CHAPTER - I
INTRODUCTION

The advancement made in science and technology has brought in industrialization and established urban societies. Production of various commodities needs a lot of inputs of natural resources. Use of natural resources produces waste causing pollution problems. Although the earth and its resources are finite and in part exhaustible, industrial society is using up many of its non-renewable resources and mismanaging potentially renewable ones. It also exploits the resources of other countries without regard for the deprivation of present population or the needs of future generations.¹

One of the consequences of industrialised society is urbanisation, which causes problems like over concentration of population, scarcity of resources like water, land, etc., contributing to the problems of environment. Environmental problems have hazardous and harmful effects on human life. As a result, people are able to realize the problems of environment. So, the problems of environment are consequences of modernization: We cannot think of development without modernization. In view of this, development activities tend to cause certain environmental problems.

After realizing the problems concerning environment, it has become a debatable subject for finding out ways and means of overcoming them.
In this connection different countries have attempted to focus the attention of the people on the environmental problems and decided to make collective efforts at the national and international level. Industrialisation is a part of modernization causing a number of disastrous effects on human and animal life due to the impact of pollution of water and air. It is ideally accepted that a large number of issues like public health, loss of fisheries, degradation of soil, deforestation, depletion of ozone layer etc., are the result of degradation of environment.

Environmental problems seem much more serious and more complex in the developed countries, where intensive industrialization and urban growth damages or upsets the balance of the natural environment. In the west, degradation of environment is due to the stresses of over-development. Whereas, in India, as in many other under-developed countries, problems of environment arise due to poverty and the consequently inadequate care devoted to the former. These issues are greatly responsible for drawing the attention of the United Nations in 1972 to the problems of environmental degradation.

The UN conference on human environment convened at Stockholm in June 1972 gave birth to the concept of "Ecodevelopment", a word coined to describe a process of ecologically sound development, of positive management for the human benefit.
Since then people started to think about achieving development without degradation of environment i.e., sustainable development. This thinking is discernible in the deliberations of the various international summits organized to sort out this problem. In this respect the first major trend setting book, "The silent spring" by Rachel Carson, 1962, as also the "Limits to Growth" (1972), and "Beyond the limits" (1992) brought out by the Club of Rome are the predominant works on environmental studies.

Ten years after the Stockholm Conference, a global tenth anniversary meeting, sponsored by the United Nations, Environment Programme (UNEP) was held in May at Nairobi in 1982. In 1987, the world commission on Environment and Development presented a report known as "Our Common Future" and in 1992 "Earth Summit" was held in Rio de Janeiro (Brazil) from 1st to 12th June 1992. Both these have highlighted the relationship between environment and development.

The Problem

Research in political science is supposed to generate relevant information on issues of public concern. Such information will help the people to perceive and form opinion on public affairs which ultimately enables them to participate in the political process.

Every environmental problem and issue has technical and economic dimensions as well as social and political implications: Effective solutions
Environmental studies are regarded as one of the sub-areas of political science. In this connection O.P. Dwivedi makes the following observations: "The emergence of a new sub-field of study - environmental politics - provides the discipline with the opportunity to broaden its basic concern to include the exercise, influence and control of power and authority. Environmental politics covers such factors as the role of political parties and interest groups, the political process, political culture, ideologies and the formulation and implementation of public policies in the determination of who gets what, when and how from the environment". Environmental politics involves people's concern over specific issues. Environment politics has to deal with conservation and maintenance of ecology, restraints on public policy that could deplete natural resources or cause uneven distribution of benefits of development, that issue out of it. The concept of political ecology has emerged on the basis of interdisciplinary subjects like political psychology, political sociology, political economy, etc. In political ecology, we combine politics with ecology. The emergence of political ecology itself demonstrates that environmental studies constitute a part of political science.

Energy is an essential component of most of the developmental activities. It is difficult to think of development without energy. The sources of energy can be solar, wind, hydro, thermal, biogas, tidal waves etc. These sources may not meet all the requirements of our country. In India,
though power generation has increased considerably, there is still a gap of more than 20,000 MWC between supply and demand of electricity in the country.9 Therefore production of energy based on nuclear technology has become inevitable. In India, for meeting rapidly growing demands of energy for development, the Tarapur, Kota, Kalpakkam, Narora, Kakrapar power generating plants have been established. The sixth nuclear power plant, at Kaiga, in Uttar Kannada district in Karnataka has been established for generating energy in order to meet requirements of development activities. However, the use of nuclear technology for energy production in a project like Kaiga, may cause environmental degradation. Energy production process like all other economic activities, consumes resources, disturbs the environment and creates waste.9 Experience of other countries using nuclear technology for production of energy has influenced a number of elites, voluntary organisations and political parties in India to perceive and respond to nuclear pollution and other related problems.

In the present study, an attempt has been made to understand the perception and the concern of elites and voluntary organisations on nuclear pollution and other issues involved in the Kaiga project. We also examine public perception of nuclear pollution and other problems of the Kaiga project. In this context, an attempt has been made here to analyse how elites and voluntary organisations, help to mobilise public opinion against the Kaiga project. We assume that elites in this context are generally those who are quite well-informed in expressing their concern over the Kaiga
Project and they play a crucial role in the functioning of voluntary organisations. It is needless to emphasize that these voluntary organisations are not government organisations.

This study examines how elites and voluntary organisations articulate the interests of the people who ultimately help in interest aggregation. Interest articulation and interest aggregation are regarded as significant functions of a political system. These functions of a political system are influential in determining the capabilities of any political system. A section of the population articulates vehemently against the dangers of nuclear pollution and other hazards associated with the Kaiga project. In this respect, public perception and viewpoint would be largely influenced by elites and voluntary organisations. This movement tends to modify the orientation and beliefs of people towards environment. In all these organisations, politically active public will mobilise the people on issues and problems connected with the Kaiga project. Therefore we study how common people are mobilised against the Kaiga project by various individuals and organisations.

We have selected the Kaiga project for our study because of the strong agitation against the establishment of this project right from the day the decision of the union cabinet to approve the construction of atomic power plant at Kaiga in Karnataka was announced. Therefore it would be very pertinent to understand how people and other organisations perceive issues
and problems of Kaiga project and react against the Kaiga project. In democratic public policymaking, responses of people and their organisations would be an important input for the policy maker. Here our assumption is that environmental policy is also a public policy which involves public concern. "Public policy remains a widely understudied field in Indian politics and partly because of the scholarly preoccupation with the theory of the state in India, even the importance of studying public policy is not often recognised."\textsuperscript{10A} Hence this study contributes broadly to public policy analyses and enables us to understand political implications of government policy towards the Kaiga project.

This study covers concern expressed by elites and voluntary organisations only on nuclear pollution and other related issues. We have identified these on the basis of their strong reactions on the Kaiga project which have appeared in prominent newspapers both in Kannada and English.

\textbf{Justification of the Study}

In India, there is little systematic study of environmental policy from the viewpoint of political science. However a few works on the subject are available. These are shown under reference at the end.\textsuperscript{11} It appears that no serious attempt has been made to examine the policy of the government on a nuclear plant like Kaiga from the viewpoint of political science. Environmental studies from the perspective of political science are significant because problems of environment have political implications.
In this context, it would be pertinent to state that the policy makers are political elites. Bureaucrats advise the political elites in taking policy decisions on public affairs such as issues and problems involved in the Kaiga project. Hence for political scientists doing research on environmental politics there is still a long way to go before they become successful in influencing the nature of governmental responses to ecological crises. This study tries to help other disciplines to understand environmental problems and recognises the value of inter-disciplinary research with regard to environmental problems.

It seems there can be a future for environmentalism as a political movement. Environmentalists in the November 1989 Lok Sabha elections supported the erudite scholar and Jnanpeeth award winner, Dr. Shivaram Karanth, for the Uttar Kannada seat, as an independent candidate. Though he was defeated in the elections environmentalism is gaining strength as a political movement. Hence, environmentalism like nationalism and sovereignty may become part of political science and guide the people and the governments in policy making. This study highlights the contribution of elites and voluntary organisations, to the environmental movement generated in the light of the establishment of the Kaiga project. Now a days, environmental studies have become one of the priority sub-areas in research in political science.
Problems of environment have increasingly become more complex because of their harmful effects on human life. Therefore, serious attention has to be paid to this study. The complex nature of problems of environment indicates the necessity of interdisciplinary approach since they mainly involve the study of biological, ecological, economic, social, geographical and political dimensions, etc. In view of this, all disciplines have to consider the implications of problems of environment from their own view point. In understanding the problems of environment, we have to consider the role of political parties, voluntary organisations, pressure groups, political culture, ideologies and the process of policy making and its implementation. These constitute a part of subject matter of political science. In other words, political scientists study how the political system responds to the problems of environment and this would be a part of problem solving activities. Environmental policy is a reaction to the problems. The study of these dimensions to problems of environment is of paramount significance. Environmental policies predictably will retain an important and high place on the political agenda of modern state. The challenge before political scientists is how to influence the shaping of power politics to enhance the quality of life and the quality of environment for all citizens, regardless of class, status or nationality. Therefore one of the priority areas of political science research is the study of problems of environment. The overall survey of research on problems of environment reveals that there is very little systematic study of problems of environment from the perspective of political science.
Only a few articles or papers on problems of nuclear pollution in India have been published. But these are not comprehensive enough. There is as yet no systematic and comprehensive study of nuclear pollution in India. Kaiga project indicates that it involves problems of nuclear pollution. This study attempts to examine issues and problem of this project. Therefore, this study broadly and systematically contributes to the environmental policy studies specially with reference to the nuclear pollution and other related issues.

In international politics this kind of understanding can be regarded as the study of factors affecting India's international environmental policy. Ultimately, the present study is expected to help in understanding international environmental policy.

The Conceptual Framework

I. Environment

Webster's dictionary defines environment as "all the conditions, circumstances and influences surrounding and affecting the development of an organism or group of organisms: often contrasted with heredity." The Oxford English Dictionary defines environment as the "condition under which any person or thing lives or is developed, the sum total of influences which modify and determine the development of life and character". The American Heritage dictionary defines environment as "the combination of external or extrinsic physical conditions that affect and influence the growth
and development of organisms”. The environment is a complex and dynamic interaction of physical, chemical, biological and social systems with man as one of its prime components. The sustenance, growth and fulfilment of living organisms and the quality of life derive from it. Here the process of expressing concern by the government, elites and voluntary organisations on a public policy issue like Kaiga project involves conflicting desires.

II. Politics

According to James E. Dougherty and Robert L. Pfaltzgraff, Jr., Politics is “a process of resolving conflicts”. Harold Lasswell defines politics as “where” values stand for desired conditions or commodities and where “authoritative” denotes some form of legitimate (i.e. governmental) process through which people regulate their inter-relationships with respect to the questions of “who gets what, when and how”. Raymond F. Hopkins and Richard W. Mansback state that “politics is the process by which men pursue goals and promote values in strategic interaction with one another.”

In the context of this study, we conceptualise politics as an activity of people either to support or oppose the public policy on an issue like the Kaiga project.
The term Elite is derived from the Latin word 'eligere' which means to choose or select. The first and foremost use of the word "elite" was made in military terminology in which it came to be applied to a choice of persons .... 'homes d'elite' and 'companied elite'. In the thirteenth century A.D., Froissart applied the term to "the best of the best" 'Meillenrs des Meillenrs'.¹⁷ In the words of Harold D. Lasswell, "the elites are the influential."¹⁸ According to Webster's Dictionary elite is "the group or part of a group selected or regarded as the finest or best, most powerful, etc."

Dwaine Marvick states that in the newer approach, "elites are routinely understood to be incumbents: Those who are collectively the influential figures in the governance of any sector of society, any institutional structure, any geographical locality or translocal community."¹⁹ Pareto defines the elites as, "those who are most capable in their particular branch of activity, whether this be playing chess or playing prostitute, thieving or defending thieves in the law courts, in writing poetry or governing the country, i.e., 'classielette', the select persons of their particular grouping, in the French tongue, 'telite'.²⁰ Mosca defines the elite as "an organised minority which holds domination over the unorganised majority." Elites are conceptualised as the cream of the society in different fields constituting a separated and distinct identifiable group in the society which attempts to influence the society.²¹
IV Voluntary Organisations

A voluntary association is an organised group of persons that is formed in order to further some common interest of its members; in which membership is voluntary in the sense that it is neither mandatory nor acquired through birth and that exists independently of the state. According to International Encyclopedia of Social Sciences 'voluntary associations' denotes voluntary organisations.

V. Public:

Webster's dictionary defines public as "belonging to, concerning, or pertaining to the people of a nation, state or community as a whole: open to common use; for the use of benefit of all ".

Interrelationship between policy of government and response of elites, voluntary organisations and the people

In this study we regard the policy of government on Kaiga nuclear project as an independent variable. The policy of government on Kaiga site selection and safety measures, radioactive waste, evacuation of people in case of accidents, forestry, marine life, decommissioning the reactors, protection of the economy etc. are components of independent variable. The response of elites, voluntary organisations and people and their action are in this study we regard this as a dependent variable. The response of
elites, voluntary organisations and people is considerably influenced by the issues of fear of likely effects of Kaiga project on the life of the people. This fear of Kaiga project is regarded as intervening variable in the study.

The decision of the government to establish the Kaiga nuclear plant is the output of the policy of the government. Consequently, voluntary organisations, elites and people responded to the policy decision of the government about the establishment of Kaiga nuclear plant. Here we assume that the nature of policy on various issues of Kaiga project determines the perception and response of elites, voluntary organisations and people.

The decision of government to establish Kaiga project is a major event in the history of Karnataka. Here we assume that the formation of voluntary organisations in North Canara district (now named as Uttar Kannada district) and other parts of Karnataka is a response to the decision of government to establish the Kaiga project. Response of an individual and a group is determined by its perception of a specific public policy issues. Voluntary organisations are regarded as interest groups in this study. People's response is a manifestation of their feelings, desires, ideas, etc.

In this study interest group approach has been adopted to understand the issues and the problems of Kaiga project. In this connection we have adopted David B. Truman's interest group approach. According to him when men act and interact in consistent patterns, it is reasonable to study these
patterns and to designate them by collective terms like group or party or nation. We have also adopted Truman's concept of politics in this study. Truman viewed politics as a struggle among actors pursuing conflicting desires on public issues and it can appropriately supplement approaches focussing on government, on law and on power.

The stand of the government, scientists, voluntary organisations, environmentalists, elites and people on a large nuclear project demonstrate their conflicting desires on public policy issues. Here public policy issues are environmental issues. Therefore we describe it as environmental politics.

The policy pursued by the government on Kaiga project is the cause for the emergence of a number of voluntary organisations, namely CANE, (Citizens Against Nuclear Energy) Parisara Samrakshana Samiti (Environment Protection Society), Avinash (Anti Nuclear Energy Citizens Struggle Society), Parisara Jagruti Sangha (Environment Awareness Association), Parisara Samiti (Environment Society) etc.

The inconsistent stand of political elites particularly MP's and MLA's of North Canara area causes apprehension and fear in the minds of people about the likely effects of Kaiga project on the life of people and animals. The policy pursued by the government and the concern expressed by the political elites of that region figure prominently in the people's perception of Kaiga project. Consequently, the justification of policy makers as well as scientists about Kaiga project does not sufficiently convince the people. As such,
the policy of government on Kaiga project becomes a controversial and debatable public policy issue. In this respect, voluntary organisations, environmentalists and elites attempted to mobilise the people against Kaiga project. The collapse of a concrete dome during construction stage at Kaiga dome in 1994 confirms people’s fear and apprehension about the likely harmful effects associated with the Kaiga project.

This has contributed to further generate in the people a negative and hostile attitude on issues concerned with the Kaiga project. In this study, our assumption is that environmental elites are those who are interested in dealing with problems of environment with certain commitment while local elites of the Kaiga region need not be environmentalists. Such elites therefore feel strongly about the Kaiga project as it affects their self-interest.

Objectives

The following are the objectives of the study:-

1. To examine the issues and problems of the Kaiga project.
2. To analyse the perceptions and concern expressed by the elite and voluntary organisations about the Kaiga project.
3. To understand the mobilisation and the strong feelings of the people against the Kaiga project.
Assumptions
1. The Indian government policy on environmental issues with regard to the Kaiga project is open to controversy and debate.
2. Elites and voluntary organisations play an active role in shaping public perception of the Kaiga project and its attendant issues with regard to politics.
3. Public perception of the Kaiga project is largely negative and hostile.

The variables of this study are as follows:

Independent variable
1. The Indian Government policy on Kaiga Nuclear Power project.

Dependent variables
1. Response of elites and voluntary organisations to the problems associated with the Kaiga project.
2. Mobilisation of public on problems associated with the Kaiga project.

Intervening variable
1. Fear of likely harmful effects of Kaiga project on the life of people and animals.

Methodology
The methodology adopted in this study is primarily documentary. This has been supplemented by secondary sources of data like books, journals...
We also collected data from local newspapers published from Sirsi and Karwar and unpublished research papers presented in various seminars on Kaiga project by the local elites and environmentalists. Besides, interview method has also been adopted to collect data for this study.

The study of perceptions and responses of elites, environmental groups and voluntary organisations is based primarily on newspaper reports because of non-availability of the original records of the organisations as also of the proceedings of the various seminars and meetings relating to nuclear pollution and other related issues of Kaiga. Therefore, we have relied more on newspaper reports for understanding the perceptions and responses of people and organisations. The newspaper clippings for this study have been collected from the Deccan Herald Library in Bangalore, India Development Service Library at Dharwad, and Parliament Library, New Delhi.

In this study we assume that those who have attempted to state their vehement opposition about Kaiga project are regarded as elites. We identified this on the basis of informal discussion with elites in Sirsi, an important business centre in North Canara district. A full list of elites and voluntary organisations in North Canara district and other parts of Karnataka was not available. In view of this, we attempted to collect the approximate total number of elites and voluntary organisations from the local elites of
Sirsi. Accordingly, it was learnt that there may be about 150 elites and about 8-10 voluntary organisations. For the purpose of this study we randomly selected 13 elites and 2 voluntary organisations to understand their concern about Kaiga project.

**Outline of the present study**

In the first chapter the statement of the problem, justification of the study, conceptual framework, objectives of the study, assumptions/hypotheses of the study and methodology adopted in the study have been explained.

The second chapter deals with the various dimensions of environment in general for understanding the issues and problems associated with the Kaiga nuclear plant. An attempt has been made to examine causes of pollution and kinds of pollution. This chapter also discusses the historical background of environmental policy in India and recent change in it. Constitutional provisions dealing with environmental matters have been stated.

The third chapter is descriptive. It analyses the various aspects of the Kaiga nuclear power project. In this chapter we study the location of the Kaiga project, merits of Kaiga over other sites in Karnataka, budget of the project, objectives of the project, etc.

The fourth chapter attempts to evaluate the issues and problems associated with the Kaiga plant. The issues and the problems of the project
are mainly the environmental protection, loss of forests, loss of fisheries, problems of decommissioning of the plant, the cost of the project, its impact on the environment of the neighbouring states, etc.

Chapter five discusses the elites' perceptions of the issues and problems of Kaiga project. We have referred to the various reports-in favour and against-the establishment of the project. The reports on the Kaiga project are regarded here as the elites' perception and evaluation of the issues and problems of the project. This chapter also attempts to understand the concern of the Parliament to deal with the issues and problems of the Kaiga project.

In the sixth chapter we examine perception of the voluntary organisations about the issues and the problems of the project. This analysis covers the perceptions of the main voluntary organisations like CANE, Parisara Samrakshana Samiti, etc.

The seventh chapter discusses public mobilisation. For this purpose, an attempt is made to examine the role of the environmentalists, voluntary organisations, mass media and the Gandhian technique in anti Kaiga agitation. This chapter also discusses about the recent issues connected with the Kaiga nuclear project including the collapse of the dome and the reaction of environmentalists, voluntary organisations and others on the subject. It also states how Kaiga nuclear project figured in the electoral
politics of the 1989 Lok Sabha elections. At this time, Dr. Shivaram Karant contested the election seeking the support of the people on the basis of the controversial issues of the Kaiga project.

The eighth chapter, the last one, contains a summary of the entire study along with the findings. Some suggestions for dealing with the issues and the problems of Kaiga project are also made. Lines of further research are briefly indicated.
REFERENCES


8. M.R. Rao, Planning Officer, Kaiga Nuclear Power Project, Type-Script, p.3.


