Project Report

DEPARTMENT OF MATHEMATICS

A STUDY ON WATER POLLUTION IN VENCODE

Project submitted to
Centre for Environmental Education
Holy Cross College (Autonomous) Nagercoil
(Affiliated to ManonmaniumSundaranar University)
In partial fulfilment of the requirements for the
Award of the degree of

BACHELOR OF SCIENCE

BY

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CERTIFICATE

This is to certify that this project report entitled **"Water Pollution in Vencode",** submitted to the Department of Mathematics, Holy Cross College, affiliated to Manonmaniam Sundaranar University for the award of the degree of Bachelor in Mathematics in a record of bonafied work done by the following students during the academic year 2019-2020 under my guidance and supervision and it had not been submitted for the award of any degree, diploma, associate ship or fellowship of any other University or institution.

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Place : Nagercoil.
Date : 07.02.2020

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DECLARATION

We hereby declare that this project work entitled **"Water Pollution in Vencode"** submitted by us for the Degree of Bachelor of Science in Mathematics is the result of our original and independent research work carried out under the guidance of **Dr.V.M.Arul Flower Mary, M.Sc., M.Phil., Ph.D.,** Associate Professor , Department of Mathematics, Holy Cross College, Nagercoil and it has not been submitted elsewhere for the award of any other degree or diploma, associateship or fellowship of any University or Institution.

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ACKNOWLEDGEMENT

First and foremost we express our heartful thanks to **Almighty God**, our parents and relatives for giving us their blessings and moral support for the successful completion of our project work.

With real pleasure, we record our indebts to our academic guide **Dr.V.M.Arul Flower Mary, M.Sc., M.Phil., Ph.D.,** for her sincere guidance, encouragement and support.

We express our sincere gratitude and thanks to our principal **Dr.Sr.Anne Perpet Sophy** for providing the necessary facilities till the end of the project.

We thank our family and all the faculty of the department of Mathematics, for the support and encouragement in carrying out this project work.

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Water Pollution in

Vencode

(Vencode Channel, Konankulam,

Aalankulam and Vencode Beach)

Submitted to the CES,

Holy Cross College,

(Autonomous)

Nagercoil – 4.

CONTENTS

DEPARTMENT OF PHYSICS

ANALYSIS ON TYPES OF SOILS AND THEIR BENEFITS

Project submitted to the Centre for Environmental Education

Holy Cross College [Autonomous], Nagercoil

[Affiliated toManonmaniam Sundaranar University, Tirunelveli]

In partial fulfillment of the requirement for the award of the degree of

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We hereby declare that the project work entitled **"ANALYSIS ON TYPES OF SOILS AND THEIR BENEFITS"** is an original work done by us under the guidance of Dr.S.Sonia M.Sc., Ph.D, Department of physics, Holy Cross College (Autonomous), Nagercoil during the academic year 2019-2020.

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ACKNOWLEDGEMENT

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I acknowledge my heartful thanks to our beloved Head of the department **Dr. S. Mary Delphine M.Sc., M.Phil., Ph.D,** availed all the opportunities and the facilities in completion of the work, I also thank her timely help to complete our work.

I wish to express my profound gratitude with indeptness to our guide **Dr. S.Sonia M.Sc., Ph.D.,** for her valuable suggestion and constant help throughout my work. Without her words of encouragement and help, this work would not have been completed.

I thank all the staff members both **teaching and non-teaching** of our department of physics for their help in successful in completion of this work.

I sincerely thank **Dr. Sr. Johnsy M. Li.Sc., Ph.D,** our librarian for providing books for reference whenever needed.

I express my gratitude to my **loving parents and friends** for their constant prayers which helped me to complete this project work successfully.

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Nafla Nazeer
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S. Priyanka
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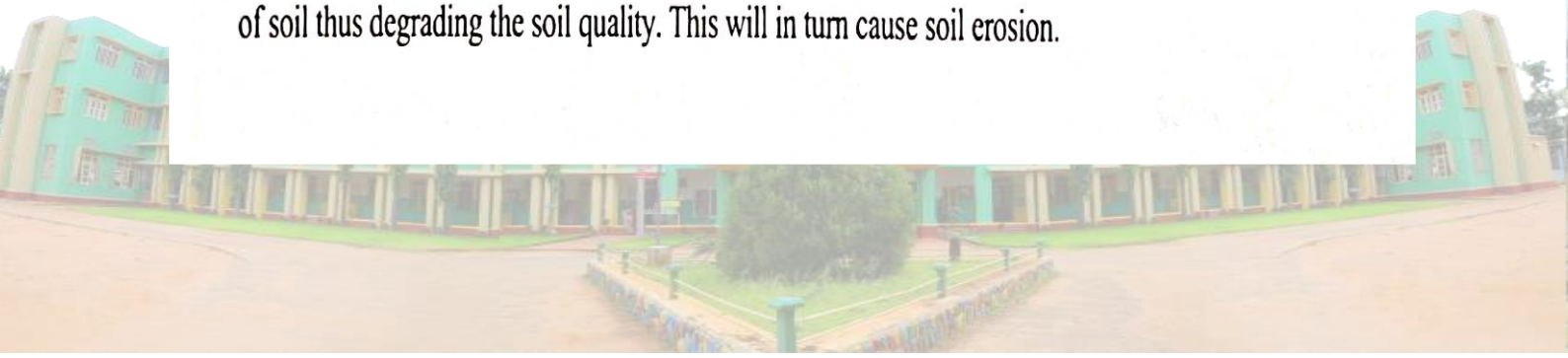
ABSTRACT

Soil is a mixture of organic matter, minerals, gases, liquids and organisms that together support life. There are many soil types exist in Indian Continent. Each soil type has specific characteristics and suitable to grow only certain type of crop. The depth of soil is not the same in all parts of the country. Soil may be only a few centimeters deep in some places while in others it may extend to as much as 30 metres. India has various types of soil ranging from the fertile alluvial of the Indo-Gangetic plains to the black and red soils of the Deccan plateau. Each type of soil benefits different types of crops through their unique physical, chemical and biological properties. Alluvial soil is a fertile soil rich in potassium. It is highly suitable for crops such as paddy, sugarcane and plantain. Red soil has high iron content and is fit for crops like red gram, Bengal gram, green gram, groundnut and castor seeds. Black soils are rich in calcium, potassium and magnesium but poor nitrogen content. Crops like cotton, tobacco chilly, oil seeds, jowar, ragi and maize grow well in it. Sandy soil is low in nutrient content but is useful for growing trees such as coconut, cashew ans cascarina in areas with high rainfall. The soil contamination can occur due to the presence of chemicals such as pesticides, herbicides, ammonia, petroleum hydrocarbons lead, nitrate, mercury, naphthalene, etc in an excess amount. The primary cause of soil pollution is a lack of awareness in general people. Thus, due to many different human activities such as overuse of pesticides the soil will lose its fertility. Moreover, the presence of excess chemicals will increase the alkalinity or acidity of soil thus degrading the soil quality. This will in turn cause soil erosion.



UTILIZATION OF SOLAR ENERGY FOR SOLAR COOKING AND WATER HEATING

Project submitted to the Centre for Environmental Education

Holy Cross College [Autonomous], Nagercoil

[Affiliated to Manonmaniam Sundaranar University, Tirunelveli]

In partial fulfillment of the requirement for the award of the degree of

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Signature of the guide

Date: 9/2/2023

DECLARATION

We hereby declare that the project work entitled **"UTILIZATION OF SOLAR ENERGY FOR SOLAR COOKING AND WATER HEATING "** is an original work done by us under the guidance of Dr.S.Sonia M.Sc., Ph.D, Department of physics, Holy Cross College (Autonomous), Nagercoil during the academic year 2019-2020.

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ACKNOWLEDGEMENT

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I acknowledge my heartful thanks to our beloved Head of the department **Dr. S. Mary Delphine M.Sc., M.Phil., Ph.D,** availed all the opportunities and the facilities in completion of the work, I also thank her timely help to complete our work.

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ABSTRACT

The solar energy generated from the sunlight is the non-vanishing renewable source of energy which is also eco friendly. Every hour enough sunlight reaches the Earth to meet the world's energy demand for a whole year. This generated solar energy has a variety of applications like industrial, commercial and residential. The solar energy can be easily generated from the sunlight and so it is very efficient and free from environmental pollution. The present report demonstrates that the use of solar energy in cooking and water heating applications and analyze the intensity effects of energy tapped by the solar cooker and water heater. In the point of generating electricity at a utility – scale, solar energy facilities necessitate large areas for collection of energy. Due to this, the facilities may interfere with existing land uses and can impact the use of areas such as wilderness or recreational management areas. Central tower systems require consuming water for cooling, which is a concern in arid settings, as an increase in water demand may strain available water resources as well as chemical spills from the facilities which may result in the contamination of groundwater or the ground surface.

STUDY ON SUPERHYDROPHOBIC SURFACES: NATURAL LEAVES

Project submitted to the Centre for Environmental Education

Holy Cross College [Autonomous], Nagercoil

[Affiliated toManonmaniam Sundaranar University, Tirunelveli]

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V. Abisha

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ABSTRACT

Mimicry of nature is the gateway to produce innovative materials and properties because nature has millennium of plants, insects and animals able to repel water as well as low surface tension liquids such as oils. Superhydrophobicity is an effect where roughness and hydrophobicity combine to generate unusually hydrophobic surfaces, causing water to bounce and roll off as if it were mercury and is used by plants and animals to repel water, stay clean and sometimes even to breathe underwater. The effect is also known as The Lotus Effect Superhydrophobic surfaces exhibit water contact angles higher than 150° and contact angle hysteresis lower than 10°.The most obvious example is the lotus leaf, but we may also consider insects able to walk on vertical surfaces or on the water surface. The present study proves that, ample of plant leaves such as drumstick tree leaves, Cassia fistula leaves, bottom surface of plantain tree and Scutch grass leaves imitate the superhydrophobic nature. The main reason for this phenomenon was the unique surface structure of the lotus leaf and also presence of a low surface energy material on the surface energy material on the surface of the leaf.

DEPARTMENT OF ZOOLOGY

COMPARATIVE STUDY OF POND POLLUTION AROUND NAGERCOIL TOWN IN KANYAKUMARI DISTRICT, TAMILNADU - INDIA

Project submitted to **the Centre for Environmental Education**, Holy Cross College (Autonomous), Nagercoil affiliated to Manonmaniam Sundaranar University, Tirunelveli in partial fulfilment of the degree of

BACHELOR OF SCIENCE

IN

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Department of Botany
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January 2020

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CERTIFICATE

This is to certify that this dissertation entitled "**Comparative study of pond pollution around Nagercoil town in Kanyakumari district, Tamilnadu - India**" submitted to "**The Centre for Environmental Education**", Holy Cross College (Autonomous), affiliated to Manonmaniam Sundaranar University, for the award of the degree of Bachelor in Botany, is a record of bonafide work done by the following students during the academic year 2019 – 2020 under my guidance and supervision and it has not been submitted for the award of any degree, diploma, associateship or fellowship of any University or Institution.

Dr. C. Anitha

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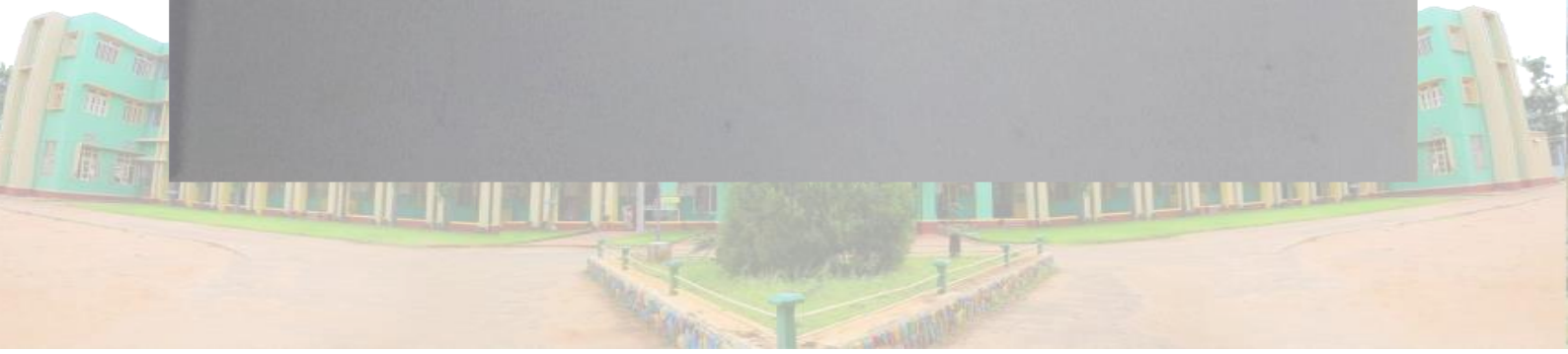
Date: 11-2-2020



DECLARATION

We hereby declare that the dissertation entitled "**Comparative study of pond pollution around Nagercoil town in Kanyakumari district, Tamilnadu - India**" submitted to "**The Centre for Environmental Education**", Holy Cross College (Autonomous), affiliated to Manonmaniam Sundaranar University, for the award of the degree of Bachelor in Botany is the record of our original and independent research work carried out under the guidance of **Dr. C. Anitha, M.Sc., B.Ed., M.Phil., Ph.D,** Asst. Professor, Department of Zoology, Holy Cross College, Nagercoil and it has not been submitted elsewhere for the award of any other degree or diploma, associateship or fellowship of any University or Institution.

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Place: Nagercoil

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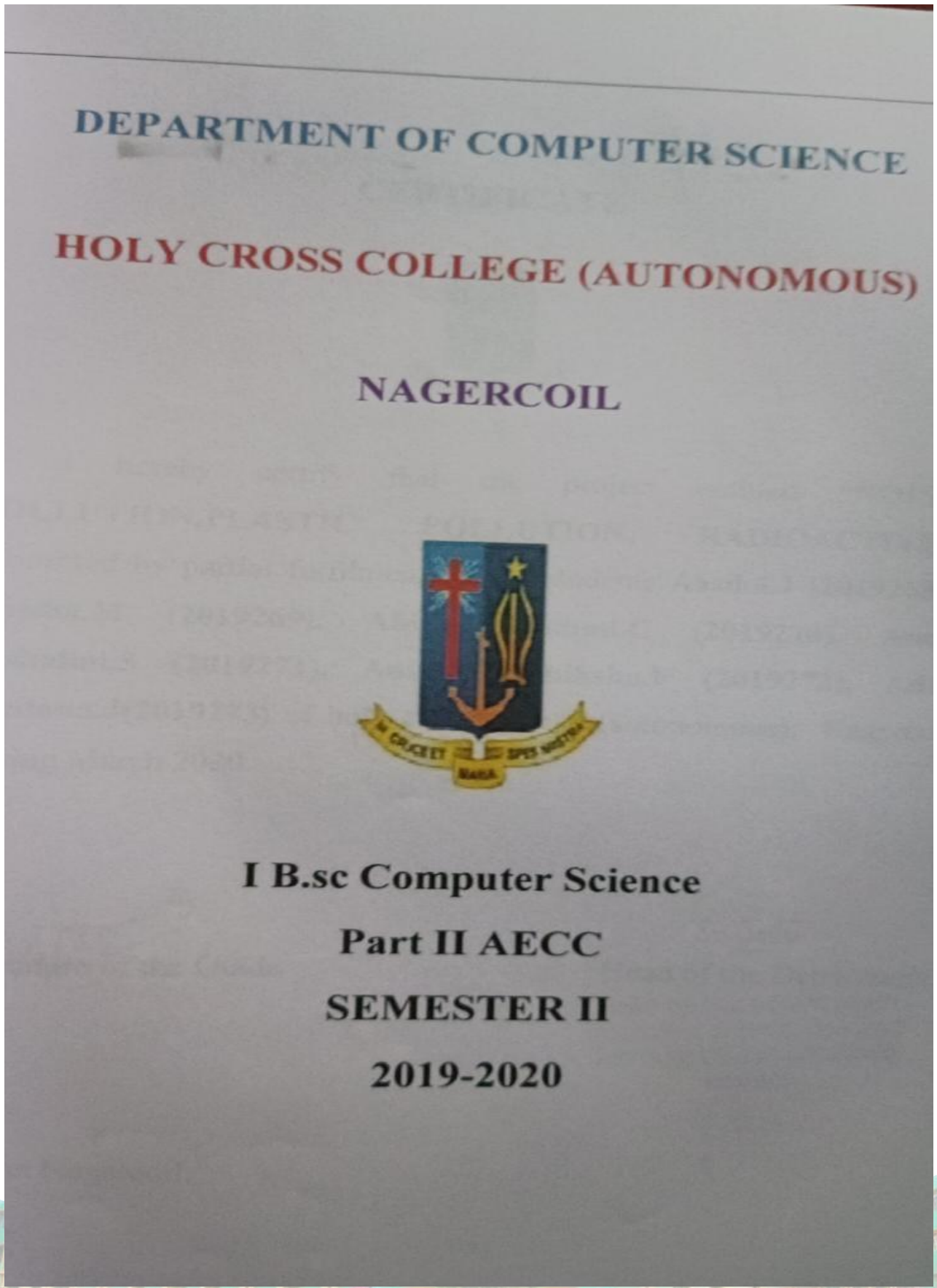
DEPARTMENT OF COMPUTER SCIENCE



CERTIFICATE

I hereby certify that the project entitled **"NOISE POLLUTION,PLASTIC POLLUTION, RADIOACTIVE"** submitted by partial fulfilment by the students **Aasika.J (2019268), Abisha.M (2019269), Abisha Reshmi.C (2019270), Ancy Nishalini.S (2019271), Anish Prathiksha.F (2019272), Anto Medona.J(2019273)** of holy cross college (autonomous), Nagercoil during March 2020.

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Place: Nagercoil.

Date:

BIODIVERSITY AND CONSERVATION

A dissertation submitted to

HOLY CROSS COLLEGE (AUTONOMOUS)

In partial fulfillment of the

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Submitted by

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ARUL AKSHANA.M	**(2019276)**
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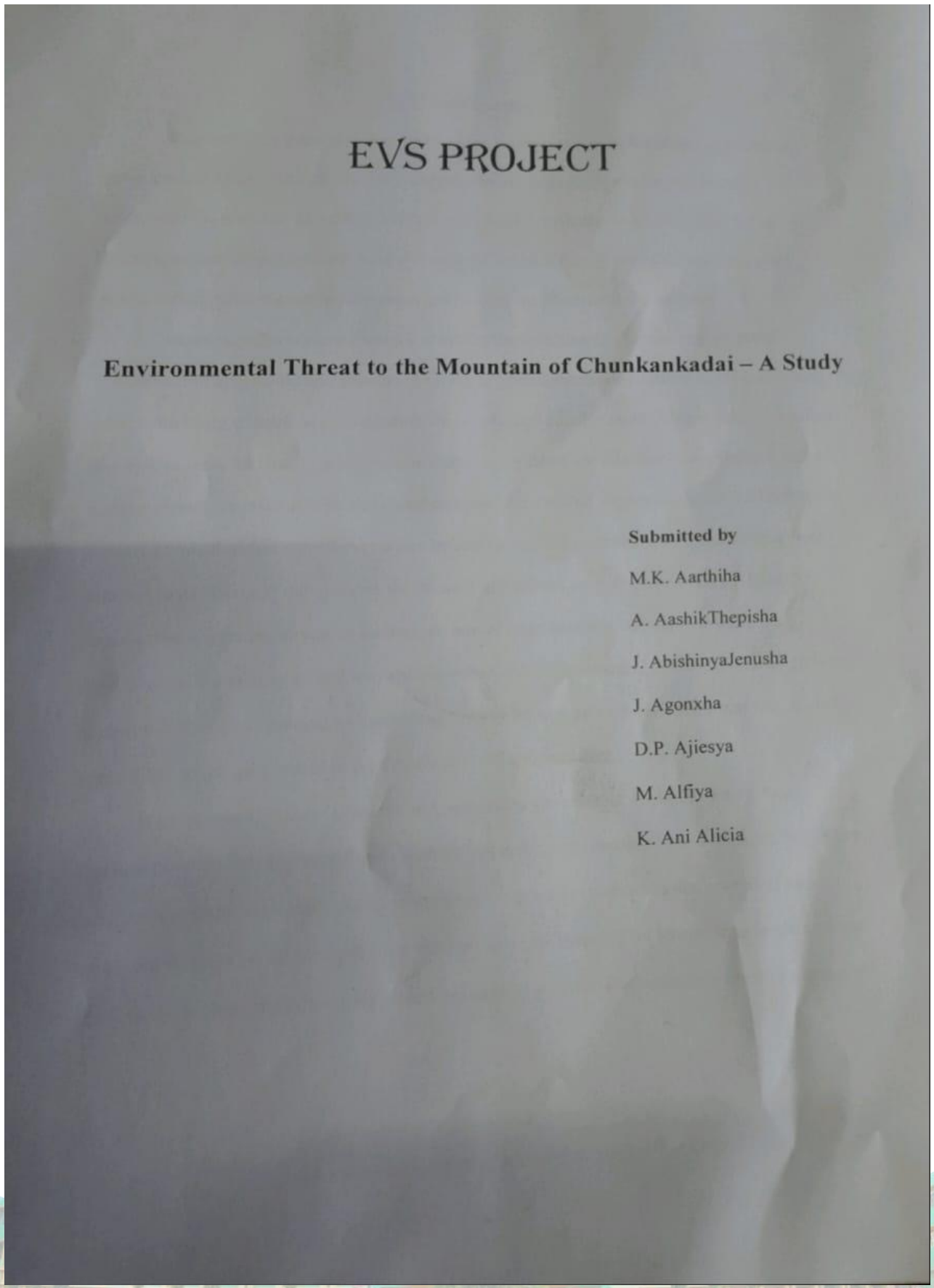
DEPARTMENT OF ENGLISH



EVS PROJECT

Environmental Threat to the Mountain of Chunkankadai – A Study

Submitted by

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Introduction

Mountains are important sources of water, energy, minerals, forest and agricultural products and areas of recreation. They are storehouses of biological diversity, home to endangered species and an essential part of the global ecosystem. From the Andes to the Himalayas, and from Southeast Asia to East and Central Africa, there is serious ecological deterioration. Most mountain areas are experiencing environmental degradation.

Mountains also represent unique areas for the detection of climatic change and the assessment of climate-related impacts. As a consequence, mountains exhibit high biodiversity, often with sharp transitions in vegetation sequences, and equally rapid changes from vegetation and soil to snow and ice. In addition, mountains ecosystems are often endemic, because many species remain isolated at high elevations compared to lowland vegetation communities that can occupy climatic niches spread over wider latitudinal belts. Certain mountain chains have been referred to as "islands" rising above the surrounding plains, such as those in East Africa. In socio-economic terms, mountain landscapes attract large numbers of people in search of opportunities for recreation and tourism. However, the environmental stress imposed by growing numbers of tourists is placing an increasingly heavy burden on mountain resources and, in many parts of the developing world in particular, on local communities.

With the rapid industrialization and population growth that the 20th century has witnessed worldwide, the natural environment has undergone unprecedented changes. While the causal mechanisms of environmental and climatic change are numerous and complex, two factors can be highlighted to explain the increasing stress imposed by human interference on the natural environment: economic growth and population growth. The economic level of a country

determines to a large extent its resource requirements, in particular energy, industrial commodities, agricultural products and fresh water supply.

Rising population levels, on the other hand, can weigh heavily upon the resources available per capita, particularly in less affluent countries. Bearing these two factors in mind, environmental deterioration in mountains can be driven by numerous factors that include deforestation, over-grazing by livestock and cultivation of marginal soils. Mountain ecosystems are susceptible to soil erosion, landslides and the rapid loss of habitat and genetic diversity. In many developing countries, in part because of the degradation of the natural environment, there is widespread unemployment, poverty, poor health and bad sanitation (Price et al., 2000). Such concerns have prompted a number of research and policy initiatives that have acknowledged and highlighted the importance of mountain environments in environmental, economic, and social terms. Perhaps the most notable action, at least in terms of policy, has been the proclamation, by the UN General Assembly in 1998 (UN, 1998), of the year 2002 as the "International Year of the Mountains".

Causes and Sources of Noise Pollution

Following are the causes and sources of noise pollution:

- **Industrialisation:** Industrialisation has led to an increase in noise pollution as the use of heavy machinery such as generators, mills, huge exhaust fans are used, resulting in the production of unwanted noise.
- **Vehicles:** Increased number of vehicles on the roads are the second reason for noise pollution.
- **Events:** Weddings, public gatherings involve loudspeakers to play music resulting in the production of unwanted noise in the neighbourhood.
- **Construction sites:** Mining, construction of buildings, etc add to the noise pollution.

Noise Pollution Examples

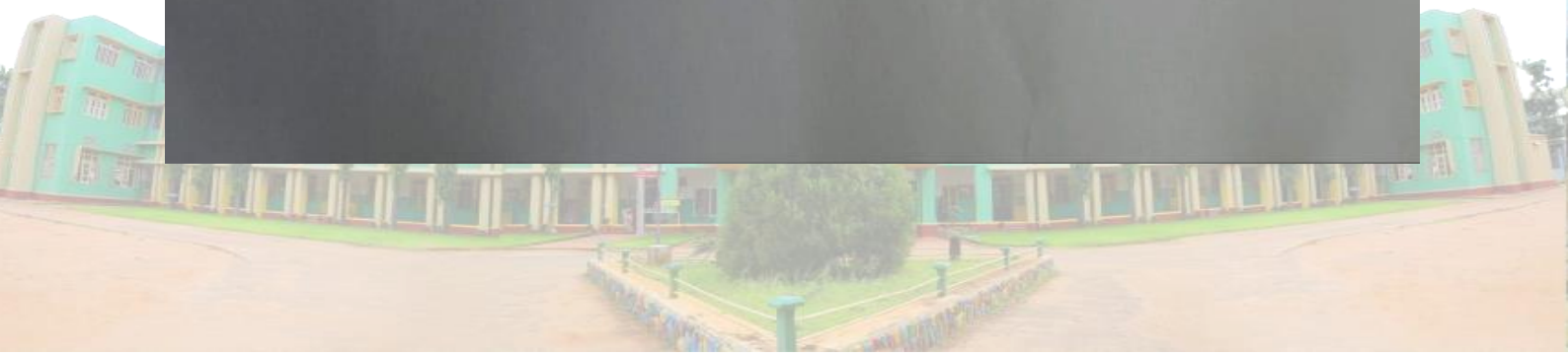
Following are the examples of noise pollution:

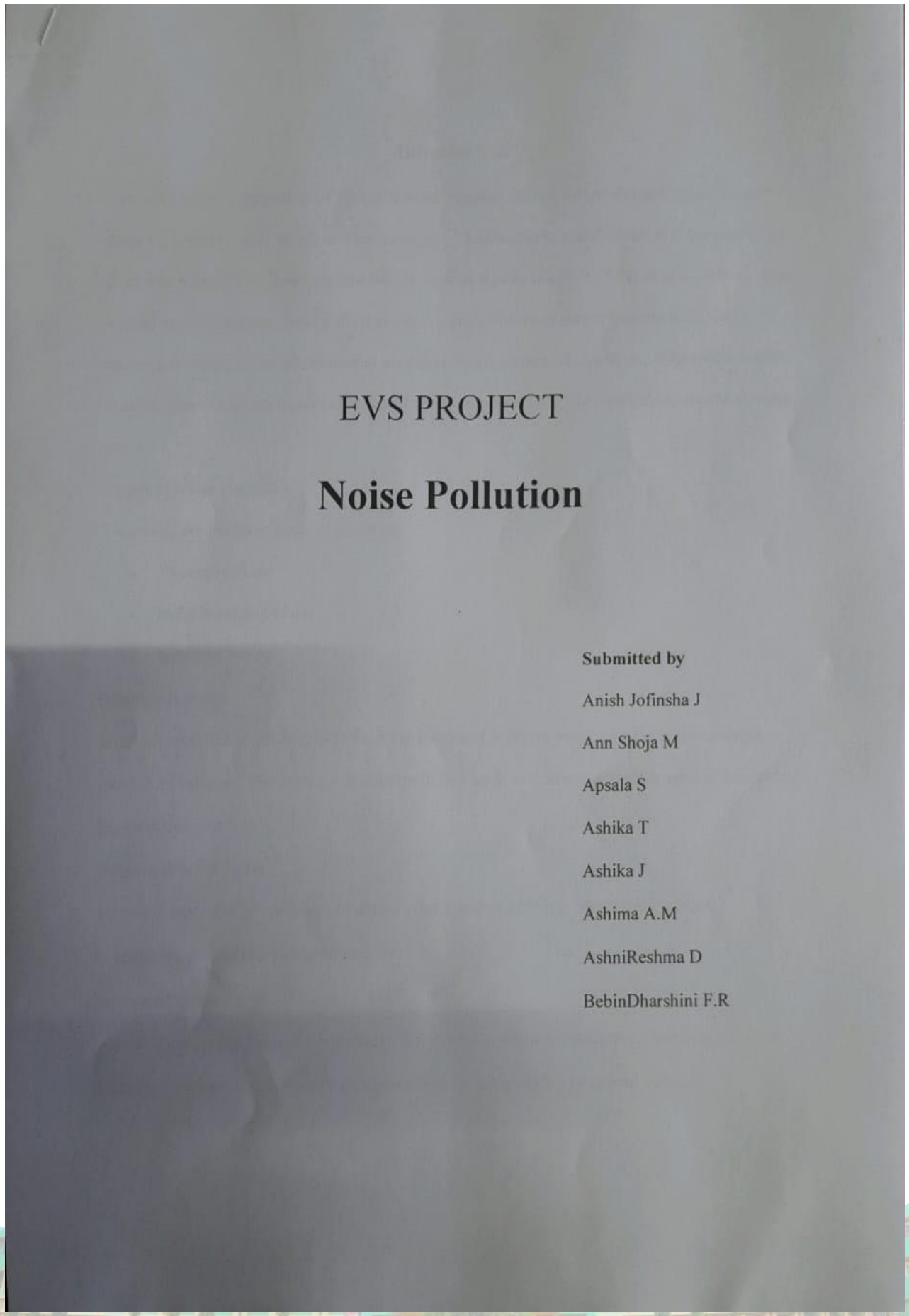
- Unnecessary usage of horns
- Using loudspeakers either for religious functions or for political purposes
- Unnecessary usage of fireworks
- Industrial noise
- Construction noise
- Noise from transportation such as railway and aircraft

Effects of Noise Pollution on Human Health

Noise pollution can be hazardous to human health in the following ways:

- **Hypertension:** It is a direct result of noise pollution which is caused due to elevated blood levels for a longer duration.





EVS PROJECT

Noise Pollution

Submitted by

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Introduction

The word noise is derived from the Latin word 'Nausea', which means sickness in which one feels the need to vomit. Noise is the unpleasant and undesirable sound which leads to discomfort in human beings. The faintest sound that the human ear can hear is 1 Db. Due to increasing noise around the civilizations, noise pollution has become a matter of concern. Some of its major causes are vehicles, aircraft, industrial machines, loudspeakers, crackers, etc. When used at high volume, some other appliances also contribute to noise pollution, like television, transistor, radio, etc.

Types of Noise Pollution

Following are the three types of pollution:

- Transport Noise
- Neighbourhood Noise
- Industrial Noise

Transport Noise

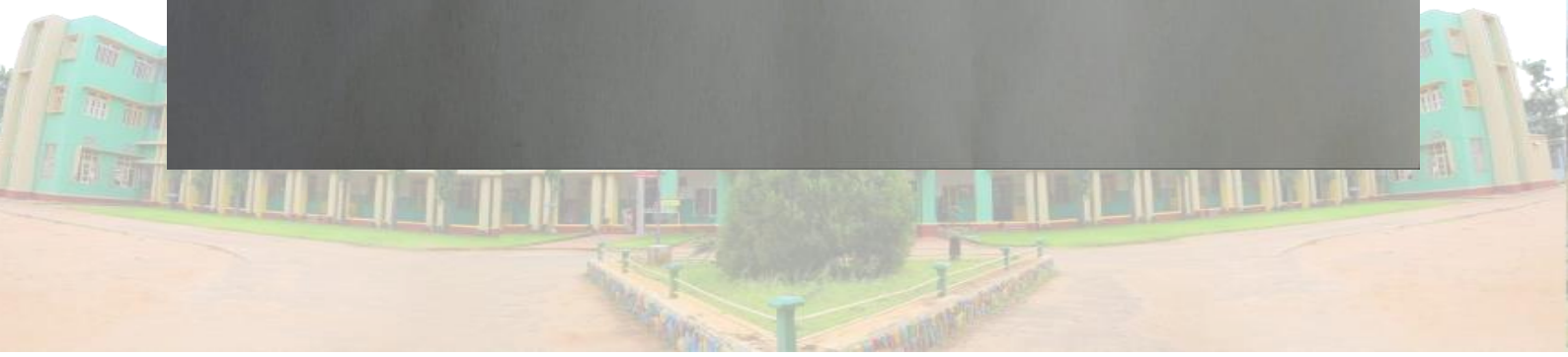
It mainly consists of traffic noise which has increased in recent years with the increase in the number of vehicles. The increase in noise pollution leads to deafening of older people, headache, hypertension, etc.

Neighbourhood Noise

The noise from gadgets, household utensils etc. Some of the main sources are musical instruments, transistors, loudspeakers, etc.

Industrial Noise

It is the high-intensity sound which is caused by heavy industrial machines. According to many researches, industrial noise pollution damages the hearing ability to around 20%.



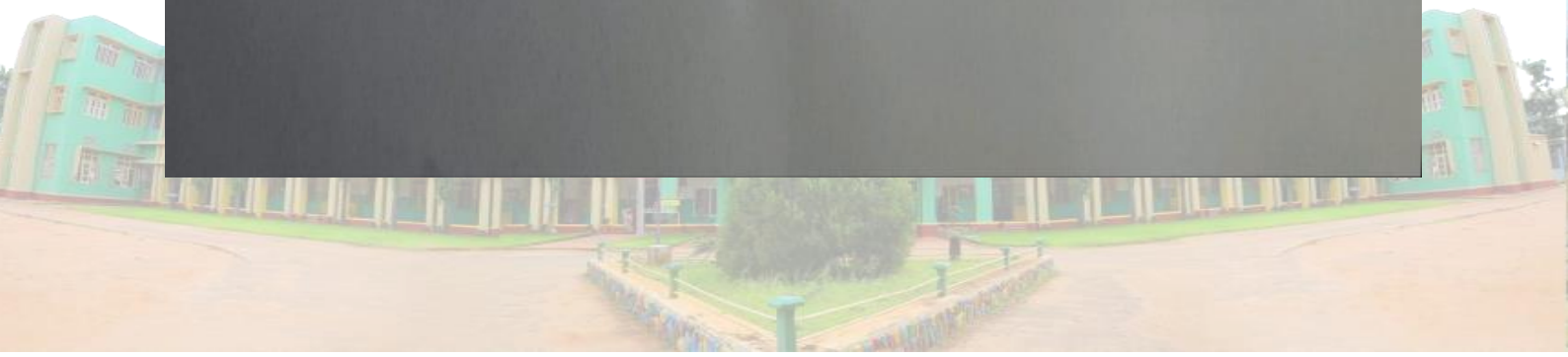
Wildlife faces far more problems than humans because of noise pollution since they are more dependent on sound. Animals develop a better sense of hearing than us since their survival depends on it.

9. Effects on Species Depending on Mating Call

Species that depend on mating calls to reproduce are often unable to hear these calls due to excessive man-made noise. As a result, they are unable to reproduce and cause declining populations. Others require sound waves to locate and find their way when migrating.

Conclusion:

Disturbing their sound signals means they get lost easily and do not migrate when they should. To cope up with the increasing sound around them, animals are becoming louder, which may further add to the pollution levels. This is why understanding noise pollution can help us lower the impact it has on the environment.



EVS PROJECT

Land Pollution

in

Beach road, Edalakudy, Kanyakumari District

Submitted by

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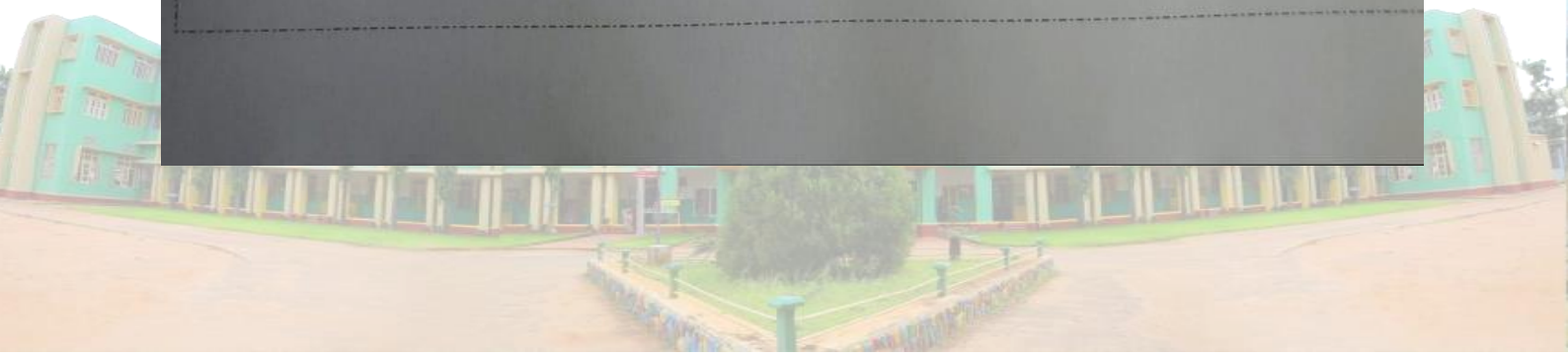
T.S. Daila Mary

Introduction

Land pollution, the deposition of solid or liquid waste materials on land or underground in a manner that can contaminate the soil and groundwater, threaten public health, and cause unsightly conditions and nuisances. The waste materials that cause land pollution are broadly classified as municipal solid waste (MSW, also called municipal refuse), construction and demolition (C&D) waste or debris, and hazardous waste. MSW includes nonhazardous garbage, rubbish, and trash from homes, institutions (e.g., schools), commercial establishments, and industrial facilities. Garbage contains moist and decomposable (biodegradable) food wastes (e.g., meat and vegetable scraps); rubbish comprises mostly dry materials such as paper, glass, textiles, and plastic objects; and trash includes bulky waste materials and objects that are not collected routinely for disposal (e.g., discarded mattresses, appliances, pieces of furniture). C&D waste (or debris) includes wood and metal objects.

Hazardous wastes include harmful and dangerous substances generated primarily as liquids but also as solids, sludges, or gases by various chemical manufacturing companies, petroleum refineries, paper mills, smelters, machine shops, dry cleaners, automobile repair shops, and many other industries or commercial facilities. In addition to improper disposal of MSW, C&D waste, and hazardous waste, contaminated effluent from subsurface sewage disposal (e.g., from septic tanks) can also be a cause of land pollution.

The permeability of soil formations underlying a waste-disposal site is of great importance with regard to land pollution. The greater the permeability, the greater the risks from land pollution.Soil consists of a mixture of unconsolidated mineral and rock fragments (gravel, sand, silt, and clay) formed from natural weathering processes. Gravel and sand formations are porous and permeable, allowing the free flow of water through the pores or spaces



compacted with heavy machinery, and covered each day with a layer of compacted soil. Leachate is collected in a network of perforated pipes at the bottom of the landfill and pumped to an on-site treatment plant or nearby public sewerage system. Methane is also collected in the landfill and safely vented to the atmosphere or recovered for use as a fuel known as biogas, or landfill gas. Groundwater-monitoring wells must be placed around the landfill and sampled periodically to ensure proper landfill operation. Completed landfills are capped with a layer of clay or an impermeable membrane to prevent water from entering. A layer of topsoil and various forms of vegetation are placed as a final cover. Completed landfills are often used as public parks or playgrounds.

Hazardous waste differs from MSW and C&D debris in both form and behaviour. Its disposal requires special attention because it can cause serious illnesses or injuries and can pose immediate and significant threats to environmental quality. The main characteristics of hazardous waste include toxicity, reactivity, ignitability, and corrosivity. In addition, waste products that may be infectious or are radioactive are also classified as hazardous waste.

water pollution is the leading worldwide cause of death and diseases. Water pollution accounted for the deaths of 1.8 million people in 2015. India and China are two countries with high levels of water pollution. An estimated 580 people in India die of water pollution related illness including waterborne diseases every day.

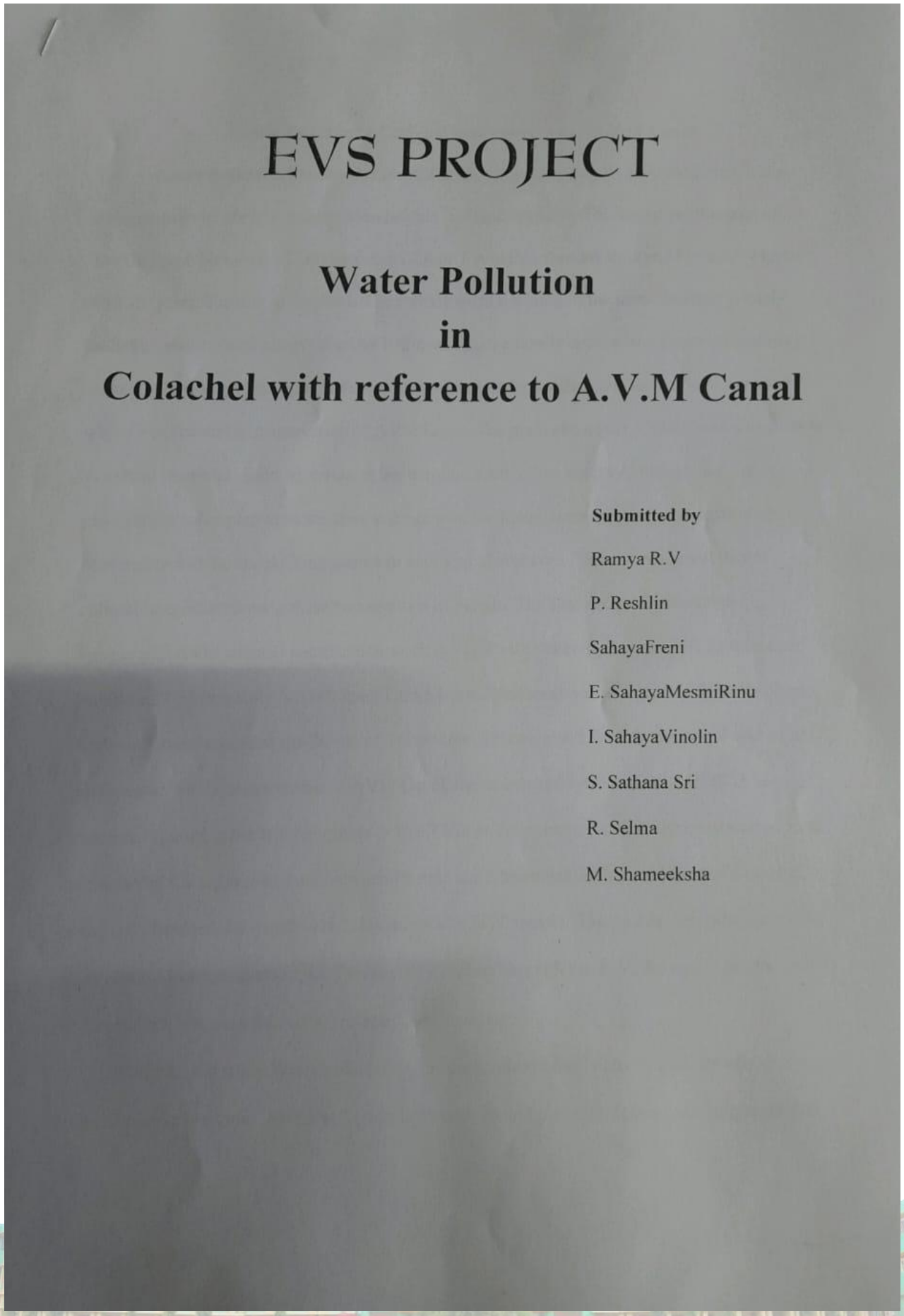
The AVM Canal is polluted completely with waste. It is full of aquatic macrophytes that harbor mosquito larvae. Defecation on the bank of the channel and domestic waste pollute the Canal. In Mondaikadu, coconut husk retting operation is carried near the Canal. In Manavalakurichi and South Kollencode, the husk netting operation takes place in the Canal itself. The hydrogen sulphide released from the netting ponds pollute the channel and the water become turbid. At present the waste collected from the town are dumped in low lying area and along the coastal side of the town near the AVM Canal. People have made their own fate in bringing up the terrible diseases like Chikungunya, Dengue fever by polluting the canal under various circumstances. S. Betsy Bai& Y. Jinisha studied the water quality of AVM canal in five different sites namely Vallavilai, Thatheyapuram, Eraviputhenthurai, Poothurai and Erayumanthurai.

They reported that dissolved oxygen showed great fluctuations. The maximum dissolved oxygen content was 9.04 mg / litre and was recorded during May. The minimum dissolved oxygen content of 5 mg / litre was recorded during March. Total Dissolved Solids in water originates from natural sources, sewage, urban run – off, industrial waste water and chemicals used in the water treatment process. In the present study, maximum TDS was recorded in site V with a value of 3880 mg / litre and a minimum of 1430 mg / litre in site I during May [3] . Study done by Mary Helen, H, Premjith, S & Jaya, D.S showed that. The maximum bacterial count was recorded during pre monsoon season and minimum during monsoon season. The important

Water Pollutionin Colachel with reference to A.V.M Canal

Anantha Victoria Marthandavarman Canal is popularly known as AVM Canal. It was running from Kochi in Kerala to Mondaikadu in Tamil Nadu. In This Canal got this name from the Highness Maharaja of Travancore Sri UtramTirunalMarthandavarma and his most respected British Queen Victoria of England. The etymological meaning of the term 'Anantha' simply indicates snake which always used by Padmanabha, the family deity of the Travancore kings [1] . The Travancore government under Sri UtramTirunalMarthandavarma had various aims and objectives behind the construction of AVM Canal. The main aim of the AVM Canal scheme was to extend the water communication to the extreme south of the country, through that the government had a plan to make close contact with the Malayalam speaking people of northern Travancore and Tamil speaking people of southern Travancore. There was a possibility of cultural integration among these two sections of people. The Travancore Government inaugurated AVM channel construction work in 1860 with the help of the British Resident and Engineers. Unfortunately in 1860 itself UtramTirunalMarthandavarma died and so in his place AyilyamTirunal ascended the throne of Travancore. He continued the construction works of his predecessor. So the construction of AVM Canal also continued systematically. In 1863 he appointed Barton as the chief engineer of the PWD in Travancore. In 1867 the construction work of the AVM Canal, in the beach between Poovar and Manavalakurichi, south east of Colachel, was partly finished. Its length was 21km and width is 20 meters. Things like rice, wheat etc were transported to various parts in the Travancore kingdom through the A.V.M canal. After the end of Travancore kingdom this canal transport was wind up.

Need for the study Water pollution is the contamination of water bodies, usually as a result of human activities. Water pollution is a major global problem. It has been suggested that



EVS PROJECT

Water Pollution
in
Colachel with reference to A.V.M Canal

Submitted by

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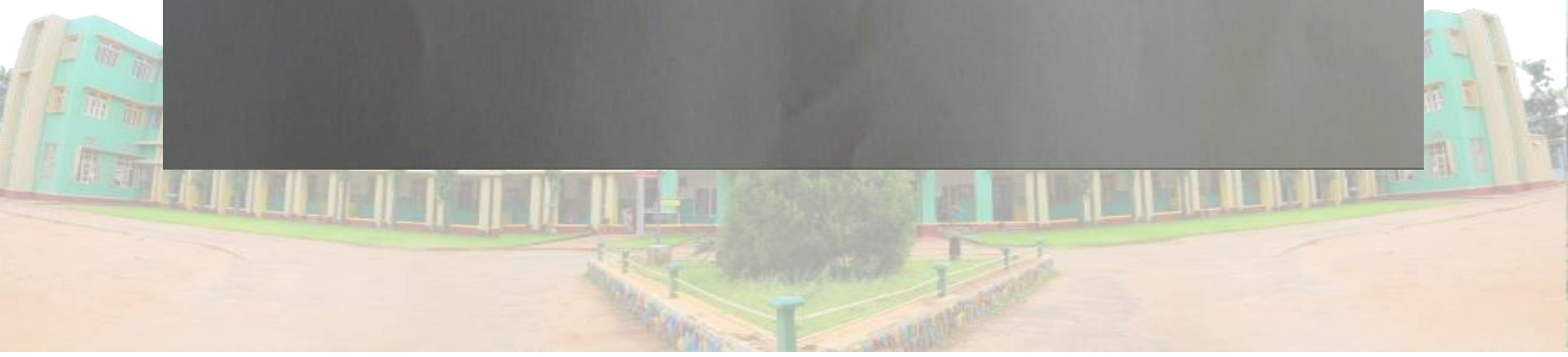
bacterial genera encountered were Escherichia coli, Salmonella and Shigella. Among the identified bacterial genera, Escherichia coli were found to be the dominant one followed by Salmonella and Shigella. The researchers are studying in the school situated near the bank of AVM Canal. Every day when they come to school, they used see the people disposing the waste in to AVM Canal and personally they have noticed bad smell and mosquito breeding around the area. Many of their schoolmates residing in the nearby villages complain of diseases caused by water pollution. So the researchers were interested to study this topic.

Aim of the study

The study aimed to assess the knowledge regarding water pollution and its hazards and attitude regarding reestablishment of AVM Canal for water navigation among residents of selected villages residing near the bank of AVM Canal in Kanyakumari district.

Conclusion

The study results concluded that the AVM canal is polluted with various domestic waste made up of plastics, glasses, the rmocol etc. The sewage from houses including public drainage drains in the AVM canal. Even though the residents have knowledge about water pollution, the historical background of the canal is not known to many. That might be the reason why they are not keeping the canal clean. The municipality also paved a way to pollute the canal by establishing public drainage system which drains in to the AVM canal. Their attitude towards cleaning and reestablishing the canal for water navigation is highly favorable. So it is the responsibility of the government and the NGOs to join hand with public to clean and re-establish the canal for water navigation so that the historical award of the district will be sustained.



Introduction

Water pollution, the release of substances into subsurface groundwater or into lakes, streams, rivers, estuaries, and oceans to the point where the substances interfere with beneficial use of the water or with the natural functioning of ecosystems. In addition to the release of substances, such as chemicals, trash, or microorganisms, water pollution may also include the release of energy, in the form of radioactivity or heat, into bodies of water.

Types and sources of water pollutants

Water bodies can be polluted by a wide variety of substances, including pathogenic microorganisms, putrescible organic waste, fertilizers and plant nutrients, toxic chemicals, sediments, heat, petroleum (oil), and radioactive substances. Several types of water pollutants are considered below. (For a discussion of the handling of sewage and other forms of waste produced by human activities, *see* waste disposal and solid-waste management.)

Water pollution point source

Water pollutants come from either point sources or dispersed sources. A point source is a pipe or channel, such as those used for discharge from an industrial facility or a city sewerage system. A dispersed (or nonpoint) source is a very broad unconfined area from which a variety of pollutants enter the water body, such as the runoff from an agricultural area. Point sources of water pollution are easier to control than dispersed sources, because the contaminated water has been collected and conveyed to one single point where it can be treated. Pollution from dispersed sources is difficult to control, and, despite much progress in the building of modern sewage-treatment plants, dispersed sources continue to cause a large fraction of water pollution problems.

Water Pollution:

Causes, Effects and Prevention

EVS PROJECT

Submitted by

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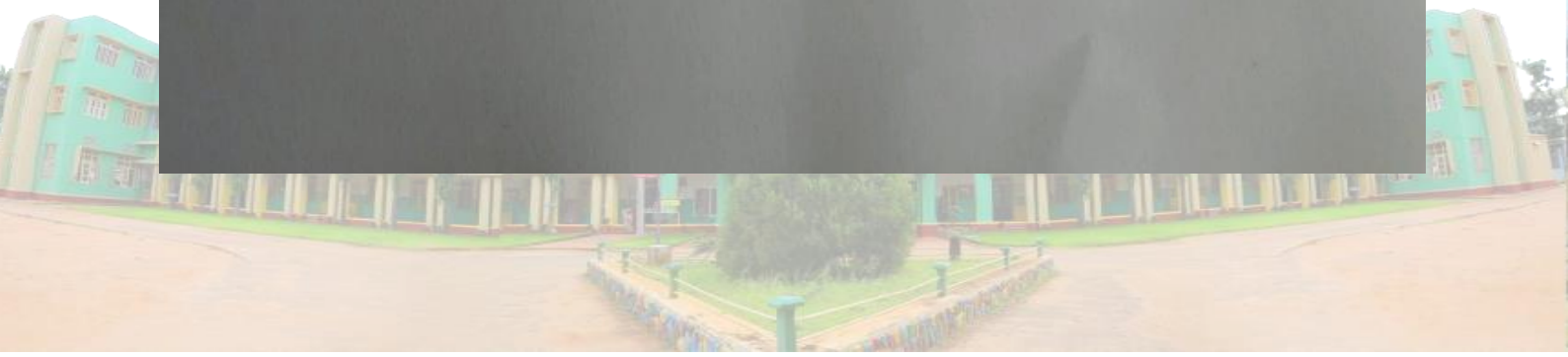
P. Jasmine Serina

Sewage Pollution:

Domestic sewage

Domestic sewage is the primary source of pathogens (disease-causing microorganisms) and putrescible organic substances. Because pathogens are excreted in feces, all sewage from cities and towns is likely to contain pathogens of some type, potentially presenting a direct threat to public health. Putrescible organic matter presents a different sort of threat to water quality. As organics are decomposed naturally in the sewage by bacteria and other microorganisms, the dissolved oxygen content of the water is depleted. This endangers the quality of lakes and streams, where high levels of oxygen are required for fish and other aquatic organisms to survive. Sewage-treatment processes reduce the levels of pathogens and organics in wastewater, but they do not eliminate them completely (*see also* wastewater treatment).

Domestic sewage is also a major source of plant nutrients mainly nitrates and phosphates. Excess nitrates and phosphates in water promote the growth of algae, sometimes causing unusually dense and rapid growths known as algal blooms. When the algae die, oxygen dissolved in the water declines because microorganisms use oxygen to digest algae during the process of decomposition (*see also* biochemical oxygen demand). Anaerobic organisms (organisms that do not require oxygen to live) then metabolize the organic wastes, releasing gases such as methane and hydrogen sulfide, which are harmful to the aerobic (oxygen-requiring) forms of life. The process by which a lake changes from a clean, clear condition—with a relatively low concentration of dissolved nutrients and a balanced aquatic community—to a nutrient-rich, algae-filled state and thence to an oxygen-deficient, waste-filled condition is called eutrophication. Eutrophication is a naturally occurring, slow, and inevitable process.



Delhi's air was cleanest on 29 September 2019, when the AQI measured 60, which is 'satisfactory'. As shown on the Real-Time Air Quality Index, in Delhi, particulate matter (PM2.5) dropped from 165µg/m3 on 21 March 2020, a level considered unhealthy to everyone, to 64µg/m3 on 29 March 2020, 'moderate' or 'acceptable'. This is a sharp drop in air pollution for Delhi which usually records 'poor' to 'severe' levels of air quality with the AQI ranging from 100 to 300, and even higher in colder months.

Table 1: Levels of PM10 and Air Quality Index during and after Lockdown

Phase of Lockdown	PM10 levels and AQI
First Three Phases (March-May 2020)	The first three phases of the national lockdown, which started on March 25, led to large declines in air pollution in Delhi. In April 2020, the concentration of PM 10 fell to 71.7 µg/m3, less than half the concentration observed during the same month over the previous three years.
Fourth Phase (May-October 2020)	The concentration of PM 10 rose to 96.4 µg/m3 during the fourth phase of the lockdown, which expanded exemptions and permitted interstate movement starting May 18. But, shortly after lockdown restrictions were eased after May 18, a spike was recorded, and records indicated that Delhi's pollution patterns

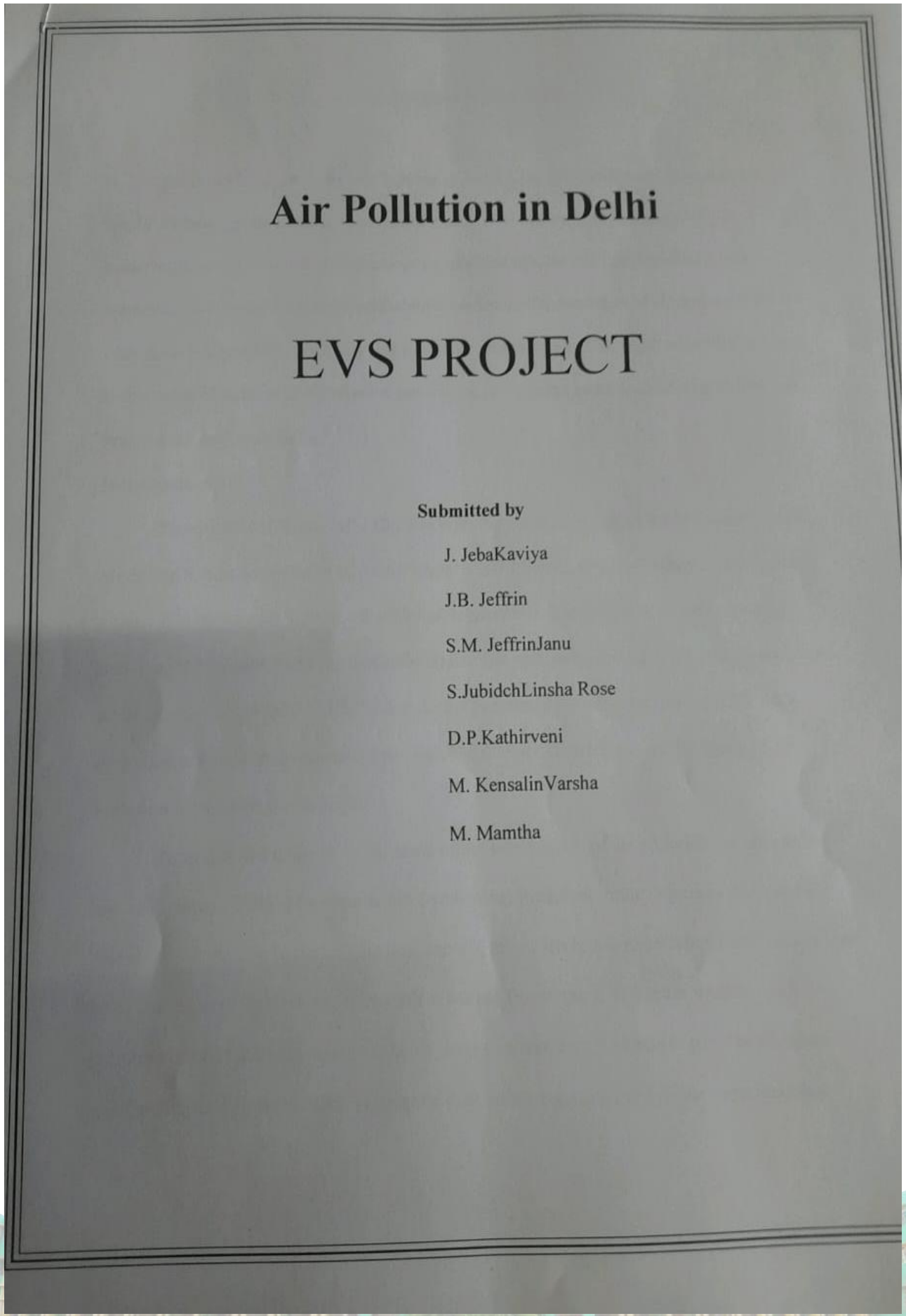
Air Pollution in New Delhi

Delhi, a Union Territory that is home to India's capital, New Delhi, is among the world's urban agglomerations with the most toxic air. The magnitude of air pollution is massive. It causes devastating impacts on people's health, the city's environment, and economic well-being. Despite overwhelming evidence of the severity of air pollution and its consequences, however, India's policy measures remain weak. This paper identifies the most crucial gaps in policies and outlines a framework for creating more focused targets that will improve air quality in Delhi.

Introduction

Twenty-one of the world's 30 cities with the worst levels of air pollution are in India, according to data compiled in IQAirAirVisual's *2019 World Air Quality Report*; six Indian cities are in the top ten. Indeed, air pollution is pervasive in many parts of India, causing massive public health and environmental crises. The economic cost of fossil fuel air pollution alone is estimated at INR 10,700 billion, or 5.4 percent of the country's annual GDP. An estimated one million deaths each year, and 980,000 pre-term births, are attributed to air pollution from fossil fuel in India.

Among all the cities in India, some of the worst levels of air pollution are seen in its capital territory, Delhi. The impacts are devastating, including in the degree of particulate matter concentrations in the air (environmental), reduction in life expectancy (health), and high costs that the state is incurring to resolve the crisis (economic). The main sources of air pollution in Delhi include vehicle exhaust, heavy industry such as power generation, small-scale industries like brick kilns, suspended dust on the roads due to vehicle movement and



Air Pollution in Delhi

EVS PROJECT

Submitted by

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M. Mamtha

trucks and tractors generate 9 percent of emissions; 7 percent from two-wheelers; 5 percent from three-wheelers; 3 percent each from cars and buses; and 1 percent from light commercial vehicles. In all, these vehicles are responsible for 41 percent of the total pollution load in Delhi.

The number of vehicles in Delhi was 10.9 million in March 2018, including over 7 million two-wheelers. While the annual growth rate of vehicles dropped from 8.13 percent in 2005-06 to 5.81 percent in 2017-18, the number of vehicles per thousand population increased from 317 to 598 during the period.The total number of motor vehicles plying the roads of the national capital territory was 10.986 million as of 31 March 2018.Emissions from four-wheelers registered in other states also contribute to the overall emissions from cars in Delhi. In 2018, cars from outside Delhi contributed to nearly 25-45 percent of overall emissions from four-wheelers.

Construction

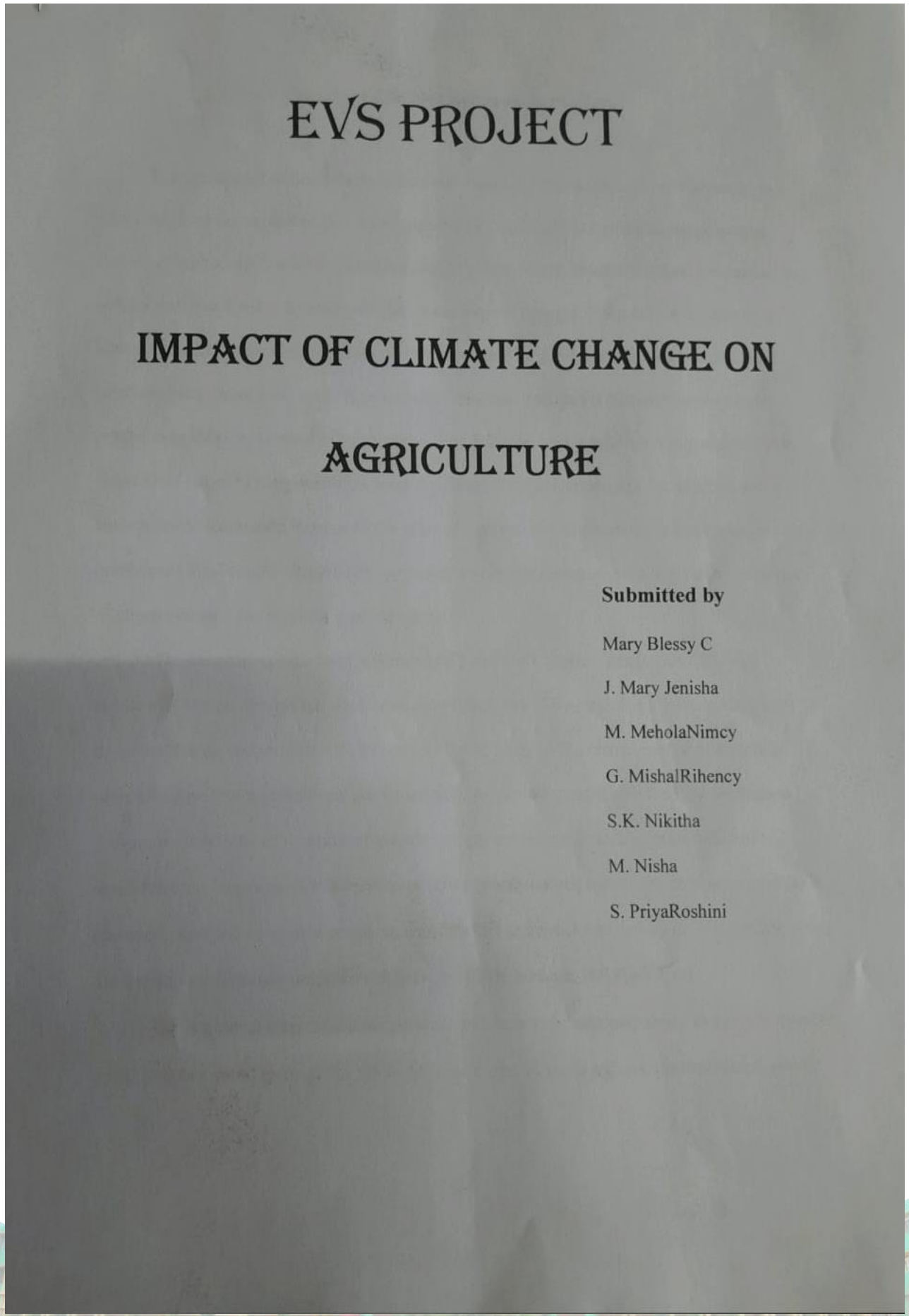
Construction sites generate high levels of pollutants that can travel long distances over time; this is true for Delhi NCR.The outskirts of NCT have roughly 360 brick kilns, mostly in the Jhajjar, Faridabad and Ghaziabad regions, whose peak business months are from December to June. Their emissions rise during the winter months, because in summer and spring, the winds are relatively faster, and gases do not stay suspended in one place. Fine dust from construction activities is a significant contributor to the poisonous mixture referred to as 'smog'. According to Delhi Pollution Control Committee (DPCC) officials, 30 percent of air pollution in the territory is caused by dust from construction sites.The government and local municipal corporations have not adequately ensured compliance of the construction industry with environmental regulations such as covering up debris and waste management.

increases are likely to be restricted byextreme events, particularly extreme heat and drought, during crop flowering. Crop production is projected to decrease in many areas during the 21st century because of climatic changes. This is illustrated in figure 2 which summarises average crop yield projections across all emission scenarios, regions, and with- or without- adaptation by farmers, showing an increasing trend towards widespread yield decreases.

Heat waves (periods of extreme high temperature) are likely to become more frequent in the future and represent a major challenge for agriculture. Heat waves can cause heat stress in both animals and plants and have a negative impact on food production. Extreme periods of high temperature are particularly harmful for crop production if they occur when the plants are flowering – if this single, critical stage is disrupted, there may be no seeds at all. In animals, heat stress can result in lower productivity and fertility, and it can also have negative effects on the immune system, making them more prone to certain diseases.

Evidence for an increase in heat waves exists from warming that has already occurred, and greater than expected increases in heat wave frequency and magnitude (figure 3). It is difficult to make accurate predictions about the future frequency and magnitude of heat waves, but there is consensus among projections that measurements for both will continue to increase in the UK, in Europe, and at a global scale. The impact of heat waves are expected to be non-uniform, with disproportionately negative effects in less developed countries. Together with other aspects of climate change such as increased drought incidence, they may exacerbate existing issues around food security.

Projected changes in climate are not limited to increases in temperature and heat waves; large changes in rainfall patterns are also expected to occur. While some regions are likely to suffer from more droughts in the future, other regions are expected to face the opposing issues of



EVS PROJECT

IMPACT OF CLIMATE CHANGE ON AGRICULTURE

Submitted by

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M. MeholaNimcy

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S.K. Nikitha

M. Nisha

S. PriyaRoshini

Impact of Climate Change on Agriculture

Climate change is likely to contribute substantially to food insecurity in the future, by increasing food prices, and reducing food production. Food may become more expensive as climate change mitigation efforts increase energy prices. Water required for food production may become more scarce due to increased crop water use and drought. Competition for land may increase as certain areas become climatically unsuitable for production. In addition, extreme weather events, associated with climate change may cause sudden reductions in agricultural productivity, leading to rapid price increases. For example, heat waves in the summer of 2010 led to yield losses in key production areas including: Russia, Ukraine and Kazakhstan, and contributed to a dramatic increase in the price of staple foods. These rising prices forced growing numbers of local people into poverty, providing a sobering demonstration of how the influence of climate change can result in food insecurity.

The consensus of the Intergovernmental Panel for Climate Change (IPCC) is that substantial climate change has already occurred since the 1950s, and that it's likely the global mean surface air temperature will increase by 0.4 to 2.6°C in the second half of this century (depending on future greenhouse gas emissions). Agriculture, and the wider food production system, is already a major source of greenhouse gas emissions. Future intensification of agriculture to compensate for reduced production (partly caused by climate change) alongside an increasing demand for animal products, could further increase these emissions. It's estimated that the demand for livestock products will grow by +70% between 2005 and 2050.

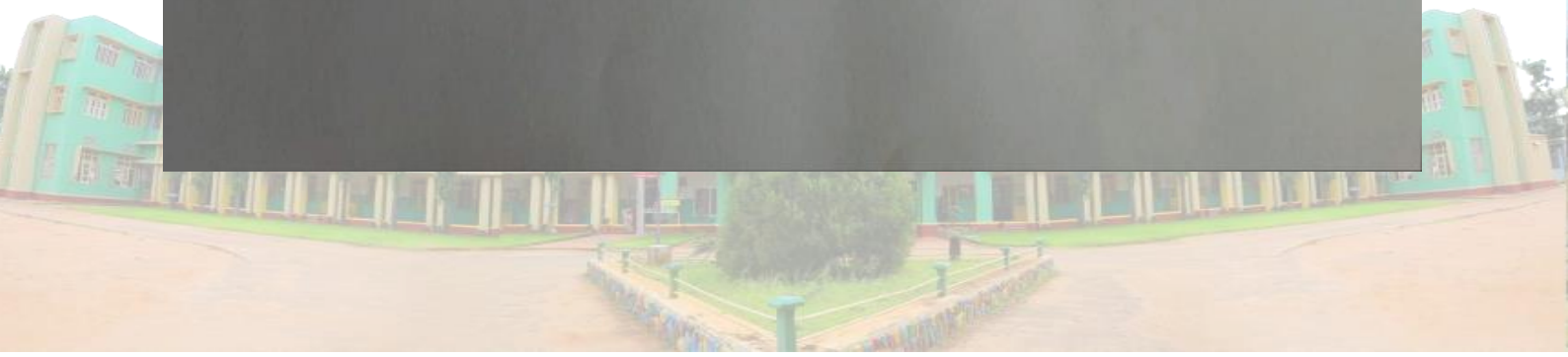
While gradual increases in temperature and carbon dioxide may result in more favourable conditions that could increase the yields of some crops, in some regions, these potential yield

25% in 2100 and maize yields by 18-23%. Future climates are likely to benefit chickpea with increase in productivity (23-54%).

Indian Council of Agricultural Research (ICAR) has initiated a network project NICRA during 2011 to address the impact of climate change on Indian agriculture. NICRA project is being reviewed by a High Level Monitoring Committee (HLMC) under the Chairmanship of Secretary, DARE & DG, ICAR with invited members representing different Ministries, Government of India. This committee recommends measures to be taken through NICRA for making Indian agriculture more resilient to changing climate. Besides an expert committee periodically review the project and advise on various aspects.

Vulnerability assessment of Indian Agriculture to climate change is undertaken by Indian Council of Agricultural Research (ICAR). Such an assessment was for 573 rural districts of India (excluding the Union Territories of Andaman and Nicobar Islands, Lakshadweep). Based on the vulnerability analysis, 109 districts out of 573 rural districts (19% of total districts) are 'very high-risk' districts, while 201 districts are risk districts.

Integrated simulation modelling studies indicated that under Representative Concentration Pathway 4.5, maximum temperature is expected to increase by 1 to 1.3°C in 256 districts, by 1.3 to 1.6 °C in 157 districts (2020-2049). The increase ranged from <1.3 °C in 199 districts to >1.6 °C in 89 districts. Cultivation of wheat in these districts is likely to be affected by heat stress.Under NICRA project, wheat germplasm comprising of advanced breeding lines and land races have been screened for heat/drought tolerance. ICAR-Indian Agricultural Research Institute (IARI) has released the high yielding varieties such as HD 2967 and HD 3086 which are being grown in large areas of North-west and North India. Zero till planting of wheat has advanced the wheat sowing in Punjab and Haryana.



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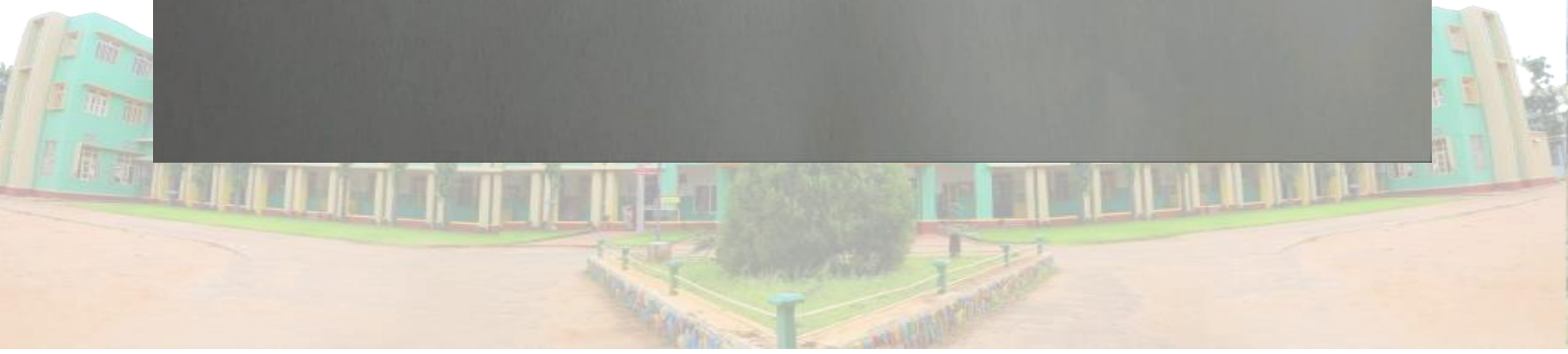

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The consensus of the Intergovernmental Panel for Climate Change (IPCC) is that substantial climate change has already occurred since the 1950s, and that it's likely the global mean surface air temperature will increase by 0.4 to 2.6°C in the second half of this century (depending on future greenhouse gas emissions). Agriculture, and the wider food production system, is already a major source of greenhouse gas emissions. Future intensification of agriculture to compensate for reduced production (partly caused by climate change) alongside an increasing demand for animal products, could further increase these emissions. It's estimated that the demand for livestock products will grow by +70% between 2005 and 2050.

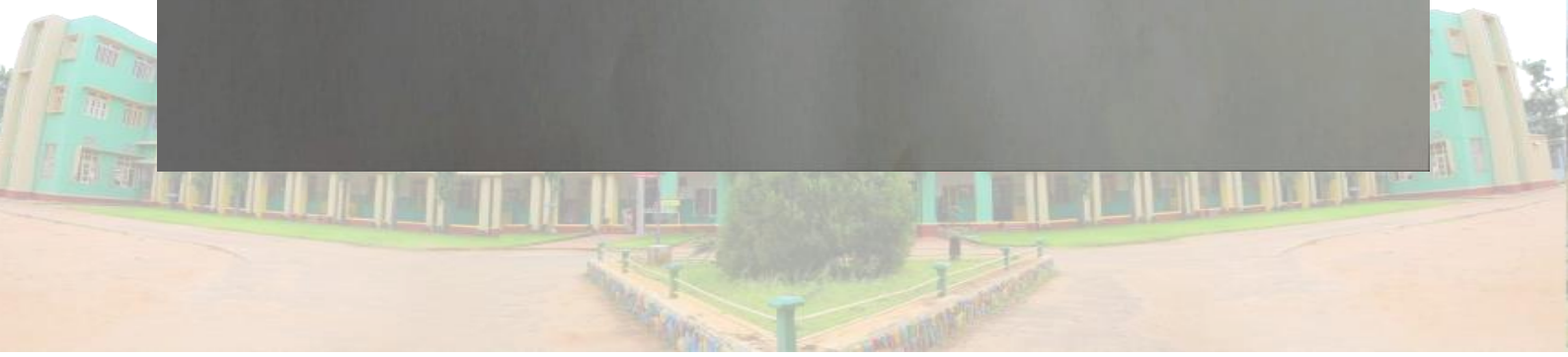
While gradual increases in temperature and carbon dioxide may result in more favourable conditions that could increase the yields of some crops, in some regions, these potential yield

25% in 2100 and maize yields by 18-23%. Future climates are likely to benefit chickpea with increase in productivity (23-54%).

Indian Council of Agricultural Research (ICAR) has initiated a network project NICRA during 2011 to address the impact of climate change on Indian agriculture. NICRA project is being reviewed by a High Level Monitoring Committee (HLMC) under the Chairmanship of Secretary, DARE & DG, ICAR with invited members representing different Ministries, Government of India. This committee recommends measures to be taken through NICRA for making Indian agriculture more resilient to changing climate. Besides an expert committee periodically review the project and advise on various aspects.

Vulnerability assessment of Indian Agriculture to climate change is undertaken by Indian Council of Agricultural Research (ICAR). Such an assessment was for 573 rural districts of India (excluding the Union Territories of Andaman and Nicobar Islands, Lakshadweep). Based on the vulnerability analysis, 109 districts out of 573 rural districts (19% of total districts) are 'very high-risk' districts, while 201 districts are risk districts.

Integrated simulation modelling studies indicated that under Representative Concentration Pathway 4.5, maximum temperature is expected to increase by 1 to 1.3°C in 256 districts, by 1.3 to 1.6 °C in 157 districts (2020-2049). The increase ranged from <1.3 °C in 199 districts to >1.6 °C in 89 districts. Cultivation of wheat in these districts is likely to be affected by heat stress.Under NICRA project, wheat germplasm comprising of advanced breeding lines and land races have been screened for heat/drought tolerance. ICAR-Indian Agricultural Research Institute (IARI) has released the high yielding varieties such as HD 2967 and HD 3086 which are being grown in large areas of North-west and North India. Zero till planting of wheat has advanced the wheat sowing in Punjab and Haryana.



DEPARTMENT OF TAMIL

இளங்கலை முதலாமாண்டு தமிழ் இ
சுற்றுச் சூழல் கல்வி

நிலைகள்
திட்டக்கட்டுரை

கட்டுரையாளர்கள்	பதிவு எண்
கோ. அபிஷா	191158
மா.அக்ஷா	191159
மு. ஆனந்தி	191160
ம. ஏஞ்சலா மெர்ஷிபா	191161
அ.அன்ஷியா மேரி	191162
அ. பபிதா	191163

மேற்பார்வையாளர்
முனைவர்செ. ஜடா

தமிழ்த்துறை (சுயநிதி)
திருச்சிலுவை கல்லூரி (தன்னாட்சி)
நாகர்கோவில் - 629004
மார்ச் - 2020

மேற்பார்வையாளர் சான்றிதழ்

இளங்கலை முதலாமாண்டு தமிழ் இலக்கியம் சுற்றுச்சூழல் கல்விக்காக 'மூலிகைகள்' என்னும் தலைப்பில் அமைந்த திட்டக்கட்டுரை கோ. அபிஷா, மா. அக்ஷா, மு. ஆனந்தி, ம.ஏஞ்சலா மெர்ஷிபா, அ.அன்ஷியா மேரி, அ.பபிதா ஆகியோர்களால் குழுவாக செய்யப்பட்டது என்று சான்றளிக்கிறேன்.

துறைத்தலைவர்

(முனைவர் ம. மேபல் எடல்குயின்)

மேற்பார்வையாளர்

முனைவர் செ.ஜடா

Department of Tamil (Research)
Holy Cross College (Autonomous)
Nagercoil - 629 004.

இடம் : நாகர்கோவில்

நாள் : 21.01.2020

தானியங்கள்

திருச்சிலுவை கல்லூரி (தன்னாட்சி),
நாகர்கோவில்
இளங்கலை முதலாமாண்டு தமிழ் இலக்கியம்

சுற்றுச்சூழல் கல்வி

திட்டக்கட்டுரை

கட்டுரையாளர்கள்	பதிவு எண்
எ.க. மெர்லின் டென்சிடா	191169
வி.மௌபி	191170
நா.பிரிய தர்ஷினி	191171
எ.ரிபோ மேன்சி	191172
சு.சங்கீதா	191174
மா.சோனா	191176

மேற்பார்வையாளர்

முனைவர் சா. டெய்சி பாய்

தமிழ்த்துறை (சுயநிதி)

திருச்சிலுவை கல்லூரி (தன்னாட்சி)

நாகர்கோவில் - 629004

மார்ச் -2020

கட்டுரையாளர்கள் உறுதிமொழி

சுற்றுச்சூழல் கல்விக்கான 'தானியங்கள்' என்னும் தலைப்பில் எழுதப்பட்ட இத்திட்டக்கட்டுரை எங்களின் முழு முயற்சியில் உருவானது என்று உறுதியளிக்கிறோம்.

கட்டுரையாளர்கள்	கையொப்பம்
எ.க. மெர்லின் டென்சிடா	எ.க. மெர்லின் டென்சிட
வி.மௌபி	வி. மௌபி.
நா. பிரிய தர்ஷினி	நா. பிரிய தர்ஷினி
எ. ரிபோ மேன்சி	எ. ரிபோ மேன்சி.
சு. சங்கீதா	சு. சங்கீதா
மா. சோனா	மா. சோனா

மேற்பார்வையாளர் சான்றிதழ்

இளங்கலை முதலாமாண்டு தமிழ் இலக்கிய சுற்றுச்சூழல் கல்விக்காக 'தானியங்கள்' என்னும் தலைப்பில் அமைந்த திட்டக்கட்டுரை எ.க. மெர்லின் டென்சிடா, வி. மௌபி, நா. பிரிய தர்ஷினி, எ.ரிபோ மேன்சி, சு. சங்கிதா, மா. சோனா ஆகியயோர்களால் குழுவாக செய்யப்பட்டது என்று சான்றளிக்கிறேன்.

துறைத்தலைவர்

(முனைவர் ம. மேபல் எடல் குயின்)
Department of Tamil (S.F.)
Holy Cross College (Autonomous)
Nagercoil - 629 004.

மேற்பார்வையாளர்

(முனைவர் சா. டெய்சிபாய்)

இடம் : நாகர்கோவில்

நாள் : 21.1.2020

DEPARTMENT OF COMMERCE

A STUDY ON PLASTIC WASTE RECYCLING IN NAGERCOIL

Project Report submitted to

Holy Cross College (Autonomous), Nagercoil

In partial fulfillment of the requirements for the award of the degree of

BACHELOR OF COMMERCE

BY

Reg.Number	Name
2019579	S. Gracy Klymancia
2019615	J. Srija
2019596	J. Mistika Smoni
2019563	S. Archana
2019578	M. Gowshika
2019592	M. Mary Snow Sherin
2019600	V. Priya Dharshini
2019607	N. Salomiya

UNDER THE GUIDANCE OF

Dr. S. MARY PEARLY SUMATHI, M.Com., B.Ed., M.Phil., Ph.D

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (Autonomous),

NAGERCOIL-629004

Dr. S. MARY PEARLY SUMATHI, M.Com., B.Ed., M.Phil., Ph.D

Department of Commerce,

Holy Cross College (Autonomous),

Nagercoil-629004

CERTIFICATE

This is to certify that, the project entitles, "**A STUDY ON PLASTIC WASTE RECYCLING IN NAGERCOIL**" is a bonafide record of work done by **S. Gracy Klymancia, J. Srija, J. Mistika Smoni, S. Archana, M. Gowshika, M. Mary Snow Sherin, V. Priya Dharshini, N. Salomiya.**under my supervision and guidance and submitted in partial fulfillment of the requirements of the degree of Bachelor of Commerce. It has not been submitted for the award of any degree, diploma, associateship or fellowship of any university or institution.

Supervisor

PLACE: Nagercoil

DATE:

M. Mary Helen Stella

Head of the Department

Dr. M. MARY HELEN STELLA
ASSOCIATE PROFESSOR
HEAD OF THE DEPARTMENT
DEPARTMENT OF COMMERCE
HOLY CROSS COLLEGE (AUTONOMOUS)
NAGERCOIL - 629 004.

External Examiner.

DECLARATION

We hereby declare that the project work entitles, "**A STUDY ON PLASTIC WASTE RECYCLING IN NAGERCOIL**" submitted by **S. Gracy Klymancia, J. Srija, J. Mistika Smoni, S. Archana, M. Gowshika, M. Mary Snow Sherin, V. Priya Dharshini, N. Salomiya.**to Holy Cross College (Autonomous) Nagercoil for the degree of Bachelor of commerce is a result of an original work , carried out under the guidance of **Dr. S. MARY PEARLY SUMATHI, M.Com., B.Ed., M.Phil., Ph.D** of Commerce department, Holy Cross College (Autonomous), Nagercoil. It has not been previously prepared for the award of any other degree, diploma, fellowship or other similar titles

Submitted by,

S. Gracy Klymancia	(I – B.Com, Aided)	2019579	Gracy
J. Srija	,,	2019615	Srija
J. Mistika Smoni	,,	2019596	Mistika Smoni
S. Archana	,,	2019563	Archana.S
M. Gowshika	,,	2019578	M. Gowshika
M. Mary Snow Sherin	,,	2019592	Mary Snow Sherin
V. Priya Dharshini	,,	2019600	Priya Dharshini.V
N. Salomiya	,,	2019607	N. Salomiya.

PLACE: Nagercoil,

DATE:

ACKNOWLEDGEMENT

Behind this successful venture there are number of people who have rendered us a special help and support during the preparation of our project report and we wish to acknowledge them.

We raise our heart with deep gratitude and love to the Almighty for the blessing showered upon us throughout this venture, which helped us to carry out this project work with interest and enthusiasm.

We express our whole hearted thanks to our secretary **Dr. Sr. Gerardin Jayam**, for providing the facilities to do this project in our institution.

We bestow our sincere thanks to **Dr. Sr. S. Anne Perpet Sophy**, Principal, Holy Cross College (Autonomous), Nagercoil for her support to carry out this project.

We wish to express our deep sense of gratitude and sincere thanks to our supervisor Dr. **S. MARY PEARLY SUMATHI, M.Com., B.Ed., M.Phil., Ph.D.** for having suggested the area of investigation and with her keen interest, able guidance and encouragement to complete this work in a successful manner.

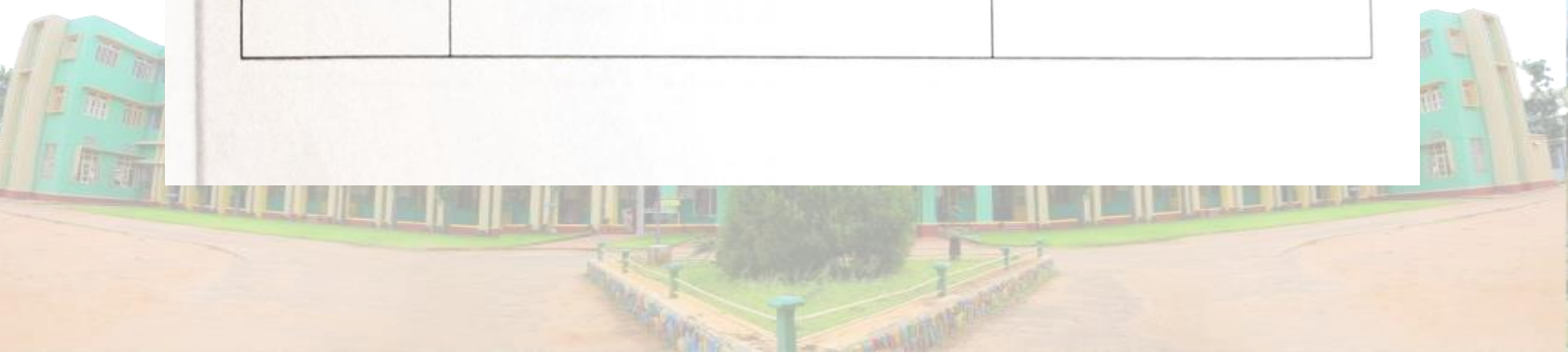
We thank all the respondents of the study who offered their co-operation and support in sharing their experiences.

We also thank our Head of the Department **Dr. MARY HELEN STELLA, M.Com., B.Ed., M.Phil., Ph.D.** for her constant support during this project work.

Our deep sense of gratitude to our parents and friends who gave given moral support and timely help throughout the project work.

2019579	S. Gracy Klymancia
2019615	J.Srija
2019596	J.Mistika Smoni
2019563	S.Archana
2019578	M.Gowshika
2019592	M.Mary Snow Sherin
2019600	V.PriyaDharshini
2019607	N. Salomiya

CONTENT



A STUDY ON WATER POLUTION IN COLACHEL

A Project Report Submitted to Holy Cross College (Autonomous) Nagercoil affiliated to Manonmaniam Sundaranar University in partial fulfilment of the requirement for the award of the degree of

Bachelor of Commerce

Submitted by

Name	Reg. No
S. DEEPA	2019574
N. BABY ABIRAMI	2019568
K. BHIGAA	2019570
M. ABISHA	2019556
A. ARSHANA BARVEEN	2019566
P. SUHITHA	2019616
L. SAHAYA SHYLIN	2019605
M. SOWMIYA	2019614

Under the guidance of

Dr. M. MARY HELEN STELLA, M.Com., M.Phil.,Ph.D

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (AUTONOMOUS)

NAGERCOIL - 629004

FEBRUARY - 2020

DECLARATION

We S. Deepa, N. Baby Abirami, K. Bhigaa, M. Abisha, A. Arshana Barveen, P. Suhitha, L. Sahaya Shylin, M. Sowmiya here by declare that the project work entitled " A STUDY ON WATE POLLUTION IN COLLACHEL" Submitted to Holy Cross College (Autonomous), Nagercoil for the first year under graduate programme is an original work done under the guidance of Dr. M. Mary Helen Stella, Head of the Department of Commerce. It has not been previously prepared for the award of any degree or diploma.

Project team members		Signature
S. Deepa	2019574	Deepa. S
N. Baby Abirami	2019568	Baby Abirami. N
K. Bhigaa	2019570	Bhigaa. k
M. Abisha	2019556	M. Abisha
A. Arshana Barveen	2019566	A. Arshana Barveen
P. Suhitha	2019616	Suhitha P
L. Sahaya Shylin	2019605	L. Shylin
M. Sowmiya	2019614	Sowmiya. M

AN OVERVIEW OF WATER POLLUTION IN PANAGUDI

A project report submitted to Holy Cross College (Autonomous) Nagercoil affiliated to Manonmaniam Sundaranar University in partial fulfilment of the award of the degree of

BACHELOR OF COMMERCE

Submitted by

NAME		REG.NO
ALFINA FATHIMA.M	:	2019559
JANAVIKHA.M	:	2019580
JESALIN SHAKKIYA.S	:	2019582
JONE RAJA SAJINA.P	:	2019585
JOSE ANGEL JENO.J	:	2019586
KELBINSHA.X	:	2019587
PRAIZY.A	:	2019597
SUTHA.I	:	2019617

Under the guidance of

Dr .S. MARY PEARLY SUMATHI, M.Com., B.Ed., M.Phil. Ph.D.

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (AUTONOMOUS)

NAGERCOIL – 629004

January 2020

Dr.S. Mary Pearly Sumathi, M.Com., B.Ed., M.Phil., Ph.D

Assistant Professor

Department of Commerce,

Holy Cross College (Autonomous),

Nagercoil-629004.

CERTIFICATE

This is to certify that the project entitled, **"AN OVERVIEW OF WATERPOLLUTION IN PANAGUDI"** is a bonafide record of work done by M.Alfina Fathima, M.Janavika, S.Jesalin Shakkiya, P.Jone Raja Sajina, J.Jose Angel Jeno, X.Kelbinsha, A.Praizy, I.Sutha under my supervision and guidance ,submitted in partial fulfilment of the degree of Bachelor of Commerce. It has not formed the basis for the award of any degree, diploma, or any other similar title.

Place: Nagercoil ,

~~Date:~~ Supervisor

H. Helen Stella

Head of the Department

Dr. M. MARY HELEN STELLA
ASSOCIATE PROFESSOR
HEAD OF THE DEPARTMENT
DEPARTMENT OF COMMERCE
HOLY CROSS COLLEGE (A...)
NAGERCOIL - 629 004.

External Examiner

ACKNOWLEDGEMENT

We the Project team members Submit our heartfelt gratitude to God Almighty for guiding us throughout the preparation of this project report.

We specially thank **HOLY CROSS COLLAGE (AUTONOMUS)** for giving this wonderful opportunity to do the project work. We also wish to express our Special thanks to our Principal **Dr.Sr.S. ANNI PERPET SOPHY** for permitting us to do the Project work.

We take this Opportunity to convey our sincere gratitude to **Dr. M. Mary Helen Stella, M.Com.,M.Phil.,Ph.D.,** for Showing Proper direction and giving her outstanding and valuable guidance, advice, support and suggestions for completing this Project work.

We also thank **Dr. M. Mary Helen Stella, M.Com.,M.Phil.,Ph.D.,** Head at the department of Commerce for her encouragement and assistance during the Preparation and Completion of this Project work.

We thank all the Faculty, Department of Commerce for their valuable Support and Suggestions to carry this Project work.

We thank all the respondents for sparing their precious time to give details based on interview Schedule.

S. Deepa	**2019574**
N. Baby Abirami	**2019568**
K. Bhigaa	**2019570**
M. Abisha	**2019556**
A. Arshana Barveen	**2019566**
P. Suhitha	**2019616**
L. Sahaya Shylin	**2019605**
M. Sowmiya	**2019614**

CONTENTS

A STUDY ON PLASTIC POLLUTION IN VADASERY

Project Report submitted to

Holy Cross College (Autonomous), Nagercoil

In partial fulfillment of the requirements for the award of the degree of

BACHELOR OF COMMERCE

BY

REG.NO:	PROJECT TEAM MEMBERS
2019565	J. AROKIYA MARY
2019575	N. FATHIMA NUSHHA
2019591	S. MARJANA SHERIN
2019594	A. MERCY
2019599	K. PRITHISKA
2019609	R. SCHOLASTICAL
2019612	R. SIVA SANKARI
2019618	P. T HARSHINI

UNDER THE GUIDANCE OF

Dr. S. MARY PEARLY SUMATHI, M.Com., B.Ed., M.Phil., Ph. D.,

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (Autonomous),

NAGERCOIL-629004

FEBRAURY 2020

Dr. S. Mary Pearly Sumathi M.Com., M.Phil., B.Ed., Ph.D.,

Assistant Professor of Commerce,

Holy Cross College, (Autonomous)

Nagercoil 629004.

CERTIFICATE

This is to certify that the project report entitled "**A STUDY ON PLASTIC POLLUTION IN VADASERY**" is a bonofide record of work done by **J. Arokiya Mary, N. Fathima Nushha, S.Marjana Sherin, A. Mercy, K. Prithiska, R. Scholastical, R. Siva Sankari, P. Tharshini**, under my supervision and guidance and submitted in partial fulfilment of the requirements for the degree of Bachelor of Commerce. It has not formed the basic for the award of any degree, diploma, or any other similar title.

PLACE: Nagercoil

DATE: 16.03.2020

SUPERVISOR

HEAD OF THE DEPARTMENT

Dr. M. MARY HELEN STELLA
ASSOCIATE PROFESSOR
HEAD OF THE DEPARTMENT
DEPARTMENT OF COMMERCE
HOLY CROSS COLLEGE (AUTONOMOUS)
NAGERCOIL - 629 004.

EXTERNAL EXAMINER

DECLARATION

J. Arokiya Mary, N. Fathima Nushha, S. Marjana Sherin, A. Mercy, K. Prithiska, R.Scholastical, R. Siva Sankari, P. Tharshini, hereby declare that, the project work entitled, **"A Study on Plastic Pollution in Vadasery"** submitted to Holy Cross College (Autonomous), Nagercoil for the first year under graduate study is an original work done under the guidance of **Dr. S. Mary Pearly Sumathi M.Com., B.Ed., M.Phil., Ph.D.,** Assistant Professor in Commerce, Holy Cross College (Autonomous). It has not been previously done for the award of the any other degree.

REG NO.	PROJECT TEAM MEMBERS	SIGNATURE
2019565	J. AROKIYA MARY	J. arokiya mary
2019575	N. FATHIMA NUSHHA	N. Fathima nushha
2019591	S. MARJANA SHERIN	Marjana sherin.S
2019594	A. MERCY	A. mercy
2019599	K. PRITHISKA	K. Prithiska.
2019609	R. SCHOLASTICAL	R. scholastical
2019612	R. SIVA SANKARI	Siva Sankari.R
2019618	P. T HARSHINI	Tharshini.P

ACKNOWLDGEMENT

We, are the project team members wish to express our heartfelt thanks to the Lord Almighty, who has helped us with His blessings to make this project a successful one.

We specially thank Holy Cross College (Autonomous), for giving this wonderful opportunity to do the project work. We also wish to express our special thanks to our Principal **Dr. Sr. Anne Perpet Sophy** for permit us to do the project work.

We are greatful to **Dr. S. Mary Pearly Sumathi, M.Com., B.Ed., M.Phil., Ph.D.,** Assistant Professor of Commerce to motivate and guide us throughout the project work.

We also express our heartfelt thanks to **Dr. M. Mary Helen Stella, M.Com., B.Ed., M.Phil., Ph.D.,** Head of the Department of Commerce, **Dr. Sr. S. Sahaya Selvi** Assistant Professor and **Dr. C. Braba**, Assistant professor give moral support and timely help throughout our project Work.

We thank the respondents for sharing their precious time to give details based on interview schedule. We also thank our family members and friends for extending their helps in one way or other.

NAME	REGISTER NO
J. AROKIYA MARY	**2019565**
N. FATHIMA NUSHHA	**2019575**
S. MARJANA SHERIN	**2019591**
A. MERCY	**2019594**
K. PRITHISKA	**2019599**
R. SHOLASTICAL	**2019609**
R. SIVA SANKARI	**2019612**
P. THARSHINI	**2019618**

CONTENTS

A study on the impact of KudankulamNuclear Power Plant Pollution in Idinthakarai

A project report submitted to Holy Cross College (Autonomous) Nagercoil affiliated to ManonmaniamSundaranarUniversity in partial fulfilment of the requirement for the award of the degree of

BACHELOR OF COMMERCE

Submitted by

Reg .no	Name
2019558	S. Akshaya
2019561	P.R.Aneetta
2019571	S.Brindha
2019577	J. George Roshini
2019590	V. Maria Frenisha
2019603	S. SahayaAbisha
2019610	A. Sherin Farhana
2019611	A. Shirine Jose

Under the Guidance

Dr .S. MARY PEARLY SUMATHI, M.Com., B.Ed., M.Phil, Ph.D

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (AUTONOMOUS)

NAGERCOIL – 629004

January 2020

Dr.S.Mary Pearly Sumathi, M.Com., B.Ed., M.Phil., Ph.D.
Assistant Professor,
Department of Commerce,
Holy Cross College (Autonomous),
Nagercoil – 629004.

CERTIFICATE

This is to certify the project entitled **"A STUDY ON THE IMPACT OF KUDANKULAM NUCLEAR POWER PLANT POLLUTION IN IDINTHAKARAI"** is a bonafide record of work done by S. Akshaya, P.R. Aneetta, S.Brindha, J. GerogeRoshini, V. Maria Frenisha, S. SahayaAbisha, A. Sherin Farhana, and A. Shirine Jose under my supervision and guidance submitted in partial fulfilment of the degree of Bachelor of Commerce . It hasnot formed the basis for the award of any degree, diploma, or any other similar title.

Place: Nagercoil.

Date:

Supervisor

Head of the Department

Dr. M. MARY HELEN STELLA
ASSOCIATE PROFESSOR
HEAD OF THE DEPARTMENT
DEPARTMENT OF COMMERCE
HOLY CROSS COLLEGE (AUTONOMOUS)
NAGERCOIL - 629 004.

External Examiner

DECLARATION

We, **S. Akshaya , P.R. Aneetta , S. Brindha , J. George Roshini , V. Maria Frenisha , S.SahayaAbisha , A. Sherin Farhana and A. Shirine Jose** hereby declare that, the project work entitled "**A Study on the Impact of Kudankulam Nuclear Power Plant Pollution in Idinthakarai**" submitted to **Holy Cross College (Autonomous), Nagercoil** for the first year under graduate study is an original work done under guidance of **Dr. S. Mary Pearly Sumathi, Assistant Professor in Commerce, Holy Cross College(Autonomous).** It has not been previously done for the award of any other degree.

Reg. No	Project Team Members	Signature
2019558	S. Akshaya	S. Akshaya
2019561	P.R. Aneetta	P.R Aneetha
2019571	S. Brindha	S. Brindha
2019577	J. George Roshini	J. George Roshin
2019590	V. Maria Frenisha	V. Maria Frenisha
2019603	S. SahayaAbisha	S. Shaya Abisha
2019610	A. Sherin Farhana	A. Sherin Farhana
2019611	A. Shirine Jose	A. Shirine Jose

Place: Nagercoil

Date:

DEPARTMENT OF COMMERCE (S.F.I)

A STUDY ON THE IMPACT OF AIR POLLUTION IN KANYAKUMARI DISTRICT

Project Report submitted to the Centre for Environmental Education,
Holy Cross College (Autonomous), Nagercoil
{Affiliated to Manonmaniam Sundaranar University, Tirunelveli}
In partial fulfilment of the requirements for the award of degree of

BACHELOR OF COMMERCE

By

Rinosha .B	2019652
Ruba Dharshiny .A	2019653
Sahaya Apsa .P	2019654
Sahaya Constense Helina .S	2019655
Sahaya Joshini .N	2019656
Sahaya Majila .A	2019657
Selva vinisha .J	2019658
Shanmuga Vadivoo .S.A	2019659
Shiji .E	2019660
Sibi Sri .H	2019661

Under the guidance of

Dr. R. Sree Devi, M.Com., M.Phil., Ph.D.

DEPARTMENT OF COMMERCE
HOLY CROSS COLLEGE (AUTONOMOUS)
NAGERCOIL - 629004

FEBRUARY 2020

Dr. R. SREE DEVI, M.Com., M.Phil., Ph.D.
Assistant Professor,
Department of Commerce,
Holy Cross College (Autonomous),
Nagercoil - 629 004

CERTIFICATE

This is to certify that the project entitled "**A STUDY ON THE IMPACT OF AIR POLLUTION IN KANYAKUMARI DISTRICT**" is a bonafide record of work done by **Rinosha .B, Ruba Dharshiny .A, Sahaya Apsa .P, Sahaya Constense Helina .S, Sahaya Joshini .N, Sahaya Majila .A, Selva Vinisha .J, Shanmuga Vadivoo .S.A, Shiji .E, Sibi Sri .H** under my supervision and guidance and submitted in partial fulfilment of the requirements for the degree of Bachelor of Commerce. It has not been submitted for the award of any degree, diploma, associateship or fellowship of any University or institution.

Supervisor

Place: Nagercoil

Date: 06-02-2020

C. K. Sunitha
Head of the Department

External Examiner

Dr. C K SUNITHA
Assistant Professor in Commerce
Research Supervisor
Holy Cross College (Autonomous)
Nagercoil - 629 004.

DECLARATION

We hereby declare that the project work entitled "**A STUDY ON THE IMPACT OF AIR POLLUTION IN KANYAKUMARI DISTRICT**" submitted by **Rinosha .B, Ruba Dharshiny .A, Sahaya Apsa .P, Sahaya Constense Helina .S, Sahaya Joshini .N, Sahaya Majila .A, Selva Vinisha .J, Shanmuga Vadivoo .S. A, Shiji .E, Sibi Sri .H** to Holy Cross College (Autonomous), Nagercoil for the degree of Bachelor of Commerce is a result of an original work, carried out under the guidance of **Dr. R.SREE DEVI, M.Com., M.Phil., Ph.D.** of Commerce department, Holy Cross College (Autonomous), Nagercoil. It has not been previously prepared for the award of any other degree, diploma, fellowship or other similar titles.

Place : Nagercoil

Date : 06-02-2020

Submitted by

Rinosha .B Rinosha.B

Ruba Dharshiny .A Dharshiny

Sahaya Apsa .P Sahaya Apsa

Sahaya Constense Helina .S S. Sahaya Constense Helin

Sahaya Joshini .N N. Sahaya Joshini.

Sahaya Majila . A Sahaya Majila A

Selva Vinisha .J Vinisha.

Shanmuga Vadivoo .S. A Shanmuga Vadivoo S.A

Shiji .E E. Shiji

Sibi Sri .H

ACKNOWLEDGEMENT

Behind this successful venture there are number of people, who have rendered us a special help and support during the preparation of our project report and we wish to acknowledge them.

We raise our heart with deep gratitude and love to the almighty for the blessings showered upon us throughout this venture, which helped us to carry out this project work with interest and enthusiasm.

We express our whole hearted thanks to our secretary **Dr.Sr.Gerardin Jayam**, for providing the facilities to do this project in our institution.

We bestow our sincere thanks to **Dr. Sr. S. Anne Perpet Sophy**, Principal, Holy Cross College (Autonomous), Nagercoil for her support to carry out this project.

We wish to express our deep sense of gratitude and sincere thanks to our supervisor **Dr. R.SREE DEVI, M.Com., M.PHIL., Ph.D.** for having suggested the area of investigation and with her keen interest, able, guidance and encouragement to complete this work in a successful manner.

We thank all the respondents of our study who offered their co-operation supporting and sharing their experiences.

We also thank our Head of the Department Ms. S.Merlin Vista for her constant support during this project work.

Our deep sense of gratitude to our parents and friends who have given moral support and timely help throughout the project work.

A STUDY ON DISASTER MANAGEMENT IN KANYAKUMARI DISTRICT

Project Report submitted to the Centre for Environmental Education,
Holy Cross College (Autonomous), Nagercoil
{Affiliated to Manonmaniam Sundaranar University, Tirunelveli}
In partial fulfilment of the requirements for the award of degree of

BACHELOR OF COMMERCE

By

Jancy Rani .A	2019634
Jenisha .C	2019636
Jenisha .J	2019637
Kanista .K	2019638
Kiruthika .A	2019639
Krishna Veni .M	2019640
Lesha .E	2019641
Lisa .M	2019642
Lizal Ponmani .I	2019643
Stephi .X	2019665

Under the guidance of

Dr. R. Sree Devi, M.Com., M.Phil., Ph.D.

DEPARTMENT OF COMMERCE
HOLY CROSS COLLEGE (AUTONOMOUS)
NAGERCOIL - 629 004

FEBRUARY - 2020

Dr. R. SREE DEVI, M.Com., M.Phil., Ph.D.
Assistant Professor,
Department of Commerce,
Holy Cross College (Autonomous),
Nagercoil - 629 004.

CERTIFICATE

This is to certify that, the project entitles, **"A STUDY ON DISASTER MANAGEMENT IN KANYAKUMARI DISTRICT"** is a bonafide record of work done by **Jancy Rani .A, Jenisha .J, Jenisha .C, Kanista .K, Kiruthika .A, Krishna Veni .M, Lesha .E, Lisa .M, Lizal Ponmani .I, Stephi .X** under my supervision and guidance and submitted in partial fulfillment of the requirements of the degree of Bachelor of Commerce. It has not been submitted for the award of any degree, diploma, associateship or fellowship of any university or institution.

Supervisor

Place: Nagercoil

Date: 06-02-2020

C. K. Sunitha
Head of the Department

External Examiner

Dr. C. K. SUNITHA
Assistant Professor in Commerce
Research Supervisor
Holy Cross College (Autonomous)
Nagercoil - 629 004

DECLARATION

We hereby declare that the project work entitled "**A STUDY ON DISASTER MANAGEMENT IN KANYAKUMARI DISTRICT**" is a bonafide record of work done by **Jancy Rani .A, Jenisha .J, Jenisha. C, Kanista .K, Kiruthika .A, Krishna Veni .M, Lesha .E, Lisa .M, Lizal Ponmani .I, Stephi .X** to Holy Cross College (Autonomous), Nagercoil for the degree of Bachelor of Commerce is a result of an original work, carried out under the guidance of **Dr. R. SREE DEVI, M.Com. M.Phil., Ph.D.** of Commerce department, Holy Cross College (Autonomous), Nagercoil. It has not been previously prepared for the award of any other degree, diploma, fellowship or other similar titles.

Place : Nagercoil

Date : 06.02.2020

Submitted by

Jancy Rani .A Jancy Rani. A

Jenisha .J J. Jenisha.

Jenisha .C C. Jenisha.

Kanista .K Kanista. K

Kiruthika .A Kiruthika. A

Krishna Veni .M Krishna Veni. M

Lesha .E Lesha E

Lisa .M Lisa. M

Lizal Ponmani .I Lizal ponmani. I

Stephi .X Stephi. X

ACKNOWLEDGEMENT

Behind this successful venture there are number of people, who have rendered us a special help and support during the preparation of our project report and we wish to acknowledge them.

We raise our heart with deep gratitude and love to the almighty for the blessings showered upon us throughout this venture, which helped us to carry out this project work with interest and enthusiasm.

We express our whole hearted thanks to our secretary **Dr. Sr. Gerardin Jayam**, for providing the facilities to do this project in our institution.

We bestow our sincere thanks to **Dr. Sr. S. Anne Perpet Sophy,** Principal, Holy Cross College (Autonomous), Nagercoil for her support to carry out this project.

We wish to express our deep sense of gratitude and sincere thanks to our supervisor **Dr. R. Sree Devi, M.Com., M.Phil., Ph.D.** for having suggested the area of investigation and with her keen interest, able, guidance and encouragement to complete this work in a successful manner.

We thank all the respondents of our study who offered their co-operation supporting and sharing their experiences.

We also thank our Head of the Department Ms. S. Merlin Vista for her constant support during this project work.

Our deep sense of gratitude to our parents and friends who have given moral support and timely help throughout the project work.

A STUDY ON THE IMPACT OF LAND POLLUTION IN KANYAKUMARI DISTRICT

Project Report submitted to the Centre for Environmental Education,
Holy Cross College (Autonomous), Nagercoil
{Affiliated to Manonmaniam Sundaranar University, Tirunelveli}
In partial fulfilment of the requirements for the award of degree of

BACHELOR OF COMMERCE

By

Lourdu Mahima .J	2019644
Maria Snega .J	2019645
Nabeeha Basheer Ahamed	2019646
Nithisha .B	2019647
Pavithra .K	2019648
Preetha .G	2019649
Rasmi .A	2019650
Reeja Medilda .J	2019651
Sneha .P.S	2019663
Thanga Ragubatha .R	2019666

Under the guidance of

Dr. R. Sree Devi, M.Com., M.Phil., Ph.D.

DEPARTMENT OF COMMERCE
HOLY CROSS COLLEGE (AUTONOMOUS)
NAGERCOIL - 629004

FEBRUARY 2020

Dr. R.SreeDevi ,M.com., M.Phil., Ph.D.
Assistant Professor,
Department of Commerce,
Holy Cross College (Autonomous),
Nagercoil - 629 004

CERTIFICATE

This is to certify that the project entitled "**A STUDY ON THE IMPACT OF LAND POLLUTION IN KANYAKUMARI DISTRICT**" is a bonafide record of work done by **LOURDU MAHIMA.J, MARIA SNEGA.J, NABEEHA BASHEER AHAMED, NITHISHA.B, PAVITHRA.K, PREETHA.G, RASMI.A, REEJA MEDILDA.J, SNEHA.P.S, THANGA RAGUBATHA.R .** under my supervision and guidance and submitted in partial fulfilment of the requirements for the degree of Bachelor of Commerce. It has not been submitted for the award of any degree, diploma, associateship or fellowship of any University or institution.

Supervisor

Place: Nagercoil

Date: 06-02-2020

C.K. Sunitha
Head of the Department

External

Examiner

Dr. C. K. SUNITHA
Assistant Professor in Commerce
Research Supervisor
Holy Cross College (Autonomous)
Nagercoil - 629 004

DECLARATION

We hereby declare that the project work entitled "A STUDY ON THE **IMPACT OF LAND POLLUTION IN KANYAKUMARI DISTRICT**" submitted by **LOURDU MAHIMA.J, MARIA SNEGA.J, NABEEHA BASHEER AHAMED, NITHISHA.B, PAVITHRA.K, PREETHA.G, RASMI.A, REEJA MEDILDA.J, SNEHA.P.S, THANGA RAGUBATHA.R.** to Holy Cross College (Autonomous), Nagercoil for the degree of Bachelor of Commerce is a result of an original work, carried out under the guidance of **Dr. R.SREE DEVI,M.Com., M.PHIL., Ph.D.** of Commerce department , Holy Cross College (Autonomous), Nagercoil. It has not been previously prepared for the award of any other degree, diploma, fellowship or other similar titles.

Place : Nagercoil

Date : 06-02-2020

Submitted by

LOURDU MAHIMA.J. J. Lourdu Mahima

MARIA SNEGA.J. Maria Snega J

NABEEHA BASHEER AHAMED. Nabeeha

NITHISHA.B B. Nithisha

PAVITHRA.K. K. Pavithra

PREETHA.G. G. Preetha

RASMI.A. A. Rasmi

REEJA MEDILDA.J. Reeja Medilda J

SNEHA.P.S. P. Sneha

THANGA RAGUBATHA.R.

ACKNOWLEDGEMENT

Behind this successful venture there are number of people, who have rendered us a special help and support during the preparation of our project report and we wish to acknowledge them.

We raise our heart with deep gratitude and love to the almighty for the blessings showered upon us throughout this venture, which helped us to carry out this project work with interest and enthusiasm.

We express our whole hearted thanks to our secretary **Dr. Sr. GERARDIN JAYAM**, for providing the facilities to do this project in our institution.

We bestow our sincere thanks to **Dr. Sr. S. ANNE PERPET SOPHY,** Principal, Holy Cross College (Autonomous), Nagercoil for her support to carry out this project.

We wish to express our deep sense of gratitude and sincere thanks to our supervisor **Dr. R. SREE DEVI, M.Com., M.Phil., Ph.D.** for having suggested the area of investigation and with her keen interest, able, guidance and encouragement to complete this work in a successful manner.

We thank all the respondents of our study who offered their co-operation supporting and sharing their experiences.

We also thank our Head of the Department Ms. S. Merlin Vista for her constant support during this project work.

Our deep sense of gratitude to our parents and friends who have given moral support and timely help throughout the project work.

DEPARTMENT OF COMMERCE (S.F.II)

The Pazhayar River – A case study of a polluted river in ozhuinesery

PROJECT REPORT ON ENVIRONMENTAL STUDIES

BACHELOR OF COMMERCE

Submitted by

	Name
2019675	Antony Minisha.S
2019683	Benitta Matlin. S
2019693	Maria Edvige.B
2019694	Nivedha.V
2019701	Sahaya varsha Rithi. M.A
2019702	Sindhu.M
2019704	Sowmiya.E
2019706	Sri Lakshmi.B
2019710	Vasantha Shiny. M

Under the guidance of

Dr. S. Anees Fathima Sumaya,M.com.

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (AUTONOMOUS)

NAGERCOIL – 629004

2019-2020

Ms. S. Anees Fathima Sumaya, M.com,
Assistant professor,
Department of commerce,
Holy cross college (Autonomous) Nagercoil-629004

CERTIFICATE

This is to certify that the project entitled," " **The Pazhayar River – A case study of a polluted river in ozhuinesery** " is a Bonafede record of work of done by AntonyMinisha.S,Benitta Matlin. S,Maria Edvige.B, Nivedha.V,Sahaya varsha Rithi. M.A, Sindhu.M,Sowmiya.E, Sri Lakshmi.B,Vasantha Shiny. M under my guidance and submitted in partial fulfillment of the requirement for the degree of b.com. this report represents entirely are independent original work for the candidate.

Place: Nagercoil

Date: 5. 3. 2020

Supervisor

External Examiner

Head of the department

Dr. J. DIVYA MERRY MALAR,
Head & Assistant Professor,
Department of Commerce (SF),
Holy Cross College (Autonomous),
Nagercoil - 629 003.

DECLARATION

We hereby declare that project work entitled, " **The Pazhayar River – A case study of a polluted river in ozhuinesery** " submitted to Holy Cross College (Autonomous), Nagercoil. For first year under graduate study is an orginal work done under the guidance of Dr. Ms. S. Anees Fathima Sumaya, M.com, , Assistance professor, Commerce Department. We here by declare that the facts are genuine and are not based on any other research work.

Place: Nagercoil

Date: 25.2.2020

Submitted By,

2019675	Antony Minisha.S
2019683	Benitta Matlin. S
2019693	Maria Edvige.B
2019694	Nivedha.V
2019701	Sahaya varsha Rithi. M.A
2019702	Sindhu.M
2019704	Sowmiya.E
2019706	Sri Lakshmi.B
2019710	Vasantha Shiny. M

A Study on the methods of waste disposal followed in Irulappapuram

PROJECT REPORT ON ENVIRONMENTAL STUDIES

BACHELOR OF COMMERCE

Submitted by

Name

2019672 Amutha. M

2019673 Angelo Gana Jemi. A

2019673 Ashika Fathima. A

2019681 Asmin Fathima. A

2019 691 Leela. A

2019692 Malavika. A

2019695 Noorul Hansa. P. H

2019700 Sahaya Reshma Plasid.

2019712 Zulfath Shahina. M. N

Under the guidance of

Dr. S. Anees Fathima Sumaya,M.com.,

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (AUTONOMOUS)

NAGERCOIL – 629004

2019-2020

Ms. S. Anees Fathima Sumaya, M.com,
Assistant professor,
Department of commerce,
Holy cross college (Autonomous) Nagercoil-629004

CERTIFICATE

This is to certify that the project entitled, " **A Study on the methods of waste disposal followed in Irulappapuram**" is a Bonafede record of work of done Amutha. M,Angelo Gana Jemi. A,Ashika Fathima. A,Asmin Fathima. A,Leela. A,Malavika. A,Noorul Reshma Plasid,Zulfath Shahina. M. N under my guidance and submitted in partial fulfillment of the requirement for the degree of b.com. this report represents entirely are independent original work for the candidate.

Place: Nagercoil

Date: 5.3.2020

Anees
Supervisor

Anees
External Examiner

Head of the department

Dr. J. DIVYA MERRY MALAR,
Head & Assistant Professor,
Department of Commerce (SF),
Holy Cross College (Autonomous),
Nagercoil - 629 003.

DECLARATION

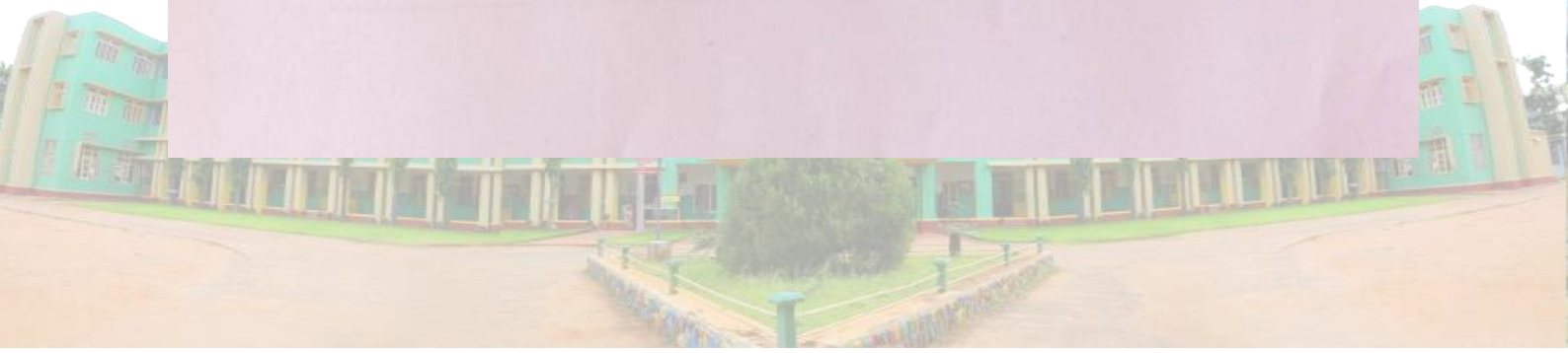
We hereby declare that project work entitled, **A Study on the methods of waste disposal followed in Irulappapuram**" submitted to Holy Cross College (Autonomous), Nagercoil, For first year under graduate study is an orginal work done under the guidance of Dr. S. Anees Fathima Sumaya,M.com., Assistance professor, Commerce Department. We here by declare that the facts are genuine and are not based on any other research work.

Place: Nagercoil

Date: 25. 2. 2020

Submitted By,

2019672	Amutha. M	Amutha
2019673	Angelo Gana Jemi. A	Jemi
2019673	Ashika Fathima. A	fathima
2019681	Asmin Fathima. A	Asmin
2019 691	Leela. A	leela
2019692	Malavika. A	Malavika
2019695	Noorul Hansa. P. H	Hansa
2019700	Sahaya Reshma Plasid.	S.
2019712	Zulfath Shahina. M. N	Shahina.



A Study on Socio-Economic Conditions of Commercial Fishermen in Fishermen in Chinnamuttom Village

PROJECT REPORT ON ENVIRONMENTAL STUDIES

BACHELOR OF COMMERCE

Submitted by

	Name
2019670	Abirami. K
2019 675	Antony Deena. S
2019 687	Jeya Sundari. R
2019690	Kowshika. M
2019697	Revathi. K
2019708	Tenifa. T
2019709	Valli. M

Under the guidance of

Dr. S. Anees Fathima Sumaya,M.com.

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (AUTONOMOUS)

NAGERCOIL – 629004

2019-2020

DECLARATION

We hereby declare that project work entitled, **A Study on socio-economic conditions of commercial fishermen in fishermen in chinnamuttom village**" submitted to Holy Cross College (Autonomous), Nagercoil, For first year under graduate study is an orginal work done under the guidance of Dr. S. Anees Fathima Sumaya,M.com, Assistance professor, Commerce Department. We here by declare that the facts are genuine and are not based on any other research work.

Place: Nagercoil

Date: 25.02.2020

Submitted By,

2019670	Abirami. K Abirami
2019 675	Antony Deena. S Deena
2019 687	Jeya Sundari. R Jeya
2019690	Kowshika. M Kowshika
2019697	Revathi. K Revathi
2019708	Tenifa. T Tenifa
2019709	Valli. M valli.

ACKNOWLEDGEMENT

"He enjoys much who is thankful for little, a grateful mind in both a great and happy life".

At the outset, we wish to express our heartfelt thanks to the lord almighty who help with his blessings to make this project a successful one.

We extend our special thanks to Dr. Sr. . Anne Perpet Sophy , Principal, Holy Cross College (AUTONOMOUS), Nagercoil for giving as this wonderful opportunity to done the project work.

We are grateful to Dr. S. Anees Fathima Sumaya,M.com.,for her excellent assistance, encouragement, and guidance throughout our project work. We also express our heart thanks to all the staff members of Department of Commerce.

Our deep gratitude goes to our parents and friends who have given moral and timely support throughout our project work.

Place: Nagercoil

Date: 5.3.2020

2019670	Abirami. K
2019 675	Antony Deena. S
2019 687	Jeya Sundari. R
2019690	Kowshika. M
2019697	Revathi. K
2019708	Tenifa. T
2019709	Valli. M

A Study on the Impact of Nuclear Power Plant in Kudankulam

PROJECT REPORT ON ENVIRONMENTAL STUDIES

BACHELOR OF COMMERCE

Submitted by

	Name
2019674	Anisha .S
2019679	Arul Saffira.A
2019682	Asorin Lithisha.A
2019688	John Sephiniya
2019696	Prem Jeyashree. A
2019698	Rudhu Prithivi. P
2019699	Ruth Robin
2019707	Suhitha. C
2019713	Sahaya Shosni. R

Under the guidance of

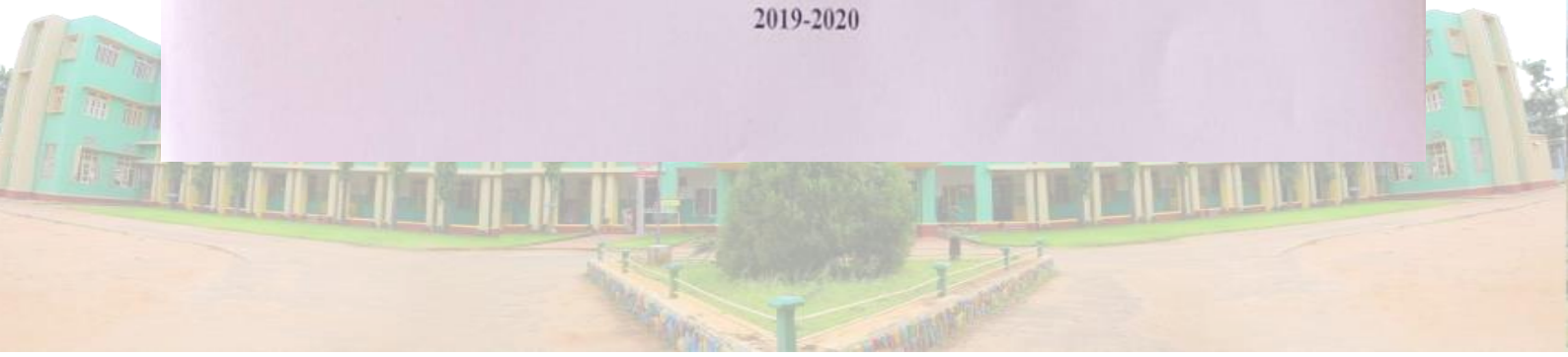
Dr. S. Anees Fathima Sumaya,M.com.

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (AUTONOMOUS)

NAGERCOIL – 629004

2019-2020



Ms. S. Anees Fathima Sumaya, M.com,
Assistant professor,
Department of commerce,
Holy cross college (Autonomous) Nagercoil-629004

CERTIFICATE

This is to certify that the project entitled," **A Study on the Impact of Nuclear Power Plant in Kudankulam** " is a Bonafede record of work of done by Arul Saffira.A,Asorin Lithisha.A,John Sephiniya,Prem Jeyashree. A,Rudhu Prithivi. P,Ruth Robin, Suhitha. C,Sahaya Shosni. R under my guidance and submitted in partial fulfillment of the requirement for the degree of b.com. this report represents entirely are independent original work for the candidate.

Place: Nagercoil

Date: 05.03.2020

Anees
Supervisor

Anees
External Examiner

Head of the department

Dr. J. DIVYA MERRY MALAR,
Head & Assistant Professor,
Department of Commerce (SF),
Holy Cross College (Autonomous),
Nagercoil - 629 003.

A Study on Bird population in Koonthankulam village

PROJECT REPORT ON ENVIRONMENTAL STUDIES

BACHELOR OF COMMERCE

Submitted by

Name

2019677 Anusha.G

2019678 Arithi.M

2019684 Davinu.D

2019686 Felinda.P

2019689 Jovina Annie.A

2019703 Sophia Merlin.C

Under the guidance of

Dr. S. Anees Fathima Sumaya,M.com.,

DEPARTMENT OF COMMERCE

HOLY CROSS COLLEGE (AUTONOMOUS)

NAGERCOIL – 629004

2019-2020

Ms. S. Anees Fathima Sumaya, M.com,
Assistant professor,
Department of commerce,
Holy cross college (Autonomous) Nagercoil-629004

CERTIFICATE

This is to certify that the project entitled," **A Study on Bird population in Koonthankulam village** " is a Bonafede record of work of done by AntonyMinisha.S.Benitta Matlin. S,Maria Edvige.B, Nivedha.V,Sahaya varsha Rithi. M.A, Sindhu.M,Sowmiya.E, Sri Lakshmi.B,Vasantha Shiny. M under my guidance and submitted in partial fulfillment of the requirement for the degree of b.com. this report represents entirely are independent original work for the candidate.

Place: Nagercoil

Date: 5.3.2020

Supervisor

External Examiner

Head of the department

Dr. J. DIVYA MERRY MALAR,
Head & Assistant Professor,
Department of Commerce (SF),
Holy Cross College (Autonomous),
Nagercoil - 629 003.

DECLARATION

We hereby declare that project work entitled, " **A Study on Bird population in Koonthankulam village**" submitted to Holy Cross College (Autonomous), Nagercoil, For first year under graduate study is an orginal work done under the guidance of Dr. Ms. S. Anees Fathima Sumaya, M.com , Assistance professor, Commerce Department. We here by declare that the facts are genuine and are not based on any other research work.

Place: Nagercoil

Date: 25.2.2020

Submitted By,

2019677	Anusha.G	Anusha G
2019678	Arithi.M	Arthi
2019684	Davinu.D	Davinu
2019686	Felinda.P	flinda.
2019689	Jovina Annie.A	Annie
2019703	Sophia Merlin.C	Merlin.