

A COMPARATIVE STUDY ON ENVIRONMENTAL AWARENESS AND ENVIRONMENTALLY BENEFICIAL BEHAVIOR IN INDIA

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1.0 Introduction

Both developing and developed countries are facing serious environmental problems. While some of the problems might be alike due to their global nature (e.g. global warming, depletion of the ozone layer), others are specifically local ones. How do people out of different cultures perceive these problems? How do they react to them?

The aim of this study is to figure out what factors are most important in explaining different levels of awareness concerning environmental problems and to compare the level of awareness as well as the actual behavior towards environment of people living in developing and developed countries.

As the countries of study India and the Federal Republic of Germany have been chosen. India is thought to represent a developing country while Germany gives an example of an economically developed country. An additional aspect when choosing the countries of study was to use the competence of the author who lives in Germany, but has the great possibility to do some fieldwork studies in India and to work together with Indian colleagues.

The design of the study has three stages:

First, information on India as far as environmental awareness and environmentally friendly behavior are concerned will be obtained by both fieldwork and a systematic survey of the available literature. This paper will focus exclusively on the first part of the study design.

Second, the same will be done for Germany.

The third and final step will be to compare the results obtained for India and Germany.

The first part of the country study will focus on the different factors that might be able to explain awareness of environmental problems. The ultimate objective is to find the most decisive factors in creating awareness of ecological issues, since this is the first step in developing effective campaigns to promote a higher level of environmental awareness among the population.

The special emphasis of this study is on the role of media in creating environmental awareness with the underlying concept of media being a very broad one. The different media sources considered can be categorized as follows:

- (a) Mass media (e.g. radio, television, newspaper and magazines)
- (b) Institutional media (e.g. school, government officials or village leaders)
- (c) Traditional media (e.g. family members, other relatives, friends and neighbors, NGO work)

As a first explanation of environmental awareness modern mass media will be considered.

It is still to be confirmed that the role of mass media is one of the most important factors underlying the knowledge of environmental problems: This can only be true on the conditions that first, mass media are accessible to large proportions of the population, second, are spending some time on environmental issues and third, people are interested in information on ecological issues provided by the media so that they view or listen to the corresponding programs as well as read newspaper articles or other written publications dealing with environmental issues.

Second, representing the institutional media the importance of school education in creating environmental awareness and training environmentally friendly behavior will be examined: the aim is to find out if and to what degree and how successful knowledge on ecological issues is taught at schools.

A third factor being able to explain the level of environmental awareness might be traditional media, the social environment of a person. If discussions on environmental issues within the family or with friends, neighbors and colleagues take place quite often or even regularly this will probably influence a person's awareness and behavior in an environmental friendly way. The work of NGOs and the support they perceive by the Ministry of Environment & Forests will be considered, too.

Forth, in addition to the role of media the degree to which a person is exposed to environmental pollution in every day life might influence its awareness of ecological

problems. Suffering from a disease or permanent health problems due to environmental pollution will probably even enhance the level of awareness.

After discussing the reasons that promote environmental awareness, the second part of each country study will focus on the resulting different levels of awareness itself. The question is if the level of awareness of environmental problems is higher in more developed countries than in less developed ones or vice versa. Whatever should be the case it should be indicated by the explanations offered above.

The third part of each country study will finally examine the individual's actual behavior towards environment. This stresses that it is important to make a difference between the way in which people actually behave and their awareness of environmental problems that is a prerequisite, but not necessarily sufficient to develop an environmental friendly behavior. It is, for example, possible that somebody is quite aware of the fact that his behavior is detrimental to natural environment, but as long as he is not convinced that it is important to preserve the environment he might not be willing or motivated to change his behavior.

2.0 Objectives

The specific aspects to study would be

- 1) to find out the most decisive factors in creating environmental awareness
- 2) to evaluate the role of modern mass media in this process
- 3) to explore how much time media are spending on environmental issues
- 4) to know if people are interested in information on environment provided by the media
- 5) to assess the importance of education in creating environmental awareness
- 6) to find out if education in school is training an environmentally friendly behavior
- 7) to figure out if the social environment of a person, e.g. its family, friends, neighbors and colleagues as well as the work of NGOs, is able to partially explain different levels of environmental awareness
- 8) to work out if exposure to environmental pollution in every day life influences the level of environmental awareness

- 9) to assess the resulting level of environmental awareness in India
- 10) to assess the actual level of environmental friendly behavior

3.0 Methodology

The planned study will be based both on fieldwork (a household survey as well as interviews with media managers, experts, government officials and teachers, a list of the interviewed persons is available in appendix) and a survey of literature and secondary information available.

a. Survey of literature and secondary information

By studying literature an attempt will be made to find out how many time and space media like television, radio and daily newspapers provide for environmental issues and what kind of issues are tackled: Are the problems in general described and their causes explained? Or is the main emphasis on politics concerning environment like legislation and implementation? Which specific problems are tackled? How often are global environmental problems in comparison to national or local ones are addressed to?

To get an overview of Indian environmental policy and to figure out if there is any regulation by law that environmental issues should be dealt with is a further attempt of the literature survey.

b. Interviews

All three kinds of interviews (those with media managers and journalists, with experts and officials and with teachers) have been designed as open interviews. The interviews with media managers will tackle the following topics: Which environmental problems are mentioned in Indian media? What is the aim of media when dealing with ecological issues: information, education or entertainment? To whom (age, level of education etc.)

do environmental programs address? Why are media spending not even more time on environmental issues? Experts and officials will be asked on their view of how environmental awareness comes into existence and what can be done to promote a more environmentally friendly behavior. The potential and actual role of the Ministry of Environment & Forests in creating environmental awareness will be examined, too.

Interviewing teachers offers the chance to obtain some information on the question if teachers are obliged to teach on environmental issues by fixed curricula, how extensively this is done and if there have been changes in teaching on environment over the last few years. Another interesting aspect is if theoretical teaching is complemented by practical training, special projects and events organized by schools.

c. Household survey

The main objectives of the household survey are to find the most important factors explaining environmental awareness, to assess the individual level of environmental awareness and to learn about the person's behavior towards environment.

For this reason the questions asked have been designed to find out the sources of information on environmental issues, e.g. media or education at school. An attempt will be made to assess how the interviewed person thinks of environmental pollution: It is an important and interesting issue? Does the interviewed person feel exposed to some kind of environmental pollution in its every day life? What environmental issues are considered the most urgent ones? Additionally, the amount of the interviewed person's knowledge concerning environmental issues will be judged. Another objective is to find out if the interviewed person is in some respect behaving in an environmentally friendly way.

The household survey will cover 100 households in different areas in Delhi. Sector IV, Timapur, Civil Line in the North, Pocket IV, Shakar Pur in the East, Minto Road Complex in Central Delhi, Rajouri Garden in the West and Lajpat Nagar near Central Market in the South of Delhi.

Based on the assumption that Indian and German middle-class households are most comparable (as opposed to lower- or upper-class households) the study will focus on middle class households.

4.0 Environmental education

The most important landmark for environmental education at an international level was without a doubt the International Conference on Environmental Education organized by UNESCO and UNEP at Tbilisi in former USSR in 1977. The goals of environmental education were defined as creating environmental awareness, impart general knowledge for a basic understanding of environment, acquiring environmental friendly attitudes and values and to generate new patterns of behavior towards environment. The more recently held United Nations Conference on Environment and Development in Rio de Janeiro, Brazil in 1992, popularly known as the Earth Summit, adopted an action plan for Sustainable Development, Agenda 21. Chapter 36 which is devoted to education states that "Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues"(100).

Education without communication is simply impossible. Communication in turn will only work with an appropriate medium. In the case of environmental education at educational establishments classes at school, college or universities level serve as this medium. As far as environmental education outside educational establishments is concerned mass media and traditional media like family, neighbors and colleagues have the role of the medium that enables people to communicate successfully.

In the following paragraph these three different kinds of media (institutional, mass and traditional media) will be examined to find out on their efforts made in creating environmental awareness and how more or less successful they are.

a) The role of mass media in creating environmental awareness

The mass media considered here trying to explain environmental awareness are newspapers, radio and television due to the fact that these are the most widely and frequently used modern mass media in both India and Germany. First, I will deal with the supply side, the coverage of environmental issues in the media, second we will take a look at the side of demand, considering the aspect if people are interested in the offered information on environment and use it.

Since independence, the number of Indian **newspapers** has multiplied several folds. Today Indian newspapers are brought out in 93 languages and dialects. In the household survey, 57% of the interviewed persons stated to read the newspaper for 30 to 60 minutes per day. With an average of about 50 minutes the daily amount of time spent on reading the newspaper, “the backbone of news” in India, is considerably high. While the figures mentioned above underline the importance of newspaper in spreading information, its limits should be mentioned, too: illiteracy in India is around 51%. In addition to that, 93% of the several million copies are sold in the large towns with population over 100.000. This accounts only for 10 percent of the population.

How extensively are environmental issues covered in the daily newspapers? After Times of India has abandoned its weekly column, none of India’s daily newspapers has a regular space reserved for environmental news so that these are only addressed as government, ministry and legal news as well as in contexts of science or health. The focus is mainly on local and national issues like air, water and noise pollution as well as deforestation. In contrast to that global environmental problems are only mentioned very rarely, e.g. if they are the topic of international conferences.

In general, the demand of journalists when writing on environment is neither an educational or motivational approach nor offering scientific explanation or background information (exceptions are environmental issues that are on the top of the political agenda, e.g. CNG (compressed natural gas)), but it is to inform their readers on the latest trends in political news related to environment. A slight tendency towards a motivational coverage of environmental issues can be observed in the regional language newspapers, e.g. when enlightening farmers on the negative consequences of the use of pesticides.

Roughly it can be said that India's most important newspapers like Times of India, The Hindu, Hindustan Times or Indian Express have an article on environmental issues at least every second day with Times of India doing the best job in terms of frequency. The low level of coverage on environment can be explained by different reasons: First, the fairly new field of environmental journalism which starting point was only in 1994 after the Bhopal catastrophe is not considered as an attractive one by journalists, the majority of the journalists covering environment has been asked to do so. Of course, there are several environmental journalists who have chosen their subject out of true commitment, too. Second, environment is competing with all the other issues covered in the newspaper whereby the most severe selection criterion is the news worthiness of an issue. The interest of the reader as far as news on environment are concerned is supposed to be still fairly low by the editors.

Nevertheless all of the interviewed editors and journalists felt that there has been an increase in the number of articles on environment both due to a higher awareness and interest of their readers (this is especially true for the younger generation) and the visible deterioration of the state of nature.

Although its number of readers is only around 16.000, India's only environmental **magazine** "Down to Earth" has to be mentioned when writing on environment and media, because it fills an important lack in Indian media and their coverage of environment. Started in 1992 this magazine is a kind of chronology of Indian environmental history. The outstanding aspect of its approach is not only the coverage of a broad variety of environment related topics (ranking from policy to science, from local to global level) and their scientific background, but also the belief that addressing environmental issues in a developing country like India is not a matter of luxury, but of pure livelihood.

Radio is cheap, most easily accessible and radio signals cover almost the whole country.

However, on average there are only 4.4 radio / transistors sets per 100 persons. 80 percent are in urban homes, only about six million sets left with 525 million rural

population. Furthermore the frequency of listening to the radio is relatively low: only 35% of the interviewees declared to listen to the radio regularly, most of them ranking between half an hour and two hours per day.

In addition to the relatively small number of people listening to the radio the role of radio in creating environmental awareness can not be considered an important one due to the fact that there are only very few regular environmental programs, although there is an instruction by Supreme Court for all media that programs on environment should be broadcast: Motivated by the Ministry of Environment & Forests Delhi FM is broadcasting two weekly programs on environment, "Kinare – Kinare" and "Ao Dilli Savaren". Otherwise, pollution of environment is only unsystematically tackled in programs designed for special target groups, e.g. rural population, industrial workers or in city programs, in women's or children's programs. The issues mentioned and the way they are dealt are naturally adjusted to the target group and the background of the program: science programs focus on scientific explanations and new technical developments, children's programs have a more educational and motivational approach, city programs are addressing local problems like air, water and noise pollution and so on.

On the national level of broadcasting news on environment are very scarce, if news on environment are broadcast this is most often at the regional level.

In sum, radio is well below its potential in creating environmental awareness and over the last few years no increase in broadcasts on environment can be observed.

Nevertheless, there has been at least one progressive approach in the use of radio in environmental education that should be mentioned: In 1998, All India Radio, the Indian National Radio Network, addressed environmental issues such as water, air and noise pollution, deforestation, solid waste disposal, organic farming and other topics in a 52-episode entertainment-education radio serial "Yeh Kahan Aa Gaye Hum" ("Where have we arrived?"), a story of rural background in which a factory settles near a small village. The **entertainment-education communication strategy** purposely designs and implements a media message to both entertain and educate, in order to increase audience members' knowledge, create favorable attitudes and change behavior. "Yeh Kahan Aa Gaye Hum" was produced under the leadership of Mrs. Usha Bhasin with the

assistance of the Central Pollution Control Board of India. This serial was broadcast weekly with repeated versions from June to December via 31 radio stations covering seven Indian states in the densely populated Hindi-speaking areas of northern India. Due to the wide preprogram publicity via radio, television, press and NGOs working in the broadcast area it was able to attract a listenership of around 100.000 persons. While the serial itself addressed environmental issues in an entertaining manner, trying to contact the listeners in their every day life context, the epilogues usually delivered by a credible media celebrity advertised the educational message. The approach was an interactive one: A competitive spirit was fostered among listeners by awarding prizes for the quality of provided feedback, outstanding community work by listeners in the realm of environmental conservation was also recognized. Impact studies accompanying the broadcasting process showed that the radio serial provoked not only past-broadcast discussion, but also the founding of clubs in which members listened to the serial collectively and started campaigns to save the environment.

“Yeh Kahan Aa Gaye Hum” is an excellent example that the use of entertainment-education communication strategies in the field of environment can be equally successful as in social ones in which it has been practiced before. In my opinion, this approach, especially, but not only via the medium radio that is able to reach the less educated and rural parts of the population, is an extremely promising one so that its chances should not be missed in the future.

Due to the high level of illiteracy in India, electronic media are in a key position. Furthermore, inquiries have shown that both radio and **television** are perceived as authoritative and friendly media by vast percentages of the population. Since India's 45 million television sets cover 86.5 per cent of the country's population, television is one of the most powerful effective means of propaganda and persuasion. Over 10 million Indian homes have cable and satellite connections. Television has become a new status symbol even in remote villages. In rural areas people have at least sometimes access to television e.g. in small restaurants and long route busses. Probably, the rapid growth rate of television sets (3 million annually) will even increase the importance of television in the future. A further advantage of television as an educational media is that

it is helpful in teaching practical work: A televised presentation can be as clear as a face-to-face demonstration.

With an average amount of 138 minutes spent on watching television per day and more than 50% out of all the interviewees watching television two to three hours per day, television dominates newspaper and radio not only in the frequency of usage, but also in the amount of time spent on it.

Considering these promising prerequisites for the use of television in environmental education it is good news that - compared to newspapers and radio - television does a good job in covering environmental issues: Discovery Channel, National Geographic Channel and Animal Planet Channel are broadcasting exclusively on endangered species, wild and sea life. The national channels are regulated by law to offer environmental programs. Doordashan the most important channel of dissemination that reaches all over the country has three regular programs on environment: each of the weekly broadcasts of scientifically profound "Earth Matters" focuses on one special environmental problem. Targeted at educated people "Earth Matters" offers information on the sources, explains the consequences of the problem considered and gives suggestions for solution by changing individual behavior. Weekly "Terraquiz", India's first environmental quiz show on television, is a competition of the top ranking schools from Green Olympiad and is sent between Hindu and English news. "Nature Plus" is even broadcast daily, most often however at midnight. The broadcasting of a forth weekly programme of 30 minutes named "Earth" in form of a magazine that subsidizes successful initiatives of individuals is planned by the Ministry of Environment & Forest in cooperation with Doordashan. In addition to that BBC's "Earth Report" offers exclusively information on environment and with the daily broadcast of "The new adventures of Captain Planet" on Cartoon Network there is at least one program on environmental issues especially designed for children.

As for radio it is true for television that even if there is no consistent programming on environment ecological issues are tackled in the news as well as in children's, health, science, rural, agricultural and educational programs.

In contrast to radio and newspaper, politicians have recognized televisions' potential in creating environmental awareness so that the Ministry of Environment and Forests grants special money for the production of films on environment. Although adds on television are highly cost intensive the Ministry of Environment & Forests has proposed to Discovery Channel to produce 50 seconds of informational adds on nature and pollution that should be broadcast four times per day and changed monthly.

Having discussed the medias' supply of information on environment, this paragraph will focus on demand side (using the results of the household survey): To what extent do people perceive environmental information provided by the media? What kind of medium is most extensively used?

A vast majority of 80% of the respondents claimed that they were informing themselves regularly on environmental issues. Out of these 80%, 93.8% used television, 82.7% used newspapers while only 35.8% mentioned radio programs as a source of information. These figures, once more underline that television and newspaper play a more important role in environmental awareness creation than radio does, both out of the perspective of supply and demand on information on environment. 70% of the interviewees stated the amount of information on environment to be exactly right, 24% felt that it was too low.

To sum up, we have to ask the following questions: What role do Indian media play in creating environmental awareness? What are their weaknesses, what their chances? What could be done to enhance their effectiveness in raising the level of consciousness of ecological problems?

A common weak point shared by radio, TV and newspaper in India is that there are no journalists specialized (only) on environmental issues, that journalism on environment is neither a part of the education as a journalist nor is there a possibility of further training in this field. Consequently, the frequency and quality of coverage on environment depends to a high degree on the personal interest and commitment of the journalists and editors. Further typical limitations of modern mass media in India are the language,

the educational and the urban – rural biases that make it necessary to design special programs for all the different target groups if the aim is to reach a vast part of the population.

A general problem in using media for education is the lack of feedback and control of the audience or readership so that it is difficult to assess the impact of educational broadcasting. A support system that is needed for an educational message to deliver it to its target group can be offered only in few cases, the same is true for a deepening of information gained through the usage of media, e.g. via sharing experiences through discussions.

Interestingly, only television and radio have an educational and motivational approach when dealing with environmental issues, while newspaper editors feel that their job is limited to providing their readership with information.

The active campaign policy of the Ministry of Environment and Forests, the guiding jurisdiction of Supreme Court and the activism of NGO's have been able to promote news on environment more forcefully so that an increase in the coverage of environment over the last few years can be observed for both television and newspaper. A definite obstacle for environment playing an even more prominent role in media is commercialization. Since many editors feel that "you can get no money out of environment", environment is not an agenda.

Despite of all the limitations for medias' use in increasing environmental awareness of the population, medias' role in that respect is an enormous one. The focus of Indian media when covering environment is definitely on local and typical Indian problems like water and air pollution, deforestation and on the campaigns launched by Ministry of Environment and Forests (e.g. against the use of crackers at Deewali or the promotion of bags out of natural materials instead of plastic) as well as government politics while ecological problems at the global level are neglected to a great extent. It is amazing to see that people asked to brainstorm the environmental problems they have heard about mention exactly the issues covered in Indian media as it was revealed by the household

survey conducted for this study. This fact gives strong evidence to the power of media in communicating environmental issues.

People themselves seem to be convinced of the dominant role of media in creating environmental awareness anyway: More than half of the interviewees (52%) declared that the information provided by media has been most important in making them aware of environmental problems.

b) Institutional media (education at school)

In 1986 environmental education became an integral component of National Policy on Education for the first time after independence. The policy stated: "there is a need to create consciousness of the environment which must permeate all ages and all sections of the society beginning with the child. Environmental consciousness should inform teaching in schools and colleges and should be integrated in the entire education process". Although there was no separate environmental education policy and plan of action either at the Union or the State levels, environmental education had been influenced by politics and plans of other sectors and strategies of environmental education have been outlined stage-wise and subject-wise in the National Curriculum Frame Work 1987. By scanning the curriculum evidence has been found that environmental education concepts in terms of awareness and knowledge seem to be adequately covered, while the development of skills for the study of environment and environmental ethics, attitudes and actions need strengthening (Bandhu, p.187).

The most recent developments are the introduction of Environmental Science as compulsory course for all the undergraduates after the invention of Supreme Court and the introduction of **Environmental Studies (EVS)** as a curricula area at primary stage (1st to 5th class). EVS combines science with social studies and environment and stresses the link between teaching and the immediate environment of the child. The interviews conducted with both government and public school principals and teachers in the South of Delhi showed that EVS is already taught at some of the schools and will be introduced in the other ones during the next months. The age of the children at primary stage naturally requires a practical or even project based approach of teaching

environmental issues. Not surprisingly, the teachers for EVS reported that the emphasis of their efforts was rather to create awareness on environmental issues and to give the children concrete suggestions how to behave in a more environmentally friendly way than explaining the scientific background of environmental problems. Although the introduction of EVS in primary stage can definitely be welcomed, since it stresses the importance of environmental issues by granting them an own subject and motivates children at an early age to deal with problems of environmental pollution, it is too early to evaluate how successful a subject like EVS can be in creating environmental awareness and altering the behavior of the children in a more environmentally friendly way. A problem EVS has to face is a lack of teachers that were prepared to teach environmental issues during their professional education. How to teach on environment and to sensitize school children for their possibility to contribute to a cleaner environment has not at all been tackled in the professional education of Indian teachers. Due to this fact, the personal commitment of teachers to issues covered in EVS gains crucial importance.

All schools including those that had not yet introduced EVS reported that they were teaching environmental issues although some of the schools were not aware that they are even obliged to do so by curriculum.

At the upper levels (6th to 12th grade) environmental concepts are extensively covered in other subjects like science, geography, economics and sociology, but there is no special subject focusing on environment and consequently no specific grade for knowledge on environmental issues. Through all levels a stress on local or India's national environmental problems, first of all pollution of air, water and pollution by waste, more than global ones like depletion of ozone layer or greenhouse effect can be observed. This might be partially due to the more practical and motivational than scientific approach as mentioned above.

A common feature of nearly all interviewed schools is an increase in the amount of time spent on teaching on environment. The explanations for this phenomenon offered by the school principals were the deterioration of the state of nature, a growing level of

awareness towards environmental pollution as well as a more forceful environmental education policy launched by the Ministry of Environment and Forests and the Supreme Court.

A new approach to address environmental issues at school is the **Eco-club scheme** that aims to bring NGO's more closely to the school system. It has been introduced in 2001 and up to now a coverage of 100 high schools chosen by the district administration in each of India's 559 districts has been realized (a coverage of 100 high schools per district results in a coverage of all high schools in 40% of the districts). Further expansion is planned. The most important difference to normal classes on environment is the project manner Eco-club scheme uses to address environmental issues. These projects that are suggested by the Ministry of Environment and Forests tackle a wide range of topics, the schools can choose on their own which campaigns they want to launch: The projects range from campaigns like "Say no to plastic bags", against the use of crackers at Deewali or campaigns promoting the use of natural colors at Holi to efforts in creating a green and clean surrounding of the school by collecting waste and planting trees and flowers. In addition to that, projects on how to save energy and offering information on renewable energies have been launched. Most of the projects urge the children to deal with environmental issues they are confronted with in their every day life and give concrete suggestions how to behave in an environmentally friendly way. The idea of the Ministry is that among the younger part of the population awareness of environmental problems is quite high, but this awareness will only result in a environmentally beneficial behavior if the students are told how to react. The campaigns mentioned above are fostered by special competitions organized by the Ministry of Environment and Forests, e.g. poster painting, essay writing or debates. The winners receive money prizes additionally to the small annual amount of financial aid (4000 rupees) every Eco-club is granted by the Ministry of Environment and Forests. The publicity of events like these and the role of children as multipliers in their families and neighborhoods even enhances the effectiveness of Eco-clubs and extends it to groups different from schoolchildren.

Eco-clubs usually meet once or twice per week under the guidance of a teacher. Especially considering the lack of education of teachers on how to teach environmental issues, it has to be appreciated that Eco-club teachers are not only offered special literature, but also further training in the form of workshops organized by the Ministry in close cooperation with NGOs. Although participation in Eco-club activities is voluntary, the number of students involved in Eco-club activities is usually ranging around 100 to 150 and by this, even exceeds the target figure of the Ministry of Environment & Forests of 50 students per Eco-club. Furthermore, Eco-club teachers who are selected by the criterion of personal interest in ecological issues by the school's principal reported great commitment of students to Eco-club related activities.

In addition to the introduction of EVS and Eco-club scheme, the Ministry evaluated all textbooks used in 8th to 10th grade in nine Indian states to figure out their content of environmental issues. This project sponsored by the World Bank aims at rewriting textbooks to enhance the coverage of environmental issues in subjects like languages and social studies.

What is the contribution of school education to the prevailing level of environmental awareness?

Recent developments in the education at Indian schools like the introduction of EVS or Eco-club definitively prove that as far as educational policy is concerned there is an understanding for the importance of promoting environmental issues. In my opinion, Eco-club scheme is a very successful new approach to sensitize children for environmental problems in a motivating manner that could have lasting effects on their behavior towards environment. The next step to take is to spread the Eco-club scheme more forcefully to cities other than New Delhi and rural areas. The introduction of EVS as an independent subject is an example for the upgrading of environmental issues and will enable teachers to address ecological subjects more extensively and effectively.

Summing over all age groups, 67% of the interviewees reported that they have been taught environmental issues at school in contrast to 24% who had not (9% could no more remember). That the efforts in teaching on environment have been enhanced over

the last few years is confirmed by the results of the household survey: a clear positive correlation between young age and the coverage of environmental issues at school could be observed. It will be interesting to watch over the next years if these intensified efforts in teaching on environment at school level will be able to enhance the level of environmental awareness and lead to a changed behavior towards environment. At this point of time it is still too early for an evaluation of how successful these reinforced efforts in teaching on environment will be, nevertheless the tendency can be welcomed.

c) Traditional media

Although there is no doubt that the traditional media like direct interaction and communication of an individual with his family, friends, neighbors or environmental activists can play an important role in enhancing environmental awareness, another perspective would stress that the frequency of discussions on environment or, in more general terms, the use of traditional media is more an indicator of the prevailing level of environmental awareness than a factor contributing to it. For this reason, traditional media will be discussed only very briefly.

In the household survey, only 11% of the interviewed persons stated to have discussions on ecological issues quite often, while 60% sometimes or rarely and 29% never discussed environmental pollution. By this, traditional media as far as the personal environment is concerned do not seem to be a major factor in contributing to the actual level of environmental awareness. According to the argument mentioned above these figures can be rather interpreted as an indicator of a low level of environmental awareness.

To support the work of NGOs dealing with environmental issues the Ministry of Environment & Forests started the **National Environmental Awareness Campaign** in 1986 with a yearly amount of 300 to 400.000 rupees. Every year nation wide spread regional resource agencies select more than 5.000 NGOs who are each granted 10.000 to 25.000 rupees to conduct campaigns on the topic of the year that is chosen by the ministry's project team. The topics, e.g. water conservation or moderate use of

pesticides, are orientated on national, especially rural more than global need and try to reach "the right people in the right manner" as can be seen by the broad variety in which the campaigns are conducted: in the form of conferences, lectures, puppet shows, rallies or competitions. It has to be appreciated that from last year on the campaigns include an action-oriented component, since it has been realized that the impact of the campaigns launched to create environmental awareness in the general public can be deepened if there is some practical training in addition to the mere offer of information. In my opinion, the special importance of the National Environmental Awareness Campaign is that it is an effective instrument to target the rural and less educated part of the population.

5.0 Additional factors in explaining environmental awareness

Due to the fact that environmental education via media (defined in the broad sense mentioned above) is supposed to play an especially important or even dominant role in creating environmental awareness the focus of this study on the contribution of media to the prevalent level of environmental awareness has been chosen. Nevertheless there is no doubt that there are additional factors influencing the level of environmental awareness. Since they are not the topic of this study at least some of them will be enumerated very briefly:

The degree to which environmental issues are set on the political agenda is not only an indicator of the prevailing level of environmental awareness itself, but will also influence the general awareness among the population. At the national level of politics Indian constitutional, legal and institutional arrangements concerning environment form a good basis for environmental protection, but implementation still remains a huge problem: "In our own country, in the post independence period our attitude was dominated by developmental growth and we did not have a culture of pollution control. (...) The total insensitivity at the bureaucratic / administrative level, which persists still, has given the nation a very heavy backlog of pollution and ecological degradation" (Bandhu, p.100).

The very active policy of the Indian Ministry of Environment & Forests in creating environmental awareness has to be appreciated: In addition to new Religious convictions and traditions highly influenced by the cultural context in which an individual lives may also contribute to its level of environmental awareness and influence its behavior towards environment. Both the religious teachings of Hinduism, Buddhism, Jainism and Christianity that is dominant in Germany contain messages about the importance of the environment and how to live harmoniously with our surroundings. In addition to that, "India has a long tradition of using environment as the basis of learning. For example, (our Father of Nation), late Mahatma Gandhi in his Basic Education Programme laid stress on the need for (...) correlation of curriculum with the productive activity and the physical and social environment" (Bandhu, p.113).

Exposure to environmental pollution

Exposure to environmental pollution in every day life could be another factor contributing to an individual's level of awareness of environmental pollution. In this context, it will be discussed only very briefly, because this factor cannot be used in campaigns to enhance the level of environmental awareness as long as deteriorating the state of nature is not considered as a desirable mean.

An overwhelming majority of interviewees, 98%, reported to feel exposed to environmental pollution in every day life with air pollution mentioned by 97% being the most prominently kind of pollution. Approximately half of the interviewed persons had recognized water pollution and waste to be a problem they had to face in their daily life, 23% felt disturbed by noise pollution. In addition to that, 66% of the interviewed had ever had or were currently facing health problems due to environmental pollution with asthma or other breathing problems mentioned by 40%, followed by headaches (22%), eye irritation (19%) and allergies (6%).

Although these figures show impressively that people feel highly exposed to environmental pollution or are even suffering from health problems attributed to environmental pollution, no statistical significant correlation between the level of environmental awareness and the feeling of being exposed to environmental pollution

as well as to health problems could be found. This surprising fact underlines the importance of education in creating environmental awareness, because the own experience of pollution in every day life does not seem to be able to sensitize people towards their natural environment as long as no further information or communication on environmental problems takes place.

An interesting question that cannot be answered in this context is if the same is true for the rural population who is much more dependent on the surrounding natural environment than the urban one that has been the target group of this study.

6.0 Level of environmental awareness

After discussing the most important factors in creating environmental awareness, their potentials and weaknesses as well as looking at their specific presence in India, the next paragraph will focus on the resulting actual level of environmental awareness.

Although more than tree third of the interviewees claimed to feel that environmental pollution is an extremely urgent problem, their confidence in this belief weakened when comparing the priority of environmental pollution with other problems Indian society has to face. Unemployment was considered to be a more serious problem by 71%, insufficient education by 66% and poverty by 52%, while 39% thought of crime, 37% of corruption and 22% of religious or social conflicts as more urgent problems to be tackled than environmental pollution.

It is striking that people do think of the problems mentioned above as interrelated, but do not see the connection between environmental destruction and many of India's urgent problems. This is probably one reason for the fact that priorities are generally not set on environment. An education policy launched on arising a higher level of environmental awareness should stress addressing the causal relationship between destruction of environment on the one hand and social as well as health problems on the other hand and should point at the fact that especially the poorer, less educated

people are exposed to environmental pollution. Making people aware of the relatedness of environmental and social problems could push the issue of environment more towards the top of the agenda.

Trying to find out on the knowledge of environmental problems that can be considered to be in a two-way relationship with environmental awareness (both as prerequisite and as consequence of awareness of environmental problems) the results showed that there is still a lot of work to be done in informing people on the major ecological problems. This is especially true for those on a global level like global warming or depletion of ozone layer that only 3% of the interviewees were familiar with. Renewable energies or conservation of biological diversity were even less known. In contrast to that many people were aware of problems like air pollution (96%), water pollution (72%) and household (57%) or industrial and chemical wastes (34%) that are not properly collected and recycled or disposed. Air pollution was considered as the most serious problem by a vast majority of people (70%), followed by water pollution and waste. These results provide strong evidence for the fact that the efforts in educating people on environment via media and at school have been fruitful: the most well-known environmental problems are exactly the ones tackled in media and at school.

76% of the interviewees felt that protection of environment is both a task of the individual as well as of the government, while 21% thought that it is only the individual's responsibility (versus 3% for only the government one's). Most people stated to be content with the government's job as far as environmental policy is concerned and felt that there had been a lot of progress over the last few years, 43% wished that environmental issues should play an even more important role in politics.

Considering the figure of 97% of persons who felt that environmental protection is the task of every individual, the next question to ask is if this belief is only a lip service without any practical consequences or if people actually try to behave in an environmental friendly way. This will be done in the next paragraph.

7.0 Behavior towards environment

Before evaluating the results of the household survey on the actual behavior towards environment, I would like to address a few words of caution. Trying to assess people's actual behavior towards environment by asking them about it in the context of a survey of environmental awareness will most probably lead to answers that are giving a too positive impression of the actual situation, because people will try to please the interviewers expectations.

83% of the interviewed persons reported to behave in an environmentally friendly way somehow. Looking a little bit closer to what they actually did the by far most prominent features of environmental friendly behavior were cleaning the house and its surroundings (mentioned by 62%) and doing plantation (38%). Although both of these actions contribute to a cleaner environment and help to reduce pollution by waste or air pollution it has to be asked if the motivation of people for cleanliness and plantation is not more due to their wish to live in a clean and green surrounding than to behave in an environmentally friendly way. Saving water as reported by 9% of the interviewees was the third and last activity that was mentioned by more than 5% of the interviewees.

It seems that people are motivated to behave in an environmentally friendly way if there is an additional motivation to do so, e.g. saving money: 97% of the people reported to save energy, out of the people who owned a motorized vehicle slightly more than 80% claimed to switch the engine off when waiting at a red light.

In addition to that, the campaigns launched by the Ministry of Environment and Forests and spread for example via the Eco-club scheme at school level like the use of cotton bags instead of plastic ones seem to be fruitful to a certain degree: 48% of the interviewed persons reported to use their own bags when shopping, some of them referred to the campaign as their motivation to do so.

As far as the proper disposal of waste is concerned there is still a lot of work to do: Throwing package materials simply away instead of using a dustbin is very common, segregation of household waste as a prerequisite of proper recycling was reported by

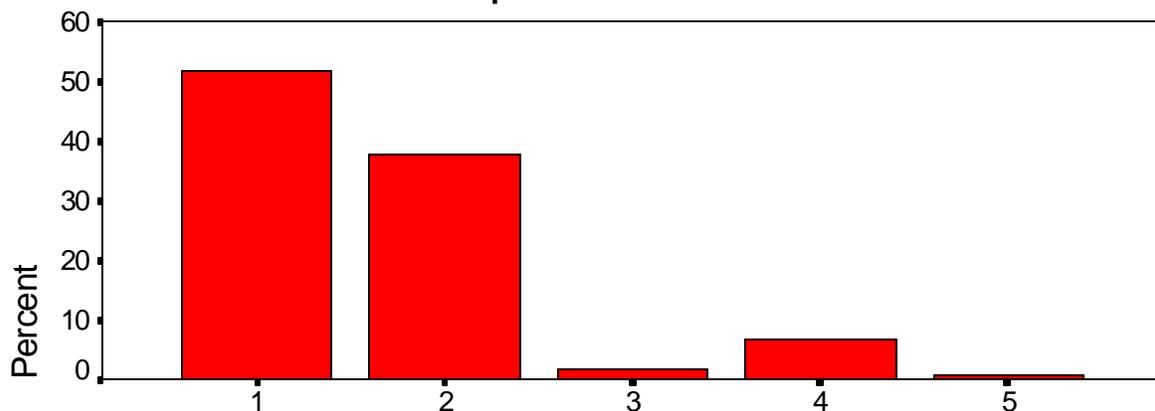
only 18% of the interviewed persons. In my opinion, the problem of household waste leading to degradation of soil and ground water and being a source of many diseases caused by lack of hygiene should be addressed more forcefully, since in the field of pollution by waste a lot of progress can be achieved quite easily by a change of individual behavior.

8.0 Conclusion

This study gives clear evidence that the role of media in creating environmental awareness is definitively a dominant one. This thesis can be supported with different arguments:

On the one hand, the results of the household survey show that more than half of the interviewees (52%) are convinced that the information provided by media has been most important in making them aware of environmental problems, followed by 38% who thought that it was their own confrontation with pollution in every day life, while education at school or other institutions was considered to be most important in creating environmental awareness by only 7% of the interviewed persons.

What has been most important to make you aware of environmental problems



Q13

1: information provided by media, 2: own experience in every day life
3: personal discussions, 4: education at school, college 5 other

Why are media such a powerful instrument in creating environmental awareness?

It is not only that the average amount of time spent on watching television and reading the newspaper per day is a tremendous one, but it also seems that the environmental issues tackled in media are realized and reflected by viewers, readers and listeners at least to some extent, while those issues that are more or less neglected by Indian media, literally the global environmental problems, are not at all present in the public's consciousness.

Furthermore, media, in principle, are able to reach a vast percentage of India's complex society. Prerequisite for this is that environmental programs are especially designed for all major target groups (age, level of education, language, urban and rural population and so on). In this context, the role of radio should not be underestimated, although the number of listeners and the amount of time spent on listening to the radio is obviously lower than the corresponding figures of television and newspaper: Most of India's rural population does not have access to television and newspaper, India's high percentage of illiterate people cannot be addressed to via the medium of newspaper. Although the coverage on environmental issues has increased over the last few years, the media's supply of information on environment is still quite low and one-sided: the variety of environmental topics tackled should increase, the reporting should not only highlight the environmental issues that are at the top of the political agenda, but the coverage should be a more continual one. To realize these suggestions media have to be sensitized that, in the field of environment, the mere offer of information is not sufficient. Concerning environmental issues the role of media should not exhaust in providing information, but there should be a motivational and educational perspective, too. Only if consequences of environmental pollution are showed very clearly and connected to the individual's behavior, the information on environment provided by the media will be able to motivate people to behave in a more environmentally friendly way.

The approach of entertainment-education is, in my opinion, a very promising one in creating environmental awareness via the usage of media: it should be used more

extensively and spread to all the three different kind of mass media considered, television, newspaper and radio.

Due to the general problems that have to be faced when media are used in an educational approach, e.g. the lack of feedback, interactive communication, control of the audience as well as the fact that media's approach will always stay a theoretical one, enhancing the efforts in creating environmental awareness should not be restricted to media alone, however powerful they may be as an instrument of environmental awareness creation.

Fortunately it has been realized recently that education at school is a powerful mean in addressing environmental problems: It reaches vast parts of the population at young age, a more environmental friendly behavior can be practiced on a daily basis and in contrast to media direct feedback mechanism exist. In my opinion, the introduction of Eco-club scheme and EVS will be able to both enhance the students' knowledge on environmental issues and motivate them to behave in a more environmental friendly way in their every day life.

9.0 References

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10.0 Appendix: List of interviewees

1. Media

Newspaper:

- The Times of India
7, Bajadurshah Zafar Marg
New Delhi –110002

Mr. Umesh Anad, Editor (Delhi),
Ph.: 9810502932

Ms. Nonia Walia, Correspondent
Ph.: 3492212

- The Hindu
I.N.S. Building
Rafi Marg
New Delhi – 110 001

Mr. Ashok Kalkur, City Editor
Ph.: 3715426, 3715427

Mr. K. Kannan, Prin. Correspondent
Ph.: 3715426, 3715427

Mr. P. Sunderrajan, Special Correspondent
Ph.: 3715426, 3710179, Res.: 2619847

News Agency:

- Mr. Parvinder Singh
United News of India (UNI)
Ph.: O.: 3718861, Res.: 6194751

Magazine:

- Down to Earth
Society for Environmental Communications
41, Institutional Area Tughlakabad
New Delhi, 110 062

Mr. Richard Mahapatra, Senior Correspondent
Ph.: 6081110, 6086394

Radio:

- All India Radio
Akashwani Bhawan
Parliament Street
New Delhi

Mr. W. A. Magazine, Director Commercial

Ms. Alka Pathak, Director of Spoken Word
Ph.: 3711812

Television:

- Doordashan
Mandhi House
Copernicus Marg
New Delhi

Mr. Y.P. Singh, Controller (Current Affairs)
Ph.: 3389615

Ms. Usha Bhasin, Controller of Programs
Ph.: 3386603

2. School Principals and Teachers

- Red Roses Public School
Shri R.R. Metha Education Trust
D Block, Saket
New Delhi

Mrs. K. Nayyar, Principal
Ph.: School: 6962977, Res.: 6358474

- St. Anthony's Senior Secondary School, Convent School
C 6, SDA, Hauz Khaz
New Delhi

Ms. Anita Krishnan, teacher
Ph.: 6514779

- Central Academy Senior Secondary School (gov.)
Sector – 13, R.K. Puram, Saket
New Delhi

Mr. H.L. Verma, principal
Ms. Sonia, teacher (Eco-club)

- Government Sarvodayabal Vidyalaya School
J Block, Saket
New Delhi 17

Mrs. Madhu Gupta, vice principal
Mr. R. F. Eufshar, teacher (EVS)
Mr. R. K. Verma, teacher

3. Government officials

- Ministry of Environment & Forests (Govt. of India)
Paryavaran Bhawan
CGO Complex, Lodi Road
New Delhi - 110003

Ms. Sanchita Jindal, Joint Director
Ph.: 4360488
(responsible for National Environmental Awareness Campaigns)

Mr. N. V. Reddy, Deputy Secretary
Ph.: 4362065
(responsible for Eco-clubs, media & environment)

Dr. D Bandopadthyay, Director (Environment & Information)
Ph.: 4360419
(responsible for ENVIS network)

4. Experts

- Ms. Usha Rai, Deputy Director PII
Coordinator: Population and Gender Project, former environmental
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