ENVIRONMENTAL RESEARCH REFERRED INFORMATION

DR. DASARI VIJAYA KUMAR

Published by NAIRJC
Publications India

ISBN 978-81-932604-7-0

ENVIRONMENTAL RESEARCH REFERRED INFORMATION

A COMPILING BOOK OF RESEARCH PAPERS

BY

DR. DASARI VIJAYA KUMAR

Dr. Dasari Vijaya Kumar

Dr. Dasari Vijaya Kumar holds the position of Principal/Professor and boasts an extensive career in educational leadership. He has served as Principal in several Engineering Colleges, both within and outside of his home state. Currently, he is dedicated to his role as Principal/Professor in the Civil Engineering Department at the College of Sri Vaishnavi College of Engineering, which is affiliated with JNTUK, Kakinada.

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His scholarly contributions are notable, with numerous publications in the realm of water quality appearing in both national and international journals. Dr. Kumar has actively participated in various National and International seminars. His book is a valuable resource for students pursuing B.E. in Civil Engineering and M.E. in Civil Environmental Engineering.

Additionally, Dr. Kumar serves as a respected member of the editorial board for the YUVA Engineers Journal, an international publication. He also takes on the role of President within the State Engineering Colleges Faculty Association in Andhra Pradesh, an organization of considerable importance, recognized by AICTE.

First Edition

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Publishers:

Nairjc Publications

221, Pulwama, Jammu & Kashmir, India.

Ph.: 01933-212815, 9906662570

E-mail: info@nairjc.com, Website: www.nairjc.com

ISBN: 978-81-932604-7-0

First Edition: September 2023

Printers: Nairjc Offset

Address: Pulwama, Jammu & Kashmir, India-192301

Dedicated to

My Wife (M. Uma Devi)

And My Daughters

(D. Sahithi & D. Aishwarya)

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CHAPTER 1

INTRODUCTION

Environmental Engineering is a professional discipline concerned with protecting people from adverse environmental effects as well as protecting ecosystems and improving the quality of the environment.

Environment engineers, also known as sustainability engineers, are involved in maintaining and updating procedures improving public health, and improving waste disposed.

Environmental engineering is the application of Science and Engineering Principles to improve the environment (Air, water and land resources) to provide healthful water, air and land for human habitation and for other organisms, and to remediate polluted sites.
Environmental research is the scientific study of environmental processes and systems, including the effects of human activity on these systems.

Everything that we see in our surroundings forms environment. It is our basic life support system. It provides us air, water, food and land- the basic needs of our life. Environmental Science is the study of living organisms and how they interact with our environment. It covers a board range of discipline including engineering, information studies and research of environmental issues.

Environmental information has a broad definition. It is recorded information, in any form, in any of following areas, the state of elements of the environment and their interaction (air, water, soil, land, and landscape, natural sites, flora and fauna) discharged emissions, noise, radiation, waste.

Environmental information plays a vital role not only in formulating environmental management policies but also in the decision making process aiming at environmental protections and improvements for sustaining good quality of life for the living beings. Information about the water quality of a river is information on the state of water as an element of the environment.

A map showing the location of mountain ranges, urban areas and wood land is information on the that would inform the public about matters affecting the environment (or)enable them to participate in decision making is likely to be environmental information. Even if the information does not directly mention the environment.

The natural environment is exclusive of all the living and the non-living things that occurs naturally. The term Environment covers the interaction of all the living species, climate, weather and natural resources. All of these components have an impact on human survival and economic activities.

Role of Environmental Research

It seeks to describe the structure and function of the Natural world, as well as the relationship between this world and humans (or) human civilization. This is the body of research that provides much of our understandings of biology and earth systems science.

Environmental specialists also ensure society meets various regulations for water, soil, and air, clean polluted areas, advice policy makers about how they can help prevent climate change and collaborate with other industries to reduce waste.

Objectives of Environmental Research

- **(a)** Creating the awareness about environmental problems among people.
- **(b)** Imparting basic knowledge about the environment and its allied problems
- **(c)** Developing an attitude of concern for the environment.
- **(d)** Motivating public to participate in environment protection and environment improvement.

Environmental Management

Preventing and solving environmental problems establishing limits, developing research institutions and monitoring systems, warning threats and identifying opportunities, suggesting measures for resource conservation, developing a strategy for the improvement of environmental conditions.

Environmental Management offers research and opinions on use and conservation of natural resources, protection of habitats and control of hazards, spanning of field of environmental management without regard to traditional disciplinary boundaries.

CHAPTER 2

STUDY OF PRESENT ENVIRONMENTAL CONDITIONS AT NATIONAL LEVEL

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ABSTRACT

According to estimates 135 million people were born and 59 million died, population explosion annoyance and is damaging the development of the country and its society last 50years has few histories terms of fragment and cataleptic changes brought about in the environment

Key words: population, annoyance, eatashopic changes.

INTRODUCTION

Environmental study is based upon a comprehensive view of various environmental systems. It aims to make the categories competent to do scientific work and find out practical solutions to meet current environmental problems the aquifers the ability to analyze the environmental problems like aquatic terrestrial atmospheric systems and their interactions with the biosphere and atmosphere human civilization has made an impressive progress to achieve economic wall being and all round development and that has certainly made life a lot more comfortable.

It is a truth that eco systems and its peoples are formed to gather is a tenuous symbiosis the industrial society is where a singly destroying this relationship giving rise to many complex environmental problems of for reaching encourages.

The biggest using facing the environment is over population of humans the global population for more than tripled in the last 60 years placing stress on every aspect of the environment.

Ever increasing area of land is being taken by urbanization and human settlements to accommodate the fast growing population.

NEED FOR STUDY

Rising levels of carbon dioxide and other gases such a methane in the atmosphere create a greenhouse effect trapping the suns energy and causing the earth and oceans to warm there is clear evidence to show that climate change is happening since the industrial revolutions, atmospheric concentrations of greenhouse gases (GHG's) are more at their highest level for lands of thousands of years rising ambient temperature affect crop yields globally with all other factor being equal.

Some studies have estimated that the crop yields many drop by about 10% by 2050

Apple cultivation in HP has suffered adversely from rising temperature, affecting livelihood of lakes of formers for apple trees winter temperature and precipitation in the form of snow are critically important to ensure normal flowering and fruiting in apples. this year is early may blistering summer heat method the asphalt roads is valsad ,Gujarat resulting into a life threatening starts for pedestrians who found it difficult to work as their shoes got an cowardly stuck in the melted asphalt and has to strangle to free their shoes.

In India water availability is being increasing crucial because per capita availability of water in the country has sharply declined as a result of population growth most of the India river are thoughtlessly used for disposing raw sewage and untreated effluents it is obvious that water of most of rivers is unfit for drinking and in many stretches not even fit for bathing despite and rivers continue to remain major challenge.

Sea level is rising the latest measurement show that the average sea level is currently 50mm higher than in 1993 according to a Un's forecast, sea levels are likely to rise wall over 50cm by 2100 posing series threat to coastal communities half of the 10 largest

cities is the world including Mumbai, Kolkata, new York city French river and one third of the world's 30 largest cities are already threatened by sea level rise.

The Maldives a chain of 1,200 island and costal atolls, about 500 miles from the tip of India is one of the lowest countries on the planet with an average land of 1.5m above sea level, many disappears if the planet place of global warming countries unabated.

The chemistry of the ocean is also changing of the absorb much of the excess carbon dioxide lying entered into atmosphere Climate changes promotes melting of polar ice caps which in turn contributes to rise in sea level as the arctic warms sea ice is rapidly decreasing over the past 20 years the ice sheets in Greenland Antarctic have shrunk as have most glaciers around world.

India has 5243 glaciers convince an area of 37579 km^2 and containing 142.88$km^2$of ice the gangotri glacier the source of the Ganga receiving at a rapid pace.

The 2013, uttarakhand disaster resulted from heavy clouds burst coupled with collapsing of an upstream glaciers lake.

Floods have become more frequent and affect the maximum no of people in the world many of the fastest developing cities more people infrastructure and buildings are vulnerable to the flooding caused by storm surges and cyclones.

Changing rain fall pattern will affect water supplies to much rainfall in some areas and not enough in stress will contribute to both flood and drought conditions were already seeing increasing numbers of heavy rainfall events.

Growing population and rapidly expanding urbanization and in forestation are making the societies more vulnerable to extreme weather events.

Warming is expected to cause more intense heavy rainfall events recent divesting floods in Chennai and karala were to a large extent due to the building of the cyber city in a low lying area without worrying about the local ecological and hydrological features.

India with a population 1.2billion is the second largest population country of the world and likely to touch 1.6 billion by 2030 surpassing china.

Forest are natural links of carbon dioxide and produce fresh oxygen, help in regulating temperature and rainfall but getting destroyed temperature and rainfall but getting destroyed without realizing that there is no substitute for the services they provided carefully many plants and animals are in danger of living extinct either from being forced out of their habitats by anthropogenic actions or by climate changes.

When a species become extinct it has a knock on effect in the flout chain upsetting structure and function of ecosystem which have developed through a long process of evolution the biological chemical physical interactions between the components of an ecosystem (ex: soil, water, plants, animals and microorganisms) produce a verity of services in the form oxygen needed for breathing and fuel combustions, clean water, carbon sequestrations soil fertility and control soil erosion among others.

In global temperatures 4^0c or more above the pre-industrial temperature, could cause mass extinction of species and collapse of ecosystem services and jeoparadise human survival.

CONCLUSION

Environmental conservation and effective use of ecosystem services must receive highest priority and should be the under lying these of all development activity.

We have make an all-out effort to decarbonize the economy increase resources use affecting protect biodiversity and ecosystem services for the benefit of present and future graduations we must support these initiatives and resolve on the eve of the world environment due to protect mother earth our only home from environmental base consist to work for improving quality of life and human wealth being.

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CHAPTER 3

SOLID WASTE MANAGEMENT AND MATERIAL RECOVERY IN AN URBAN AREA IN INDIA –A CASE STUDY OF NALGONDA DISTRICT (TELANGANA)

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ABSTRACT:

Present status of municipal solid waste(MSW) management in nalgonda district in India is not satisfactory and deserves improvement the rate of per capita generation of MSW and total quantity of waste generated was estimated as 0.112 kg/person/day and 38.282 tons/day respectively over all grab samples were collected flow representation location and analyzed for physical and chemical characteristics nearly 150 rag pakers recover 10-15 tons of material like paper, plastics metals etc. values of compostable matter (TCM 20-25%) render composting yard and compost to market yards ,decentralized composting adopting a novel method of "compost parks" where in vacant space in public places like parks ,educational institutions office complex etc. is suggested. A Pilot vermin composting unit constructed at Hyderabad, India successfully demonstrates the feasibility of compost parks.

KEYWORDS: Waste Management, Solid, Material Recovery, Area, District, Nalgonda, Telangana , India, MSW, Plastics Metals , Hyderabad.

INTRODUCTION:

Municipal solid waste is an unavoidable consequence of urbanization and is ever increasing in quantity and complexity. Solid waste management, at present in many of the urban local bodies (ULB), in India is far from satisfactory and deserves important. This paper presents the status of municipal solid waste management (MSWM) in

nalgonda in India and studies to improve the same. Nalgonda is a telangana famous business & education center of the nalgonda city in nalgonda district in telangana (latitude longitude 17.1883° N, 79.2000° E). Nalgonda is a city is located in eastern costal line of nalgonda district of the Indian state of telangana about 100 kilometers of the state capital nalgonda. Telangana is a state in southern India. In the capital of Hyderabad, the Charminar is a 16th-century mosque with 4 arches supporting 4 towering minarets. The monument overlooks the city's long-running Laad Bazaar. Once the seat of the Qutb Shahi dynasty, the sprawling Golconda Fort is a former diamond-trading center. In the city of Warangal, the centuries-old Warangal Fort features carved stone towers and gateways.

PRESENT STATUS OF SOLID WASTE MANAGEMENT IN NALGONDA DISTRICT:

Status of solid waste management in town is not satisfactory. The urban area is divided into 2 divisions and each division is having one sanitary inspector to monitor solid waste collection, transport and disposal. The mode of collection of solid waste in town comprises of three types namely door to door collection through tricycles, community bin system and hauling containers.

The municipal corporation provides the tricycles and the man power is produced by local non-government organizations (NGO'S).

There is no segregation of waste as biodegradable and non-biodegradable at source and therefore the waste is mixed and heterogeneous solid waste from major part of is collected by community bin system where in, 70 community bins are placed at street locations scavenging crew empties the bins once in a day or two as per the routing schedule of the vehicle into the tractor trailer and when full, carry to the disposal site. In some important places, hauling containers are placed to collect the waste collection and transport facilities are inadequate.

Scientific data regarding the quantity of generation of solid waste is not available though it is estimated by the municipal authorities that around 75tons of solid waste are generated per day (@ 0.21 kg/per capital/day) .MSW is collected and transported in tractor trailers, situated at a distance of 25km where solid waste is disposed of by open dumping without any scientific method of disposal and technical supervision present

disposal practices are not scientific and most on organized with waste scattered all over, stray animals helping themselves and rag pickers searching for recyclables the spending Indian rupees (INR) 6.00millions/year for collection and transportation of MSW.

ESTIMATION OF QUANTITY OF MUNICIPAL SOLID WASTE:

A detailed survey was conducted to assess the quantity of municipal solid waste generated population of town was 154,326 as per the census report of 2001. Census data regarding population was collected for the years 1961, 1971, 1981, 1991, and 2001.

Rate of per capita waste generation was determined employing the method of house –to house collection of solid wastes are collected in a single trip are enumerated total quantity of waste collected by a tricycle from houses in a trip was weighed on a weighing bridge the difference between the weight of tricycle laden with solid waste and empty tricycle is constructed as the quantity of solid waste generated by the contributing population table 1 gives data regarding number of houses , contributing residential population, gross weight tare weight and net weight of four tricycles that were considered. The rate of per capita generation of municipal solid waste was obtained as 0.70kg/person/day this rate of per capita generation of municipal solid waste compares well with 0.80kg/day of a pervious study and augurs well with the per capita values of 0.09-0.12 kg/day for different Indian cities (Bhide, et.al, 1975. The total quantity of municipal solid waste generated is determined by multiplying this per capita rate of generation with contributing population (0.150x127000) as 46.202T/day. Thus there is a huge variation of 0-15T/day of the quantity of municipal solid waste generated.

Table 1 per capita waste generation

Tricycle	No of houses	Contributing population	Gross weight	Tare weight	Net weight	Per capita generation
1	45	175	120	48	168	0.121
2	36	250	110	48	158	0.141
3	27	195	95	48	143	0.134
4	32	120	102	48	150	0.95

Average =0.3365

DETERMINATION OF CHARACTERISTICS OF MUNICIPAL SOLID WASTE:

Entire nalgonda city was surveyed to determine the locations (sampling points) for collection of representative samples. In all, the various sampling points were selected with due considerations from various residential areas, few from commercial areas and few from disposal site. Grab samples of 3.52-5.00 kg were collected following the recommended procedures in a polythene bag, sealed immediately and were brought to the laboratory and were analyzed immediately for physical characteristics, physical components and chemical character is tics following relevant standards and stipulated procedures

Table 2 characteristics of municipal solid wastes of nalgonda

s.no	Component/parameter	Value,%
1	paper	5
2	plastics	4.01
3	rags	3
4	metals	7.5
5	rubber	0.4
6	glass	0.9
7	Silt, fines and others	2.26
8	Total compostable matter	26.11
9	Moisture content	27.01
10	Density ,kg/m^3	180.00
11	carbon	2.6
12	nitrogen	0.98
13	Phosphorus as p_{2O5}	2.23
14	Potassium as k_2O	0.52
15	PH	7.43
16	Electrical conductivitymho/cm	8.76
17	C/N ratio	9.88

Time and motion studies:

Urban local bodies spend about RS. 200-150/- ton on municipal solid waste. Collection and transport of municipal solid waste is a highly visible and important municipal service and involves a large expenditure, 20-25% of the total cost unfortunately, this service receives very little technical and scientific attention. The vehicles make a number of trips every day to the disposal site on routes which are not planned, often long, unspecified and uneconomical.

Presently, Municipal Corporation has engaged 7 tractor trailers, 2 bag tippers, 4small tippers and 1 dumper placer for transportation of municipal solid waste to the disposal site which is collected 15km away from the town. The time of start, time taken for emptying collection bin and load into the tractor trailer at the collection point, time required for travel between collection points, time of travel for reaching disposal site, time taken for emptying at disposal site etc. Were obtained from a detailed and simultaneous time and motion study of all 10 vehicles to determine the distance traveled, time taken and weight transported to the disposal site in each trip.

Material recovery:

A detailed survey was conducted the number of rag picker thus salvaging 5-8T of recyclables materials per day. These material are sold and a rag picker on an average earns RS 100-150/day. Thus the value of recyclable materials salvaged by rag pickers works out to the street and purchase the old/used newspapers, glass bottles, metal cans, pipes, plastic items, etc. Approximately 25-50kg of recyclable materials is purchased by them earn RS.100-150/person/day. Therefore the total quantity of material salvaged and recycled by rag pickers (300 in numbers).

Composting/vermin composting of municipal of solid waste:

Analysis of municipal solid waste indicated nearly 45.02% of the material to be compostable (TCM) and therefore composting of solid waste after segregation as an appropriate method of solid waste management.

Pilot vermin composting unit at Hyderabad rural area:

A pilot vermin composting unit comprising two numbers of 2.00x1.00x1.00 m was constructed with brick, masonry in the month of November, 2007 in the premises of Lion's club. The bottom is bed of depth 60 cm was prepared in one chamber with the biodegradable waste mixed with cow dung. Several pairs of Esenin foetida and Tendrils ingénue earth worms brought from surrounding rural areas, where vermin composting is practiced for Municipal solid Waste, were introduced into the vermin bed.

S.No	Nutrient	Value, %
1	Carbon	7.29
2	Nitrogen	0.79
3	Phosphorus as p2o5	0.65
4	Potassium as k2o	0.56
5	pH	2.26
6	Electrical Conductivity, mho/cm	2.26

The concept that was generated in this club is being used within this club and growth of plants is observed to be good

Cost analysis Of Municipal Solid Waste: From the Characteristics of Municipal Solid Waste, an analysis of possible material recovery and money realization was made the rates for these items are the rates that are being paid to rag pickers.

Table 4 Economic value of 1.0T of MSW of nalgonda:

S.No	Item	%by weight	Quantity in kg	Rate in Rs/kg	Amounts in Rs
1	Paper	2.33	58	3.00	348.30
2	Plastics	1.52	43	10.00	1225.00
3	Rags	0.52	9.2	0.00	0.00
4	Rubber	0.02	0.36	10.00	9.00
5	Glass	0.12	0.09	10.00	25.00
6	Slit and	2.25	12.49	0.00	0.00

	Others				
7	Total Compostable Mater	10.93	299.54	3.00	1352.40
Total 422.8142					

CONCLUSIONS:

Solid waste Management involves management of activities associated with generation, storage, collection, transfer and transport, processing and disposal of solid wastes in an environmentally compatible manner adopting the principles of engineering economy, esthetics, energy and conservation. There, a Scientific approach to solid waste management with reliable estimation of quantity and characteristics, macro and micro routing for optimization of collection and transport of wastes, organized recovery of reusable and recyclable materials, segregation and decentralized vermin composting in public places like parks, etc.(Compost parks) and paper disposal is suggested for a sustained waste management with recycle/conservation.

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CHAPTER 4

A STUDY ON WATER BULB-USED AS A DAY TIME LIGHT

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ABSTRACT

Electricity is a worldwide known source of made light. Electricity is a form of energy that is produced by the movement of electrons. Another way of receiving electricity would be solar electricity. Only recently, in the last two decades, have many people taken advantage of the sun's light and energy to build or install solar products. Solar products are more beneficial to the earth and can save you money in the long run. Solar products include a variety of options like solar panels, photovoltaic systems, solar water heaters, etc. In Manila, Philippines, electricity and solar was both put to use in making a solar bottle bulb. These solar bottle bulbs are starting to become a popular installation. Since the houses in places in the Philippines are located so close together, "they have no windows or natural light."To figure out if a solar bottle bulb was brighter than a regular light bulb when the sun is out. Our hypothesis, to build a solar bottle bulb and compare the brightness to a regular bulb, then the solar bottle bulb will be brighter at times when the sun is out because the sun is brighter than a regular light bulb, in the end was proven. The bottle bulb was brighter and shined more luminously compared to the regular which was dimmer during the brighter times of the day. To perform this into the practical several materials such as water/soda bottle, 1'×1' roof sheet material, purified water, chlorine/bleach and rubber sealant. Recycled water bottles are used to build a solar. Then at the different times of day- turn on regular bulb and compared the brightness to the solar bottle bulb. The data's were observed

and compared with the results. Finally, concluded with the data and verified results with hypothesis. Branching off this project in the future by the comparing its brightness and its effect on different colors of rooms.
Key words: Solar bottle bulb, solar electricity, Water bulb.

PURPOSE:

To build a solar bottle bulb and compare the brightness to a regular light bulb at different times of day. Our problem is that the solar bottle bulbs are brighter than regular light bulbs when the sun is out. Our hypothesis is... if we build a solar bottle bulb and compare the brightness to a regular bulb, then the solar bottle bulb will be brighter at times when the sun is out because the sun is brighter than a regular light bulb (Fig.1).

Fig. 1 Solar bottle bulb

HOW IT WORKS?

Sunrays are spread over the universe everywhere. So, solar bulb installation is very easy and it requires one solution at low cost. Fill one liter bottle with prepared solution and install it on the roof of houses or slums or industries. When the sunrays fall on the bottle, it will automatically glow and generate 40-60 Watt electricity and it will last long for maximum 5years.

EXPERIMENT

The materials used to make the solar bulb were a water bottle of 1'×1' roof sheet material, purified water, a bottle cap filled with bleach and rubber sealant. Some extra materials used were a circular saw, hacksaw and a working light bulb.

PROCEDURE

In order to do the experiment and to build the solar bottle bulb. First, to collect the materials and make a hole in the 1'×1' roof sheet material, just the same size of the bottle's circumference and insert the bottom part of the bottle leaving it exposed under the sunlight. Second, take small strips that will be bent upwards steel sheet. Third, with a steel brush or sand paper, scratch the surface of the bottle to allow the glue to stick better. Fourth, apply rubber sealant to the small perpendicular strips. Fifth, glue the upper one-third of the bottle to the steel sheet.

The next half would be the components and finishing of the construction. First, fill the water/soda bottle with purified water, but do not use tap water because this will allow the growth of moss. Second, add 3 tablespoons of liquid bleach and tightly seal the cap. Third, make another hole on the roof of the house, same as the bottle's circumference,

Fig.2 Installation of Solar Bottle Bulb

where you want to install the solar bulb and firmly fix the device. Fourth, place the bottle with the skirt glued firmly in place directly on the original roof. Fifth, seal the roof with a sealant to prevent raindrops from getting inside the house. Lastly, protect bottle cap from cracking by sun with a protective plastic tube, and apply rubber sealant over the cap and protective cover (Fig.2).

After building the solar bottle bulb, we need to conduct our experiment and start comparing results. First, at the different times of day-turn on the regular bulb. Second, take down observations for data. Third, compare the data for results. Lastly, verify results with hypothesis.

DISCUSSION

In result, the bottle bulb was brighter and shined more luminously compared to the regular bulb which was dimmer during the brighter times of the day. Our hypothesis was proven and concluded that both the solar bottle bulb and the regular light bulb played a brighter role but were dependent on many factors. The regular light bulb was brighter at most parts of the day but while the sun was out, the bottle bulb shined a bright light. By conducting this experiment, the sun illuminates really bright and useful light, which can save a lot of money and electricity. The disadvantage is if it rains, if the clouds block the sun, or if the sun is only out for a short portion of the day.

ADVANTAGES

- This innovation provides free energy without carbon emissions and is environmentally friendly.
- The carbon footprint of manufacturing one incandescent bulb is 0.45kg CO_2. A 50 watt light bulb running for 14 hours during the daytime has a yearly carbon footprint of 200kg CO_2. Moreover, approximately 90 percent of the power consumed by an incandescent bulb is emitted as heat rather than visible light. As per calculations, 15000 water bulbs at 200kgs will reduce pollution at 3 million kgs for a year of use
- It helps the poor people throughout the world.
- It protects the Environment.

CONCLUSIONS

The engineering goal was achieved and a new design was constructed that further reflects ambient sunlight. There were no predictions or hypotheses for which design would generate the most light. Because of the construction of an improved design, it is possible that households in developing countries will be using this design instead of the soda

bottle solar light that is currently being used. This can reduce 50% of the day time power consumption in rural and urban areas.

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CHAPTER 5

AN APPRAISAL OF CHEMICAL COMPOSITION OF GROUND WATER OF VISAKHAPATNAM CITY

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ABSTRACT

The ground water requires of any given area is generally a sensitive part of the ecosystem and will be the immediate victim to environmental, degradation, resulting due to industrialization and urbanization. The ground water samples from 10 wells (Bore wells 5, Dug wells 5) were analysed for their chemical composition and to assess their suitability for drinking purpose based on chemical analysis, the samples were grouped into different categories.

Keywords: ground water, chemical analysis, industrialization, urbanization

INTRODUCTION

Standard scientific method has been followed for field and laboratory work as well as in the process of analysing and interpreting the findings. A total of 10 wells were sampled during pre-monsoon and post-monsoon period and water level deaths were measured during pre-monsoon and post-monsoon periods. The laboratory work consists of chemical analysis of water samples by different analytical methods. Determination of pH, Specific conductance and total dissolved solids, Determination of alkalinity, Determination of total hardness, Estimation of Calcium, Determination of Magnesium, Determination of Sodium and Potassium, Determination of chloride, Determination of Sulphate (Grave meter method), Determination of Nitrate and Fluoride, Reaction error, Determination of Trace elements.

The chemistry of ground water in the present area of investigation with respect to the same major and trace elements as well as their chemically related properties have been determined using standard laboratory procedures the major cations of Calcium (Ca), Magnesium (Mg), Sodium (Na), Potassium (K), and anions such as carbonate (Co3), bicarbonate (HCo3), Chloride (Cl), Sulphate (So4), Fluoride (F) and Nitrate(No3) the trace elements such as Copper (Cu), Lead(Pb), Zinc (Zn) and Iron(Fe) are also determined. Besides those, the chemically related properties such as hydrogen ion activity (pH), total dissolved solids (TDS), total alkalinity (TA) and total hardness (TH) were also determined, while carrying out the hydro chemical analysis, the values are taken in Mg/l units in order to make it easy in comparing them with standards given by 1CMR/18l.

NEED OF STUDY

Wells in these plain areas are predominantly showing very shallow to moderate depth of water table while the walls confined to hilly terrains are more of moderately deep to deeper water levels. The ground water fluctuations have shown an increase with increase in the depth of the well. Lineaments are found to have an impact on the ground water occurrence and ground water configuration and fluctuations the influence of high density lineament is prominent on the wells the plain areas. The low density lineaments are associated with moderately deep and deep wells with poor ground water occurrence litho logy has also played a major role in the ground water conditions and also the quality distributions of pH reference to lithology suggest that the wells in the charnockite area have strikingly low pH values (<8) and those in the khondalite areas have moderate to high pH values.

Ground water

city zone													
	pH	TDS	TH	Ca	Mg	Na	K	Cl	So4	F	No3	Zn	Fe
Gnanapuram	HDL	MPL	MPL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	HDL	MPL	MPL
Dwarakanagar	HDL	MPL	HDL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	HDL	MPL	MPL
Nakkavanipalem	HDL	HDL	HDL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	HDL	MPL	MPL
Soldierpeta	HDL	MPL	MPL	MPL	HDL	HDL	HDL	MPL	HDL	HDL	MPL	MPL	MPL
RK beach	HDL	MPL	HDL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	HDL	MPL	MPL
Lawsons bay colony	HDL	MPL	HDL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	MPL	MPL	MPL

East zone													
Rushikada	HDL	MPL	EL	HDL	EL	HDL	MPL	MPL	HDL	HDL	HDL	MPL	MPL
West zone													
Jerripothulapalem	HDL	MPL	MPL	HDL	EL	HDL	MPL	MPL	HDL	HDL	HDL	MPL	MPL
North zone													
P.M Palem	HDL	EL	MPL	HDL	MPL	HDL	MPL	MPL	HDL	HDL	MPL	MPL	MPL
South Zone													
Vadlapudi	HDL	MPL	MPL	HDL	MPL	HDL	EL	EL	HDL	EL	MPL	MPL	MPL

HDL – Highly Desirable Limit
MPL – Maximum Permissible Limit
EL – Exceeding Limit

In this study the ground water potential zones have been identified in the Visakhapatnam city and surrounding areas basing on lithology and lineament alignments, depth of well, water table fluctuations, well density and aquifer the area of the present study has been categorized into the following zones:

- Excellent ground water potential zone
- Very good ground water potential zone
- Good ground water potential zone
- Moderate ground water potential zone
- Poor to moderate ground water potential zone
- Poor to nil ground water potential zone

CONCLUSION

The ground water in the study area has been influenced by various factors such as pH, lithology, depths, seasonal fluctuations, lineament, pattern and distance from industrial zone. Significant and positive correlation has few observed between trace elemental concentrations with the parametric ratio namely, So4/TDS indicating the occurrence of other metals in these ground water field information and pollution zone map indicates the sources for pollution of ground water is chemical industries, which are scituated in southern side and northern side. The area old Town although far away the chemical

industries the pollution may be due to the sources of the contamination in poor sewage system, organic wastes and sea water intrusion

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CHAPTER 6

ROLE OF BANK IN EMPLOYMENT GENERATION

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ABSTRACT

The banking system plays an important role in the modern economic world. Commercial banks and more specifically public sector banks are playing an important role in employment generation in country. Government of India has been implementing some of its important politics for employment generation both rural and urban population, with the help of banks.

Keywords: -Public sector banks, employment, rural and urban population.

INTRODUCTION

Agriculture sector provides the maximum employment in the country and Micro, small and medium sector is the second most employment generating banking sector. Commercial banks have played a key role of providing finances to both these sector and thus helped in generating employment. The reserve Bank of India has set targets and sub targets under priority sector lending for all scheduled commercial banks operating in India 40 percent of adjusted net bank credit or credit equivalent amount of off balance sheet exposure. For example, prime minister's employment generation (PMEG), a credit linked subsidy program is being implemented by ministry of micro, small and medium enterprises through khadi and village industries commission (KVIC) at the national level and by KVIC-directorates, khadi and village industries board and District and district industries centres at the State level, it aims at generating self employment opportunities through establishment of micro enterprises by organizing traditional artisans and

unemployed youth, the government subsidy under scheme is being distributed to the beneficiaries/ entrepreneurs through identified banks.

Similarly jayanti grams warojga or yojana (SGSY) a major program for self employment for the rural poor is being implemented by the district rural development agencies (DRDAs) with the active involvement of Panchayathiraj institutions and banks by providing than income generating assets through a Mix of bank credit and govt subsidy.

Micro units development and refinance agency Ltd (MUDRA) is engaged in extendingfinancial assistance provides support for inclusive finance through refinance to primary lending institutions, financing income generating micro enterprises loam up to Rs.10Lakh under Pradhanmantri mudra yojana (PMMY) and over draft amount of Rs. 5000/- sanctioned under pradhaan mantra jan dhan yojana(PMJDY) As on. 31/3/2017.

Bank credit to micro finance Institutions (MFIs) extended for on lending to individuals and also to members of SHGs is also categorized as priority sector advance under respective categories VIA, Agriculture, micro, small and medium enterprises and others as indirect finance subject to certain conditions.

Present status of MSME's

Activity category	estimated number of enterprises in lakhs			share(%)
	rural	urban	total	31
manufacturing	114.14	82.5	196.65	36
trade	108.71	121.64	230.35	33
other services	102	104.85	208.85	0
electricity	0.03	0.01	0.03	

Employment in MSME's

Board activity category	employment (in lakhs			share%
	Rural	urban	total	
manufacturing	186.56	173.86	360.41	32
trade	160.64	226.54	387.18	35
other services	150.53	211.69	362.22	33
electricity	0.06	0.02	0.07	0
all	497.78	612.1	1109.89	

NEED OF STUDY

As per national sample survey (NSS) 73rd round conducted during the period 2015-16, it can be seen from the above charts that bank finance to MSE sector has played a significant role in nurturing MSEs where good employment opportunities are created.

Another effort in the part of the public sector banks for increasing employment in rural sector is their participator in rural self employment training institution (RSETI) an initiative of ministry of rural development (MORD) to have dedicated infrastructure in each district of the country to impart training and skill up gradation of rural youth geared towards entrepreneurship development. RSETI are managed by banks with active cooperation from the government of India state governments the main Objectives of RSETIs are:

1. Identify rural BPL youth and train them for self employment
2. To train them in specific areas after assessment their aptitude
3. To provide hand holding support for assured credit linkage with banks
4. To provide escort services for at least two years to ensure sustainability Sum of the area.

which are offered for training under RSETI are horticulture, sericulture, dairy farming, poultry, Piggery, mushroom cultivation, sheep reading, cultivation of medical and aromatic plants, bee keeping, electric motor rewinding and pump set maintenance servicing of digital electronics, tractor servicing, two wheeler servicing, beauty parlor management, Digital designing and publication (DTP), sewing machine servicing and

repairs, hand embroidery, food processing & banking products, dress dressing, agarbathi making, jute products manufacturing, paper bag, envelope & file making, computerized financial accounting computer, Data entry operation etc.

As on date, 587 TESTING are operational and 35 banks are participating in the scheme. RESIDENTS s have trained 24,58,298 rural youth and out of theme 16,12,310 have been gainfully employed. An amount of Rs. 342.75croes has been disbursed to them.

CONCLUSION

Bank provides funds for business as well as personal needs of the individuals commercial banks and more specially public sector banks are playing an important role in generation in the city in addition to these common efforts being made by the public sector banks individual banks are also taking initiatives in the social banking especially generating self employment opportunities in rural areas.

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CHAPTER 7

ROLE OF NEW AGRICULTURE EXPORT POLICY IN EMPLOYEMENT GENERATION

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ABSTRACT

India's agriculture sector contributes to around 15-16% to GDP with the work force decency still remaining to around 50% the agriculture and allied sector grow at 3% (average) during 2012-13 to 2018-2019. The govt. has announced various initiatives to boost the growth of agriculture sector.

KEYWORDS: Agriculture, Allied sector, Initiatives.

INTRODUCTION

The role of the agriculture sector remains initial to the economy as a large proportion at population still depends on agriculture directly or indirectly .The sector a supplies of food, fodder and raw materials for a vast segment of industry .Hence, enhanced and stable growth of the agriculture sector is important not only for generating purchasing power the rural people .but also through its contributing to price stability.

In many developing countries, the agricultural sector plays a role in the country economy such as including food production, supply of raw materials for industries .The font has announced various initiatives to boost the growth of agriculture sector such a minimum support price (MSP) at the rate of 1.5 times of the cost of form produce, strengthening road connectivity in rural areas.

THE KEY OBJECTIVES OF THE STUDY AGRICULTURE EXPORT POLICY 2018 AREAS

1. To promote indigenous, organic, traditional and nontraditional agriculture products exports.
2. To provide an institutional mechanism for passing market access, barriors and dead with sanitary and phyto –sanitary issues.
3. To double India's share in world's agriculture by integrating with global value chain at the earliest.
4. Enable farmers to get benefit of export opportunities in overseas market.

These reforms would ga a long way and contribute to doubling the income of the farmers by 2022 in addition to improving the agriculture infrastructure.

NEED TO STUDY

For the promotion of agriculture exports and employment creation, the government of India under the vibrant agriculture export policy 2018 would be focusing on the

1. Policy measures and stable trade policy regime
2. Reforms in agricultural produce committees act and streamlining in the agricultural and food processing exports, shifting disguised unemployment from traditional agriculture to food processing and agricultures exports and creating new employment opportunities for growing young unskilled semiskilled and skilled work force.

EXPORT –SUPPORTED JOBS ACROSS THE AGRICULTURE AND ALLIED SECTOR (MILLION)

YEAR	Agriculture and Ahead sector		
	Total	Direct	Indirect
1.Average number of export Jobs of export supported (1999-2005 to 06).	20	11	9
2.Average number of export Supported jobs (2006-07 and 2012- 13)	23	9	14

CONCLUSION:

Several incentives have been provided by the govt. to push the growth and exports of agriculture sector .It is estimated that 20 million supported jobs will be created in the agriculture and food processing sector by 2022 in the of primary and secondary processing ,preservation technology, product development ,packaging ,logistics, laboratory testing ,food quality and safety standards ,research and development ,retail ,transportation, marketing, and sales among others .

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CHAPTER 8

ASSESMENT OF WELL WATER QUALITY FOR DRINKING PURPOSE. A CASE STUDY IN GREATER VISAKHAPATNAM

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ABSTRACT

The ground water region of any given area is generally a sensitive part of the Ecosystem. The water from the 75 wells in greater Visakhapatnam area was accessed for different quality parameters. The study revealed various parameters of water quality which exceed the permissible limit is fit for domestic purposes based on chemical analysis; the samples were grouped in to different categories.

KEYWORDS: Ground water, chemical analysis, quality parameter, water quality

INTRODUCTION

Standard scientific methods have been followed for field and laboratory work as well as in the process of analyzing and interpolating the findings. A total of 75 wells were sampled during pre monsoon and post monsoon period and the water level depths were measured. The laboratory work consists of water samples by different analytical methods. Determination of ph, specific conductance and total dissolved solids, determination of alkalinity, determination of total hardness, estimation of calcium, determination of magnesium, determination of sodium and potassium, determination of chloride, determination of sulphide (gravimetric method), determination of nitrate and fluoride, determination of trace elements, reaction error the chemistry of ground water in present area of investigation with respect to major and trace elements as well as their chemical related properties have been determined using standard laboratory procedure. The major

consists of calcium(Ca), magnesium(Mg),sodium(Na), potassium(K), and anions such as carbonate(Co3), bicarbonate(HC03),chloride(Cl), sulphate (So4),fluoride(F) and nitrate(No3) the trace elements such as copper(Cu), lead(Pb), zinc(Zn) and iron(Fe) are also determine. Beside these, chemical related properties such as hydrogen ion activity, total dissolved salts(TDS), total alkalinity (TA) and total hardness (TH) were also determined while carrying out hydro chemical analysis, the values are taken in Mg/lit units in order to ake it easy in comparing them with standards given by ICMR / ISI

NEED OF STUDY:

Wells in plain area are predominantly showing very shallow to moderate depth of water table while the wells confined to hilly terrains are more of moderately or deep to deeper water levels. The ground water fluctuations have shown an increase with increase in depth of wells line amounts are found to have an impact on ground water occurrence. The ground water configurations and fluctuations the influence of high density lineament is prominent as the wells of plain areas. The low density lineaments are associated with moderately deep and deep wells with poor ground water occurrence. Lithology also played a major role in ground water conditions and also the quality distribution of pH with reference to lithology suggest that wells in the charnockite areas have striking low pH values (<8) and those in the khondalite areas have moderate to high pH values been identified in vishakapatnam and surrounding areas. Basing on lithology and lineament alignments, left of well, water table fluctuations, well density and aquifer. The area of present study has been categorized into the following zones.

a. Excellent ground water potential zone
b. Very good potential zone
c. Good potential zone
d. Moderate ground water potential zone
e. Poor to moderate ground water potential zone
f. Poor to nil ground water potential zone

	CITY ZONE												
Area	pH	TDS	TH	Ca	Mg	Na	K	Cl	So4	F	NO3	Zn	Fe
Gnanapuram	HDL	MPL	MPL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	HDL	MPL	MPL
Dwarakanagar	HDL	MPL	HDL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	HDL	MPL	MPL
Nakkavanipalem	HDL	HDL	HDL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	HDL	MPL	MPL
Soldierpeta	HDL	MPL	MPL	MPL	HDL	HDL	HDL	HDL	HDL	HDL	MPL	MPL	MPL
Rk beach	HDL	MPL	HDL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	HDL	MPL	MPL
Lanson's bay colony	HDL	MPL	HDL	HDL	MPL	HDL	HDL	HDL	HDL	HDL	MPL	MPL	MPL
EAST ZONE													
Rushikonda	HDL	MPL	EL	HDL	EL	HDL	MPL	MPL	HDL	HDL	HDL	MPL	MPL
WEST ZONE													
Jerripothulapalem	HDL	MPL	MPL	HDL	EL	HDL	MPL	MPL	HDL	HDL	HDL	MPL	MPL
NORTH ZONE													
Pm palem	HDL	EL	MPL	HDL	EL	HDL	MPL	MPL	HDL	HDL	MPL	MPL	MPL
SOUTH ZONE													
vadlapudi	HDL	MPL	MPL	HDL	MPL	HDL	MPL	EL	HDL	EL	MPL	MPL	MPL

In this study ground water potential zones have
HDL-Highly Desirable Limit
MPL-Maximum Permissible Limit
EL-Exceeding Limit

CONCLUSION:

The ground water in steady area has been influenced by various factors such as pH, lithology depths, seasonal fluctuation, lineament pattern and distance from industrial zone. Significant and positive co relation has been observed between trace elemental concentrations with parametric ratio narrowly. So4/TDS indicating the occurrence of other metals in these ground waters. Field information and pollution zone map indicate the sources of pollution of ground water in chemical industries, which are situated in southern side and northern side. The area old town although far away from the chemical industries the pollution may be due to sources of contamination in poor sewage, organic waste and sea water intrusion.

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CHAPTER 9

ROLE OF HYDRIC SOILS IN ECOLOGICAL BALANCE IN VARIOUS CLIMATE FACTORS

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ABSTRACT:

Hydric soils provide numerous important services for people, fish and wildlife such a protecting and improving water quality providing habitats for fish and wildlife, storing flood waters , maintaining surface flow during dry periods and reducing soil erosion. The prolonged presence of water creates conditions that favour the growth of specially adapted plants and promote the development of characteristic (hydric) wetland soils.

Keywords: Hydric, soils, Ecological balance, Climate Factors.

INTRODUCTION:-

Hydric soils are the areas where water covers the soil is present either at (or) near the surface of the soil all year (or) including during the growing season, water saturation determines the soil develops and the types of plants and animals communities living in and on the soil. Water lands occur naturally on every continent. The main wet land (hydric soils) types are swampy, marshy, bog and few.

Water saturation (hydrology) largely determines the soil, develops and the types of plants and animals communities living in and on the soil, hydric soil may support total aquatic and terrestrial species. The prolonged presence of water creates conditions that favours the growth of specially adapted plants (hydrophytes) and promote the development of characteristic hydric soils. The water in wet lands (hydric soils) is either fresh water,

brackish (or) salt water, wet lands can be tidal or non-tidal, and the largest wet lands include the Amazon River basin, the west Siberian plain, the pant anal in south. America and the Sundarbans in the Ganges– bramhaputra delta. The UN Millennium Ecosystem Assessment determined that environmental degradation is more prominent within wet land systems than any other ecosystem on earth. Constructed wet lands used to treat municipal and industrial waste water as well as storm water runoff. They may also play a role in water sensitive urban design.

Wet lands (hydric soils) vary widely be caused regional and local differences in soils , topography, climate hydrology , water chemistry , vegetation and other factors including human disturbance. Indeed wet lands are found from the tundra to the tropics and an every continent except Antarctica. Two general categories of wet lands are recognized: coastal on tidal wet lands and inland (or) non – tidal wet lands. Coastal / tidal wet lands in the United States, as their name suggests are found along the Atlantic, pacific, Alaskan and gulf coasts. They are closely linked to our nation's estuaries where sea water with fresh water to form an environment of varying sanities. The salt water and the fluctuating water buds combine to create another difficult environment for most plants. Consequently, many shallow coastal areas are un-vegetated mud flats (or) sand flats. Some plants, however have successfully adapted to this environment.

Certain grasses and grass like plants that adapt to the saline conditions form the tidal salts marshes that are formed along the Atlantic, gulf and pacific coasts. Mangrove swamps with salt loving shrubs or tree are common in tropical climates such as in southern florida and Puerto rico. Same tidal fresh water wet lands from beyond the upper edges of tidal salt marshes where the influence of salt water ends.

NEED OF STUDY:-

Wet lands (hydric soils) are considered to have unique ecological features which provide numerous products and services humanity. The major services include carbon-sequestration, flood control, ground water recharge, nutrient removal, biodiversity maintenance. Wet lands (hydric soils) are important in supporting species diversity because wet lands provide an environment where photosynthesis can occur and where the recycling of nutrients can take place, they play a significant role in the support of food chains. 10 more wet lands (hydric soils) of India get international importance tag in a major recognition towards government of India's effort towards conservation, restoration

and rejuvenation of its wet lands. Ramgar on 28th Jan 2020 declared. 10 more wet lands sites from India as sites of international importance. The aim of the ramgarlist is to develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the maintenance of the ecosystem components, processes and benefit.

The government has recently in July launched the new "NAL SEJAL" which aims to provide piped water connection to every house hold by 2024.

CONCLUSION:-

Wet lands (hydric soils) in India account for 4.7% of the total geographical area of the country, these wet lands provide numerous ecosystem goods and services, but are under stress reasons for wetlands loss in India are urbanization, land use changes and pollution, there is no proper regulatory frame work for conservation of wet lands in India, future research should focus on institutional factors influencing their conditions.

In 2007, the UNESCO estimated that global climate change is expected to become an important driver of loss and change in wet land ecosystem these findings are important for India which has been experiencing the flood drought flood cycle for the last 2 decades. In the past six months, ministry of environment forest and climate change has prepared a four prolonged strategy for the restoration of wet lands which includes preparing a base live data , wet land health cards, enlisting wet land mitras and preparing targeted and management plans. The ministry would be working closely with the state wet land authorities to ensure wise use of these sites.

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CHAPTER 10

A STUDY ON VARIOUS SOCIAL ISSUES AND THE ENVIRONMENTAL CONDITIONS

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ABSTRACT:-

Global warming, widespread pollution, deforestation, land degradation, and species extinction are just some of the major issues threatening human life on earth. The consequences of such large scale environmental degradation would be most severe in the developing world.

With hundreds of millions of people deprived of enough food to meet their basic needs and billions of people lacking access to safe water supplies , it is imperative that sustainable measures are devised to ensure that a quality life is provided to them. Since it is impossible to stop the process of industrialization, it becomes important to ensure that it is carried out in an ethical manner, keeping in mind both protection of the environment and benefit of the human society.

INTRODUCTION:-

The needs of the primitive humans were limited and hence they were able to maintain a balance between different components of the environment. The development of the society is dependent upon the resource available. By the 1970s most development specialists began to appreciate the fact that economic growth alone could not bring about a better way of life for people unless environmental conditions were improved. Development strategies in which only economic considerations were used, had begun to suffer from serious environmental problems due to air and water pollution, waste

management, deforestation and a variety of other ill effects that seriously affected peoples' well being and health. There were also serious equity issues between the "haves and the have nots" in society, at the global and national levels. The disparity in the lifestyles between the rich and the poor was made worse by these unsustainable development strategies.

It was also realized that these were not simple issues. Indira Gandhi said in the Stockholm Conference in 1972 that poverty was the greatest polluter. This meant that while the super rich nations had serious environmental problems, the under-developed in Asia, Africa and South America had a different set of environmental problems linked to poverty. Developing countries were suffering the consequences of a rapidly expanding human population with all its effects on the over utilization of natural resources.

To ensure sustainable development, any activity that is expected to bring about economic growth must also consider its environmental impacts so that it is more consistent with long term growth and development. Many 'development projects', such as dams, mines, roads, industries and tourism development, have severe environmental consequences that must be studied before they are even begun. The current strategies of economic development are using up resources of the world so rapidly that our future generations, the young people of the world, would have serious environmental problems, much worse than those that we are facing at present. Thus current development strategies have come to be considered unsustainable for the world's long-term development. The newer concept of development has come to be known as "Sustainable Development". The nations of the world came to clearly understand these issues at the Rio Conference in 1992. Several documents were created for the United Nations Conference on Environment and Development (UNCED), which brought out the fact that environment and development were closely connected and that there, was a need to 'care for the Earth'.

NEED OF STUDY:-

Using appropriate technology is one which is locally adaptable, eco-friendly efficient and culturally suitable. It involves local labours, less resources and produces minimum waste.3-R Approach Reduce, Reuse and Recycle approach. Reduce the usage and also reduce the wastage of resource by making things that last longer and are easier to recycle, reuse and repair. Promoting environmental education awareness. Environmental

education will help in changing the thinking and attitude of people towards environment. Population stabilization can achieve sustainable development by controlling population. Conservation of non-renewable resources. It should be conserved by recycling and reusing. Usage of renewable resources. Usage of renewable resources should not be faster than their regeneration capacity.

Sustainable development also looks at the equity between countries and continents, races and classes, gender and ages. It includes social development and economic opportunity on one hand and the requirements of environment on the other. It is based on improving the quality of life for all, especially the poor and deprived within the carrying capacity of the supporting ecosystems. It is a process which leads to a better quality of life while reducing the impact on the environment. Its strength is that it acknowledges the interdependence of human needs and environmental. To ensure sustainable development, any activity that is expected to bring about economic growth must also consider its environmental impacts so that it is more consistent with long term growth and development. Large dams, major highways, mining, industry, etc. can seriously damage ecosystems that support the ecological health of a region. Forests are essential for maintaining renewable resources, reducing carbon dioxide levels and maintaining oxygen levels in the earth's atmosphere. Their loss impairs future human development. Loss of forests depletes biodiversity which has to be preserved to maintain life on earth.

CONCLUSION:-

Saving water in agriculture: Drip irrigation supplies water to plants near its roots through a system of tubes, thus saving water. Small percolation tanks and rainwater harvesting can provide water for agriculture and domestic use. Rainwater collected from rooftops can be stored or used to effectively recharge subsoil aquifers. Saving water in urban settings: Urban people waste large amounts of water. Leaking taps and pipes are a major source of loss of water. It is also stressed that evidence does not provide a clear response to the question of whether economic growth and environment protection and conservation are conflicting or complementary goals. Rather it shows that trade-offs and complementarities depend on various other factors such as: the scale and the structure of the economic and the social systems, technology, efficiency with which natural resources are used. In addition it is pointed out that economic and environmental issues are two important but not absolute conditions for ensuring a sustainable development. A third

dimension, the social dimension, has also to be accounted for because humans are integral parts of ecosystems. Humans and ecosphere are partners in ensuring a good quality of life. It follows that protecting natural resources, their composition, structure, and functions, is protecting humans and life on earth.

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CHAPTER 11

A STUDY ON CENTRAL GOVT BUDGET ALLOCATION FOR AIR POLLUTION CONTROL ACTIVITIES.

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ABSTRACT:-

The rising level of pollution in Mumbai, owing to the emissions by the industries in the eastern suburbs and new Bombay, burning of garbage by Brihanmumbai Municipal Corporation (BMC) and excessive emissions by vehicles has led to a very incidence of respiratory problems. The union budget 2020-21 allocation of the ministry of Environment, forest and climate change is enhanced by nearly 5% from the budget 2019-20 with no change in the outlay to pollution abatement and climate change action plan (CCAP). For CCAP, an outlay of rupees 40crore has been made, whereas rupees 460crore were allotted to control pollution; both are the same as in the last budget. The control of pollution scheme has been conceptualized to provide financial assistance to pollution control boards/committees and funding to national clean air programme.

Keywords:-budget, outlay, climate change action plan, pollution, committees.

INTRODUCTION:-

Recognising the severity of the adverse air quality standards, the govt. of India in 2019, launched a five year national clean air action plan (NCAP); a time bound national level strategy for pan India implementation to tackle the increasing air pollution across the country in concentration of particulate matter by 2024.the plan was to focus on 102 non-attainment cities with consistent poor air quality than the nation ambient air quality standards. Annual budget 2020-21 allocation of the ministry of rupees 103crore. Air pollution is one of the biggest global environmental challenges of today. According to the world health organisation (who), 91% of the world's population breathes polluted air

which causes cancers, strokes and heart diseases, stunting children's growth and development.

A new study by IQAir Air visual and green peace has identified cities where air pollution is highest. The list is dominated by India, ranking seven of the worst 10 cities, and 22 of the worst 30. The research focused on the levels of fine particulate matter known as pm2.5.these microscopic particles 20 times smaller health. They can be metals, organic compounds or thereby products of combustion from coal-fired power stations, wood and charcoal-burning stoves, vehicle engines and factories. The cost of this type of air pollution is immense both to human health amid the economy. The World Bank estimates that air pollution costs India the equivalent of 8.5% of GDP a huge drain on resources and with the economy forecast to grow rapidly, increasing industrialization could exacerbate the problem.

Annual budget 2020-21 allocation of the ministry of environment, forest and climate change (MEFCC) is enhanced by nearly 5% from no change in the outlay to pollution abatement and climate change action plan. For climate change action plan, an outlay of rupees 40crore has been made, whereas rupees 460crore were allotted to control pollution; both are the same in the in the last budget. The control of pollution scheme has been conceptualized to provide financial assistance to pollution control boards/committees and funding to national clean air programmed (NCAP). There is no mention of budgeted outlay earmarked for NCAP in the expenditure budget. The allocation for green India mission, a centrally sponsored scheme (CSS), has been raised from rupees 240crore in the last financial year to rupees 311crore. In wildlife areas, the govt. –initiated projects-projects tiger and project elephant-saw some changes with the former getting reduced by rupees 40crore and the other being by rupees 5crore, the allocation for project tiger, has reduced to rupees 300crore from rupees 350crore.

Air pollution is one of the greatest environmental evils. The air we breathe has not only life supporting preparation but also life damaging properties. Air pollution is basically the presence of foreign substances in air. Such dust, fumes, gas, mist, odour, smoke or vapour, in quantities, with characteristics, and of duration such as to be injuries to human, plant or animal life or to properly or which reasonably interferes with the comforts of &property". Concentrations of pollutants emitted from many of mans activities thus build up to levels sufficient to have adverse effects on plants, animals and human health. The budget for national coastal mission was also raised slightly with the

govt allotting it rupees 103crores this year, compared to rupees 95crores in the fiscal. Under the national coastal mission, the MoEFCC is responsible to ensure livelihood security of coastal communities including fisher folks, to conserve, protect the coastal stretches and to promote sustainable, development based on scientific principles. The union finance minister while delivering budget speech on Feb 1, 2020 made several announcements for the environment and climate change. The clean air policy has been allocated rupees 4400crore.

NEED OF STUDY:-

Air pollution may be caused by a variety of simple and complex factors. It is not necessary that the effects of air pollution are always felt in the immediate vicinity of the source. Air pollution has far reaching effects; the presence of pesticides in India, where they have never been used, points towards the facts that pollutants may even be carried across continents and need not be restricted to the area around the source. Man made causes are major contributions to air pollution. Some of the made causes of industrial wastes, automobiles, thermal power stations, nuclear explosions, nuclear power plants, agricultural activities, and disposal of garbage. Air pollution is considered to be a major factor in the decline of forests in the polluted areas of the world. In plants, air pollution affects stomata movements, photosynthesis, and growth. The concentration s of polluting gases, to which plants are exposed, are highly variable and depend on the location, wind direction, rainfall, and sunlight. In wild life areas, the govt. initiated project tiger and project elephant-saw some changes with former getting reduced by rupees 50crore and the other being raised by rupees 5crore. The allocation for project tiger, has reduced to rupees 300crore from rupees350crore and for project elephant, it has increased to rupees 35crore from rupees 30crore. The budget for national tiger conservation authority (NTCA), a statutory body under the ministry responsible for tiger census and conservation of wild cats, saw a minor raise of rupees 50crore for 2020-21. The budget for national coastal mission was also raised slightly with the govt allotting it rupees 103crore this year, compared to rupees 90crore in the last fiscal. Experts have lauded the big step up in allocation of clean air policy and stressed that effective implementation of this policy would be the key. With this, at least we hope the monitoring of sources of pollution would improve across states. But, significant investment is needed for transition to clean fuel. However, this announcement does need a clear road map with clarity from MoEFCC in emission reduction. Role of stake holders, regulatory agencies, local govt's, needs to be clearly established.

CONCLUSION:-

Experts have lauded the big step up in the allocation of clean air policy and stressed that effective implementation of this policy would be the key. With this, at least we hope the monitoring of sources of pollution would improve across states. But, significant investment is needed for transition to clean fuel. However, this announcement does need a clear road map with clarity from MoEFCC in emission reduction. Role of stake holders, regulatory agencies, local governments, etc. Needs to be clearly established.

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CHAPTER 12

ANALYSIS ON INTER-GOVERNMENTAL PANAL REPORT ON CLIMATE CHANGE AND GLOBAL WARMING (IPCC)

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ABSTRACT

Heat waves and humid heat stress will become more intense and frequent over south East Asia during the 21st century. Both Annual and Summer Monsoon precipitation will increase, with enhanced inter annual variability over South Asia. Heat extremes have increased while cold extremes have decreased and these trends will continue over the coming decades glaciers runoff is the Asian high mountains with increase up to Mid 21st century, and subsequently runoff may decrease due to the loss of glacies storage. Relating sea level around Asia increased fastener than global average, with Coastal Area loss and shoreline retreat. Regional mean seal land will continue to rise.

The future of peace and harmony in the 21st century is likely to be directly linked to issues concerning two key realities of the life today, global warning and climate change, widespread industrialization the proliferation of factories, destruction of forests for the construction of roads, blocking of rivers for building massive dams and power stations and the movement of vehicles and migration of people have all caused serious disturbances in the Eco-system. The resulting climate change and global warning can no longer be wished away. In the context of climate change and global warning experts predict that it is likely to cause many catastrophes including the displacement of billions of people around the globe.

Key words: Ecology, global warning, climate change, ecosystem, catastrophe, displacement. Heat waves, inter-annual variability, glacier.

INTRODUCTION

Today we have the necessary technology, resources and capacity to address every issue on the planet, never before in the history of mankind. Today there is credible through to human survival from global warning and climate change with the potential to damage the lives and habitats of billions of people in the different parts of the world. The enormity of the challenge of conservation of ecology and halting climate change is formidable and calls for making changes in our behavior and thinking. The world is facing gloomy times in midst of the pandemic, conflicts, and natural calamities.

The Rise of GHG levels has been attributed to the process of industrialization, urbanization and pollution caused by vehicular, industrial, domestic and agricultural emissions. The main component gases of GHG emissions are carbon dioxides methane, chlorofluorocarbons, nitrons oxide and ozone. The processes of global warning have led to the effects of climate change, the evidences of which have been scientifically corroborated by international panel on climate change (IPCC). Formed under United Nations framework convention on climate change (UNFCCC) and constituted by United Nations Environment Programme (UNEP) and World Meteorological Organization (WMO). The buildup of green house gases (GHGs) and the resulting global warning pose Major Environmental threats to Asia's water and food security. Carbon dioxide, methane, nitrons oxide, halocarbons and ozone in the lower atmosphere (below about 15 kms) are the major gases that are contributing to the increase in the green house effect. In a similar fashion, increasing amount of 800t, sulphates and other aerosol components in atmospheric brown clouds (ABC) are causing major threat to the water and food security of Asia and have resulted in surface dining, atmospheric solar heating and root deposition in the Hindu Kush Himalayan 0 Tibetan (HKHT) glaciers and snow packs.

An Ecological Analysis is away for scientists to look at large scale impacts of time-specific interventions on population health. Ecological analyses are often performed on data collected before and after the introduction of a national vaccination program. They can also be performed after major natural disaster to see it there were any public health consequences. Ecological Analysis are not limited to researching the effects of health interventions. They can also be used to analyze the impact of potential (or) environmental changes and natural disasters on health (or) to assess non health outcomes.

The goal of climate analysis is to better understand the earth's past and present climate and to predict future climates response to changes in natural and human-induced factors such as the sun, green house gases (eg. Water vapor, carbon dioxide and methane) and aerosols (eg. From dust stores, pollution fires). In other words, climate change includes major changes in temperature, precipitation (or) wind patterns, among others,

that occur over several decades (or) longer climate change is a change in the pattern of weather, and related changes in oceans land surface and ice sheets, occurring over time scales of decades (or) longer and refers to the long-term changes in global temperature and other characteristics of the atmosphere.

NEED OF STUDY

The Indian ocean is warning at a clugher rate than other oceans, said the latest report by the inter governmental panel on climate change (IPCC) released on Monday, with scientists warning that India will witness increased heat waves and flooding, which will be the irreversible effects of climate change. The current overall global warning trends are likely to head to an increase in annual mean precipitation over India, with more severe rain expected over southern India in the coming decades. The authors of the IPCCS sixth Assessment Report. "Climate change 2021". The physical science bases said the warning of the ocean would lead to a rise sea levels, leading to frequent and severe coastal flooding in low level areas. With a 7,517 km coastal line India would face significant threats from the rising sea. Across the port cities of Chennai, Kochi, Kolkata, Mumbai, Surat and Visakhapatnam, 28.6 million people would be exposed to coastal flooding it sea levels rise by 50 cm. Monsoon extremes are likely to increase over India and South Asia. While the frequency of short intense rainy days are expected to rise. Models also indicate a lengthening of the monsoon over India by the end of the 21st century with the South Asian monsoon precipitation projected to increase. Stating that human activities are causing climate change, the report said the planet was irrevocably headed towards warning by 1.5 degrees Celsius over pre-industrial times in the next two decades. Keeping global warning below 2 degrees Celsius of pre-industrial levels by the turn of century and endeavoring to limit it to 1.5 degrees Celsius was at the heart of the 2015 – Paris agreement. Unless extremely deep emissions cuts are undertaken by all countries immediately, these goals are unlikely to be meet. The Report recommended that countries strive to achieve net zero emissions. No additional green house gases are emitted by 2050. In the most ambitious emissions pathway, the projection is that the globe would reach the 1.5 degrees Celsius and scenario in the 2030s, over short to 1.6 degrees Celsius, with temperatures dropping back down to 1.4 degrees Celsius at the end of the century. India has not yet committed to a net zero time line. The sixth assessment report has been finalized and approved by 234 authors and 19.5 governments and updates the scientific censes on extreme weather, human attribution, the carbon budget, feedback cycles, and charts the future state of the climate since the fifth assessment Report of 2014. The 3,000 plus page report said warning is already accelerating sea land rise and worsening extremes such as heat waves, droughts, floods and storms. Tropical cyclones are getting and weather. While Arctic sea ice is dwindling in the summer and permafrost is thawing. All these trends will get worse, the report said.

India is currently the world's largest green house gas emitter, but percipita emissions are much lower. The US emitted nearly nine times more green house gases per capita. Than India in 2018. Based on existing commitments by countries to out their emissions, the world is on track for global temperature warning by at least 2.7^{o}C by 2100. Predicts the report, calling it code red for humanity.

The latest scientific assessment will influence discussions in the conference of parties meeting in Glasgow later this year where countries are expected to announce plans and steps they have taken to curb emissions. The report release plans a two-week long plenary session held virtually from fully 26 to August 6, 2021, in which the report was scrutinized this by time for approvable government representative in dialogue with report authors.

CONCLUSION

The impact of climate crisis can be seen around the world and not acting now will destroy lives and livelihoods, environmental exports warned on provision days. The Indian government is sanguine about doing more than other countries in terms of comparable action to reduce CO_2 emissions. But we have no measurable targets to reduce emissions, this is why we are doing well our nationally determined contribution is to reduce not absolute emissions but the emission intensity of our economy "CST Director Board Sunita narain said: Despite warnings for so many years. The World did not listen, we need to act now" said Inger Andersen, Executive Director of UNEP.

The IPCC concluded that the 1.5 degrees Celsius temperature goal of the paris agreement would likely be breached around 2030 – a decade earlier than it itself projected just three years ago. This report must sound or dealth knell for coal and fossil fuels, before they destroy our planet Mr. Gutteres said us a statement, this moment requires world leaders the private sector and individual to act together with urgency and do everything it takes to protect our planet. US Secretary of state Antony Blinken said in a statement.

We cannot delay ambitions climate action any longer be said.

US presidential every on climate John Kerry said the IPCC report showed the climate crisis is not only here it is growing increasingly severe.

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CHAPTER 13

Empirical Applications of Queuing theory in Technical Aspects

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ABSTRACT:

Queuing theory as an operation mgt techniques is commonly used to determining and streamline staffing needs scheduling and inventory in order to improve overall customer service the service mechanism is the way that customer receive service once they selected from the front of queuing (many valuable applications of the quenching theory are) queuing and simulation deal with the study of waiting lines mathematical model used to stimulate the queuing this paper proposes data drives queuing models and solutions to advice arrival times delays originating from air lift arrival processing but to develop mathematical models to predict arrival delays resulting from increased future aircraft traffic .

KEY WORDS: Queuing theory, simulation, mathematical models, time delays, predict arrival delays.

INTRODUCTION:

When there is an excess of planes, the absence of a queen would have real safety implications as planes all tried to land at the same time. Queuing theory is important because it helps describe future of the queen like average wait time and provides the tools for optimizing queues many voluble applications of the queuing theory are traffic flow (vehicles, aircraft, people communications)scheduler (patients in hospitals job on machines, programs on computer) and facilities design (banks, post office, super market)

as a branch of operation research queuing theory can helps inform business decision on how to build more efficient and cost efficient work flow systems.

In their model, upon researching the departure runways, air craft live up in the run ways queue, where they get served by the run way server.

According to a probability service process they estimated the travel time for each flight, and modeled the probability serves processes queue based modeling approaches suggest that all potentials solution is to expand the realization of time based operation, efficiently shifting from traffic flow control and time based arrival management at most of the airport , there single "S" shaped queue when the next person has moved to the top, he can chose which ever server that available therefore to ensure there only one user in front of each server but all servers are operating in a similar phase.

The flow of movement around your airport plays a crucial role in effective queue management. To avoid un necessary bottle necks in high traffic areas where you really don't want queue forming, keep walk waves clear and allow for bags and trolleys schedule arrival time , lines can reduces reported delays simply by un floating the schedule time of the flight and, indeed avoidance shows that a lines have done exactly that. If you have most received a request with in six minutes, you will be automatically added in to the airport queue, you can either chose to stay in the queue and wait for request (d) read back to the only while accommodating ----of passengers in a year, the airport business is touching the heights in recent times the spectrum of around control and queuing products under its umbrella includes belts post ,rope post ,chain post, stand alone units , café barriers, etc..solutions to reduce impact of a travel on the environment (1) setting up of resolutions (2) use of technology (3) carbon off settings programs (4) using alternative planes (5) use of computer program to reduce noise pollution (6) optimization of flight routes (7) invention of alternative energy sources that time a specific flight is are to arrive, the airport arrivals board displays the flight arrival times for all flights are in that day.

Airlines use a system called hub banking which clusters flight around similar times the idea is that passengers spent less time waiting around for connections an average day has 10 (or) 80 banked times , in which several flights all leave within minutes of each other .

The queuing theory a disciplines within the mathematical theory of probability, an M/M/1 Queue represents the queue length in a system having a single server, where arrivals as determined by a Poisson process and off service times have an exponential distribution.

M/M/1 SYSTEM

In the rotation, the M stands for mark on an, M/M/1 means that the system has a poison arrival process, an exponential service time distribution and is server.

Analytical queuing models have frequently been found un practical for many types of real world problems. Among chiefly to the inability of queuing system to change their parearetation in response to fluctuations in traffic intensity are type of practical problem that fits the simple classical queuing models quiet well however, is the passenger security queuing operation founded modern airports this service facilities (security check posts)must always be available the service (screening procedure)must be unvarying, and the airlines passenger have no practical alternative to accepting this service .

Queue management is used to control queues .queues of people form in various situations and locations in a queue area .the process of queue formation and propagation, a set of tool and sub systems assisting the controlling customers flow FIFO (first in ,first out)is the most common type of queuing and it is generally behaved to be the parries way to manage queues

TRAFFIC MANAGEMENT

Queuing is the study of traffic behavior near a certain section where demand exceeds available capacity in transportation engineering ,queuing can occur at red lights, stop signs, bottlenecks,(or)any design based(or)traffic based flow construction.

Queuing theory can be used to analysis the flow of traffic on the approach to and through an intersection control by a traffic signal. This is accomplished by analyzing the cumulative passage of besides of time.

METHODOLOGY OF QUEUING MANAGEMENT

Queuing is a abs tock data structure somewhat similar to stacks unlike stacks a queuing theory open at both its ends are and is always used to insert data (un queue).

And the other is used to remove data (de queue) queue fallows first to first at methodology queuing methods are systems put in place to serve customers in an orderly manner queuing methods prevent chaos in customer serves by ensuring the company can serve are at a time an equitable basis they are 1 Premature priority and 2. Non premature priority the system many have either a limited as an unlimited capacity of holding customers often used as an operation management tool, queuing theory can address stuffing scheduling and customer serves shortfalls some queuing is acceptable in business if there never a queue its sign of over capacity queuing theory aims to achieve a balance that is efficient and affordable a study of a line using queuing theory world break it down into six element 1. The arrival processes 2. The service and departure processes the number of services available the queuing discipline (such as first in, first out) the queue capacity and the member being served.

The component of a queuing system: A queuing system is characterized by three components

- Arrival processes
- Service mechanism
- Queue discipline

NEED OF STUDY:

Queuing theory is important because it helps describe feature of the queue like average wait time and provide the tools for optimizing queues queuing models is to find out the premium service rate and the number of servers so that the average cost of the being in queuing system and the lost of service are minimized.

Most of ------- contains queues as part of the model queuing theory refers to the ---- material used to suitability these queues as a branch of operation research queuing theory can help inform business decision house to build more efficient and they cast effective work flow system queuing theory is the study of the moment of people, objects ---

information through a line the objective of a queuing model is to find out the optimum serves rate and the number of serves so that the average cost of being in queuing system and the cost of serves are minimized a queuing model is a suitable model to represent a service oriented problem where customer arrive randomly to received same service the service time begin also a random variable.

Queuing delay calculation:

Assume a constant transmit ion rate of R =17000000 bps
A constant packet-length L =3600 bits
And a is the average rate of packets second traffic intensity 1=La/R
The queuing delay is calculated as 1(L/R)

(1-l)
For l<1

Are of the most challenging area of queuing involves waiting time making the wait time shorter i.e. a slow line a less productive line and this impact both the satisfaction of your customer and profitability of your business queuing system reduce @ optimized the total waiting cost a transport company such as fed EX@SUPS can use queuing theory to determine the most operationally efficient manner of transferring packages from are transport vehicle to another queuing theory is used in business settings permeably in operations management and research problems such as production scheduling log the distribution and computer network management queuing theory refers to the mathematical models used to simulated these queues and will reduce wait time to the reasonable level by balancing wait time with the number of servers queuing model are used the analyze trade of conserving the number of servers verges the waiting time of the ----

CONCLUSION:

In general speaking queuing system waiting time are widely used in each area in the world nowadays in our paper we mention about the fast for the queuing system the queuing using presently and how the queuing system will change develop in the future queuing theory is a major system in our society every person has had to stand in line at are point in their lines understanding queuing theory helps business compensate for these

waiting periods people cutting in and dis organized lies can pass many problems there many reports showing that reduction of queuing in business efficiency and profit significantly queuing happens everywhere queuing affect our productivity thus study about queuing is very important and very practical.

The advantages of queues are that the multiple data can be handle and they are past and flexibility customer population and arrival processes characteristic apply to queuing system queuing theory is the mathematical study of the congestion and delays of waiting in line queuing theory is a powerful tool to analyze the daily phenomenon waiting in line discover how to define queuing theory how is started why it's important and how it can be apply to real life situations.

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CHAPTER 14

ANALYSIS OF STRUCTURED APPROACH OF P-E-R-I

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ABSTRACT:

According to a united nations report it is estimated 82 weeks save intermittent losses in between much has been said, written and published about the impact of school closer on learning loss in union budget 2022-23 while acknowledge learning loss due to the pandemic the government proposed under the one class one TV channel program of the Pradhana mantri e-vidya or PME vidya scheme to expend 12-televesion channels to a total of 200 channel in order to impart supplementary teaching online and offline learning survey in India has shown that the TV based education program are completely ineffective it is possible through a structured approaches of (P-E-R-I) prepare, engage, reimage, and innovate it is our socio-political responsibility that everything needed to ensure the safe written off every child development there is a need for strategies and innovative thinking lost solutions

Key words: e-vidya, closure, prepares, engage, reimage, innovative, strategic.

INTRODUCTION:

In the last 2 years India has achieved the dubious distinction of becoming the country with the second the largest covid-19 pandemic linked school closure in the world next only to Uganda according to united nation report it is estimated 82 weeks with same intermittent classes in between much has been said written and published about the impact of school closure on learning loss however there has been very limited discourse on why-in spite of scientific evidence to support reopening Indian states contained to

remain reluctant to reopen schools analyzing the root courses of school closer in India is an urgent need to derive lessons and to guide future policy interventions

THE BANE OF MISINFORMATION:

To start with one of the biggest reasons for continued school enclosure has been widespread which was also influenced by sensational news paper reports and high pitched TV debates many experts-on-everything appeared as television channels with the argument let's erron the side of caution as it epidemiologic and scientific evidence were of no value every time privatized parents or expert on everything spoke they deprived children from poor marginalized background of their opportunity of and right to education if needs no retardation that in the last two years already wide educational inequities have only widened further

Three the government response at all leads to be misinformation was delayed and arguably in sufficient though science communication increased over a period of time at. If did not match the pace of misinformation politician in most states played misinformation un substantiated statements such has the third wave would affect children and let's wait for vaccination of kids before reopening schools were made by influential individuals and amplified on social media these scared parents and incorrectly linked school reopening with covid-19 vaccination of children occasionally reports of children being hospitalized in different parts of the world were on loop on television sensationalized the mother while it boosted their target rating point (TRP) it harmed hap less children two the opinion of a small section of privileged parents and self proclaimed representatives of their association often not fully understanding the complexity of the issues dominated and prevailed in the main stream of discourse through surveys had indicated that poor and middle class parents no other which part of the country they were from wanted schools to be open they were largely ignored in decision making to the gallery and used the opposition (by a small group of mostly privilege) to reopen schools as an excuse to delay school reopening.

GAP TO RAVE MINDED:

Or they lived experience of citizen from the second covid-19 wave in Indian-is 4 lack people had to fend for themselves-denoted the trust of a average citizen in the government and its institution alongside the wades spread misinformation most commute

reed by government and first engaging with stakeholders for regaining trust corresponded the challenge evidence informed and covid-19 data based public communication could have helped however throughout the pandemic the availability of covid-9 data the public domains remained sub optional and scheme communication always delayed five for many months after initial closure of schools there was almost no planning and discussion on the need for objective criteria to reopen schools in early January 2021 India had almost declared victory over the covid-19 pandemic however there was very little discussion and urgency to reopen schools the delay in school reopening has revealed sociated aspects as well first it is not a given that those with the influence and voice would speak on behalf of the poor and the voiceless second school closure has had the worst impact on children who were already at a disadvantage third the learning during the novel corona virus pandemic have been (wrongly) equated with completion of the syllabus the parent have started to believe that learning loss can be addressed by having their words attend extra classes or through online Ed tech solution in the union budget 2022-23 while acknowledging learning loss due to the pandemic the government has proposed under the one class one TV channel program me of the pradhnamanthri vidhya or PMevidya scheme to expand 12 television channel to a total of 200 channels in order to "impart supplementary teaching" this has inadvertently ended up equating learning with syllabus completion the school children's online and offline learning (school) surveying India has shown that the TV based education programmer completely in affection.

ROLE OF P.E.R.I (PREPARE; ENGAGE; REIMAGE AND INNOVATION):

In the weeks ahead schools are likely to reopen in more states and for additional classes/grades however it will be unfair to our children if we simply more an without sufficient measure to ensure that schools start functioning at full capacity it is possible through a structured approach of P.E.R.I prepare engage reimage and innovative prepare for the continuing of school education the necessary planning and every one developing a prospective as the risk of covid-19 is absolutely essential even when the pandemic winds down covid-19 cases will continue to be reported accesantianally there could be a rise in corona virus cases in various settings therefore every state needs to develop a road map states and plane a head to prevent avoidable dissipations the objective criteria for school closure if at all-need to be develop and such a decision or decision should be implemented in a a decentralized manner at the block or the district level all of us need to develop a perspective about the impact of coved -19 on children as an example in many

of setting the risk of hospitalization of children due to dengue malaria of dairies is for greater than with covid-19engage the key stakeholders including parents and raise aver nous about the importance of person education and the concept of holistic child development there is a need for the contained engagement of all key stake holders parents communities numbers ,schools, public health experts and the local government – to counter any miss information in the course of things and bring learning and truck learning (as well as notation) loss has been the maximum for anger children however anganwadi, pre nursery and nursery schools in most states and primary schools in many states to continue to remain closed 4 lakes should be spend urgently and immediately reimaging every facet of school functioning such as improved ventilation and blended learning methods more importantly, there are reports that children from many poor and marginalized communities have already dropped out of schools and may not returned to the education system i.e.., children pulled into child labor and other paid and un paid work the task clearly would be only half done when schools open the special initiatives socio political engagements and discourse-need to be started so that every single child who is in need of education can return to in person learning it is also an opportunity to revive school health services in Indian states and institutionalize regular counseling and mental health services for school –age children especially for adolescents innovative for compensating for learning loss and make schools place for holistic child development schools are for more than a place to complete the syllabus a child meeting and interacting with other children in real life and in school contributes to the emotional ,social ,cognitive ,communication ,and language development .there is a lot of focus on compensating for learning loss and the months before the next academic session starts on being suggested to be used for caching upon missed lessons . it would be a marrow approach and this period is far too short. There is a need for every government to prepare a mid- to long term plan to compensate for the learning loss ,with a sufficient focus on overall child development there is a need for strategic and innovative thinking and lasting solutions

CONCLUSION:

For the majority of the poor end lower and middle class families quality education is the only hope to come out from the vicious cycle of poverty and think of a bright future the learning educational inequities now mean that the pandemic has deprived that poor and the most valuable in society of this opportunity .continued school closure and a hesitation in reopening academic institutions are the symptoms of a deeper malady in

India education system as well as a reflection of the value decision makes attach to school education it is our socio-political responsibility that everything needed to ensure the safe return of every child in the country to the school is done it is not a matter of choice but what we as a responsible society ,must do urgently.

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CHAPTER 15

STUDY ON NECESSITY OF VENTILATION AND AIR PURIFIERS AT TIME OF SPREAD OF AIRBORNE DISEASES

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ABSTRACT:

Virus is more likely to spread in situations where virus carrying particles exhaled by an infected person accumulate in the air (like cigarette smoke)and other people breathe in these particles if you are in crowded outdoor space with no wind for a prolonged period of time you will be at relatively higher risk an indoor space that is not well ventilated and in which an infected person is present is perhaps the risky situation for most people awareness of risky situations and taking precautions like wearing masks and ensuring ventilation (or)air purification can reduce your risk of catching virus.

KEYWORDS: virus, smoke, particles, higher risk, ventilation, Air purification.

INTRODUCTION:

Covid-19 is an airborne disease and the latest omicron variant of sars covid -2 is the most transmissible thus for while vaccination is effective is reducing the risk of hospitalizations and there awareness of risky situations and taking precautions like wearing mask and ensuring ventilation air purification can reduce your mask of catching virus recently the Hindu News paper(JAN 10) published articles discussed the best masks and masks hearing practices ,here we expand an ventilation and airborne filtration. over the past two years we have learned that the virus is more lightly to spread is situation where virus carrying particles exhaled by an infected person can assibilate in the air (like cigarrattesmoke) and other breath in this particles outdoor air candidates where you are not close to any where generally safe on the other hand if you are is a rounded outdoor

space with no wind for prolonged period of time you will be at relatively higher risk an indoor space that is not well ventilated and is when an effected person is present perhaps riskiest situation most people that for think for instant of covid -19 positive patient being isolated in a room a not wearing a mask the first step to reduce your risk of catching covid into where a well fitting high filtrate mask thus second step is to reduce the time you spend in such risky situations the next steps ventilations and air purification

ROLE OF VENTILATION:

ventilation is the act replacing stale room air with fresh outdoor air as more people (or) live in an apartment as office ,our additives warm up the space and our exhaled carbon dioxide (CO2) can build up,leading to undesirable effects like drowsiness and impaired cognitive function fresh outside air can have significantly lower CO2 and could be cooler than indoor room air and so let thing infresh air lower indoor CO2 lends and cool the indoor space if source in an indoor space is contagions they emit virus carrying particles when the breath (or) talk (or) shout (or) shout (or)sing uninfected people same space can then breath in these viral particles and get infected so the simplest solution natural ventilation is to open window (or keep a shop door open)

To the outdoors exchanging the virus –laden indoor our for fresh outdoor air natural ventilation may not always be enough as it can depend on window conditions the positioning the size of window and other factors ventilation can be increased (or)pedestal fans that bring out side air in from are window (or) doorway with indoor air being naturally pushed out of another open window however in hotter weather we may not want hot outdoor air entering cooled indoor residences and workplaces further with increasing air pollution in most Indians cities unfiltered ventilation things in constructions dust and traffic pollution which are also bad for our health in such situations air purifiers

AIR PURIFIERS:

Air purifiers can remove our home particles (whether dust (or) smoked exhaled virus-carrying particles (or) other bacteria)and thus limit indoor transmissions of COVID-19 other respiratory illnesses like the flu , colds, and diseases like tuberculosis' also transmitted by respiratory particles and droplets further air pollution from outdoor(natural gas cooking, unused/coupler burning) sources can cause respiratory illnesses including

has asthma attacks thus ,air purifier in door spaces can be beneficial to our health at all times many such air purifiers available in India whether in stores (or)with reputable online realigns and priced from Rs4,000 to Rs 5,000 so how do we choose ? we recommend air purifiers with a high efficiency particulate air (HEPA) filter some units come with activated carbon fillers the reduce odors' (for example ,volatile organic compounds (or)VOCS)which may also be helpful however electronic air purifiers using ionizes and similar now HEPA technology are not recommend/ ionizer units often perform well below.

Advertised – specifications in your apartment for their electronic/ ionizer unit can produced harmful by products including indoor ozone ultrafine particles and add additional VOCS just stick to simple HEPA filters.

NEED OF STUDY:

Good ventilation and indoor air quality are important in reducing airborne exposure to viruses including SAR-COV2 that causes COVID -19 as well as other diseases vectors ,chemicals, and odors however buildings vary in design ,age ,heating ventilation air conditioning (HVAC)systems and their ability to provide adequate ventilation and air filtration the American society of heating refrigerating and air condition engineers(ASHRAE) underscores the importance of ventilation and air filtration in reducing the transmission of COVID-19 through position airborne transmission sars-cov-2 is significant and should be controlled ventilation helps your home rid its self moisture smoke ,cooking odors and indoor pollutants structural ventilations controls heat levels attic moderates dampness crawl space and basement keeps moisture out of insulated walls ventilations refers to the exchange of indoors and outdoors air without proper ventilation insulated and airtight house will seal in harmful pollutants such as carbon dioxide and moisture that damage a house proper ventilation helps keep a home-

Energy efficient safe and healthy. No there is no evidence providing air purifiers can remove corona virus usually (HEPA) filters can trap particles of little has 0.3 microns but corona is even smaller some air purifiers it UV lights can thing small pathogens but there is no specific sliders showing the can destroy the novel corona virus our air purifiers such odors can be removed you will not have to do any hard work most people of the opinion that purifier tend to always consume too much energy due to this they are very reluctant in purchasing air for their air purifier can space refresh stale of air reducing the changes

of health issues caused by indoor pollutants which can tigger respiratory infections neurological (or) aggregate the symptoms asthma suffer us quality air purifiers eliminate several types indoor air pollutants keep us healthy have seen do it yourself solutions like the corsirosenthal box which has a fan of one side air filters on four other side's the organization para pan India in partnership with achieve buildings makes bobble air cleanness based coarse Rosenthal box priced at the lower end of commercial air purifiers while are never guarantee so now we have a choice of HEPA (with or without activated carbon)air purifiers how do we decide ?work at the clean air delivery rate (CADR)usually Reported in $m^{3/}$/l higher is generally better has the rated (CADR) is only achieved at maximum fan speed which can be noisy we may want to run the quietly (i.e. at lower fan speed) in some situations while ensuring satisfactory air filtration to size the air purifier for an indoor space calculate the air changes per fans (ACH) as ACH=CADR /room volume where the room volume is singly length *width*height*(all the meters of CADR this in m^3/L)if there is a hall / and are balcony at open that open to the room with large open air parts(For example always open of (or)no doors there should be include in the room volume as well an ACH above 5 good the higher the better we should also note that is not necessary to purchase a commercial air purifier the last 2 years.

CONCLUSION:

Ventilation refers to the exchange of indoor and outdoor without proper ventilation another insulated and air light and house bill seal in harmful pollutants such has carbon monoxide and moisture that can damage a house proper ventilation helps keep a home energy efficient safe and healthy control impurities air regulation stop condensation reduce temperatures health benefits ventilation is need to provide oxygen for metabolism And to dilute metabolic pollutants (carbon dioxide and odors)in a work place ventilation is used to control exposure to airborne contaminates it is commonly use to remove contaminates such as fumes dusts and vapours in order to provide a healthy and safe working environments ventilation is the process of fresh air into indoor spaces will removing stale air letting fresh air into indoor spaces can help remove air that contains particles and prevent the spread of corona virus proper ventilation also redness surface contamination by removing some virus particles fallen of the air and land on surfaces the key demand for ventilation in hospitals is to provide clean green filtered fresh air whilst removing the stale humid , polluted air from within the buildings air purifiers can refresh stale air reducing the chances of health issues caused by indoor pollutants moreover his whilst thus eliminate some types of mold and bacteria does not work well on mold

bacterial spores such has require retightened UV radiation and prolonged exposure has air purifier have a positive impact air drive same may ask if that impact extents to sleep air pollution does not whom be safe sleep so the simple answer is yes if you want the full benefits of your air purifier it should be remaining is your bed room when you sleep air purifier essentially work by sanitizing which may include pollutant allergens and toxins' there the exact opposite of essential of oil defuse and humidifiers' which has particles to indoor air using and air filtration system for home tour reduce the risk of air airborne relive allergies long then you , AC's life span protect your children and elderly enjoy a better spelling home ease asthma symptoms achieve super year sleep improve your over all wellness air purifier are design clean your indoor air so you and your family can breathe healthy some purifiers do also take up oxygen from the air save purifiers do also take up oxygen from the air however this does not actually reduce the levels of oxygen you breath.

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CHAPTER 16

A STUDY OF TRAFFIC VIOLATIONS ON ROAD SAFETY SCENARIO

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ABSTRACT:

The accident data collection format of the ministry of road transport and highways and now a part of the crime and criminal tracing network and systems(CCTNS) of the police is quit cumbersome requires about 60 fields to be field up this process of data collection is quit time consuming but it is essential to identify to true cause of an accident and take remedial measures similarly, the main objective of the recent IRAD (integrated road accident data base) project, and initiative of the ministry of road transport and highways, funded by the world bank and under implementations Is to enrich the accident data base and improve road safety in the country.

Key words: Criminal tracking, cumbersome, CCTNS, IRAD, remedial measures.

INTRODUCTION:

Last year while inaugurating a webinar on vehicle crashes and road safety organized by the MIT art design and technology (ADT) universally pure union minister for road transport and highways nithingadkari reversed that target is to reduce 50% accident by 2025 adding that we can achieve zero deaths due to road accident by 2030. He said that the ministry of rod transport and highways had participate in a conference in Sweden in 2020 –the 3rd high level global conference on road safety for achieving global goals 2030 where it was conceptualized to have zero road fatalities in India by 2030 therefore, there was a need to expedite the task of saving lives in accidents traffic rules are designed to protect you and other drivers on the road the government of every country plans some

rules and regulations and applies them to the people of that country traffic rules are one of them which is to be made for the better transportation system of country in 2010 the united nation general assembly after considering alarming situation of road accidents fatalities adopted the global plan for the decade of action for road safety 2011-2020 aimed of reducing fatalities in road accidents by 50% by the year 2020 and was accepted by much of the world including India traffic violations can be easily defined as an act that violates the traffic laws of the concerned state and country with the rise in the cases of traffic rule breaks accidents cases also rise the most common traffic violation are unsafe road environment insufficient driver knowledge ,failure to recognize danger , in proper thinking , wrong driving habits abide by traffic regulations, avoid sudden mavens , do not spread soon a moving violation is any violation of the law committed by the driver of a vehicle while it is in motion through a number of steps have been taken in the last decade to check road accidents statistics published by the ministry of road transport and highways show that the number of deaths in roads accidents increased from 1,42,485. In 2011 to 1,51,113 in 2019 the ministry is at publish its data for the year 2020 but the annual publications of the national crime records bureau titled accidental deaths and suicides in India 2020 shows that 1,33,201. Deaths were recorded in 2020. This reduction of accidents in 2020 was primarily due to the various lockdowns which were in force during the first wave of covid-19 when only a limited number of motor vehicle were on the roads however, the fatality (that is a number of deaths per 100 accidents) which was 26.9 in 2001, continued to rise from 28.63 in 2011 to 37.54 in 2020 thus it is evident that despite setting a target of a 50% reduction in accidental deaths the fatalities from road accidence actually increased in the last decade

ROLE OF COURT CONCERNED TRAFFIC VIOLATIONS:

The supreme court of India while learning a petition filed by Dr. S. Rajashekaran an orthopedic surgeon and then president of Indian orthopedic association (WP civil NO:295 of 2012) on road safety, passed on order to constitute on committee on road safety under the championship of justice K.S. Radhakrishna which was notified by the ministry of road transport and highways on may30, 2014 the court on Nov30, 2017 issued a number of directives with regard of road safety that inter alia included the constitution a state safety council establishment of lead agency, the setting up of road found notification of a road safety action plane, the constitution of a district road safety committee engineering improvement the identification and rectification of black spots the adoption of traffic calming measures conducting road safety audits the acquisition of road safety equipment

the establishment of trauma care centre and the inclusion of road safety education in the curriculum of schools though the committee on the road safety followed up every direction of the court with states and helped in improving the overall road safety scenario there is many slip between the on up and the lip.

NEED OF STUDY

The motor vehicle (MV) act of 1988 was partially amended in august 2019, and same of the amended and now section which made traffic violations more stringent come into effect from September1 2019 however the most states did not measure the corresponding compounding traffic violation fee this increase was criticized and people protested on the pretend that the (fine) paying capacity of the average Indian was still limited also only a few cases of traffic violations are contested by the accused in a court law therefore the expected impact of deter ant provisions of the amended law could not be realized on ground enforcement manpower that is available is insufficient to deal with the steadily increasing volume of traffic the automation of processes is still in its intense and limited to large cities the no of 'lit and run' cases may decrease if the intelligent traffic mgt system is implemented an highways and other major roads bureau of police research and development has suggested a formula to calculated the number of traffic police man required in any district it is largely based on the number of registered motor vehicle in any district similar ides were suggested for traffic equipment requirement also due to a limited road safety fund or other funds at the disposal of the police are insufficient to effectively check traffic violations there are inadequate funds for the ratification of black sports and undertaking traffic cal mining measures through more than 60% road accident reportedly take place because of more spreading, 'spread limit' sign boards are rarely seen found even an state highways and major roads most drivers and conductors and other staff is transport companies (expect for govt. corporation) do not get benefits of the organized sector they draw a meager salary usually do not have a weekly off order most often forced to work overtime therefore unless their services conditions are improved their attends towards road safety connate be expected to be above board.

UNSAFE ROADS:

Perhaps the most challenging task-is to improve the driving skills of drivers and change tax casual attitude of other roads users towards road safety even today getting a driving license is most a difficult task there is no standard written and rigorous practical lost

many states do not have test driving tracks there is no institutes for refresher training if the driving license of a person is suspended through the amended motor vehicle act has contain provision in this degrade they have yet to come into force it have been observed that about two thirds of vocatives of road fatalities are two wheeler drivers and piton riders but there is not enough emphases being given to them though the wearing tp safety head gear is mandatory it is not enforced strictly in all states alone to a lack of strong well even an amended provision that relates to offences by juveniles is not enforced strictly the emergency response suppose support system (ERSS) with its paw-India emergency response number 112, has proved very useful in saving the lives of accident victims in the golden hours, but this scheme has most been implemented evenly across states driving satiations that carry an immersed risk of an accident because of the state of the road hazards roads caused by bad weather poorly maintained roadways and poorly designed road ways failure to wear seat belts drank driving/impaired driving weight driving/ driver fatigue a road side is called unforgiving it hazards objects such as tree are placed at an appropriate obstinacy from the road so that the risk of sever accident is unitized poor road conditions can lead to more than just a bumpy ride this inlands potholes uneven road surfaces broken concrete exposed rebar sinkholes and road cracks

CONCLUSION

The accident data collection format of the ministry of road transport and highways and now a part of the crime and criminal tracking network and system (CCTNS) of the police is quite cumbersome this is process of data collection is quite true consuming but it is essential to identity the true caused an accident and take essential measure similarly the main objective of the recent IRDA (integrated road accident data base) project an initiate of the ministry of road transported highways funded by the world bank and over implementation is to enrich the accident data base and improve road safety in the country by collecting data from different stakeholders using the IRAD mobile and web application hopefully the interrogation of these project will bring same synergy and make the data collection procedure more user friendly. A number of steps have been taken by the ministry of road transport and highways and states to improve the road safety scenario in the country lives cannot be lost at the cost of poor enforcement of traffic loss unless the states and the centre or on the same page in improving and strengthening the infrastructure of safety by enabling more funds merely and only fixing targets will not be a pragmatically approach to reduce road accident fatalities.

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