

Relationship of socioeconomic parameters in coastal litigations of coastal states of India

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ABSTRACT: *The coastline of India plays a significant role in Nation's economy by virtue of its resources. Many economic sectors and major urban areas are located within the coastal zone hence, the demand from the coastal resources are high. In India, nine states and four Union Territories (UTs) are falling under coastal areas of India. The progress of socio-economic development among the coastal major states and UTs are not uniform in terms of per capita income, poverty, infrastructure and socio-economic development. The above disparities can be attributed to three different types of factors they are; natural differences, socio-cultural conditions and policy decisions. Coastal social institutions can have a decisive impact on economic performance of the coastal areas. The law is particularly important in shaping the institutional framework for economic activities. Legal rules can be viewed as socio-technological devices used to help individuals to solve the coordination problems and conflicts that arise in an environment of scarce resources. Coastal Regulation Zone (CRZ) Notification, issued in 1991 and 2011 under Environment (Protection) Act., 1986 is the most significant and specialized legislation regulating developmental activities along the coastal areas of India for sustainable development. Research on the relationship between social change and law, the roots of which go back to the theories of Durkheim and Weber, belongs to one of the oldest traditions of sociology of law. In the present study, coastal related litigations in India and its linkages with the various socio-economic factors of the coastal states and UTs have been studied. In total, one hundred and twenty two litigations have been filed in various high courts of India during between 1950 and 2010 which are falling under 9 mainland coastal states of India. The Union Territories (UTs) of India does not have any litigation in its high court. The numbers of litigations in the states to the various socio-economic factors mentioned above are positively correlated. The above result is supporting the social functional theory of Durkheim.*

KEYWORDS: *Coastal management, litigation, India, coastal states, socio-economics*

I. INTRODUCTION

India has 7,500 km long coastline with ecosystems such as sand dunes, beaches, wetlands, mangroves, estuaries, backwater lagoons, coral reefs etc. The coastline of India plays a significant role in Nation's economy by virtue of its resources. The coastal areas of India are pressurised due to increase of human population, urbanization and accelerated developmental activities. Many economic sectors and major urban areas are located within the coastal zone so that important economic and social processes characterise coastal systems [1]. Sales of large tracks of undeveloped land at the fringe of the coastal town and coastal cities are directly influence the rate of urban expansion. Additionally, some of these large tracks of undeveloped land at the fringe of an urban area might eventually become the sites of new centres of economic activity. These new centres of economic activity will then exert new influences upon all surrounding land [2]. Limited coastal land resources and inflated land demand can result in human-earth conflicts. In the process of urbanization, land use changes result in a series of environmental conflicts, especially in developing countries in periods of economic transition [3]. The coastal environment is unable to maintain the flow of goods (e.g., resources for exploitation) and services (e.g., natural defence systems) [4]. In India, nine states and four Union Territories (UTs) are falling under coastal areas of India. The progress of socio-economic development among the coastal major states and UTs are not uniform in terms of per capita income, poverty, infrastructure and socio-economic development. The above disparities can be attributed to three different types of factors they are; natural differences, socio-cultural conditions and policy decisions. Among the natural factors, agro-climatic conditions, geographical location, resource endowment etc., play an important role in socio-economic development of a particular area. The second set of factors which include values, rigid traditions, and patron-client relationships, affects socio-economic mobility, innovation and entrepreneurship. The central and state department wise policies, annual plans and five year plans are involving for third factor which influences disparity of socio-economic

development. According to Chattopadhyay *et al* [5], growth in the India's income is not uniform between rural and urban areas. The share of rural sector in the national income has been declining in India for quite some time. The decelerating growth of rural income and the inability to absorb rural workers in non-agricultural activities to improve their income were identified as contributing factors to this declining share. Socio-economic development in the coastal areas of India is a multi-dimensional phenomenon. Some of its' major dimensions include: number of coastal industries, number of ports, level of economic growth, level of education, level of health services, degree of modernization, status of women, level of nutrition, quality of housing, distribution of goods and services, access to communication, urbanization, migration etc. Coastal social institutions can have a decisive impact on economic performance of the coastal areas. The law is particularly important in shaping the institutional framework for economic activities. Legal rules can be viewed as socio-technological devices used to help individuals to solve the coordination problems and conflicts that arise in an environment of scarce resources [6]. When behavioural patterns for one reason or another are disturbed or even broken down, law is available to restore the break. Law thus represents the solidarity of society. Further, law creates a new social order when behaviour patterns change.

The environmental legislation provides the tools to regulate human activities, which may have a relevant impact on processes of interaction with other living organisms and their environment. The influences of the coastal related legislation in the socio-economic development shall be evaluated to provide the best for the welfare of the coastal people. The Coastal Regulation Zone (CRZ) Notification, issued in 1991 and 2011 under Environment (Protection) Act., 1986 is the most significant and specialized legislation regulating developmental activities along the coastal areas of India for sustainable development. According to Charles [7] and Gilbreath [8], legislations shall be evaluated to analyse the present or predicted future legal regulations to determine whether they are consistent with the envisaged objectives, include the undesirable effects, and evaluate the coherence of available means to reach these objectives. Research on the relationship between social change and law, the roots of which go back to the theories of Durkheim and Weber, belongs to one of the oldest traditions of sociology of law [9]. During the past few decades in both the United States and in the Western Europe, the above tradition has inspired several longitudinal studies of civil litigation. Although these studies represent a new and fruitful approach to research on the relationship of law and society, their results have been weakened by questions about the use of functional theories to describe the relationship between social change and law [10]. Munger [11], for example, presents a critical evaluation of "the normative effect theory". According to this theory, law supports the functioning of other institutions which supports the works of Durkheim and Weber. In Mexico, several compilations about Litigation Investigations (LIs) which can be classified as (1) responsibilities within institutions and LIs; (2) the constitutional basis of environmental protection; and (3) national and international environmental policies. However, these analyses have been criticized since it has failed to determine whether existing legislation has contributed to sustainable use of land and resources of coastal ecosystems [12]. According to Van Loon and Langerwerf [10], litigations and the judgments is an important analytical tool to identify the coastal issues and its trends. India's federal structure allows testing hypothesized associations between litigation rates and both economic prosperity and other factors. According to Theodore Eisenberg [13], within-country study of litigation rates and prosperity, India has the useful but lamentable characteristic of substantial variation in economic development. Jolene Lin [14] has perceived that litigation has been utilised as a channel to exert pressure on the executive and legislative branches of government to act on the climate change issue.

In India, the litigation trend studies were conducted by Guruswamy and Singh's [15]. The study analysed the India's state-level litigation rates and state-level measures of well-being. They study informally compared them with state-level poverty rates, literacy rates, and violence for a period of one year from 2009 to 2010. In this present article, we have tested the relationship of number of litigation of the coastal states of India with socio-economic factors along with physiographic features. The factors evaluated are (1) coastal length of states (2) coastal population in coastal districts (3) literacy rate of coastal population (4) number of active fishermen population (5) percentage of economic establishments other than agriculture investments (6) Net State Domestic Product (7) State Human Development Index (8) number of major ports (9) number of minor ports (10) number of designated protected areas in the coastal states. This article also tested the usefulness of some aspects of functional theory in explaining the relationship between socioeconomic development and litigation trends.

II. METHODOLOGY

To perceive the coastal related litigations in India and its linkages with the various socio-economic factors of the coastal areas in various coastal states and UTs have been studied followed by the methods adopted by Van Loon and Langerwerf [10], Guruswamy and Singh [14], Theodore Eisenberg [13]. Functionalism is the oldest, and still the dominant, theoretical perspective in sociology and many other social sciences. According to

Chris McGrath [16], literature survey to test the proposition that evaluation of the effectiveness of environmental legal systems is relatively rare surveyed. He suggested, that while the term, “research”, has been sometimes confined to the natural sciences and laboratory studies, it is used to mean a careful and systematic process of inquiry to find answers to problems of interest. This kind of evaluation are similar to the evaluation of state of the environment prepared for United States of America and the guidelines developed by Organisation for Economic Co-operation and Development (“OECD”) to its member countries to prepare periodic national reports on the state of the environment and its changes over time [17]. Information of the proceedings of the coastal related litigations is widely available in online databases. Coastal environment related State / UTs’ litigations were collected from the online database. Data mining is one step at the core of the knowledge discovery process, dealing with the extraction of patterns and relationships from large amounts of data. Knowledge discovery in databases is a rapidly growing field, whose development is driven by strong research interests as well as urgent practical, social, and economical needs. Knowledge discovery can be broadly defined as the automated discovery of novel and useful information from commercial databases [18].The coastal related litigations were collected from online databases such as Judgement Information System (<http://judis.nic.in/>) of India and Manupatra (<http://www.manupatra.com/>) of India. The important socio economic factors and physiographic data of the coastal states were collected from Government of India departments and their websites. The litigations, socio economic and physiographic data were classified based on the states (high court) they are falling. Since the Union Territories (UTs) does not have any coastal related litigation, the present study has evaluated the mainland coastal states. Correlation coefficient formula has been used to analyse the relationship between litigation number and socio economic factors.

III. RESULTS

In total one hundred and twenty two litigations are filed in various high courts of India during between 1950 and 2010. Out of the thirteen coastal states and Union Territories (UTs) of India, the UTs viz., Puducherry, Andaman & Nicobar Islands, Lakshadweep and Daman and Diu does not have litigations about the coastal areas hence, the data were classified under nine mainland coastal states of India. Off the 120 total litigations on coastal environment, the coastal state Maharashtra has maximum number of court cases (25) and the coastal state West Bengal and Karnataka has minimum (1) number of coast case. The number of high court cases in various coastal states and the coastal length are given in `Figure – 1.

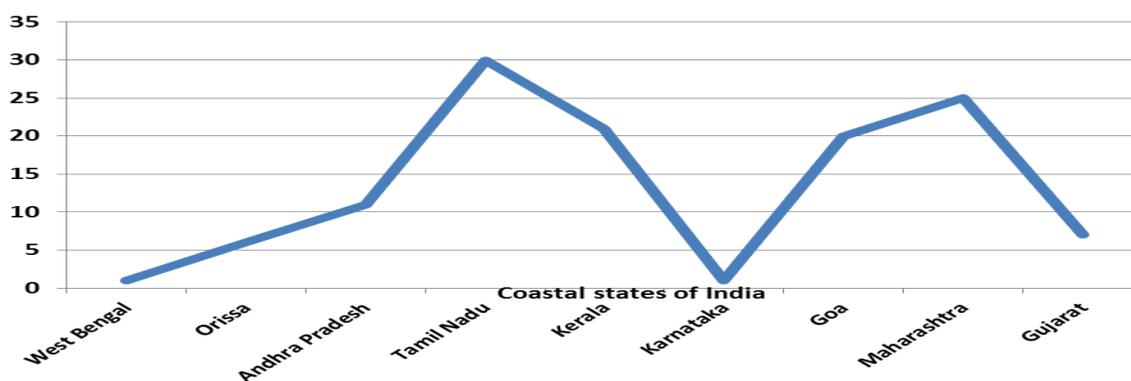


Figure - 1 : Number of litigation in coastal states

The numbers of litigations filed in the high court of coastal states were evaluated with the eleven socio economic and physiographic factors. The coastal lengths of the coastal states are varying between 1663 km in the coastal state of Gujarat (maximum) and 200 kms in the coastal state of West Bengal (minimum). The number of litigations are positively correlated (CORREL = 0.1622) with the coastal length of coastal states. Coastal population (2001 census) living in the coastal districts are high (3,17,05,092) in coastal state of Andhra Pradesh followed by the coastal state of Tamil Nadu (2,87,01,470), and the coastal state of Kerala (2,60,80,036). Coastal population is low (13,47,668) in the coastal state of Goa. The number state wise litigations are positively correlated (CORREL =0.0853) with the coastal population of the coastal states.

Literacy rate is high (74.27 %) in the coastal districts of Kerala and it is very low (55.3%) in the coastal districts of Andhra Pradesh. The number court cases to the rate of literate in the coastal state is positively correlated (CORREL = 0.1816). Fishermen in India are the important human resources of the coastal areas and they are very sensitive with the participation of other stakeholders in sharing of coastal resources. Hence, a number of coastal related litigation have been compared with the number of active fishermen population of the coastal states estimate of Vivekanandan (2005). The active fishermen population are high (1703044) in coastal state of Kerala followed by the coastal state of Andhra Pradesh (105662). The active fishermen population is

less (10177) in the state of Goa. The number of court cases to the number of active population in the coastal states are positively correlated (CORREL = 0.4277)

The Fifth Economic Census was conducted in all the State / UTs. All economic activities (agricultural and non-agricultural), except those involved in crop production and plantation related to production and /or distribution of goods and / or services other than for the sole purpose of own consumption were covered (Fifth Economic Census 2005). As per the data of 5th economic census of the coastal states of India, economic establishments other than agriculture establishments are high (96.38) in coastal state of Goa followed by the coastal state of Orissa (89.49%), and coastal state of Maharashtra (85.7%). Establishments are low (68.60 %) in the coastal state of Kerala followed by the coastal state of Gujarat (70.7 %). Non-agriculture urban establishments are high (50%) in the coastal state of Goa and coastal state of Maharashtra. The non-agriculture urban establishments are less in the coastal state of Orissa (21 %) followed by the coastal state of Andhra Pradesh (29 %). The number of litigations in coastal states to the rate of non-agriculture economic establishment is positively correlated (CORREL = 0.0640). Net State Domestic Product (NSDP) of the coastal states for the year 2006-2007 have been analysed for the coastal states. NSDP is high (614071 crore) in the coastal state of Maharashtra state followed by the coastal state of Andhra Pradesh (325955 crore) and the coastal state of Tamil Nadu (313812). The NSDP is low (16826) in the coastal state of Goa. The number of coastal related litigation of the states are positively correlated (CORREL = 0.2395) with the NSDP of the coastal states. Ports are playing important role in economic activities of the states. Twelve major ports and one hundred eighty seven minor ports are distributed in various coastal states of India. The number of major ports are high (3) in the coastal state of Tamil Nadu followed by the coastal state of Maharashtra (2). Minor ports are high (53) in the coastal state of Maharashtra followed by the coastal state of Gujarat (40). The coastal related litigations in the coastal states are positively correlated (CORREL =0.7307 & (CORREL = 0.3504)) with the major ports and minor ports respectively.

Higher economic growth and higher per capita income in a country does not always mean that its people are better off than those in a country with lower income, because there are many aspects of human wellbeing that these indicators do not capture. United Nations experts prefer to use the Human Development Index (HDI) to measure a country's development. To evaluate the coastal related litigations, the present paper attempted to use the HDI of the coastal states of India. The State HDI (year 2006) is comparatively high (0.764) in the coastal state of Kerala and it is very less (0.537) in the coastal state of Orissa (data from the Ministry of women and child development, Govt. of India). The values are comparable with the national average of 0.605. The number of coastal litigation in the coastal states are positively correlated (CORREL = 0.5976) with the HDI.

Natural resources are fundamental to the production of all goods, including capital goods. Location values must not be confused with values imparted by fixed capital improvements. In classical economics, land is considered one of the three factors of production (along with capital, and labor). The ecologically important areas shall be one among the productive factors of the coastal areas hence, it is compared with the number of coastal litigations. Hence, the designated coastal protected areas such as coastal national marine parks, and coastal wild life sanctuaries of coastal states have been compared with the number of coastal litigations in the coastal states. The number of designated coastal protected areas are high (5) in the coastal state of Orissa, followed by Andhra Pradesh (5), Tamil Nadu (5) and Gujarat (5). The number of litigations in the coastal states are positively correlated (CORREL = 0.0560) with the number of coastal protected areas.

Several socio-economic factors are determining the litigation rates of the coastal states. In the present study we have tested the positivity of the relationship of eleven socio-economic factors and the coastal related litigations. The study results that the socio-economic factors that were tested are positively correlated with the number of litigations.

IV. DISCUSSION

In the present study, it is evident that the socio-economic factors are influencing the number of litigations and supporting the functional theory of Durkheim. Since the coastal areas of India are getting greater importance in recent years, owing to increasing human population, urbanization and accelerated developmental activities have increased the conflict between physical, environmental and human dimensions [18]. Systematic knowledge and understanding of various dimensions of the coastal area shall guide for wise use of coastal resources, resolving human-induced problems, and improving governance systems. The Coastal Regulation Zone (CRZ., 1991 & 2011) is aimed to develop sustainable management of the coastlines. The above regulation helps the stakeholders in the coastal areas to resolve the conflicts in the coastal areas through sustainable coastal zone management. According to Xuegong Xu et al [3], economic activities and increased population, and urbanization are intense in coastal zones which lead to a series of land resource and environmental conflicts, especially in developing countries at times of economic transition. It is not a recent problem, not only in India but all over the world even before industrial era. In 1798, Malthus [19] worried about how Britain's apparently

inexorable rise in population could be sustained from a finite amount of land. In 1865, Jevons [20] wondered how Britain's ever-increasing energy consumption could be sustained from finite supplies of coal.

According to a number of recent World Bank studies, physical capital (produced assets) is not the main—much less the only—component of a country's wealth. Most important for all countries are human resources, which consist of “raw labor,” determined mainly by the number of people in a country's labor force, and human capital [21]. Guruswamy and Aditya Singh [15] have observed a positive association between higher literacy rates, as reported in the 2001 census, and civil filing rates in India. Global wealth is concentrated less and less in factories, land, tools, and machinery. The knowledge, skills, and resourcefulness of people are increasingly critical to the world economy [18]. Lack of education likely reduces knowledge of one's private and public rights, ill-health may disable one from many activities, including litigation, and shorter life expectancies provide less time to sue. In addition to these direct effects on litigation, less education and shorter life expectancies may compromise economic development, and thereby indirectly influence litigation rates through economic measures [13]. The empirical study of Guruswamy, and Aditya Singh [15] found that the litigation in India supplies substantial new evidence that higher litigation rates are not necessarily evidence of an overly litigious society or a drain on the economy; they can be a natural consequence of economic development and improved human well-being. In India, more prosperous states have for decades had higher litigation rates than less prosperous states. Clark's [22] study of regions within six countries (Chile, Columbia, Costa Rica, Italy, Peru, Spain) found that “there was a positive relationship between elevated socioeconomic development and higher rates of civil litigation.”

The total numbers of active fishermen in the coastal states are positively correlated with the number of litigations in the coastal states. Coastal fisheries, coastal aquaculture, and coastal tourism are among several activities that can either coexist harmoniously or be in conflict, depending on how they are managed [23]. Fishermen in India are continuously agitating with other coastal activities such as unregulated tourism, polluting industries, infrastructure, aquaculture, sand mining, construction of seawall and rapid urbanisation, and ecosystems health issues. One solution might be the use of an integrated approach to coastal and marine management and land and sea use, under which economic, social, and environmental issues would be integrated [24].

In the present study, the numbers of economic establishments other than agriculture are positively correlated with the number of litigations in the coastal states. According to Van Loon and Langerwerf [10], functional theory predicts that the effect of industrialization is curvilinear, that the litigation rate will be higher during industrial take-off. Intense economic growth leads to reordering of a broad range of social relationships, which creates a need for normative interventions. An alternative functional theory says that industrialization is accompanied by stress and a breakdown of traditional social relations. As a result, during the process of industrialization there is greater reliance on the legal order to resolve conflicts, with elevated litigation rates as a consequence. A careful examination of the “Five Years Plans” being adopted by many Third World Economies shows more concentration of their limited resources on urban industrial development while neglecting their rural areas. The neglect of rural areas and the resulting high poverty levels, on the one hand, and more urban industrial development, on the other hand, led to increasing rates of rural-urban migration with the expectation of finding better and secure livelihood opportunities such as employment, housing, education, etc. [25]. The numbers of litigation are positively correlated with the state net production and economic activities. Analyzing over twenty years of data from High Courts and six years of data from trial courts within India, Theodore Eisenberg *etal* [13] found that Indian states with higher civil litigation rates also generally have higher GDP per capita and literacy rates. Further the above study suggested that the India makes a great case study for examining the connection between litigation and economic development because there is wide disparity between Indian states in GDP and literacy. India is one among the economic transitioning democracy which influences much litigation. In fact, both a growing and a declining economy can cause increased numbers of court cases [10].

In the present study, Human Development Index (HDI) is positively correlated with the number of litigations of the coastal states. Theodore Eisenberg *etal* [13], found that the state's **HDI Score** (which is a composite of economic, health and education indicators) correlates even more with higher litigation rates than a state's GDP and literacy rate. The fact that higher litigation rates are associated with Indian states with a higher HDI score suggests that people are more likely to use the courts to resolve disputes when they are economically, socially, and physically better off. The implications for those who are concerned about the fact that many Indians lack access to justice and courts is that simply improving the courts or macroeconomic growth are not the most important factors in ensuring that people are able to assess the courts. Wollschläger [26] reported on civil litigation rates for 35 countries. The Wollschläger [26] data were not available for each country for the same year so the litigation data ranged from 1987 to 1996. He observed that low litigation rates in Ethiopia, Nepal, Paraguay, and the Solomon Islands “can easily be attributed to economic underdevelopment” but he provided no statistical analysis comparing litigation rates with economic development. However, the present study has provided statistical analysis along with the linkages of the HDI scores as a tool for the analysis for number of litigations.

The numbers of coastal protected areas which are the coastal eco-sensitive areas in the coastal states are positively correlated with the number of litigations. It is evident from various research findings from India that the health statuses of coastal ecosystems are deteriorating. Pimm *etal.*, [27] confirmed that the in many parts of the world, population growth and economic expansion have increased the percentage of land devoted to human use. There has been widespread conversion of habitat for agriculture and timber harvesting, and to a lesser extent urban development. There are concerns that the loss of habitat has greatly increased species extinction rates. The environment protection organisations, non- Governmental organisations and traditional coastal community are sensitive to protect and conserve the ecologically sensitive areas from

conversion and uses for other development purposes. Therefore, land use control should be made with holistic and strategic planning, especially in land development and basic farmland conservation. The method should combine both rigidity and flexibility [3]. A thorough understanding of natural and socioeconomic processes defining coastal behaviour is central to the effective management of the coastal system [28].

V. CONCLUSION

Socio-economics factors are influencing over the coastal environmental law, the factors shall be verified to incorporate many socio-economic development mechanisms in the coastal zone management initiatives of India. The draft Fishermen Act (2010) of India may be revisited with very many linkages of the socio-economics. The findings are supporting the functional theory of Durkheim.

VI. ACKNOWLEDGEMENTS

The authors wish to thank Ministry of Environment and Forests, and other Ministries and Departments of Government of India for accessing their data that are relevant to litigations related coastal environment. Further, they wish to thank the World Bank officials, Society of Integrated Coastal Management, New Delhi and National Centre for Sustainable Coastal Management, Chennai for their support to prepare this manuscript.

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