-पक्षी अशी विविध निसर्ग घटकांची पर्यावरणाशी संबंधित असलेली प्रतिमारुपे आपल्या अभंगात पेरली आहेत.

मराठी साहित्यातील लोकगीतातून सुद्धा पर्यावरणाचे दर्शन घडते लोकगीतामध्ये अंतर्भूत असलेल्या जात्यावरच्या ओव्या म्हणजे लोकगीताचे असलेले ठरतात त्यातून पर्यावरणातील घटकांचा सुंदर उल्लेख येऊन जातो. 'आम्ही दोघी बहिणी दोन गावांच्या बारवा, मध्ये चंदन हिरवा भाईराजा'.....

नात्यातील एकोपा आपलेपणा जिव्हाळा दर्शविण्यासाठी जात्यावरच्या ओव्यामधून बारवा चंदन हिरवा यासारख्या सुंदर प्रतिमा सहजपणे येऊन जातात हे विशेष. लोकसाहित्यात पर्यावरण हे विविध पद्धतीने चितारण्यात आले आहे. मराठी साहित्यातील जेष्ठ कविवर्य विंदा करंदीकर निसर्गातील काही प्रतिमा आपल्या कवितेतून सहज मांडतात,

'हिरव्या पिवळ्या माळावरून हिरवी पिवळी शाल घ्यावी भरलेल्या भिमेकडून तुकोबाची माळ घ्यावी'....

यातून माळरानावरील हिरवेगार वातावरण भीमा नदीचे प्रवाहित वर्णन पर्यावरणातील प्रतिमांचा असलपणे यात वापर केला आहे हे सहज लक्षात येते.

नव्या पिढीचे प्रतिभावंत लेखक प्रसाद कुमठेकर यांची बगळा ही कादंबरी मराठवाडी मुलीसाठी प्रसिद्ध आहे पर्यावरणाचा चांगला संदेश देणारी अलीकडील एक महत्त्वाची कादंबरी म्हणून बगळा या कादंबरीचा उल्लेख केला जातो ना दोन महानोर या जेष्ठ कवींनी आपल्या 'रानातल्या कविता' 'पानझड' यासारख्या कवितासंग्रहातून पर्यावरणाला अलगदपणे शब्दबद्ध

केले आहे. आपल्या ग्रामीण शब्दछटेमुळे वाचकांना त्यांनी आपल्या कवितेचे रसिक बनवले आहे. ग्रामीण कथाकार व्यंकटेश माडगूळकर यांनी 'बनगरवाडी' या कादंबरीतून पर्यावरणातील दुष्काळ हा विषय गांभीर्याने हाताळला आहे. 'माणदेशी माणसं' या पुस्तकातून तर त्यांनी निसर्गाच्या लहरीपणा पुढे माणसं कशी तग धरून असतात याचे धाडसाने चित्रण केले आहे.

निसर्गप्रेमी व ज्येष्ठ साहित्यिक मारुती चितमपल्ली यांनी आयुष्याची चाळीस वर्ष महाराष्ट्रातील विदर्भाच्या जंगलात पर्यावरणाच्या सानिध्यात व्यतीत केले आहे 'पक्षी जाय दिगंतरा', 'रानवाटा' या त्यांच्या पर्यावरणातील घटकांचा समावेश असलेल्या ग्रंथातून पशू-पक्षी हे ऋतूप्रमाणे कसे बदलतात याचे मनोमन चित्रण केले आहे.

अशा प्रकारे मराठी साहित्यातून कथाकार कवी लेखक यांनी पर्यावरणाचा मोठ्या खुबीने वापर केला आहे आपल्या शब्द प्रतिमा शब्दकळा या माध्यमातून पर्यावरणाची सुंदर पेरणी त्यांनी कथा, कविता, कादंबरी ललितगद्य यातून केलेला आढळून येतो.

संदर्भ ग्रंथ

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२) ठाकूर, रवींद्र - साहित्य, समीक्षा आणि संवाद - दिलीपराज प्रकाशन, पुणे.

३) चितमपल्ली, मारुती निसर्गवाचन, पद्मगंधा प्रकाशन, पुणे.

४) सार्थ तुकाराम महाराजांची गाथा - ह. भ. प. साखरे महाराज.

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संतांच्या साहित्यातील पर्यावरण विचार

डॉ. राम रौनेकर,
प्राध्यापक व संशोधक मार्गदर्शक,
प्रमुख, पदवी व पदव्युत्तर मराठी विभाग,
मत्स्योदरी महाविद्यालय, अंबड, जि. जालना.
ramrounekar@gamil.com

भूतलावरील मानवाला पर्यावरणाशिवाय पर्याय नाही. पर्यावरणाच्या शुद्धतेवर मानवाचे भवितव्य अवलंबून आहे. म्हणूनच आपल्या पूर्वजांनी पर्यावरणाच्या शुद्धतेसाठी पर्यावरणातील घटकांमध्ये देवाधिकांना स्थान दिले आहे. विभूतीयोगात भगवान श्रीकृष्ण म्हणतात, 'अश्वत्थ तो मी आहे.' अश्वत्थ म्हणजे पिंपळ होय. याचा विस्तार करतांना ज्ञानोबाराय म्हणतात,

"कल्पद्रुम हन पारिजातु। गुणे चंदनुही वाड विख्यातु।
तरि ययां वृक्षजाताआंतु। अश्वत्थू तो मी।

कल्पवृक्ष, परिजातक आणि चंदन हे सर्व वृक्ष गुणांनी मोठेच आहेत. तरीही या सर्व वृक्षात श्रेष्ठ पिंपळ आहे. असे आपल्या पूर्वजांनी का म्हटले असेल याचा सविस्तर विचार करू

पर्यावरणाच्या दृष्टीने या वृक्षात अनेक गुण आहेत. प्राणवायू निर्माण करण्याची विलक्षण क्षमता या वृक्षात आहे. वातावरणातील कार्बन डायऑक्साइड बरोबर इतर अनेक प्राण घातक वायूचे शोषण करून शुद्ध प्राणवायू पर्यावरणात सोडण्याचे काम हा वृक्ष करतो. म्हणूनच हा प्रत्येक गावातील मंदिरासमोर मोकळ्या जागेवर दिसतो. या वृक्षात साक्षात विष्णू आहे. या संत विचाराने चालणाऱ्या समाजाने या वृक्षाचे रोपण, संवर्धन आणि संरक्षण केले आहे. हा छाया वृक्ष असल्यामुळे यास ओटा बांधून त्यावर ग्रामस्थ प्रपंच आणि परमार्थ याची सांगड घालणाऱ्या गोष्टी करतात. या वृक्षाचे पावित्र्य राखतात. पक्षांसाठी हा वृक्ष वरदान आहे. याची फळे ते आवडीने खातात त्यावर निवारा करतात.

"पिंपळ वृक्ष वेदकाळापासून पूजनीय आहे."[१] असे प.पू. देवेंद्र गुरुजी म्हणतात. गौतम बुद्धाने याच वृक्षाखाली बसून तपश्चर्या केली आणि त्यांना ज्ञानसाक्षात्कार झाला असे म्हणतात. ज्ञानोबारायांच्या मातु:श्रींनी आपले मनोरथ पूर्ण करण्यासाठी याच वृक्षाचे पूजन करून सव्वा लक्ष प्रदक्षिणा पूर्ण घातल्या आहेत. अशी वारकऱ्यांची श्रद्धा आहे. प्रापंचिकांना उपदेश करताना संतांनी पशुपक्षी, झाडे झुडपे, लता वेली यांच्या वैशिष्ट्यांचे दाखले दिले आहेत. साठविणे हे माणसाचे लक्षण आहे. यातून माझे ते माझे, तुझे तेही माझे ही वृत्ती बळावत जाते आणि माणूस स्वार्थी बनतो. तो एका पिढीचा विचार न करता सात पिढ्यांचा विचार करावयास लागतो. त्यातून तो हिंसक बनतो. इतरांना शारीरिक आणि मानसिक इजा करण्यासही मागेपुढे पाहत नाही ज्ञानोबाराय म्हणतात.

"अजातशत्रू तरुवरा। सर्वांगी देखविल्या शिरा। ऐसे जीव घेऊनि धनुर्धरा। कोरडे केले।"

येथे केवळ माणसाचा विचार नाही. मुक्या प्राण्यांचा विचार नाही तर मुक्या झाडाझुडपांचा विचार केला आहे. ही करुणा संतांच्या अंतकरणांमध्ये वास करते.

संत निवृत्तीनाथ महाराजांनी विठ्ठल महिमा सांगण्यासाठी निसर्ग प्रतिमा वापरली आहे- "चंदनाचे झाड परिमळे वाड | त्याहुनी कथा गोड विठ्ठलाची |" चंदन हा शितल, बलप्रद व रक्तशुद्धी करणारा वृक्ष आहे. म्हणून त्याची उटी दाह कमी करण्यासाठी वापरली जाते. अशा विविध गुणांनी युक्त असणाऱ्या चंदनाला संतांनी स्वतःच्या कवितेमध्ये स्थान दिले आहे. संत ज्ञानोबाराय, संत रामदास स्वामी यांनी आपल्या कवितांमध्ये याचा उपयोग केला आहे.

संत नामदेव महाराजांनी ढोंगी साधू वर प्रहार केले आहेत. यासाठी त्यांनी निसर्गातील बगळ्याचे उदाहरण दिले आहे.

"बक ध्यान लावणी टाळी| मौन धरूनी मासा गिळी|"

शरीर सुखात रनमाण होणाऱ्या माणसांना ते भक्ती मार्गाकडे वळू पाहतात. त्यांच्यातील विकार काढून त्यांचा विवेक जागा ठेवू पाहतात. समाजामध्ये तत्व आणि व्यवहार यात फरक करणाऱ्या माणसाची संख्या अधिक आहे. ही माणसे बोलतात एक आणि करतात एक. 'पोटात एक- ओठात एक' अशी वर्तन करणारी ही मंडळी समाजाची दिशाभूल करतात. समाजाला भ्रमित करतात. त्यांच्यापासून सावध करण्याचे कार्य संतांनी केलेले आहे .

संत सेना महाराजांनी "आम्ही वारीक वारीक | करू हजामात बारीक |" या अभंगातून स्वच्छतेचा संदेश दिला आहे. माणसे स्वच्छ राहिली नाही तर ती अनेक आजारांना बळी पडतात. संसर्ग रोगातून गावेच्या गावी नष्ट झाल्याचे इतिहास सांगतो आहे. म्हणून सर्वप्रथम वैयक्तिक स्वच्छतेनंतर सार्वजनिक स्वच्छता करणे किती महत्त्वाचे आहे हे संतांनी समाजाला सप्रमाण समजावले आहे. सर्वांनी स्वच्छता ठेवली तर जगाचे आरोग्य चांगले राहील. माणसाचे आयुर्मान वाढेल हा व्यापक विचार सेना महाराजांनी येथे सांगितला आहे.

सावता महाराजांनी आपल्या कर्तव्यकर्मावर निष्ठा ठेवून आपला व्यवसाय हरी रूप मानला आहे. आमुची माळीयाची जात| शेत लावू बागाईत| आम्हा हाती मोट नाडा| पाणी जाते फुल झाडा| ही विठ्ठल रुपी फुलझाडे आहेत. पाण्यामुळे ती बहरलेली आहेत. त्यांचे शेत हे साक्षात पंढरी आहे. हा भाव त्यांच्या ठायी वसलेला आहे. "वृक्ष आणि मानव यांचे अतूट नाते आहे. वृक्षांनी मानवाला भरभरून दिले आहे."[२] असे भास्कर जोहरापूरकर म्हणतात. वृक्षामुळेच माणूस जिवंत राहू शकतो. हवा, पाणी, अन्न वस्त्र आणि निवारा या सर्व मूलभूत गरजा केवळ वृक्षच पूर्ण करीत असतात. याशिवाय टेबल, खुर्ची, कपाट, खिडक्या, दरवाजे इत्यादी वस्तू वृक्षामुळेच बनवता येतात. आपल्या पूर्वजांना वृक्षाचे महत्त्व माहीत असल्यामुळे त्यांनी वृक्षांना देवाचा दर्जा दिला आहे. तर संतांनी वृक्षांना सोयरे म्हटले आहे.

चोखा महाराज म्हणतात-

"ऊस डोंगा परी रस नव्हे डोंगा| काय भुललासी वरलीया रंगा|"

या समाजिक वेदनेला वाचा फोडण्यासाठी महाराजांनी शेतातील उसाचा उत्तम उपयोग केला आहे. ऊस वर पाहता वेडा वाकडा दिसतो. मात्र त्याच्या अंगी कितीतरी गुण आहेत हे

चिंतन चोखोबारायांनी मांडले आहे. गुळ आणि साखर देण्याची त्याच्यात क्षमता आहे. म्हणजेच मानव व मानवेत्तर प्राण्यांची भूक भागविण्याची क्षमता त्यांच्याकडे आहे हे रूपक वापरून महाराजांनी माणसाचे अंतरंग महत्त्वाचे आहे हे अधोरेखित केले आहे. जात, धर्म, पंथ, प्रदेश या गोष्टी महत्त्वाच्या नाहीत हे सप्रमाण सांगितले आहे.

संत एकनाथ महाराजांनी पशु हिंसा करणाऱ्यांना निक्षून सांगितले आहे- "जे करिती पशु हिंसा | तया पुरुषा अध:पतन |" नवस सायास व यज्ञ-यागाच्या निमित्ताने माणसे पशुची हत्या करतात. अभक्ष भक्षण करतात. हे कृत्य म्हणजे मानवी जीवनाचे आणि संस्कृतीचे अध:पतन आहे. परमेश्वराने दिलेला हा देह ईश्वर भक्ती करण्यासाठी दिलेला आहे. धूम्रपान, अपेयपान व वासना पूर्ण करण्यासाठी दिलेला नाही.

नाथ महाराजांनी लोक भाषेचा वापर केला. त्यामुळे तिला जिवंतपणा लाभला आहे. त्यांनी प्रपंच आणि परमार्थ यांची ओळख समाजाला करून दिली आहे. त्यांच्या लिखाणात आशय संपन्नता आहे. कल्पनाविलासाबरोबरच विचारांचे वैभव आहे. प्रकाश देशपांडे केजकर म्हणतात, "आत्म सुख आणि विषय सुख यांच्यातील व्दैत ही एकनाथांच्या कवितेतील एक महत्त्वाचे आशयसूत्र आहे.[३]

आज ऐहिक संस्कृतीचे आपल्यावर आक्रमण होत आहे. त्यामुळे माणूस निसर्गापासून दूर जात आहे. हे असे चालत राहिले तर भविष्यात जीवसृष्टीच्या अस्तित्वाचाच प्रश्न उभा राहील. हे थांबविणे गरजेचे आहे. यासाठी संताचा विचार मुळातून समजून घेणे आवश्यक आहे.

संतांनी चराचरसृष्टीमध्ये परमेश्वर पाहिला आहे आणि इतरांनाही पाहण्यास सांगितले आहे. मानवाचे व संपूर्ण सजीवाचे जीवन निरामय रहावे असे वाटत असेल तर तुकोबारायांचा विचार केवळ वाचून चालणार नाही तो प्रत्यक्ष जगावा लागेल. महाराज म्हणतात,

"वृक्षवल्ली आम्हा सोयरी वनचरे ,पक्षीही सुस्वरे आळवीती|"

वनस्पती शास्त्रातील तज्ञ सांगतात की, तुळस ही दिवसातील वीस तास ऑक्सिजन देते तर उर्वरित तास कार्बन डाय-ऑक्साइड हवेत सोडते. याचाच अर्थ आपल्या पूर्वजांना पर्यावरणाचा सखोल अभ्यास होता. म्हणून त्यांनी तुळशीला अत्यंत पवित्र मानले. प्रत्येक घरासमोर तुळशी वृंदावन उभारले. तिची पाने फुले फळे सर्वच पवित्र मांनले आहे.आयुर्वेदात तिचे महत्त्व उपयोग सांगितले आहे. ती बहुगुणी वनस्पती म्हणून तिच्याकडे पाहिले जाते. डॉ.संतोष चव्हाण म्हणतात, "विष्णूला तुळस अत्यंत प्रिय असल्याने वारकरी गळ्यात तुळशीची माळ धारण करतो."[५]

मानवाने स्वतःच्या स्वार्थासाठी आज पर्यावरणाचे अतोनात नुकसान केले आहे. या नुकसानीला रोखण्याचे सामर्थ्य संत साहित्यात आहे. कारण संतांनी आचार विचारांची आचारसंहिता सांगितली आहे. ही आचारसंहिता निसर्गाशी तादात्म्य पावलेली आहे. आपण उत्सवप्रिय माणसे आहोत हे संत जाणून होते. म्हणून त्यांनी प्रत्येक सणाला, उत्सवाला निसर्गाशी जोडले आहे. निसर्गाला परमेश्वर मानले आणि निसर्गातील सर्व चराचर सृष्टीला श्रेष्ठ मानले आहे.

पंचमहाभूतांचा निर्माता निसर्ग आहे. या जगात जे काही आहे ते सर्व निसर्गाने निर्माण केल्या आणि निसर्गातील उपलब्ध साधनांचा वापर विवेकाने करावयाचे आव्हान संत साहित्य करते. जसे 'जोडोनिया धन उत्तम व्यवहारे.' उत्तम व्यवहारातून निसर्गचक्र उत्तम चालते. झाडाची संख्या वाढली तर पाऊस जास्त पडेल. पावसामुळे अन्न निर्मिती वाढेल आणि मानवाला सुखाने जगता येईल. आज माणसे या उलट जगत आहेत वृक्षतोड मोठ्या प्रमाणावर सुरू आहे. त्यामुळे पावसाचे प्रमाण कमी झाले आहे. पुढे उत्पादनावर त्याचा परिणाम झाला आहे. या पर्यावरणाची हानी पोचविणाऱ्या वर्तनामुळे नाना प्रश्न निर्माण झाले आहेत.

'हे विश्वची माझे घर' ही व्यापक भूमिका घेऊन सर्वाना विवेकाने जगावे लागेल. तरच जगाचा उद्धार होईल. संत विचाराच्या पालनाने पृथ्वीमाता सुख समृद्धीने भरेल. नद्या आनंदाने सदा सर्वकाळ वाहतील. चराचरसृष्टी परस्परांवर विलक्षण प्रेम करील. हे सर्व पाहून संत सुखी होतील.

निष्कर्ष:

पर्यावरण समतोलात संतांची भूमिका अनन्यसाधारण आहे.
निसर्गातील प्रतिमा आणि प्रतिकांचा वापर संतांनी समाजकल्याणसाठीच केला आहे.
संताच्या निसर्गदर्शनातून समाजमन संस्कारित झाले आहे.
संत साहित्यामुळे निसर्गाचे भरण पोषण समाजाने केले आहे.
संत संस्कारातून समाज निसर्गाचे रोपन, संवर्धन आणि संरक्षण करीत आहे.

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'मराठवाड्यातील ललित गद्य व पर्यावरणीय स्त्रीवाद : एक अन्वयार्थ'

उद्धव राधाकृष्ण बिन्नीवाले
संशोधक विद्यार्थी Ph.D. (मराठी)
मोबाईल नं.7798611395

स्त्रीवाद ही संकल्पना खूप व्यापक असून अनेक नवनवीन संज्ञा व संकल्पनांना आपल्यात सामावून घेताना दिसते. खरे तर 'स्त्रीवाद' ही संकल्पना राजकीय विचारप्रणाली मधून उदयास आलेली आहे. स्त्री ही देखील माणूस आहे. तिलाही मन, भावना, आत्मसन्मान आहे. परंतु अनेक बाबतीत स्त्रियांना माणूस म्हणून ओळख दिल्या गेली नाही. पारंपारिक समाजव्यवस्थेमध्ये स्त्रियांना दुय्यम स्थान असल्याचे दिसते. त्यातून पुरुषप्रधान संस्कृतीने स्त्रीचे विविध पातळ्यावर शोषण केले. परंपरेने तिला अबला म्हणून हिणवले. 'चूल आणि मूल' हेच तिच्या जीवनाचे कार्यक्षेत्र ठरवले गेले. तिच्याकडे पाहत असताना न्यूनत्वाच्या दृष्टिकोनातून पाहिले. पुरुषाशिवाय तिला पूर्णत्व येऊ शकत नाही हे वारंवार तिच्या मनावर बिंबवले. पुरुषानेही कधी देव तर कधी धर्माचा व ग्रंथांचा आधार घेऊन त्यात विविध युक्त्या वापरून स्त्री कायम गुलाम राहील ही काळजी घेतली. स्त्री कधी दुर्गा तर कधी ममतेचा सागर म्हणून तर शोशिकतेचा आदर्श नमुना म्हणून खोटी प्रशंसा करून आपल्या दबावातच ठेवले. यातून पुरुषी संस्कृतीच्या जोखडामध्ये स्त्री अधिकाधिक गुंतत गेली. हे तिचे गुंतत जाणे पुरुषी संस्कृतीच्या हिताचे होते. स्त्री केवळ उपभोग्य वस्तू,अबला,मुका जीव अशी निचांकी अवस्था सहन करत होती.

पुढे विज्ञानाच्या शोधाने औद्योगिक क्रांती झाली. औद्योगिक क्रांती ही जागतिक इतिहासातील एक महत्त्वाची घटना यामुळे जीवनाच्या विविध क्षेत्रावर विकासात्मक बदल घडून येऊ लागला. वैज्ञानिक शोध व क्रांतीमुळे माणूस देव, धर्म व धर्मग्रंथ याविषयी चिकित्सा करू लागला. यातून अनेक भ्रम व अंधश्रद्धा बाजूला सारल्या गेल्या व नवादृष्टिकोन समाजामध्ये रुजल्या गेला. अठराव्या शतकाच्या उत्तरार्धातील फ्रेंच राज्यक्रांतीमुळे जगाला "स्वातंत्र्य, समता, बंधुता" ही मूल्ये मिळाली. या फ्रेंच राज्यक्रांतीच्या उगमातच स्त्रीवादी चळवळीचे बीज रुजलेली दिसते. यामुळे गुलामगिरीत जखडलेल्या दुर्बल घटकांची अस्मिता जागी झाली. यात स्त्रियाही होत्या. यातूनच 'स्त्रीवाद' नावाची विचारसरणी उदयास आली.

स्त्रीवाद

स्त्रीवाद ही एक व्यापक संकल्पना आहे. स्त्रीवादाचा विकास हा स्त्रियांचे हक्क व त्यांच्यावरील अन्याय-अत्याचार करणाऱ्या चळवळीतून झाला आहे. स्त्रीवाद व स्त्रीवादी चळवळीविषयी डॉ. मंगला वरखेडे महत्त्वपूर्ण भाष्य करतात ,"पुरुषप्रधान समाजव्यवस्थेत स्त्रियांना मिळालेल्या दुय्यम स्थानाचा प्रतिवाद करणे आणि सामाजिक, राजकीय आणि आर्थिक सत्तास्थानात पुरुषांच्या बरोबरीने स्थान प्राप्त होण्यासाठी चळवळ हे स्त्रीवादी चळवळीचे स्वरूप आहे."१

पुरुषी सत्ता, वर्चस्व व अहंकार झुगारून देऊन स्त्री ही देखील माणूस आहे व पुरुषाला जे अधिकार व हक्क आहे तेच स्त्रियांना मिळायला हवेत हा स्त्रीवादाचा महत्त्वाचा भाग होता. स्त्रीमुक्ती व स्त्री स्वातंत्र्य हे स्त्रीवादास अपेक्षित आहे. स्त्रियांचे हक्क, स्वातंत्र्य, प्रतिष्ठा, आत्मसन्मान या मूल्यांच्या आड येणाऱ्या सर्व बाबींस 'स्त्रीवाद' विरोध करतो नव्हे ती या चळवळीची विषयपत्रिकाच दिसते. सारांशपणे असे सांगता येईल की 'स्त्रीवाद' म्हणजे स्त्रियांच्या शोषणाबद्दल ,अत्याचाराबद्दल समाजात, कुटुंबात कामाच्या जागी जागृती निर्माण करणे आणि परिस्थिती बदलण्यासाठी स्त्री-पुरुषांनी जाणीवपूर्वक विचार व कृती करणे म्हणजे 'स्त्रीवाद' होय.

पुढे स्त्रीवादी चळवळ अधिक सक्रिय तसेच आक्रमक होऊन 'मवाळ स्त्रीवाद' व 'जहाल स्त्रीवाद' असे स्वरूपही स्त्रीवादास प्राप्त झाल्याचे दिसते. स्त्री जीवनातील अनेक समस्यांचा अभ्यास स्त्रीवादी चळवळीमध्ये केल्या जातो. 'स्त्री' आणि 'पुरुष' या संकल्पना निसर्गाने निर्माण केलेल्या नाहीत तर त्या समाजनिर्मित आहेत. स्त्री ही जन्मत: स्त्री नसते तर त्या पद्धतीने समाज दिला घडवतो. यात पुरुषी संस्कृतीचा हातभार अधिक दिसतो.

स्त्रीवादाचा प्रारंभ हा पाश्चात्य राष्ट्रांमध्ये झालेला दिसतो. भारतामध्ये १९ व्या शतकाच्या उत्तरार्धात ताराबाई शिंदे यांच्या साहित्याच्या माध्यमातून व म.फुल्यांच्या कार्यातून झालेला दिसतो. अगोदरच म्हटल्याप्रमाणे 'स्त्रीवाद' ही खूप व्याकप संकल्पना आहे. ती ज्या पद्धतीने बौद्धिक तत्वप्रणाली आहे त्याचप्रमाणे राजकीय विचार प्रणालीही आहे. पुढे तर या विचार प्रणालीमध्ये अनेक घटक-उपघटक समाविष्ट झालेले दिसतात त्यापैकीच एक उपघटक म्हणजे 'पर्यावरणवादी स्त्रीवाद' होय.

'पर्यावरणवादी स्त्रीवाद'

पाश्चिमात्य देशातील उद्योगिकीकरणाच्या अपरिहार्य परिणामातून पृथ्वीचा नैसर्गिक, जैविक व भौगोलिक समतोल बिघडून त्याचे गंभीर परिणाम मानवी जीवनावर झाल्यामुळे 'पर्यावरणीय स्त्रीवाद' ही संकल्पना उदयास आली. १९७० च्या दशकात ही संकल्पना वापरात आली असून फ्रेंच स्त्रीवादी विचारवंत फ्राँस्वा यांनी 'फेमिनिझम ऑफ डेथ' या आपल्या पुस्तकात 'इकोफेमिनिझम' हा शब्द पहिल्यांदा वापरला. त्यांनी आपल्या लेखनातून स्त्री व पर्यावरण यांचा घनिष्ठ संबंध अधोरेखित करत तत्कालिक पाश्चिमात्य देशांतील विचारसरणी पर्यावरणाच्या ऱ्हासाला व स्त्रियांच्या शोषणाला कारणीभूत ठरवली. ज्या पद्धतीने माणसाच्या पोषणासाठी, संरक्षणासाठी अवतीभोवती निसर्ग व त्याचे घटक असतात. त्यातून माणसाचे जगणे अधिक सुसह्य होत असते. भरपूर झाडे असली म्हणजे स्वच्छ व भरपूर प्राणवायू मिळतो. अन्न, वस्त्र, निवारा या गरजा निसर्गातूनच पूर्ण होत आलेल्या आहेत. यालाच पर्यावरण म्हणतात. पर्यावरण म्हणजे मानवी जीवनास अनुकूल बाबी होय.

'पर्यावरणीय स्त्रीवाद' किंवा 'स्त्रीवादी पर्यावरणवाद' ह्या संकल्पना पर्यावरणाविषयीच्या आणि स्त्रीवादी चळवळींना जोडणारा दुवा आहे. ह्या एकत्रित चळवळीद्वारे समाजातील फ़क्त स्त्रीयांवर होणाऱ्या अन्यालाच वाचा फ़ोडली जाते असेच नव्हे तर समाजातील सर्वच प्रकारच्या शोषणांना विरोध करून त्यांचे निर्मूलन करण्यासाठी प्रयत्न केले जातात. फ्रेंच स्त्रीवादी विचारवंत फ्राँस्वा या फ़्रांन्सच्या

लेखिकेनी १९७४ साली लिहिलेल्या पुस्तकात पहिल्यांदा ह्या संकल्पनेचा वापर केल्याचे समजले जाते. तिच्या मते ,"ह्या विचारधारेमध्ये असे गृहित धरले जाते की, स्त्रीयांच्या शोषणाच्या पद्धती आणि निसर्गाच्या शोषणाच्या पद्धतींमध्ये काही साम्य आहे आणि ते साम्य स्त्रीया, काळे लोक, मुले, गरिब इ. व त्याचप्रकारे निसर्गातील प्राणी, जमिन, पाणी आणि वायू ह्या गटांच्या शोषणामध्येही वर्चस्ववादी गटांकडून वापरले जाते." २

फ्रेंच स्त्रीवादी विचारवंत फ्राँस्वा यांनी 'फेमिनिझम ऑफ डेथ' या पुस्तकाच्या माध्यमातून प्रस्थापित वर्ग किंवा सत्ताधारी समाज आपल्या स्वार्थासाठी पर्यावरणाचा ज्या पद्धतीने वापर व हानी करतो त्यातून निसर्गाचा समतोल बिघडतो अगदी त्याच पद्धतीने मानवी समाजातील पुरुष स्त्रीचे शारीरिक, मानसिक, आर्थिक, राजकीय, सामाजिक, धार्मिक व सांस्कृतिकतेच्या माध्यमातून सर्वांगीन शोषण करत असतो. स्त्री ही केवळ उपभोग्य वस्तू आहे,तिच्यात बौद्धिक क्षमता असूच शकत नाहीत असा अपप्रचार करून तो तिचे कायम शोषण करत आला व तिच्या प्रगतीच्या वाटा अडवून ठेवल्या त्यातून तिला समाजामध्ये दुय्यम स्थान मिळाले. आर्थिक सत्ताच राजकीय सत्ता ठरवत असते. या दोन्ही सत्ता स्त्रियांकडे नसल्यामुळे त्या माणुसकीच्या साध्या हक्कापासूनही हजारो वर्षे दूरच राहिल्या असे दिसते.

तत्कालिक पाश्चिमात्य देशांतील विचारसरणी पर्यावरणाच्या ऱ्हासाला व स्त्रियांच्या शोषणाला कारणीभूत आहे हे महत्त्वपूर्ण सत्य फ्राँस्वा सांगते. या लेखिकेच्या मते स्त्री व पर्यावरण यांचा सहसंबंध खूप घनिष्ठ आहे. खरंतर पहिल्यांदा स्त्रियांचा व पर्यावरणाचा संबंध आल्याचे दिसते. पर्यावरणीय स्त्रीवादाने पर्यावरण व स्त्रीयांच्या सहसंबंधाचा खूप व्यापक विचार करत उद्योगीकरण व आधुनिकीकरणामुळे आधुनिक शेती, संकरित बी-बियाणे, रासायनिक खते, औषधे इत्यादी घटकापासून निसर्गातील पाणी, जमीन, वायू इत्यादी महत्त्वपूर्ण घटकांचे अपरिमित शोषण झाले. त्याचा थेट परिणाम स्त्रियांवरती झाल्याची मांडणी केली.पितृसत्ताक विकासामुळे पर्यावरणीय स्त्रीवादाने विकासप्रक्रियेच्या संदर्भात स्त्रियांच्या प्रश्नांचा नव्याने पुनर्विचार करण्याची गरज व्यक्त केली.पर्यावरणीय स्त्रीवाद या संकल्पनेपूर्वी इ. स. १९५२ च्या सुमारास सिमोन दि बुआ यांनी पितृसत्ता ही स्त्रिया व निसर्ग या दोन्हींचे शोषण करत आहे, अशी मांडणी केली आहे.

भारतीय स्त्रीवादी विचारवंत वंदना शिवा यांनी १९८८ मध्ये लिहिलेल्या आपल्या 'स्टेइंग अलाईव्ह:वूमन', 'इकॉलॉजी अँड डेव्हलपमेंट' या पुस्तकामध्ये आजच्या विकासाची प्रक्रिया यूरोपकेंद्रीत आणि पुरुषप्रधान विचारांवर आधारित असल्याचे मत व्यक्त केले आहे. भारतीय कृषी व्यवस्थेचा विचार केला तर त्यात स्त्रियांचा सहभाग अधिक दिसतो मात्र विकासाच्या बाबतीत स्त्रिया कोसो दूर दिसतात. विज्ञान व उद्योगीकरणाच्या विकासामध्येही पितृसत्तेचे वर्चस्व अभ्यासपूर्णरित्या मांडतात. स्त्रियांना निसर्गाचे असलेले ज्ञान,शेतीविषयीचे कौशल्य, अनुभव, सूक्ष्म निरीक्षण यांस कधी महत्वच दिले गेले नाही परिणामी स्त्रीया विकासापासून दूरच राहिल्या.वंदना शिवा आणि मारीया मेस यांनी १९९३ मध्ये लिहिलेल्या 'इकोफेमिनिझम'या पुस्तकात पितृसत्ता व भांडवली व्यवस्था कोणत्याही वेगळेपणाला समान दर्जा देत नाहीत, अशी मांडणी केली. वेगळेपण हे उतरंडीच्या रचनेत बसविणे,

त्यांना सत्ता राबविण्यासाठी आवश्यक असते. भारतासारख्या कृषिप्रधान देशामध्ये शेती व शेती संबंधित सर्व श्रमाची कामे या स्त्रीयाच करताना दिसतात. खरंतर संधी मिळाली असती तर यापेक्षा चांगली व महत्त्वाची कामे त्यांना करता आली असती. नाईलाजास्तव त्यांना शेतीचे कामे करण्यात भाग पडले. यातूनच त्यांचा शेती, निसर्ग व पर्यावरणाशी खूपच जवळून सहसंबंध आला. हे प्रामुख्याने ग्रामीण भागातील स्त्रियासंबंधी सांगता येईल.'पर्यावरणीय स्त्रीवाद' असे मानतो की, पितृसत्ताक विकासाच्या प्रक्रियेत होणारा पर्यावरणाचा ऱ्हास आणि स्त्रियांचे शोषण या दोन्ही लढाई हातात हात घालून लढावी लागेल. भारतातील अनेक पर्यावरणवादी चळवळीमध्ये स्त्रियांचा खूप महत्त्वपूर्णरित्या सहभाग असल्याचे दिसते. यातून एकच सांगायचे आहे की स्त्री व पर्यावरण या दोन्हीचीही दुःख सारखेच आहेत. कारण पितृसत्ताक व्यवस्थेने या दोन्हीचेही आपल्या स्वार्थासाठी मोठ्या प्रमाणात शोषण केल्याचे दिसते. असा हा ऋणानुबंध दिसतो. मानव प्रजाती टिकण्यासाठी त्याच्या अवतीभवतीचे पर्यावरण त्यात जंगल, झाडे, पाणी, वायु टिकून राहिले तरच माणूस टिकेल. अगदी याच प्रमाणे मानवी समाजामध्ये समतोल व अनुकूलता ठेवण्यासाठी स्त्रियांच्या भोवतीचे वातावरण शुद्ध, निकोप, मूल्याधिष्ठित असायला हवे. स्त्री ही देखील माणूस आहे. तिलाही पुरुषा इतकाच जगण्याचा अधिकार आहे. तिच्या वाटल्याही आत्मसन्मान, प्रतिष्ठा यावी म्हणून प्रयत्न करायला हवे तेव्हाच तिच्या जगण्याला अर्थ प्राप्त होईल. स्त्रियांच्या भोवतालचे सामाजिक, मानसिक, धार्मिक व आर्थिक पर्यावरण अधिक घट्ट व्हायला हवे असा प्रयत्न पर्यावरणीय स्त्रीवाद करताना दिसतो.

आज जगभरात स्त्रीवादी साहित्यावर भरभरून लिहिले जात आहे. त्याचप्रमाणे पर्यावरणीय स्त्रीवादावरही चांगल्या प्रकारे साहित्य निर्माण होत आहे. मराठी साहित्यामधून 'स्त्रीवाद' व ' पर्यावरणीय स्त्रीवाद' यावर चांगल्या प्रकारे लेखन केलेले दिसते. मराठवाड्यातील स्वातंत्र्योत्तर ललित गद्य वाङ्मयाच्या संदर्भामध्ये 'पर्यावरणीय स्त्रीवादी' साहित्य चांगल्या प्रकारे निर्माण झाल्याचे दिसते. प्रा. भगवंत देशमुख यांच्या 'आठवणीतल्या गोष्टी' या ललित गद्याच्या आठवणीमधून निजाम राजवटीमध्ये मराठवाड्यातील स्त्रियांचे, मानसिक, आर्थिक व शारीरिक शोषण झाल्याचे लेखक मांडतात. तर ना. धों.महानोर यांच्या 'आठवणींचा झोका' या आठवणीच्या माध्यमातून विधवा स्त्रीकडे पुरुषांचा पाहण्याचा दूषित दृष्टिकोन येतो. यातून ती विधवा महिला आत्महत्या करताना दिसते. म्हणजेच स्त्रियांच्या भोवतालचे पर्यावरण अनुकूल नसल्याचे हे द्योतकच होय. इंद्रजीत भालेराव यांच्या 'लळा' मधून महानुभाव संप्रदायातील महंत असलेल्या स्त्रियांकडे प्रस्थापित समाज दूषित नजरेने पाहतो असे चित्र मांडले आहे.

स्त्री मग ती भारतातली असो किंवा आफ्रिका खंडातील तिच्यावर जर अन्याय झाला असेल तर सर्व स्तरामधून तिच्याविषयीची सहानुभूती निर्माण व्हायला हवी. ही सहानुभूती जात, धर्म, पंथ, व प्रदेशापूर्ती मर्यादित नसावी हेच पर्यावरणीय स्त्रीवादास अपेक्षित आहे. न.शे.पोहनेरकर यांच्या ' विरलेल्या गारा' या व्यक्तिचित्रणाच्या माध्यमातून 'मरी मुकादम' या दलित महिलेवर गिरणीतील अधिकारी अन्याय-अत्याचार करतात तेव्हा असे जाणवते की स्त्रियांसाठीचे जगण्याचे पर्यावरण खरंच खूप दूषित झाल्याचे दिसते.

'आपले आभाळ पेलताना' या ललित लेखसंग्रहामधून शैला लोहिया स्त्रियांच्या शोषणाचा व अन्याय अत्याचाराचा जणू काय पाढाच वाचतात असे वाटते. अशा कितीतरी घटना प्रसंगांमधून पुरुषांची व पुरुषी मानसिकतेची स्त्रियांवरील अत्याचाराची मालिकाच या लेखसंग्रहामधून येते. महावीर जोंधळे ' अर्कचित्र' च्या माध्यमातून धर्म, जात व पुरुषी अहंकार हे स्त्रियांस कायम दुय्यम स्थान देत असतात. शिकली सवरलेली व आर्थिक दृष्ट्या स्थिरावलेली नवी पिढी जाती धर्माची बंधने मानत नाहीत त्यातूनच अभिलाषा देसाई व सदानंद हे दोघेही प्रेम विवाह करतात. मुलगा ब्राह्मण व मुलगी लिंगायत यावरून मुलाच्या घरी सर्व नाराज असतात याविषयीचे महत्त्वपूर्ण वर्णन अर्कचित्र मधून आलेले आहे, "पहिली दोन वर्षे त्यांच्याकडची (मुलाकडील) माणसं मात्र येत नव्हती. कारण मी जातीने लिंगायत म्हणून!"३ जात व धर्माने स्त्रियांच्या भोवतालचे पर्यावरण दूषित व भयावह केल्याचे वरील चित्रण दिसून येते.

स्त्री व पर्यावरण या दोन्हीमध्ये खूप जवळचे असे साम्य आहे. कारण स्त्री व पर्यावरणामध्ये नवनिर्मिती करण्याचे सामर्थ्य असते.स्त्री जन्माचा सन्मान व्हायला हवा आहे हे 'मेळा' या ललित लेखसंग्रहाच्या माध्यमातून लेखक दासू वैद्य अतिशय संवेदनशीलपणे अभिव्यक्त करतात. स्त्रियांस अनुकूल असे सामाजिक व सांस्कृतिक पर्यावरण राहिले नाही म्हणून त्यांचा पुरुषावरील विश्वास राहिला नाही याचे सुंदर चित्र ते 'मेळा'मधून करतात. टेलिफोन खात्यात मोठ्या पदावर असणारा त्यांचा इंजिनीअर मित्र कामानिमित्त जात असताना एक तरुण मुलची स्कुटी स्लिप होऊन रसत्याच्याकडेला पडते त्या मुलीस लेखकाचा मित्र मदत करतो. तिला धीर देतो. पुढे त्यांनी त्या मुलीस घरचा पत्ता व मोबाईल नंबर विचारला परंतु ती मुलगी काहीच बोलली नाही काही काळानंतर त्या ठिकाणी एक महिला येथे त्या महिलेशी मात्र ती मुलगी व्यवस्थित बोलु लागते यावरून लेखकाचा मित्र काहीसा नाराज होतो व लेखकास सर्व हकीकत सांगतो. तेव्हा लेखक म्हणतात ,"एका परपुरुषाला आपला कॉन्टॅक्ट नंबर किंवा पत्ता सांगणं त्या मुलीला योग्य वाटलं नाही. त्यात इंजिनीअरसाहेबांवरच्या वैयक्तिक अविश्वासापेक्षा 'पुरुष' जातीची वाढत चाललेली दहशतच अधिक जबाबदार असावी. प्रत्येक लाल मुंगी आपल्याला चावत नसते. पण लाल मुंग्या दिसल्या की आपण सावध होतो. कारण लाल मुंगीच्या कडाडून चावण्याची किमान माहिती आपल्या गाठीशी असते. बायका अशाच दचकून असतात पुरुषांच्या बाबतीत."४

स्त्रीयांचं हे दचकणं , संकोचणं, घाबरणं आणि सावरणं सुरू होतं ते ऋतुप्राप्तीपासून होय. ऋतूप्राप्तीपासून बाईच्या जगण्यावर अचानक बंधने येतात असे दिसते. अनेकदा देव-धर्माचा आधार घेऊन स्त्रियांना या काळात अस्पृश्य ठरवले जाते याचे अतिशय संवेदनशीलपणे चित्रण लेखक दासू वैद्य करतात. स्त्रीच्या या ऋतूप्राप्तीस ते 'जाळभाज' म्हणतात. अशा अनेक प्रकारे मराठवाड्यातील स्वातंत्र्योत्तर ललित गद्यामधून 'पर्यावरणीय स्त्रीवाद' अतिशय नेमके व समर्पकपणे आलेला आहे. स्त्रीयांचे शोषण व त्यांच्यावरील अन्याय -अत्याचार यांचे चित्रण करणे म्हणजेच 'पर्यावरणीय स्त्रीवाद' नव्हे तर स्त्रीवादास ज्या ज्या गोष्टी मूल्ये प्राप्त करून देतील त्यांचा स्वीकार म्हणजे 'पर्यावरणीय

स्त्रीवाद' होय. स्त्रियांना नवी मूल्ये, प्रतिष्ठा,आत्मसन्मान प्राप्त व्हावे हा उद्देशही यालेखनामागे असल्याचे दिसते.

सारांशपणे असे सांगता येईल की, स्त्रियांचे जीवन अधिकाधिक विकसित व्हावे असे वाटत असेल तर तिच्या भोवतालचे सामाजिक, आर्थिक, मानसिक व सांस्कृतिक पर्यावरण स्वच्छ सुंदर करणे आवश्यक आहे त्यातूनच पर्यावरणाचा समतोल राखेल.अन्यथा ज्याप्रमाणे उद्योगीकरणामुळे निसर्ग धोक्यात आला आहे अगदी त्याचप्रमाणे पुरुषी अहंकाराच्या अतिदबावातंत्रामुळे स्त्रीत्वही धोक्यात येऊन सगळी समाजव्यवस्था उध्वस्त होईल हे थांबावे म्हणून 'पर्यावरणीय स्त्रीवाद' नवी मूल्ये रुजवण्याचा प्रयत्न करते आहे. हे विशेष महत्त्वपूर्ण वाटते.

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Environmental Awareness in Urdu Poetry

اُردو شاعری میں ماحولیاتی بیداری

مقالہ نگار: ڈاکٹر انصاری مسعود اختر جمال احمد
صدر شعبۂ اُردو،
انکوش راؤ ٹوپے کالج، جالنہ

Dr. Ansari Masood Akhtar Jamal Ahmed
Head of Urdu Dept.,
MSS's Ankushrao Tope College, Jalna

Abstract

Environmental awareness in Urdu Poetry

Everything that man has learned, explained and discovered has been provided to him by his environment. Romantic poets and writers of all languages of the world often wrote about beautiful rural and natural scenes and made nature poetry a popular poetic genre. Contemporary poets tend to write about nature and environment more broadly than their predecessors, focusing on the negative effects.

As far as Urdu poetry is concerned, so in all genres of Urdu poetry, environmental ecology and its interpretation is mentioned. Natural scenery is found in Urdu Qasida. Urdu Marsiya is also capable of presenting a flower with hundreds of colors. There is also a full reflection of nature and environment in Urdu Mythology (Mathnavi). Urdu Gazals are also not devoid of it. It also explains the environment through analogies (tashbeehaat), talmeehaat, Husn-e-taleel, symbols and metaphors (Isteara). In fact, the poet writes what he sees in the environment around him.

Excess of environmental pollution is an important issue in the present era. According to the United Nations and B.B.C. urdunews.com, thousands of scientists around the world are continuously protesting to raise awareness about the emergency situation of climate change.

Environmental pollution is related to the whole world of humanity. This is not just a problem of one region, country, nation or religion, but it is a problem of the entire humanity as well as the flora and fauna, so everyone should find a solution to this problem together.

Therefore, we should take part in the process of saving our natural environment by knowing trees, rivers, seas, mountains and all natural resources as our friends. If we

secure our natural assets, we will not only have a positive and healthy society. All these efforts of ours will improve our mental health, improve the human environment and develop the natural system, and this system will inspire our poets, writers and awakened minds to come up with better and more enlightened creations.

Keywords: awareness, biosphere, eco-system, environment, genre, language, literature, Urdu.

عہدِ قدیم کا انسان ہو یا دورِ جدید کا ہر لمحہ وہ ماحولیات سے فیض یاب ہوتا رہتا ہے۔ یہاں تک کہ وہ لکھنا، پڑھنا اور بولنا نہیں جانتا تھا تو اپنے اطراف کے ماحول کو دیکھتا اور مشاہدہ کرتا تھا اور اپنے خیالات کا اظہار ماحول کے ذریعے سے کرتا تھا اور اس بات پر آثارِ قدیمہ کے وہ دستاویز بھی شاہد ہیں جس میں اُس نے پتھروں اور چٹانوں پر اپنے ماحولیاتی نظام کی تصویر کشی کی ہے۔ لیکن جب انسان نے لکھنا، پڑھنا اور بولنا سیکھ لیا تو وہ ماحول کی اِن چیزوں کو اپنی زبان و کلام میں بخوبی استعمال کرنے لگا، اِس کے ثبوت، وہ محاورے اور الفاظ ہیں جو اُس نے ماحول سے اخذ کئے ہیں۔ گویا انسان نے جو کچھ سیکھا، سمجھا یا دریافت کیا ہے وہ سب اُس کو اپنے ماحول سے ہی حاصل ہوا ہے۔

دنیا کی تمام زبانوں کے رومانوی شاعروں اور ادیبوں نے اکثر خوبصورت دیہی و فطری مناظر کے بارے میں خوشی کا ذریعہ کے طور پر لکھا اور فطرت کی شاعری کو مقبول شاعرانہ صنف بنا دیا۔ آج بھی ماحولیاتی نظمیں لکھی جاتی ہیں، تو ہم عصر شاعر اپنے پیش روؤں کے مقابلے فطرت کے بارے میں زیادہ وسیع پیمانے پر لکھتے ہیں، منفی اثرات پر زیادہ توجہ مرکوز کرتے ہیں، اسی لئے ہمیں اُن کے کلام میں ہمیں مناظرِ فطرت، موسم خزاں و بہار، موسمِ باراں، شجر و حجر اور کھیتوں اور کھلیانوں کا جا بجا ذکر ملتا ہے۔

جہاں تک اُردو شاعری کا تعلق ہے تو اِس میں کوئی صنفِ سخن ایسی نہیں جس میں ماحولیات کی کیفیات اور اُس کی ترجمانی نہ ملتی ہو، اُردو قصائد کی بات کریں تو اِس میں مناظرِ قدرت کے اشعار ملتے ہیں۔ اُردو مرثیہ بھی پھول کے مضمون کو سو رنگ سے پیش کرنے کی طلب رکھتا ہے، اُردو مثنویوں میں بھی قدرت و فطرت کی بھرپور عکاسی ملتی ہے۔ اُس میں بہار خزاں، گرمی و سردی، صبح و شام، جنگل و بیاباں، کوہ و صحرا، سبزہ زار و مرغزار وغیرہ کے مناظر صاف طور سے نظر آتے ہیں۔ غزلوں کا دامن بھی اس سے اچھوتا نہیں ہے، اس میں بھی تشبیہات، تلمیحات، حسنِ تعلیل، علامتوں اور استعاروں کے آئینے میں ماحولیات کی ترجمانی ملتی ہے۔ بالخصوص دورِ جدید کی غزلوں نے تو اس کو اپنا اوڑھنا بچھونا بنا رکھا ہے۔ غزل کا چلن عام تھا۔ نظیر، حالی اور اسماعیل میرٹھی سے لے کر دورِ جدید کے شعراء میں وفا نقوی، احمد فراز اور رفیق اعظمی وغیرہ نے مضامینِ فطرت کو نظم کا موضوع بنایا، دراصل شاعر وہی تحریر و تصنیف کرتا ہے جو وہ اپنے گرد و پیش کے ماحول میں دیکھتا ہے۔ لہٰذا اس موقع پر اُردو شاعری میں ماحولیاتی بیداری کے حوالے چند باتیں عرض کرنے کی کوشش کی گئی ہے۔

ہزاروں سال سے زمین، انسان اور حیوانات کا مسکن بنی ہوئی ہے اور ارتقاء کی بہت سی منزلوں سے گزرتے ہوئے آج کے ترقی یافتہ دور میں پہنچ گئی ہے۔ زمین کے ماضی کا مطالعہ کرنے سے ہم کو زمین پر آئی تبدیلیوں کے بارے میں پتہ چلتا ہے۔

کرۂ حیات کو سب سے بڑا ماحولیاتی نظام کہا جاتا ہے۔ دراصل ماحولیات کے مختلف موضوعات کا تعلق درحقیقت کرۂ حیات سے ہی ہے۔ کیوں کہ اس کا مطلب زندگی دینے والا کرہ ہے۔ کرۂ حیات کے جاندار اور بے جان عوامل کے درمیان مسلسل تعاملات کی وجہ سے غذا اور توانائی کی منتقلی ہوتی رہتی ہے یہ راز کرۂ حیات، کرۂ جمادات، کرۂ آب اور کرۂ باد پر مشتمل ہے، اِن سب کروں میں زندگی کا وجود موجود ہے اور ان کے اندر جاندار پائے جاتے ہیں۔ ماحول میں یہ اہم ترین عنصر ہے۔ زمین کے علاوہ دوسرے کسی سیارے پر کرۂ حیات کے امکانات نہیں ملتے ہیں، کیوں کہ وہاں پر نہ تو

پانی ہے اور نہ ہی ہوا کا وجود ہے۔ اسی سبب وہاں کرۂ آب اور کرۂ باد کا بھی وجود نہیں ملتا ہے۔ زمین پر موجود تمام جاندار زندہ رہنے کے لئے اپنے ارد گرد کے ماحول پر بھروسہ کرتے ہیں، اس میں حیاتی اور غیر حیاتی (جاندار اور بے جان) سب ہی چیزیں شامل ہیں، یہ وہ فطری ماحول ہے جس میں جاندار اپنے اطراف کی چیزوں کے ساتھ ہم آہنگی اور تعلق قائم کرتے ہیں۔ لیکن افسوس کا مقام یہ ہے کہ انسان اپنے مفاد کی خاطر اس قدرتی ماحول کے ساتھ کھلواڑ کر رہا ہے۔ انسانی اعمال کے نتیجے میں ہزاروں سال سے مخلوقات کی پرورش کرنے والی یہ زمین آج بربادی کی راہ پر گامزن ہے، اس زمین کی پرتیں ڈھیلی ہوتی جارہی ہیں، مٹی کی زرخیزی ختم ہوتی جارہی ہے، ہوائیں لطیف سے کثیف ہوتی جارہی ہیں، دریا اور سمندر کا پانی آلودہ ہوتا جارہا ہے، بہت سے پرندے، جانور اور نباتات کا وجود ختم ہوتا جارہا ہے۔ ماحولیات کے عناصر میں بڑی تبدیلیاں رونما ہو رہی ہیں۔ کرۂ جمادات، کرۂ آب، کرۂ باد اور کرۂ حیات آلودہ ہو چکے ہیں۔ کرۂ باد میں شگاف ہو چکا ہے جس سبب سورج کی مضر کرنیں زمین تک آرہی ہیں اور زمین کے درجۂ حرارت میں اضافہ ہو رہا ہے۔

اس سلسلے میں بی بی سی اردو نیوز کی یہ خبر چونکا دینے والی ہے:

"ماحولیات کے سائنسداں سڑکوں پر سراپا احتجاج کیوں ہیں؟

21 مئی 2023

دنیا بھر میں سائنس دانوں کی بڑی تعداد نے ڈائریکٹ ایکشن یا براہ راست اقدامات کا سہارا لیا ہے اور وہ موسمیاتی تبدیلی کی ہنگامی صورتحال پر توجہ دلانے کے لئے ایسا کر رہے ہیں۔ اس کے تحت وہ خود کو عوامی عمارتوں کے سامنے زنجیروں میں جکڑ رہے ہیں اور سڑکوں کو بلاک کر رہے ہیں اور اسے وہ موسمیاتی ہنگامی صورتحال پر احتجاج کرنا کہتے ہیں۔

اُن کا کہنا ہے کہ "موسمیاتی تبدیلی کے بحران کا پیغام اب سائنسی حلقوں تک محفوظ نہیں رہ سکتا، کیوں کہ گھر (زمین) میں آگ لگی ہوئی ہے۔"

Scientist Rebellion

سائنس دانوں کی بین الاقوامی تنظیم 'سائنٹسٹ ریبیلیئن' کئی ممالک میں کئی سال سے زیادہ عرصے سے احتجاج اور براہ راست مظاہروں کا اہتمام کر رہا ہے۔ اس کا کہنا ہے کہ ان کے شرکاء کی تعداد 2000 سے زیادہ ہو چکی ہے۔

اقوام متحدہ کا موسمیاتی تبدیلی یا آب وہوا کے متعلق کانفرنس سی او پی 28 متحدہ عرب امارات میں منعقد ہو رہی ہے جو سن 2015 میں پیرس میں ہونے والی بڑی بین الاقوامی کانفرنس میں آب وہوا کے متفقہ اہداف کی طرف ہر ملک کی پیشرفت کا پہلی بار جائزہ لے گی۔

اس معاہدہ کا مقصد عالمی درجۂ حرارت میں اوسطاً اضافے کو صنعتی دور کے مقابلے میں دو ڈگری سینٹی گریڈ سے کم رکھنا ہے جبکہ کوشش یہ کرنی ہے کہ یہ اعشاریہ پانچ ڈگری پر رہے کیونکہ سائنسدانوں کا کہنا ہے کہ یہ محفوظ حد ہے۔ اسے حاصل کرنے کے لئے دنیا کو 2030 تک کاربن کے اخراج کو 2019 کی سطح سے 43 فیصد تک کم کرنا ہوگا۔ لیکن گذشتہ سال اقوام متحدہ کے اخراج کی جائزے سے ظاہر ہوا کہ دنیا میں کاربن کے اخراج میں کمی کی بجائے 2010 کی سطح سے 11 فیصد اضافہ دیکھا گیا ہے۔

۔۔۔۔ اینڈیز کے دور دراز پہاڑوں کے علاوہ شہروں میں احتجاج کرنے والے سائنسداں کا کہنا ہے کہ "ہمارے اقدامات نہ صرف حکومتوں پر دباؤ ڈالتے ہیں، بلکہ وہ عوام کو متوجہ بھی کرتے ہیں اور اس سے انھیں یہ سمجھنے میں مدد ملتی ہے کہ موسمیاتی بحران کتنا سنگین ہے۔"

(بحوالہ: بی بی سی اُردو نیوز۔ 21 مئی 2023)

اُردو زبان کے معروف شاعر الطاف حسین حالی نے اُس وقت نظم لکھنے کو ترجیح دی جب غزل کا چلن عام تھا۔ انھوں نے مضامینِ فطرت کو نظم کا موضوع بنایا، اُن کی نظم 'برکھا رُت' "موسمیاتی بدلاؤ اور تغیر کا بہترین نمونہ ہے، اسے ہم 'موسمیاتی تبدیلی کی ماحولیات'

Ecology of climate change

سکتے ہیں۔ جس میں اس موسمیاتی کیفیت کو بیان کیا گیا ہے جو کسی بھی انسان کی روحانی ماحولیات کو یکسر تبدیل کر دیتی ہے۔ شمال سے آنے والی کالی بدلیوں کا رقص اور حبس زدگی کا خاتمہ اور چھم چھم بارش کی ایسا فطری نظارہ ہے جو ہر انسان کی زندگی کو تازگی عطا کرتا ہے۔ مولانا الطاف حسین حالی کی نظم 'برکھا رت' میں سے کچھ چنندہ اشعار ملاحظہ کیجئے:

برسات کا بج رہا ہے ڈنکا
اک شور ہے آسماں پہ برپا
سب باغوں میں جا بہ جا ہے جھگڑے
جھولے ہیں کہ سو بہ سو پڑے ہیں
کچھ لڑکیاں بالیاں ہیں کم سن
جن کے ہیں یہ کھیل کود کے دن
ندی نالے چڑھے ہوئے ہیں

اسی طرح اُردو کے مشہور شاعر پنڈت برج موہن لال چکبست لکھنوی کا یہ شعر مکمل طور سے ماحولیات کے ماضی، حال اور مستقبل کی تبدیلیوں کی ترجمانی کرتا ہوا نظر آتا ہے:

زندگی کیا ہے، عناصر میں ظہورِ ترتیب
موت کیا ہے، انہی اجزاء کا پریشاں ہونا

ہمارا ماحول زمین، پانی اور فضا سے مل کر بنا ہے۔ اس لئے اچھا ماحول وہی ہے جس میں یہ تینوں حصے صاف اور اپنی قدرتی حالت میں ہوں۔ اس ماحولیاتی نظام میں کسی زیادتی یا کمی سے ماحولیاتی آلودگی کہا جاتا ہے۔ انسان اپنے مفاد کی خاطر قدرت کے ساتھ کھلواڑ کر رہا ہے۔ یہ ماحول کو شہر بسانے، صنعت اور زراعت کے لئے استعمال کر کے اس میں ناگزیر نقصانات پہنچا رہا ہے۔ جنگلی جانوروں کے اندھا دھند شکار سے کچھ جانور ختم ہو گئے ہیں اور کچھ جانور ختم ہونے جا رہے ہیں، اس وجہ سے مٹی کے کٹاؤ میں بھی اضافہ ہوا ہے۔ ساتھ ہی ہرے بھرے علاقے ریگستانوں میں تبدیل ہونے لگے ہیں، مثال کے طور پر صحارا ریگستان بننے کی ممکنہ وجوہات رومن لوگوں کے ذریعے شیروں کو پکڑنا یا شکار کرنا ہے جس سے وہاں سبزی خور جانوروں کی تعداد بڑھنے سے وہاں جنگلات کم ہونے لگے اور وہ علاقہ ریگستان میں تبدیل ہو گیا۔

احمد فراز اس ماحولیاتی آلودگی کو کچھ اس طرح بیان کرتے ہیں:

اب وہاں خاک اُڑاتی ہے صبا
پھول ہی پھول جہاں تھے پہلے

سائنس اور ٹیکنالوجی کی ترقیوں نے جہاں ہمارے لئے آسانیوں کی راہ ہموار کی ہے وہیں اُس کے مضر اثرات بھی رونما ہوئے ہیں جس نے ہمارے ماحول اور ہماری صحت کو بربادی کی راہ پر لا کر کھڑا کر دیا ہے۔ فیکٹریوں سے نکلنے والی زہریلی گیسیں، سڑکوں پر آنے جانے والی موٹر گاڑیاں فضائی آلودگی کا سبب بنی ہوئی ہیں۔ اس فضائی آلودگی کے لئے کاربن مونو آکسائیڈ، گندھک نائٹروجن آکسائیڈ، ہائیڈروکاربنؔ کے اجزاء ذمہ دار ہیں۔ اس آلودگی سے بہت سی بیماریاں پیدا ہوئی ہیں مثلاً پھیپھڑوں اور خون کی بیماریاں، سانس کی بیماریاں، سردی، کھانسی اور الرجی۔ فضا میں ہائیڈروکاربن کینسر کی بیماری کا سبب بنتی ہے۔

اس آلودگی سے ہم نے اپنی زمین، اوزون کی پرت کو متاثر کیا ہے۔ کلورو فارم کاربن کی وجہ سے اوزون کی پرت میں کمی واقع ہوئی ہے۔ جس کے سبب سورج کی مضر شعاعیں براہ راست زمین پر آنے سے جلدی کینسر کی بیماریاں رونما ہوئی ہیں۔ اس کے ساتھ ساتھ تیزابی بارش نے بھی برے اثرات پیدا کئے ہیں جو بارش کے پانی میں زہریلی گیسوں کے ملنے سے وجود میں آئی ہے۔ اسی بارش سے سبزیاں، انسان، پیڑ پودے اور مچھلیاں وغیرہ بھی متاثر ہوئی ہیں۔

اس ماحولیاتی آلودگی کے سبب انسان کی زندگی بری طرح متاثر ہوئی ہے، جس کی وجہ سے انسان اپنی جوانی کی خطرناک کھوتا جارہا ہے، وہ کم عمری اور جونوجوانی میں بوڑھا نظر آنے لگا ہے اور اس کی زندگی سمٹ کر چھوٹی ہوگئی ہے۔ حساس شاعر بھلا کیسے اپنے ماحول سے بے خبر رہ سکتا ہے۔ ساز دہلوی اپنی غزل کے ایک شعر میں اس ماحولیاتی آلودگی کی ترجمانی کچھ اس طرح کرتے ہیں:

زندگی کم ہے، جوانی تو بہت ہی کم ہے
اِس پہ آلودہ ہوا کس کو جواں چھوڑتی ہے

پانی قدرت کی طرف سے عطا کیا گیا انمول تحفہ ہے۔ تمام تر مخلوقات کی زندگی کا دارومدار پانی پر منحصر ہے۔ ہم تاریخ کے اوراق پلٹ کر دیکھتے ہیں تو پتہ چلتا ہے کہ بڑی بڑی قومیں ندیوں اور سمندروں کے کنارے آباد تھیں جس سے پانی کی اہمیت کا اندازہ ہوتا ہے۔

سمندر کا پانی آفتاب کی گرمی سے بھاپ بن کر بلندی پر جا کر بادل بن جاتا ہے اور ہوا کی نمی میں بھی اضافہ کرتا ہے۔ اگر 'واٹر ری سائیکل' کا یہ نظام قائم نہ ہو تو بادل تشکیل نہ ہوں اور نہ ہی ہوا کی نمی میں اضافہ ہو۔ اس عمل کے بغیر نہ تو بادل بن سکیں گے اور نہ ہی بارش ہو سکتی ہے اور موسم کی تبدیلی کا خیال بھی نہیں کیا جا سکتا اور انسان کے ساتھ ساتھ نباتات اور حیوانات کی زندگی بھی متاثر ہوگی۔

الغرض سمندر کا وجود اگر زمین پر نہ ہو تو پوری دنیا بھری دنیا ویرانے اور بے جان صحرا میں تبدیل ہو کر رہ جائے گی۔ احمد فراز، اسی سائنسی حقیقت کو کچھ اس طرح بیان کرتے ہیں:

دل کو کیا روئیں کہ اب سوکھ گئی ہوں آنکھیں
شہر ویراں ہے کہ دریاؤں میں پانی کم ہے

شاعر کہتا ہے کہ شہر کی ویرانی کبھی کہیں دریاؤں میں پانی کم ہو جانے کی وجہ سے تو نہیں ہے۔ اسی ضمن میں طالب سحر کچھ اس طرح شعر کہتے ہیں:

گھر ہمارا جو نہ روتے بھی تو ویراں ہوتا
بحر، گر بحر نہ ہوتا، تو بیاباں ہوتا

شہری پھیلاؤ، بڑھتی ہوئی آبادی اور صنعتی نظام نے ماحولیات کی آلودگی کے ساتھ ساتھ سمندر اور زیر زمین موجود پینے کے پانی کے ذخیروں کو بھی متاثر کیا ہے۔ جس سے آج پینے لائق پانی کی دستیابی کا مسئلہ درپیش ہے۔ دنیا میں تین چوتھائی اور تقریباً 70 فیصد حصے میں سمندر ہونے کے باوجود اس کے کھارے ہونے کی وجہ سے اس کے پانی کو پینے کے لئے استعمال نہیں کیا جا سکتا ہے۔ یہ بات ہم کو سمجھنے کی ضرورت ہے کہ پینے کے پانی کا تحفظ کرنا زندگی کے لئے بہت لازم ہے۔

شہروں میں لوگوں کو مجبور ہو کر پینے کے پانی کے لئے اچھی خاصی رقم کرنی پڑ رہی ہے۔ بشیر بدر اپنے انوکھے اسلوب میں سمندر اور پینے کے پانی کے درمیان موجود فرق کی طرف اشارہ کرتے ہوئے کچھ اس انداز میں کہتے ہیں کہ:

میری اپنی بھی مجبوریاں ہیں بہت
میں سمندر ہوں، پینے کا پانی نہیں

فیکٹریوں اور کارخانوں سے ٹھوس اور سیال کیمیائی مادے، مصنوعی کھاد اور چھڑکاؤ کی ہوئی حشرہ کش دوائیاں پانی کے ساتھ مل کر جھیلوں، دریاؤں اور سمندروں میں مچھلیوں کی آبادی میں تیزی سے کمی کا سبب بن رہے ہیں، کیوں کہ تیزابی بارش اور آلودہ پانی نہ صرف مچھلیوں میں انڈے دینے اور اُن کے بچوں کے زندہ رہنے کی صلاحیت کو کم کر دیتے ہیں بلکہ یہ پانی نہ تو شہریوں کے استعمال کے لائق رہتا ہے اور نہ اس کو آبپاشی اور دیگر صنعتوں کے لئے کام میں لایا جا سکتا ہے۔ اگر آلودہ پانی کو پینے کے استعمال میں لایا جائے تو کئی بیماریاں لاحق ہوتی ہیں جن میں ہیضہ، ٹائیفائیڈ، جگر اور پیٹ کی بیماریاں قابل ذکر ہیں۔ اس آلودہ پانی میں مچھلیوں کے علاوہ آبی پودوں اور جانوروں کا زندہ رہنا بھی دشوار ہو جاتا ہے۔ تحقیق کی روشنی میں یہ بات سامنے آئی ہے کہ پچھلے پچاس برسوں میں سمندری پانی کے آلودہ ہونے کی وجہ سے دنیا بھر میں تقریباً سترہ ہزار آبی پودوں اور جانداروں کی نسلیں ناپید ہو چکی ہیں۔

یورپی ماہرین اور سائنسدانوں نے اس بات کا پتہ لگایا ہے کہ فضا میں 'میتھین گیس' سے متاثر ہونے والی تیزابی بارش سمندر کی گہرائی میں پائے جانے والے کئی جانداروں کے ناپید ہونے کا سبب بن رہی ہے۔ غزل کا یہ شعر اس حقیقت کی عکاسی کرتا ہوا نظر آ رہا ہے:

مچھلیوں میں خوف کیسے آ رہا ہے رات دن
آج پانی میں ذرا اُتار چڑھاؤ، تو اندازہ ہوا

آبادی میں اضافہ ہونے سے شہروں کی وسعت میں بھی اضافہ ہوا ہے۔ جیسے جیسے آبادی بڑھتی گئی۔ شہر خوب پھیلتے گئے اور جنگلات سمٹنے لگے۔ پیڑ پودوں کی بے تحاشہ کٹائی ہونے لگی۔ لیکن نادان انسان یہ نہیں سمجھ سکا کہ وہ پیڑوں پر نہیں بلکہ اپنے پیروں پر کلہاڑی چلا رہا ہے۔ اپنے قدرتی ماحول اور زندگی کو برباد کی راہ پر گامزن کر رہا ہے۔ افسوس کا مقام ہے کہ اس نے اپنے لالچ کی خاطر پیڑ پودوں کے مفاد کو کنارے کر دیا۔ اُس نے جس تیزی سے جنگلات کا خاتمہ کیا اُتنی رفتار سے پیڑ پودوں کو نہیں لگایا۔ ماحول سے آلودگی دور کرنے کے لئے جنگلات بے حد لازمی ہیں۔ دراصل جنگلات ایک ایسا قدرتی سرمایہ ہے جس سے انسان کو فائدہ ہی فائدہ ہے۔ پھر بھی ترقی اور جدیدیت کرنے کا دعویٰ کرنے والے افراد آج اس کی کٹائی کر رہے ہیں۔

ایک وقت ہوا کرتا تھا جب زمین کا 70 فیصد رقبہ 12 ارب 80 کروڑ ہیکٹر جنگلات سے بھرا ہوا تھا جو آج سکڑ کر صرف 16 فیصد یعنی 2 ارب ہیکٹر ہی رہ گیا ہے۔ ماہرین کے مطابق جنگلات کی اندھا دھن کٹائی سے بارش کی مقدار، زیر زمین پانی کی سطح اور پانی کے دیگر قدرتی ذخیروں میں کمی آئی ہے۔ جس کے نتیجے کے طور پر سیلاب، خشک سالی، زمین کا کھسکنا جیسے حالات رونما ہونے لگے ہیں۔

ماہرین نباتات و جنگلات کے مطابق 50 ٹن وزن کا صحت مند درخت۔ اگر 50 سال تک زندہ رہتا ہے تو وہ 2 لاکھ 50 ہزار روپیوں کی قیمت کی آکسیجن، 20 ہزار روپیوں کی پروٹین، 2 لاکھ 5 ہزار روپیوں کے برابر مٹی کا تحفظ، 3 لاکھ روپیوں کے برابر آبی کنٹرول، 2 لاکھ 50 ہزار کے برابر پرندوں کی حفاظت اور ساتھ ہی کیڑوں، پتنگوں کو بھی محفوظ کرتا ہے۔ اگر درخت سے حاصل شدہ پھل، پھول، لکڑی اور جڑی بوٹیوں سے حاصل شدہ آمدنی کا اندازہ لگایا جائے تو درخت ہم کو تقریباً 18 لاکھ روپیوں کا فائدہ پہنچاتا ہے۔ اُردو غزل کے ایک شاعر نے درختوں کے اس نقصان اور ماحول کی بربادی کو ایک عظیم حادثے سے منسوب کیا ہے:

ایک حادثہ عظیم ہوا ہے زمین پر
کیسا گھنا درخت گرا ہے زمین پر
(ہلال نقوی)

اس بات کی وضاحت یہ شعر بھی کرتا ہوا نظر آتا ہے:

درخت کاٹنے والوں نے یہ نہیں سوچا
کہ اپنی موت کا سامان کر رہے ہیں
(وفا نقوی)

آج سائنس اور ٹیکنالوجی کے دور میں جہاں موٹریں، بسیں، ٹرک، ریل گاڑیاں، ہوائی جہاز، فیکٹریاں، ایٹمی ہتھیار اور فضلہ اور دوسری چیزیں اپنا دھواں پھیلا کر فضا کو آلودہ بنا رہی ہیں۔ تو یہ درخت ہی ہیں جو فضا کو آلودگی سے بچا سکتے ہیں۔ یہ درخت اوزون کی تہہ کو نقصان پہنچانے سے بچا سکتے ہیں، اس کے علاوہ درخت بارش برسانے کا سبب بنتے ہیں۔ اپنے پتوں سے پانی اور نمکیات جذب کر کے ہوا میں نمی پھیلاتے ہیں۔ کرۂ ارض کے گرد موجود اوزون کی قدرتی تہہ اہلِ زمین کو سورج کے خطرناک بالا بنفشی شعاعوں سے بچاتی ہے۔ اس تہہ کے ختم ہو جانے سے زمین کا درجۂ حرارت بڑھنے کا خطرہ پیدا ہو گیا ہے۔ جس سے قطبین کی برف پگھل کر کئی براعظموں کو زیرِ آب کر دے گی اور جنگلات وغیرہ تباہ ہو جائیں گے۔ اس قدرتی تہہ اوزون کی سب سے بڑی دشمن فضائی و ایٹمی آلودگی ہے جس کے خاتمے کے لئے روئے زمین پر درختوں کی کثیر مقدار کا ہونا بے حد ضروری ہے۔ اس صورت حال کا مقابلہ کرنے کے لئے آلودگی کے خلاف جہاد کیا جانا چاہئے اور کرۂ ارض پر ہر قسم کی زندگی کے تحفظ کے لئے ممکنہ اقدامات کئے جانا چاہئے۔

پرتگال کے کلب باغ کے بارے درج ہے کہ:

"اس راہ سے گزرنے والے انسان! اس سے پہلے کہ تو مجھے کاٹنے کے لئے ہاتھ بڑھائے، میری بات سنتا جا! میں موسمِ سرما کی راتوں میں تیرے چولہے کا ایندھن بن کر تیرے گھر کو گرم رکھتا ہوں، موسمِ گرما میں تیرے لئے سایہ فراہم کرتا ہوں، ہوا کو آلودگی سے بچاتا ہوں، تیرے بچے کا پنگھوڑا اور موت کے بعد تیری قبر کا سامان بھی میں ہی ہوں۔"

(درخت نعمت: ڈاکٹر خولہ علوی، جسارت بلاگ)

کل رات جو ایندھن کے لئے کٹ کے گرا ہے
چڑیوں کو بہت پیار تھا اُس بوڑھے شجر سے

کچھ عرصہ قبل کلب سائنسدانوں نے 100 فٹ اونچے درخت میں مختلف تجربات کئے تھے۔ درخت پر تقریباً دو لاکھ پتے تھے اور یہ پتے فضا میں جو ٹھنڈک پیدا کر رہے تھے، اس کا اندازہ کلب لاکھ ٹن ایئر کنڈیشنرز کے برابر تھا، اور جو کاربن ڈائی آکسائیڈ جذب کر رہے تھے، اور ماحول کی جو صفائی کے ساتھ خوراک بنا رہے تھے، وہ اس کے علاوہ تھی۔ اس کلب درخت سے ہم اندازہ لگا سکتے ہیں کہ چھوٹے بڑے درخت مل کر نظامِ کائنات میں کس قدر اہم کردار ادا کر رہے ہیں۔

ماحولیات اور نباتات کے ماہر ڈاکٹر ایس کا کہنا ہے کہ:

"کلب اوسط سائز کا درخت، دو خاندانوں سے خارج شدہ کاربن ڈائی آکسائیڈ گیس کو جذب کر کے ہوا میں کافی آکسیجن پیدا کر دیتا ہے۔"

ناسا کی تحقیق کے مطابق: "چھوٹے پودوں کے گلدستے گھروں میں رکھنے سے گھروں کی اندرونی فضا صاف ہوتی رہتی ہے۔"

درخت زمین کے محافظ ہوتے ہیں، اُن کی جڑیں پانی کو جذب کر لیتی ہیں اور وہ دور دور پھیل کر مٹی کے کٹاؤ کو روکتی ہیں۔ اور وہ مٹی کی زرخیزی کو برقرار رکھتے ہیں، جس زمین پر پیڑ پودے اور ہریالی نہیں ہوتی اُس کی زرخیزی میں کمی واقع ہونے لگتی ہے۔ ساتھ ہی سیلاب اور بارش کے پانی سے مٹی کے کٹاؤ کے امکانات بڑھنے لگتے ہیں۔ وفا نقوی اپنے شعر میں اس کی ترجمانی کچھ اس طرح کرتے ہیں:

تو دۂ خاکِ بدن آبِ رواں خوب ہوا

اب کے برسات میں مٹی کا زیاں خوب ہوا

آج درختوں کی کٹائی سے ماحول پر بادی کی دہلیز پر کھڑا نظر آتا ہے، کرۂ بارض مسلسل گرم ہوتا جارہا ہے، ماحول کی آلودگی سے کاربن ڈائی آکسائیڈ اور دوسری خطرناک گیسیں سورج کی کرنوں سے پیدا ہونے والی گرمی کو کرۂ ارض تک لانے کا سبب بنی ہیں، اور وہ اس گرمی کو واپس فضا میں جانے سے روک لیتی ہیں جس کے نتیجے میں زمین کا درجۂ حرارت بڑھنے لگتا ہے اس عمل کو 'گلوبل وارمنگ' کہتے ہیں۔ اس کے ساتھ ساتھ 'ال نینو' کے اثرات بھی ظاہر ہوئے ہیں۔ 'ال نینو' کے اثرات سمندر کے درجۂ حرارت میں اضافہ ہونے سے پیدا ہوئے ہیں جو موسم کی تبدیلی کا سبب بنتے ہیں، جس کے نتیجے میں بارش کا کم ہونا، قحط یا خشک سالی ہونا بڑے مسائل ہیں۔ ناصر کاظمی اور عباس تابش کے یہ اشعار ماحولیات کی ان دشواریوں کو پیش کرتے ہوئے نظر آتے ہیں:

پیاسی دھرتی جلتی ہے
سوکھ گئے بہتے دریا
زمیں لوگوں سے خالی ہو رہی ہے
یہ رنگِ آسماں دیکھا نہ جائے
بھری برسات خالی جا رہی ہے
سرِ امرِ رواں دیکھا نہ جائے
ناصر کاظمی

ہم ہیں سوکھے ہوئے تالاب پہ بیٹھے ہوئے ہنس
جو تعلق کو نبھاتے ہوئے مر جاتے ہیں
عباس تابش

اس کے علاوہ بشیر بدر اس موضوع کو کچھ اس طرح پیش کرتے ہیں:

زمیں سے آنچ زمیں توڑ کر نکلتی ہے
عجیب تشنگی ان بادلوں سے برسی ہے
بشیر بدر

خاک ہو جائے گی زمیں اک دن
آسمانوں کی آسمانی میں
بشیر بدر

امریکہ کے شہر شکاگو سے ایک آن لائن میگزین شائع ہوتا ہے جس کا موضوع ماحولیاتی شاعری ہے۔ اس میگزین میں گذشتہ ستر سال کی ماحول سے جڑی ہوئی شاعری کی کھوج لگائی گئی ہے اور اُسے شائع کرنے کا اہتمام کیا گیا ہے۔ اس کا عنوان ہے:

Poetry and Environment

Recent poetic approaches to the natural world and ecology.

فطرت سے جڑت اور ماحولیاتی ادب و شاعری کے حوالے سے اس مگزین کے پہلے صفحہ پر شائع ہونے والے اپنے اقتباس میں خاتون تجزیہ کار ڈائنا سوڈیکا لکھتی ہیں:

"....Now a pressing political question, a question survival. Distinct from nature poetry, environmental poetry explores the complicated connections between people and nature, often written by poets who are concerned about over impact on the natural world. Poets today are serving as witness to climate change while bringing attention to important environmental issues and advocating for preservation and conservation."

(http://www.poetryfoundation.org/collections/146462/potry-and-the-environment)

(ترجمہ: "- - - - - اب ایک اہم سیاسی سوال ہے، بقا کا سوال۔ "فطرت کی شاعری سے الگ، ماحولیاتی شاعری لوگوں اور فطرت کے درمیان پیچیدہ روابط کی کھوج کرتی ہے، جو اکثر ایسے شاعروں کے لکھے ہوتے ہیں جو قدرتی دنیا پر ہمارے اثرات کے بارے میں فکر مند ہوتے ہیں۔ شاعر آج ماحولیاتی تبدیلی کے گواہ کے طور پر کام کر رہے ہیں جبکہ اہم ماحولیاتی مسائل پر توجہ مبذول کر رہے ہیں اور تحفظ اور تحفظ کی وکالت کر رہے ہیں۔")

مذکورہ بالا اقتباس اور دیگر عالمی ادب کے مطالعہ کی بناء پر ہم یہ کہہ سکتے ہیں کہ آج ہم جس دور میں زندگی بسر کر رہے ہیں، اُس میں ماحولیاتی آلودگی کی زیادتی ایک اہم مسئلہ ہے، اور کوئی بھی حساس طبیعت اور شاعر اس موضوع سے گریز نہیں کر سکتا۔

خلافتِ ارضی اور تسخیرِ کائنات عظیم نعمتیں ہیں، اب یہ خود انسان کا فرض ہے کہ وہ ان نعمتوں کی قدر کرے اور اُن کا حق ادا کرے۔ ماحولیاتی آلودگی کا تعلق پوری دنیائے اسلام سے ہے۔ یہ صرف کسی ایک علاقے، ملک، قوم یا مذہب کا مسئلہ نہیں ہے بلکہ یہ پوری انسانیت کے ساتھ ساتھ جمادات و نباتات کا بھی مسئلہ ہے، اس لیے سب کو مل کر اس مسئلے کا حل ڈھونڈنا چاہیئے۔

اس لئے ہمیں چاہیے کہ ہم ماحول سے جڑے رہیں، پرندوں اور پیڑوں کو اپنا دوست جانتے ہوئے فطری آوازوں کی موسیقیت سے زندگی کشید کریں۔ پیڑوں کے تازہ پھلوں کے ذائقوں سے لذت پائیں۔ پرندوں کی ماحولیات کا مطالعہ اور مشاہدہ ہمیں فطرت کے قریب کر دے گا۔ اگر ہم اپنے فطری ماحول کے بچاؤ کے عمل میں حصہ دار رہے اور فطری لمحوں کو محفوظ بنا لیا تو ہم نہ صرف ایک مثبت اور صحت مند معاشرے کے مالک ہوں گے بلکہ بہترین روشن اور تخلیقی دماغ اور بھرپور طور پر دھڑکنے والے دل ہمارے مددگار ہوں گے۔ یہی وجہ ہے کہ ہماری ذہنی صحت (مینٹل ہیلتھ)، سماجی ماحولیات کی بہتری (ہیومن ایکولوجی) اور فطرت کے نظام (ایکو سسٹم) کو ترقی دیں گے اور یہ نظام ہمارے شاعروں، ادیبوں اور بیدار مغزوں کو بہتر اور عالمی سطح سے بھرپور تخلیقات سامنے لانے کی ترغیب دے گا۔

اس بار جو ایندھن کے لئے کٹ کے گرا ہے
چڑیوں کو بہت پیار تھا اُس بوڑھے شجر سے

(پروین شاکر)

کتابیات و حوالہ جات:

(1) ماحولیات مصنفہ محمد شمس الحق، (قومی کونسل برائے فروغِ اُردو زبان، نئی دہلی)

(2)ماحولیاتی سائنس مصنفہ ڈاکٹر شاہ زلی حسن خاں (ایجوکیشنل بک ہاؤس، علی گڑھ)
(3)م گرین ہسٹری مصنفہ وال ڈیرک (مکلی بک ایجنسی، الاشراق، لاہور)
(4)ماحولیات اور زندگی مصنفہ ڈاکٹر شمس صدیقی و پروفیسر ڈاکٹر پروین منشی (بلڈ ٹس ویلی ڈیولپمنٹ سوسائٹی، حیدر آباد)
(5)ماحولیاتی تنقید: نظریہ اور عمل ترجمہ: ڈاکٹر اورنگ سنہ . نیازی

مضامین:
فطرت لا نی، ماحولیات اور تخلیقی ادب کی مطالعہ از۔ ڈاکٹر زانہ کوکب (تحقیقی مجلہ متن جلد 1، شمارہ 2 ص 225 تا 241)
تناظر کی ماحولیاتی تنقیدی تجزیہ از۔ الیاس بار اعوان
اُردو غزل اور ماحولیاتی سائنس از۔ انجینئر محمد عادل فراز
ستاروں کے درمیاں غزل کے دامن کو سائنسی رنگوں سے سجانے والا شاعر: ڈاکٹر احمد علی برقی اعظمی از۔ انجینئر محمد عادل فراز
اُردو ادب میں سائنس کی شمولیت از۔ توصیف خان
عالمی یوم ماحولیات: پریس انفارمیشن بیورو 05 مئی 2023-06-22
ماحولیات۔ تحفظ کی عملی تدبیر از۔ حنا مقبول (مضامین ڈاٹ کام)

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