

# ENVIRONMENTAL AWARENESS AMONG THE STUDENTS OF AFRICAN COUNTRIES IN MYSORE CITY

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## Abstract:

Environmental education means the educational process dealing with man's relationship with his natural and man made surroundings and includes the relations of populations, pollution, resource allocation and depletion, conservation, transportation, technology, energy and, urban and rural planning to the total biosphere. It should aim not merely at imparting knowledge and understanding of man's total environment but also at the development of skills, attitudes and values necessary to understand and improve the biosphere and the troposphere. As such creating, among social groups and individuals, an awareness of and sensitivity to the total environment and its allied problems form an integral part of environment education.

It has been discussed at conferences and seminars and concluded that the environmental protection starts by creating an awareness among the people so that it becomes a part of people's life style. A better understanding of our environment is indispensable for its rational management because it will enable us to comprehend the environment's resilience to man's action and the maximum potential it may offer for sustained development of mankind. Thus environmental awareness is an imperative need of the hour and much research is required to study the level of environmental awareness among different strata of population like students, teachers, leaders and public etc. and also to design educational programmes to develop that awareness.

The present paper gives the details of the descriptive survey type study which mainly aimed at (i) studying the level of environmental awareness among the students of African countries in Mysore city and (ii) exploring the environmental problems faced relating to industrial pollution and water pollution and measures taken to control or overcome them in the African countries. The data was collected from 150 students of four African countries (Kenya, Tanzania, Ethiopia, Somalia) pursuing different undergraduate and post graduate courses in Mysore city, using an environmental awareness questionnaire and an interview schedule prepared by the investigators.

The data was analysed using percentage analysis, mean and standard deviation, pie diagram and bar graph and chi square test for hypothesis testing: the results in detail are presented in the paper. However it could be concluded that 85% of the students from only four African countries exhibited environmental awareness in general; majority of the students viewed environment in terms of physical aspects where as only 10% of the students could recognize the social and cultural aspects of the environment. Further, it is

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very interesting to note that only 6% of the students were aware of the date on which World Environment Day is celebrated every year and only 1 % of the students were aware of the Government body working towards pollution control and environmental conservation, and also environmental legislation in India. Majority of the students were not aware of the Acts and Rules in vogue in their native (African) countries to regulate environmental protection. Each country in Africa has a Ministry for Environment and Non-governmental organisations play an important role in environmental monitoring.

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According to the recommendation no. 1 of the first Inter governmental conference on Environmental Education held at Tbilisi, USSR (former) in October 1977, the basic aim of Environmental Education is to succeed in making individuals and communities understand the complex nature of the natural and the built environments resulting from the interaction of their biological, physical, social, economic, and culture aspects, and acquire the knowledge, values, attitudes and practical skills to participate in a responsible and effective way in anticipating and solving social problems, and in the management of the quality of Environment. Further, it aims to show the economic, political and ecological interdependence of the modern world, in which decisions and actions by different countries can have international repercussions. Environmental education should, in this regard, help to develop a sense of responsibility and solidarity among countries and regions as the foundation for a new international order which will guarantee the conservation and improvement of the environment.

It has been discussed at conferences and seminars and concluded that the environmental protection starts by creating an awareness among the people so that it becomes a part of people's life style. A better understanding of our environment is indispensable for its rational management because it will enable us to comprehend the environment's resilience to man's action and the maximum potential it may offer for sustained development of mankind. Thus environmental awareness is an imperative need of the hour. In India, conscious efforts are being made by the Government Departments to encourage both research and regulation of environmental issues. Various organisations (voluntary and non-governmental) have been set up to increase the environmental awareness in the society.

Because all the policy makers, administrative leaders and the people who matter in influencing decisions in the community pass through school and college system, it is better that they leave these premises aware of the environmental hazards caused by man and be physically as well as psychologically ready to help in their alleviation or prevention. University education being aimed at quality education and academic excellence leading to the production of academic leaders in different areas of

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knowledge, it is imperative that the students at this level should be better aware of environmental problems and their management and be able to meet the challenges of the day. As such, it was found significant to study the level of environmental awareness among students at the university level and thus necessitated the present study.

**Objectives of the study :** This study is of descriptive type and following are the objectives of the study

1. To study the level of environmental awareness among the students of African countries in Mysore city.
2. To study gender difference in the level of environmental awareness among the students selected for the study.
3. To study the difference in the level of environmental awareness between the post-graduate and undergraduate students.
4. To study the difference in the level of environmental awareness among the students of different age groups.
5. To study the differences in the level of environmental awareness among the students of different nationalities.
6. To explore the environmental problems faced relating to industrial pollution & water pollution and measures taken to control or overcome them in different African countries.

**Hypotheses tested :** The following hypotheses were formulated and tested relating to the objectives 2 to 5.

There is no significant difference in the level of environmental awareness among the

1. male and female students.
2. post graduate and undergraduate students.
3. students of different age group.

**Sample of the study:** The sample of the study is purposive sample and consisted of 150 students from four African countries in Mysore city out of which 99 were from Kenya, 41 from Tanzania, 6 from Ethiopia and 4 from Somalia; 29 were female and 121 were male students; 20 were postgraduate students and 130 were undergraduate students. All these students were pursuing different courses of the study viz : Science, Commerce, Law, Humanities and Pharmacy in different institutions in Mysore city.

**Table - 1**

Composition of the sample of the study by levels of education and type of courses pursued

Nationality	Science	Commerce	Law	Engg	Pharmacy	Arts	Total	Science	Commerce	Law	Humanities	Total	Grant	Total
KENYA	5	14	47	-	14	2	85	5	3	3	3	14		99
TANZANIA	9	9	19	-	3	-	40	1	-	-	-	1		41
EHIPIA	2	--	--	1	--	-	3	1	-	-	2	3		6
SOMALIA	-	2	--	-	--	-	2	1	1	-	-	2		4
TOTAL	16	25	66	1	17	2	130	8	4	3	5	20		150

**Tools used in the study :** The Environmental Awareness Questionnaire to measure environmental awareness and Interview Schedule to explore environmental problems faces and measure taken to control and conserve them in African countries were developed by the investigators following the modalities meant for preparing a valid and reliable tool of research.

The questionnaire prepared was of mixed type consisting of 31 questions of both closed and open type, covering the following aspects, - (1) Meaning and concept of environment (2) Environmental problems and their remediation or management (3) General knowledge of some selected environmental events and issues, (4) Application of environmental knowledge to analyse environmental problems.

The Interview schedule consisted of 40 questions on the following areas-political environment, economic activities, social climate, industrial pollution, water pollution, deforestation, municipal waste disposal, Acts and regulations.

**Procedure :** The data was collected by administering the Environmental Awareness Questionnaire on the sample of the study and by interviewing them using the Interview schedule developed by the investigators. The data on the questionnaire was analysed using percentage analysis, mean and standard deviation, pie diagrams and paragraphs, chisquare test for hypotheses testing where as the data obtained on the interview schedule was consolidated and some generalisations were drawn. To assess the level of the environmental awareness among the students, the total sample of the students was classified into 3 categories as above average, average and below average on the basis of the common criteria in terms of mean and standard deviations (i.e M+SD & above -> Above average, between M+SD and M-SD -> Average, M-SD and below -> below average)

**Major findings of the study:**

**Environmental Awareness:**

Table - 2

Number and percentage of students with different levels of awareness under different heads of the questionnaire

Level of awareness	Env. awareness in total		Concept of Env.		Env. problems & remediations		General knowledge in Env. issues		Application of Env. knowlodge	
	No.	%	No.	%	No.	%	No.	%	No.	%
Above Average	30	20	102	68	86	57	22	15	25	17
Average	98	65	42	28	54	36	78	52	30	20
Below Average	22	15	6	4	10	7	50	33	95	63

1. 85% of the students from four African countries (Kenya, Tanzania, Ethiopia and Somalia) are aware of the environmental problems, issues and their management or remedial measures (65% are average, 20% above average and 15% below average in environmental awareness).
2. 67% of the students know the comprehensive definition of the environment.
3. 84% of the students viewed environment in terms of physical aspects whereas only 10% of the students could recognise the social and cultural of the environment.
4. More than 90% of the students are aware of different environmental problems whereas only 40% of them are aware of the effects of global warming.
5. Only 25% of the students are clearly aware of the ozone layer depletion.
6. Only 40% of the students has a clear understanding of the meaning of green house effect.
7. 60% of the students are aware of the El Niño, but only 10% know exactly what it is and its cause.
8. Over 65% of the students were aware of the reasons for environmental problems in India.
9. Only 1% of the students are aware of the Government body working towards pollution control and environmental conservation, and also environmental legislation in India (i.e Acts & Rules enforced for environmental protection)
10. Only 6% of the students are aware of the date on which world Environment Day is celebrated every year.
11. Only 40% of the students know the year in which the Environmental protection Act came into force in India.

12. 67% of the students have exhibited a general knowledge of some environmental issues and events.
13. Only 37% of the students were able to apply environmental knowledge to analyse certain environmental issues.
14. No significant difference is found in the level of environmental awareness between male and female students, postgraduate and undergraduate students.
15. No significant difference is found in the level of environmental awareness among the students of different age group and of different nationalities.
16. Majority of the students are not aware of the Acts and rules in vogue in their native (Africa) countries to regulate environmental protection.

### **Environmental Problems and Remediations**

**Industrial Pollution :** In Africa countries pollution by industry is a localised issue, only affecting the proximity. In the industry centres, noise and smoke are prevalent only in the surrounding areas. The following types of industries are found in the four African countries industries for processing of coffee, tea, sisal etc., mining and quarrying and construction industry. The major environmental problems due to industrial pollution are those affecting the communities living near the industrial zones i.e more noise, smell and dust, smoke leading to acid rains in these areas, colouring of buildings, cancer problems, headache & nausea.

The following are some of the disposal methods prevailed in (four) African countries.

1. Liquid effluents are disposed into the river or open sewages.
2. Solid wastes are openly dumped or sold to small scales informal sector.
3. Recycling of paper and metals is more common in Kenya and Tanzania.
4. Workers in the factories where dust particles pose a problem are supplied with mouth & nose covers.

The measures used to control industrial pollution in African countries are given below.

- a. Urban zoning - creating industrial areas and residential areas.
- b. Government licensing - inspection before licence is granted to commence activities in any new industry.
- c. Closing down polluting industries until their pollution problems are solved.
- d. Emission regulation by Government boards to ensure tolerance limits adhered to.
- e. Selecting industrial sites based upon detailed environmental impact assessment.
- f. Continuous monitoring of industries.
- g. Demanding chemical and biological treatment of effluent before it enters public sewage system.

**Water Pollution :** Water sources in these African countries are mainly rivers and lakes. Major pollutants of these waters ranges from country to country, from rivers to rivers and

lake to lake. The most polluted river in Kenya is Athi river which originates from an industrial area. Lake Victoria is considered as the most polluted lake. However, the following pollutants are found in water.

- a. Agricultural wastes such as fertilizers and insecticides in Tana river.
- b. Municipal wastes especially in lake Nakuru, Victoria and Tana river.
- c. Industrial dumping especially in lake Nakuru, Victoria and river Athi.
- d. Fish wastes returned to water during fish washing, common in lake Turkana and lake Victoria.
- e. Belting in almost all rivers & lakes.
- f. Oil spillage in lake Victoria. Following measures have been taken up to prevent this water pollution

Following measures have been taken up to prevent this water pollution.

- a. Outlawing of direct and untreated dumping into the lakes and rivers.
- b. Prevention of indiscriminating fishing (allowed only licenced people, not others).
- c. Wild life guards and lake police especially in lake Victoria.
- d. Construction of treatment plants to treat water before releasing it to lakes (eg: lake Nakura).
- e. Measures to prevent run of water contaminated with fertilizers and insecticides to rivers and lakes.
- f. Forbidding agricultural activities in river banks.

In cities, the water is chlorinated before being supplied to homes, boiling supplements chlorination. In rural areas, water is rarely treated as the water is from very safe sources like springs, boreholes etc.

Each country has a separate Ministry for Environment. Like India many Acts and rules are in vogue to protect environment. Non-governmental organisations play an important role in environmental monitoring. Churches also play a leading role in environmental issues to the notice of the authorities.

#### **Implications of the study :**

From this study, though it was found that majority of the students of African countries in Mysore city are aware of the concept of environment, a few environmental problems and their remediation, it is quite interesting to note that majority of the students are unaware of the (i) social and cultural aspects of the environment (ii) global environmental problems like ozone layer depletion, green house effect etc., (iii) Government body working towards pollution control, Environmental legislation in India and African countries, World Environment Day celebrations. However University being a place of excellence and the terminal point for majority of students, who in turn are expected to be future leaders in different fields of work, it is advisable that they all be equipped with adequate awareness of the environment and ability to tackle environmental problems at regional or global level. Therefore, it is suggested that deliberate efforts be put at university level through short term courses, package

programmes, integration of environment knowledge with all the courses of study. In addition to the special courses on environmental studies in separate departments, it is very essential that the basics of environmental issues/studies be integrated with all the courses of study in the university. Special care should be taken to sensitise university students on the Environmental Legislation (Acts and Rules) and also on the local and global issues of Environment. Finally, knowledge on this should be made part of the entrance examination to colleges, universities and several competitive examinations at the State and Central levels. Environmental education at university level should be practical oriented rather than theoretical.

The human civilization in natural processes has created ecological degradation and environmental problems of serious magnitude. Large amount of toxic waste has led to the extinction of many species of birds and fauna. The revolution has led to an erosion which in turn has caused floods. Despite modern technologies erosion and flooding are increasing through the different areas of the world. Desert is expanding, the raised industrialization has resulted in increase in percentage of Carbon Monoxide and sulphur in the atmosphere. The use of pesticides and herbicides has resulted in pollution in the atmosphere. The use of industrial wastes and city garbage disposed off in the oceans and toxic to marine life. This has resulted in water and air pollution in industrial areas and cities. The problem of sanitation found in urban and rural areas have given rise to various kinds of diseases. The rapid and unbridled growth of human activities has led to the formation of toxic sludge leading to environmental degradation and depletion of resources. The degradation and environmental pollution has environmental problems in the form of global warming, depletion of ozone layer, acid rain and so on.

After exploring the environment much, man has realized to undertake remedial measures to protect, manage and conserve the depleting environmental resources. Since then, many conferences, conventions, discussions, meetings, seminars and symposia were held both at the national as well as at the international level in order to create environmental awareness among the individuals. Environmental education is such a strategy which enables people to enjoy good health and high quality of life in which it is vital to prevent harmful effects to human health or damage to the environment.